Appendix A
Scoping Report

CORNUCOPIA HYBRID SOLAR PROJECT

Scoping Report
EIR No. 8511
CUP No. 3777
Variance No. 4184

Prepared for
County of Fresno Department of Public Works and Planning, Development Services and Capital Projects Division

May 2025

Cover photo: Cornucopia Hybrid, LLC, 2024

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May 2025

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CORNUCOPIA HYBRID SOLAR PROJECT
Scoping Report

1. Introduction

This report provides an overview of the comments received by the Fresno County Department of Public Works and Planning, Development Services and Capital Projects Division (County) during the scoping period for Environmental Impact Report (EIR) No. 8511, which the County is preparing for the Cornucopia Hybrid Project (Project). The County is the lead agency pursuant to the California Environmental Quality Act (CEQA) and its implementing regulations (CEQA Guidelines).

CEQA Guidelines section 15083 provides that a "Lead Agency may…consult directly with any person… it believes will be concerned with the environmental effects of the project." Scoping is the process of early consultation with affected agencies and the public prior to completion of a Draft EIR. Section 15083(a) states that scoping can be "helpful to agencies in identifying the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in an EIR and in eliminating from detailed study issues found not to be important." Scoping is an effective way to bring together and consider the concerns of affected State, regional, and local agencies, and other interested stakeholders (CEQA Guidelines section 15083[b]). Scoping is not conducted to resolve differences concerning the merits of a project or to anticipate the ultimate decision on a proposal. Rather, the purpose of scoping is to determine the scope of information and analysis to be included in an EIR and, in this way, to ensure that an appropriately comprehensive and focused EIR will be prepared that provides an informed basis for decision-making. Comments not within the scope of CEQA will not be addressed through the CEQA process, but separately may be considered by the County as part of the decision-making process.

This report is intended for use by the County in preparing the EIR as formal documentation of initial input received regarding the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in the EIR. It also provides access for other agencies and stakeholders to comments received by the County during the scoping period.

2. Description of the Project

Project Summary

BayWa r. e. Solar Projects LLC (Applicant) applied to the County for an Unclassified Conditional Use Permit (CUP No. 3777) and Variance (Variance No. 4184) to construct, operate, maintain, and ultimately to decommission a hybrid energy project comprised of a solar energy generation facility and an energy storage facility. The Project could generate approximately 300 megawatts (MW) of solar generated

energy and store approximately 300 megawatts alternating current (MWac)[1] of energy in modular enclosures. The solar energy generation facility would consist of photovoltaic (PV) solar modules, a substation and switching station, an energy storage system, and two prefabricated structures to be used for maintenance and operation services and for control services. The PV solar modules would be arranged into arrays supported by racking systems and units that track the sun. The modules would be connected to power inverters to convert the sunlight energy collected by the modules from direct current (DC) into usable alternating current (AC) power. The energy would then be transferred from the inverters to a new Pacific Gas and Electric (PG&E) switching station, to ultimately transfer the power to the local electrical grid via an interconnection to the existing to Templeton-Gates 230 kilovolt (kV) transmission lines. The substation and the PG&E switching station would be located within the southeast corner of the Project boundaries. The substation would include an electrical control building and would tie into the PG&E switching station via a new 230 kV transmission line. The energy storage system would occupy an approximately 12-acre area adjacent to the substation and be comprised of lithium-ion, flow, or sodium sulfur batteries. The Project site is located on parcels subject to Williamson Act agricultural preserve contracts. The applicant proposes to retain agricultural preserve status by providing sheep grazing lands within and surrounding the proposed solar PV panels and equipment.

Project Site

The Project would be located on approximately 2,446 acres of private land within portions of Assessor Parcel Numbers 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S in western Fresno County. The site is located approximately 11 miles southeast of the City of Coalinga in Fresno County, 2.75 miles northwest of the City of Avenal in Kings County, and 4 miles west of Interstate 5 (I-5). The community of Lost Hills, which the Fresno County 2000 General Plan Policy Document[2] identifies as a Disadvantaged Unincorporated Community, is contiguous to the southeast portion of the Project site off State Route (SR) 33 (South Lost Hills Road). The Project site is intersected north to south by SR 33 and east to west by Sutter Avenue. The Project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36; Township 22 South, Range 16 East, Sections 1, 2; and Range 17 East, Section 6 of the Avenal, California United States Geological Survey (USGS) 7.5-minute Topographical Quadrangle Map.

3. Scoping Activities

Notifications

On May 3, 2024, the County published and distributed a Notice of Preparation (NOP) in English and Spanish to advise interested local, regional, state, and federal agencies, as well as the public, that an EIR would be prepared for the Project. The NOP solicited comments on the scope and content of the EIR. It also provided a description of the Project and the Project setting with a location map, information on the scoping process, and avenues to submit public comments. Agencies and members of the public were encouraged to submit their comments to the County by email or U.S. post.

[1] 300 MWac is an equivalent storage battery rating to 1200 megawatt hours (MWh).

[2] County of Fresno, 2000. Fresno County General Plan Policy Document Appendix B-2: Disadvantaged Unincorporated Communities SB 244. October 3, 2000. https://www.fresnocountyca.gov/files/sharedassets/county/vision-files/files/48571-sb-244-analysis.pdf. Accessed June 13, 2024.

Both copies of the NOP were sent to a mailing list that included California Native American tribes; local, state, and federal agencies; property owners located within 0.5 mile of the Project site; and other stakeholders as well as the Governor's Office of Planning and Research, State Clearinghouse. The NOP was also posted with the County Clerk and on the County's website at: www.co.fresno.ca.us/EIR. The NOP and NOP mailing list are provided in **Exhibit A**, *Notice of Preparation and Mailing List*.

The NOP, including information about a public scoping meeting, was published in legal advertisements in The Business Journal in English and Spanish on May 8, 2024. Copies of the legal notices are provided in **Exhibit B**, *Newspaper Notifications*. The advertisements provided basic Project information, the date, time, and participation information for a virtual public scoping meeting, and a brief explanation of the public scoping process.

Public Scoping Meetings

The County conducted a virtual public scoping meeting on Tuesday, May 14, 2024, beginning at 3:30 p.m. in English with the simulcast option to listen to the Spanish interpretation during the meeting. Copies of the presentation slide deck were posted to the County's website in English and in Spanish in advance of the scoping meeting. The presentation included an overview of the Project, the County's land use and permitting process, the environmental review process, and directions for submitting scoping comments. Meeting participants included Jeremy Shaw of Fresno County Department of Public Works and Planning, and Janna Scott, Selena Whitney, Nicole Lobodzinski, Larry Kass, Marisol Guzman, and Steven Johnson of Environmental Science Associates. Two members of the public called into the scoping meeting by telephone and 10 others attended via the Zoom online meeting platform. Two oral comments were received during the meeting. Copies of the presentation in English and Spanish and notes of the May 14, 2024, meeting are provided in **Exhibit C**, *Scoping Meeting Presentation and Meeting Notes*.

4. Summary of Scoping Comments

The County received seven scoping letters between May 10 and June 4, 2024, input from two people at the scoping meeting, and one additional letter after the public scoping period closed. All scoping comments received are documented in this Scoping Report and will be considered in the EIR. **Table 1** lists the names of commenting parties in the order in which the comments were received. The County will review and rely upon the full text of the comment letters in preparing the EIR; summaries of the environmental issues raised there and in oral comments made at the scoping meeting are provided below for ease in review by other agencies and members of the public. The letters and a summary of the scoping meeting comments are provided in **Exhibit D**, *Scoping Comment Letters*.

The County received scoping input regarding the resource areas summarized below.

TABLE 1
PARTIES SUBMITTING COMMENTS DURING THE CORNUCOPIA HYBRID PROJECT EIR SCOPING PROCESS

Name	Organization/Affiliation	Letter ID	Date
Diana Carroll	Scoping Meeting Commenter	n/a	May 14, 2024
Dirk Poeschel	Scoping Meeting Commenter	n/a	May 14, 2024
Tom Jordan	San Joaquin Valley Air Pollution Control District	A	May 23, 2024
Monique Wilber	California Department of Conservation, Division of Land Resources	B	May 28, 2024
Julie A. Vance	State of California Natural Resources Agency, Department of Fish and Wildlife	C	June 3, 2024
Sophia Markowska	Defenders of Wildlife	D	June 3, 2024
Diana Carroll	Community Member	E	June 3, 2024
Nichole Escalon	Santa Rosa Ranchera Tachi Yokut Tribe	F	June 4, 2024
Cameron Vela	Native American Heritage Commission	G	May 10, 2024
Keyomi Jones	California Department of Transportation (Caltrans)	H	August 7, 2024

NOTE: n/a = not applicable

Agriculture Resources

The California Department of Conservation Division of Land Resource Protection (DOC) provided input regarding the Project's potential impacts on agricultural resources, and recommended topics of discussion in the EIR (Letter B). The DOC noted that the Project site is designated as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland as designated by the DOC's Farmland Mapping and Monitoring Program. DOC's letter also noted that the Project site is subject to the Williamson Act program and suggests that the conversion of agricultural land could represent a permanent reduction and may be viewed as an impact of at least regional significance. The DOC recommends that the County consider agricultural conservation easements, among other measures, as potential mitigation. In addition to proposed mitigation measures, DOC recommends further discussion on the type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project. The DOC letter further suggests that impacts to any current or future agricultural operations in the vicinity should be assessed, as well as the Project's compatibility with lands within an agricultural preserve and/or enrolled in a Williamson Act contract.

Air Quality

The San Joaquin Valley Air Pollution Control District (SJVAPCD) provided input regarding the Project's potential impact on air quality and requested information in the Draft EIR to facilitate assessment of air quality impacts (Letter A). SJVAPCD requests that emissions from construction and operation of the Project be identified, quantified, and compared to significance thresholds and, more specifically, that details be provided about activities that would result in the emission of pollutants relative to sensitive receptors. If the Project is expected to emit criteria pollutants that exceed the significance thresholds, SJVAPCD recommends, in part, that an Ambient Air Quality Analysis be performed, and that the Draft EIR include a discussion on the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA) for the Project.

SJVAPCD's letter recommends that equipment exhaust and fugitive dust emissions be quantified and that emissions analysis be performed using CalEEMod. The SJVAPCD recommends conducting a Health Risk Assessment to assess potential health impacts on surrounding receptors resulting from operational and multi-year construction toxic air contaminants emissions, including from diesel exhaust. The letter recommends that the Project should use the cleanest available off-road construction equipment, including the latest tier equipment to reduce emissions. Project-related impacts on air quality should be reduced to levels of significance through incorporation of design elements such as the use of cleaner Heavy Heavy-Duty (HHD) trucks and vehicles, measures that reduce Vehicle Miles Traveled (VMTs), and measures that increase energy efficiency.

Letter A also identifies SJVAPCD rules and regulations applicable to the Project, including: District Rules 2010 and 2201 (Air Quality Permitting for Stationary Sources), District Rule 9510 (Indirect Source Review), District Rule 4601 (Architectural Coatings), District Regulation VIII (Fugitive PM10 Prohibitions), District Rule 4102 (Nuisance), and District Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

Biological Resources

Scoping letters received from the California Department of Fish and Wildlife (CDFW, Letter C) and the Defenders of Wildlife (Letter D) both speak to the potential for sensitive biological resources within the Project site. CDFW states that special-status species have been documented in the study area per the California Natural Diversity Database (CNDDB). These species include, but are not limited to, the State and Federally endangered giant kangaroo rat, the State threatened San Joaquin [Nelson's] antelope squirrel, the State threatened and federally endangered San Joaquin kit fox, the state threatened Swainson's hawk and tricolored blackbird, the state and federally endangered blunt-nosed leopard lizard, the State candidate endangered Temblor legless lizard and Crotch's bumblebee, the State species of special concern American badger, San Joaquin pocket mouse, short-nosed kangaroo rat, Tulare grasshopper mouse, burrowing owl, loggerhead shrike, northern harrier, prairie falcon, Blainville's horned lizard, California glossy snake, and San Joaquin coachwhip, and the federally proposed threatened and State species of special concern western spadefoot. Defenders of Wildlife similarly states that the Project would be located on lands that are considered to be sensitive with moderately high, high, and very high conservation values. CDFW and Defenders of Wildlife recommend that a qualified biologist perform relevant database reviews and other research of the Project area, then conduct a habitat assessment and focused biological studies in support of the Draft EIR to determine if the Project area or its immediate vicinity contains suitable habitat for any of the special-status species mentioned and if so, any mitigation measures that may be necessary. CDFW's letter recommended several mitigation measures for the San Joaquin kit fox, Swainson's hawk, Blunt-nosed leopard lizard, and Burrowing owl.

Defenders of Wildlife recommends consultation with CDFW and the United States Fish and Wildlife Service (USFWS) to establish recommended impact avoidance, minimization, and mitigation measures, including compensatory mitigation and the need to obtain an incidental take permit. Defenders of Wildlife's letter, additionally, states that if habitat management (HM) lands are deemed necessary due to survey results, the HM lands must contain suitable habitat for the species and be managed in perpetuity by a qualified conservation organization as defined by CA Civil Code Section 8153. Credits could be purchased in a CDFW-approved mitigation bank.

CDFW also states that the Project area would be within the geographic range of several special status plant species including, but not limited to, the State and federally endangered California Rare Plant Rank CRPR 1B.1 California jewelflower, and the CRPR 1B.2 and federally endangered Kern mallow and San Joaquin woollythreads. CDFW recommends that the Project area be surveyed for special status plants within areas of suitable habitat by a qualified botanist as part of the biological technical studies conducted in support of the Draft EIR. Consultation with CDFW is recommended for guidance on mitigation measures if surveys indicate the presence or potential presence of special status plants. CDFW recommends consulting with USFWS well in advance of any Project activities regarding potential impacts to federally listed species. Defenders of Wildlife also states that agency consultation will be required as early as possible given the Project is proposed to be located on land with "moderately high" to "very high" conservation value.

Multiple streams subject to CDFW's regulatory authority appear to be present within the Project site. Project activities that substantially change the bed, bank, and channel of any river, stream, or lake would be subject to CDFW's regulatory authority pursuant Fish and Game Code section 1600 et seq. Section 1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake, (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation), or (c) deposit debris, waste or other materials that could pass into any river, stream, or lake.

CDFW's letter also states that the Project would be within the geographic range of many migratory and non-migratory nesting birds. The Project applicant is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes sections. Additionally, CDFW states that the installation of outdoor artificial night lighting can disrupt the circadian rhythms of many wildlife species. CDFW recommends that the Draft EIR for the Project include an analysis of artificial lighting as it relates to biological resources and incorporate enforceable mitigation measures to decrease the impacts of artificial outdoor lighting on wildlife species. CDFW also recommends that on-site features that contribute to habitat connectivity should be evaluated and maintained as habitat connections support movement across the broader landscape, sustaining both transitory and permanent wildlife populations. Defenders of Wildlife requests a cumulative impact analysis to closely examine the population status and direct and indirect cumulative impact of past, present, and reasonably foreseeable activities that adversely impact biological resources with the potential to occur on or near the proposed Project site. The analysis is recommended to include a detailed map of all existing and planned development within the remaining habitat and connectivity corridors for Blunt-nosed leopard lizard and San Joaquin kit fox. Defenders of Wildlife also recommend consultation with CDFW to identify an acceptable methodology to evaluate cumulative impacts at the resource level.

Cultural and Tribal Resources

The Santa Rosa Ranchera Tachi Yokut Tribe submitted a letter requesting a historical record search with results and a Sacred Lands File search with results, in addition to other project-specific and locational data (Letter F). The letter requested certain project components, mitigation measures, and construction monitoring activities to avoid inadvertent discoveries and to best protect tribal cultural resources. The requested project components or mitigation measures include the preparation of a curation agreement and

the inclusion of native plants in the seed mix. Monitoring activities would include a Tribal monitor during construction and decommissioning.

The Native American Heritage Commission submitted a letter that provided information regarding the processes of the California Environmental Quality Act and the requirement to draft an EIR if a project should have the potential to have a significant impact. The letter also provides information about both Assembly Bill 52 and Senate Bill 18, and expresses the importance of adhering to the requirement of tribal consultation ahead of any Project actions as part of the CEQA process. The letter concludes with a summary of resources available to assist in the tribal consultation process.

Transportation

During the scoping meeting, the first commenter, Diana Carroll, requested further information about roads and access to the Project site, particularly for residents near the site but not on the NOP mailing list (Exhibit C, Scoping Meeting Notes). The second commenter, Dirk Poeschel, requested Diana's contact information to reach out to her about her comment (Exhibit C, Scoping Meeting Notes). Diana Carroll also submitted an email to express her family's and surrounding property owners' concerns regarding access to the available dirt roads that lead to and from their properties located in the unincorporated community of Lost Hills located adjacent to the Project site (Letter E). She explained that the dirt roads that lead to their properties are directly connected to SR 33 and expressed concern that SR 33 will be out of service due to the Project. She asked if alternative routes will be implemented by the project, to allow property owners to continue to have unimpeded access to their properties.

The Project also received a letter from Caltrans. The letter discusses Caltrans's review of the Conditional Use Permit Application filed for the Project. It states that it is Caltrans's policy to use existing access points and to minimize new access points to state highways, and that proposed driveways along State Route 33 may then not be permitted. Further, Caltrans recommends that access via Sutter Avenue be considered, and that a transportation management plan be developed for the Project.

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Exhibit A

Notice of Preparation and Mailing List

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT AND PUBLIC SCOPING MEETING FOR THE Cornucopia Solar Project

TO: Responsible and Trustee Agencies, other interested agencies, and members of the public

FROM: County of Fresno, Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

SUBJECT: Notice of Preparation of an Environmental Impact Report for the Cornucopia Hybrid Solar Project

Date: May 3, 2024

Action: The County of Fresno (County) will be the Lead Agency pursuant to the California Environmental Quality Act (CEQA) and will be responsible for preparing an Environmental Impact Report (EIR) pursuant to CEQA and the CEQA Guidelines for the Cornucopia Hybrid Solar Project.

Project Title: Cornucopia Hybrid Solar Project, Unclassified Conditional Use Permit Application No. 3777 & EIR No. 8511

Project Applicant: BayWa r.e. Solar Projects LLC

Project Location and Summary:
The applicant proposes to construct, operate, and maintain a new solar energy generation facility capable of generating approximately 300 MW of energy and an approximately 300 MW of alternating current (MWac) battery storage system and associated infrastructure and buildings (Project). The proposed Project would be located on approximately 2,446 acres of private land within portions of Assessor Parcel Numbers 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S in western Fresno County. The site is located approximately 11 miles southeast of the City of Coalinga in Fresno County, 2.75 miles northwest of the City of Avenal in Kings County, and 4 miles west of Interstate 5 (I-5). The disadvantaged unincorporated community of Lost Hills is contiguous to the southeast portion of the project of the site off SR 33. The Project site is intersected north to south by State Route (SR) 33 (South Lost Hills Road) and east to west by Sutter Avenue. The Project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36; Township 22 South, Range 16 East, Sections 1, 2; and Range 17 East, Section 6 of the Avenal, California United States Geological Survey (USGS) 7.5-minute Topographical Quadrangle Map.

The solar energy generation facility would consist of photovoltaic (PV) solar modules, a substation and switching station, an energy storage system, and two prefabricated structures to be used for maintenance and operation services and for control services. The PV solar modules would be arranged into arrays supported by racking systems and units that track the sun. The modules would be connected to power inverters to convert the sunlight energy into usable alternating current power. The energy would then be transferred from the inverters to a Pacific Gas and Electric (PG&E) switching station, to ultimately transfer the power to the local electrical grid. The substation and the PG&E switching station would be located within the southeast corner of the Project boundaries. The substation would include an electrical control building and would tie into the

PG&E switching station via a new transmission line. The energy storage system would consist of a battery storage system comprising of lithium-ion, flow, or sodium sulfur batteries and would be able to store approximately 300 MWac of electricity. The energy storage system would be located adjacent to the substation, with a footprint of approximately 12 acres in size. The Project site is located on parcels subject to Williamson Act agricultural preserve contracts. The applicant proposes to retain agricultural preserve status by providing sheep grazing lands within and surrounding the proposed solar PV panels and equipment.

A project description, maps, and figures are available for review at the following locations:

- Fresno County Public Works and Planning Department, 2220 Tulare Street, Suite A Street Level, Fresno, CA 93721
- Fresno County website: https://www.fresnocountyca.gov/eir8511

Written Comments:
This Notice of Preparation (NOP) solicits comments from Responsible and Trustee Agencies and other public agencies so that Project-related concerns relevant to each agency's statutory responsibilities can be addressed in the EIR. This NOP also solicits input from other interested parties, including Tribes and members of the public. The County requests that any potential Responsible or Trustee Agencies responding to this NOP reply in a manner consistent with CEQA Guidelines Section 15082(b), which allows for submittal of any comments in response to this notice no later than 30 days after receipt of the NOP. Comments in response to this NOP will be accepted through June 3, 2024.

Please send written scoping input to:

Attn: Jeremy Shaw
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Phone: (559) 600-4207 Fax: (559) 600-4200
Email: jshaw@FresnoCountyCA.gov

Please reference EIR 8511, Cornucopia Hybrid Solar Project. Include your name, address, and phone number and/or email address so that we may contact you for clarification, if necessary.

Public Scoping Meeting:
CEQA encourages public input throughout the planning process. Consistent with CEQA and CEQA Guidelines Section 15083, oral and written comments may be presented at a scoping meeting where the County will solicit input on the scope and content of the EIR, including environmental impacts of concern and mitigation measures or alternatives that should be considered. The scoping meeting will be held online for 30 minutes or until all who wish to speak have had an opportunity to do so. Scoping meeting details are as follows:

Date:	Tuesday, May 14, 2024
Time:	3:30 p.m.
If joining from a computer:	https://bit.ly/CornucopiaScopingMtg
	Webinar ID: 881 1371 1821
If joining by phone:	(888) 788-0099

Physical Setting:
The Project site consists of agricultural and vacant, undeveloped land. The surrounding land is predominantly agricultural land and large areas of vacant, undeveloped land to the north and south; the Lost Hills residential community and vacant land to the east; and vacant, undeveloped land to the west. Sutter Avenue bisects the site from north to south and SR-33 crosses through the site from the northwest to the southeast. Utility poles and power lines are located around the perimeter of the site. Multiple structures exist adjacent to the Project boundary in the Lost Hills community, with the closest residence located approximately 200 linear feet from the nearest proposed PV panel. All eight parcels associated with the Project site within Williamson Act agricultural preserve contracts. Three existing wells are located within the leased areas of the site.

Approximately 2,075 acres of the site is located within a Federal Emergency Management Agency Flood Zone and another approximately 309 acres of the site is designated as Special Flood Hazard Area. Approximately 10.4 acres of riverine features exist within the site. Within 10 miles of the site, 34 special-status plant species and 32 special-status wildlife species exist.

Land Use Designation:
The project site is designated for Agriculture in the County General Plan and all eight parcels within the site are zoned Exclusive Agricultural (AE). The site includes parcels zoned AE-20 and AE-40 (Exclusive Agricultural, 20-acre minimum parcel size and 40-acre minimum parcel size, respectively) pursuant to the County's Zoning Map. The AE zone is intended to be an exclusive district for agriculture and for those uses which are necessary and an integral part of an agricultural operation.

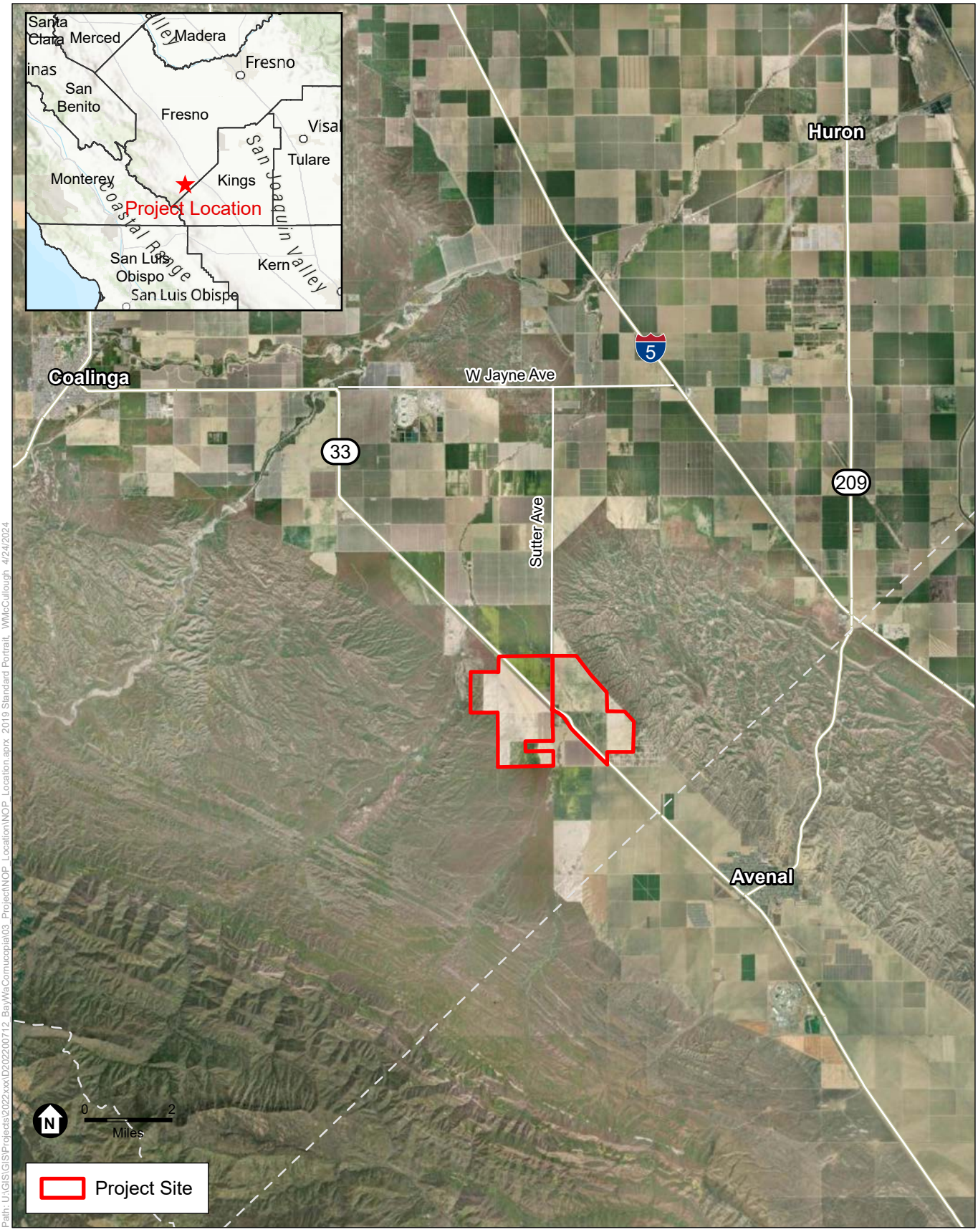
According to Fresno County Zoning Ordinance, Chapter 842.5, *Conditional Use Permits,* the proposed solar energy generation facility falls under Section 842.5.020, Item B.14, which permits the following uses with an Unclassified Conditional Use Permit (CUP): power production and generation facilities, including utility-scale PV facilities subject to the County's adopted Solar Facility Guidelines.

Alternatives to be Analyzed in the EIR:
In accordance with CEQA Guidelines Section 15126.6, the Draft EIR will assess a range of alternatives to the Project, including a No Project Alternative and one or more other alternatives that would attain most of the basic objectives of the Project while avoiding or reducing any of its significant environmental effects. Potential alternatives will be identified during the scoping process.

Potential Environmental Impacts:
Pursuant to CEQA Guidelines Section 15060(d), the County has determined that this Project could result in one or more significant impacts on the physical environment, thereby necessitating the preparation of an EIR, and so has not prepared an Initial Study. The EIR will analyze the environmental issues identified in the CEQA Guidelines Appendix G Environmental Checklist (listed below) after establishing the environmental setting, or baseline, for the analysis. The EIR will identify potential significant direct, indirect, and cumulative effects of the Project and alternatives related to:

- Aesthetic quality and views, particularly in the vicinity of existing communities;
- Agriculture and forestry resources, including the use of property currently subject to Williamson Act contracts to an energy storage use for the duration of the permit term, some portions of the land may be considered prime farmland or farmland of statewide importance;
- Air quality and noise in the vicinity of sensitive receptors, particularly from equipment;
- The intersection of air quality, energy use, transportation, and greenhouse gas (GHG) emissions;

- Biological resources, including species and habitats, based on database queries, field surveys, and agency consultations, if required;
- Cultural and tribal cultural resources that could be disturbed during construction, based on record searches, field surveys, and input that may be received from California Native American Tribes;
- Geology and soils, paleontological resources, hazards and hazardous materials, hydrology and water quality, and related considerations and constraints;
- The Project's relationship to land use and planning, as well as lands subject to special resources management activities, such as mineral resources and recreation;
- Population and housing, public services, and utilities and service systems;
- Wildfire, including the potential to exacerbate wildfire risks, and thereby expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; and
- Growth inducement, particularly in relation to existing, adopted development plans for Fresno County.



SOURCE: ESA, 2024

Cornucopia Hybrid Solar Project

Figure 1
Project Location

ESA

AVISO DE PREPARACIÓN DE INFORME DE IMPACTO AMBIENTAL Y REUNIÓN PÚBLICA DE ALCANCE PARA EL Proyecto Solar Cornucopia

PARA: Agencias Responsables y Fiduciarias, otras agencias interesadas, y miembros del público

DE: Condado de Fresno, Departamento de Obras Públicas y Planificación
Divisiones de Servicios de Desarrollo y de Proyectos Capitales
2220 Tulare Street, Sexto Piso
Fresno, CA 93721

ASUNTO: Aviso de Preparación de un Informe de Impacto Ambiental para el Proyecto Solar Híbrido Cornucopia

Fecha: 3 de mayo de 2024

Acción: El Condado de Fresno (Condado) será la Agencia Principal de conformidad con la Ley de Calidad Ambiental de California (CEQA, por sus siglas en ingles) y será responsable de preparar un Informe de Impacto Ambiental (EIR, por sus siglas en ingles) de conformidad con CEQA y las Directrices de CEQA para el Proyecto Solar Híbrido Cornucopia.

Título del Proyecto: Proyecto Solar Híbrido Cornucopia, Solicitud de Permiso de Uso Condicional No Clasificado No. 3777 & Informe de Impacto Ambiental No. 8511

Solicitante del Proyecto: BayWa r.e. Solar Projects LLC

Ubicación y Resumen del Proyecto:
El solicitante propone construir, operar y mantener una nueva instalación de generación de energía solar capaz de generar aproximadamente 300 MW de energía y un sistema de baterías de almacenamiento de aproximadamente 300 MW de corriente alterna (MWac), junto con la infraestructura y los edificios asociados (Proyecto). El proyecto propuesto se ubicaría en aproximadamente 2,446 acres de terreno privado dentro de partes de las parcelas con números del asesor 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12 y 085-110-13S en el oeste del condado de Fresno. El sitio se encuentra aproximadamente a 11 millas al sureste de la ciudad de Coalinga en el condado de Fresno, a 2.75 millas al noroeste de la ciudad de Avenal en el condado de Kings, y a 4 millas al oeste de la Interestatal 5 (I-5). La comunidad desfavorecida no incorporada de Lost Hills está contigua a la porción sureste del proyecto cerca de la Ruta Estatal 33. El sitio del proyecto está atravesado de norte a sur por la Ruta Estatal (SR) 33 (South Lost Hills Road) y de este a oeste por la Avenida Sutter. El sitio del proyecto está ubicado dentro del Municipio 21 Sur, Rango 16 Este, Secciones 34, 35 y 36; Municipio 22 Sur, Rango 16 Este, Secciones 1, 2; y Rango 17 Este, Sección 6 del Mapa Cuadrangular Topográfico de 7.5 minutos de Avenal, California del Servicio Geológico de los Estados Unidos (USGS).

La instalación de generación de energía solar consistiría en módulos solares fotovoltaicos (VF), una subestación y estación de conmutación, un sistema de almacenamiento de energía y dos estructuras prefabricadas para ser utilizadas para servicios de mantenimiento y operación y para servicios de control. Los módulos solares fotovoltaicos se colocarían en matrices sostenidas por sistemas de bastidores y seguidores solares. Los módulos se conectarían a inversores de energía para convertir la energía solar en corriente alterna utilizable. Luego, la energía sería transferida de los inversores a una estación de conmutación de Pacific Gas and Electric

(PG&E), para finalmente transferir la energía a la red eléctrica local. La subestación y la estación de conmutación de PG&E estarían ubicadas dentro de la esquina sureste de los límites del proyecto. La subestación incluiría un edificio de control eléctrico y se conectaría a la estación de conmutación de PG&E a través de una nueva línea de transmisión. El sistema de almacenamiento de energía consistiría en una batería compuesto por pilas de iones de litio, flujo, o azufre de sodio y sería capaz de almacenar aproximadamente 300 MW de electricidad. El sistema de almacenamiento de energía se ubicaría junto a la subestación, con una huella de aproximadamente 12 acres de tamaño. El sitio del proyecto está ubicado en parcelas sujetas a contratos de preservación agrícola del Acta Williamson. El solicitante propone mantener el estatus de reserva agrícola al proporcionar tierras para pastoreo de ovejas dentro y alrededor de los paneles solares fotovoltaicos y el equipo propuesto.

Una descripción del proyecto, mapas y figuras están disponibles para su revisión en las siguientes ubicaciones:

- Departamento de Obras Públicas y Planificación del Condado de Fresno, 2220 Tulare Street, Suite A, Nivel de la Calle, Fresno, CA 93721
- Sitio web del Condado de Fresno: https://www.fresnocountyca.gov/eir8511

Comentarios Escritos:
Este Aviso de Preparación (NOP, por sus siglas en inglés) solicita comentarios de las Agencias Responsables y Fiduciarias y otras agencias públicas para que las preocupaciones relacionadas con el Proyecto relevantes para las responsabilidades estatutarias de cada agencia puedan ser abordadas en el Informe de Impacto Ambiental. Este NOP también solicita aportes de otras partes interesadas, incluías Tribus y miembros del público. El condado solicita que cualquier posible Agencia Responsable o Fiduciaria que responda a este Aviso de Preparación lo haga de manera consistente con la Sección 15082(b) de las Directrices de CEQA, que permite la presentación de cualquier comentario en respuesta a este aviso no más tarde de 30 días después de recibir el Aviso de Preparación. Los comentarios en respuesta a este Aviso de Preparación se aceptarán hasta el 3 de junio de 2024.

Por favor, envíe sus comentarios por escrito a:

A la atención de: Jeremy Shaw
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Teléfono: (559) 600-4207 Fax: (559) 600-4200
Correo electrónico: jshaw@FresnoCountyCA.gov

Por favor, refiérase al EIR 8511, Cornucopia Hybrid Solar Project. Incluya su nombre, dirección y número de teléfono y/o dirección de correo electrónico para que podamos comunicarnos con usted para obtener una aclaración, si es necesario.

Reunión Pública de Alcance:
CEQA fomenta la participación del público durante todo el proceso de planificación. De acuerdo con CEQA y la Sección 15083 de las Directrices de CEQA, se pueden presentar comentarios verbales y escritos en una reunión de alcance donde el Condado solicitará aportes sobre el alcance y contenido del Informe de Impacto Ambiental, incluidos los impactos ambientales preocupantes y las medidas de mitigación o alternativas que deberían considerarse. La reunión de alcance se llevará a cabo en línea durante 30 minutos o hasta que todos los que deseen hablar hayan tenido la oportunidad de hacerlo. Los detalles de la reunión de alcance son los siguientes:

Fecha: martes, 14 de mayo de 2024
Hora: 3:30 p.m.
Si desea unirse por computadora: https://bit.ly/CornucopiaScopingMtg
ID del seminario web: 881 1371 1821
Si desea unirse por teléfono: (888) 788-0099

Entorno Físico:
El sitio del proyecto consiste en terrenos agrícolas y vacantes, sin desarrollar. Las tierras circundantes son predominantemente tierras agrícolas y grandes áreas de terreno vacío y sin desarrollar al norte y al sur; la comunidad residencial de Lost Hills y terrenos vacantes al este; y terrenos vacantes y sin desarrollar al oeste. Sutter Avenue atraviesa el sitio de norte a sur y la Ruta Estatal 33 cruza el sitio de noroeste a sureste. Postes de electricidad y líneas de transmisión están ubicados alrededor del perímetro del sitio. Varias estructuras existen adyacentes al límite del proyecto en la comunidad de Lost Hills, con la residencia más cercana ubicada aproximadamente a 200 pies lineales del propuesto panel solar fotovoltaico más cercano. Las ocho parcelas asociadas con el sitio del Proyecto están bajo contratos de reserva agrícola de la Acta Williamson. Tres pozos existentes se encuentran dentro de las áreas arrendadas del sitio.

Aproximadamente 2,075 acres del sitio están ubicados dentro de una zona de inundación de la Agencia Federal para el Manejo de Emergencias y otros aproximadamente 309 acres del sitio están designados como Área Especial de Riesgo de Inundación. Existen aproximadamente 10.4 acres de características ribereñas dentro del sitio. Dentro de un radio de 10 millas del sitio, existen 34 especies de plantas de estatus especial y 32 especies de vida silvestre de estatus especial.

Designación de uso del Suelo:
El sitio del proyecto está designado para Agricultura en el Plan General del Condado y los ocho lotes dentro del sitio están zonificados como Agrícola Exclusivo (AE). El sitio incluye parcelas zonificadas AE-20 y AE-40 (Agrícola Exclusiva, tamaño mínimo de parcela de 20 acres y 40 acres, respectivamente) de acuerdo con el Mapa de Zonificación del Condado. La zona AE está destinada a ser un distrito exclusivo para la agricultura y para aquellos usos que sean necesarios y una parte integral de una operación agrícola.

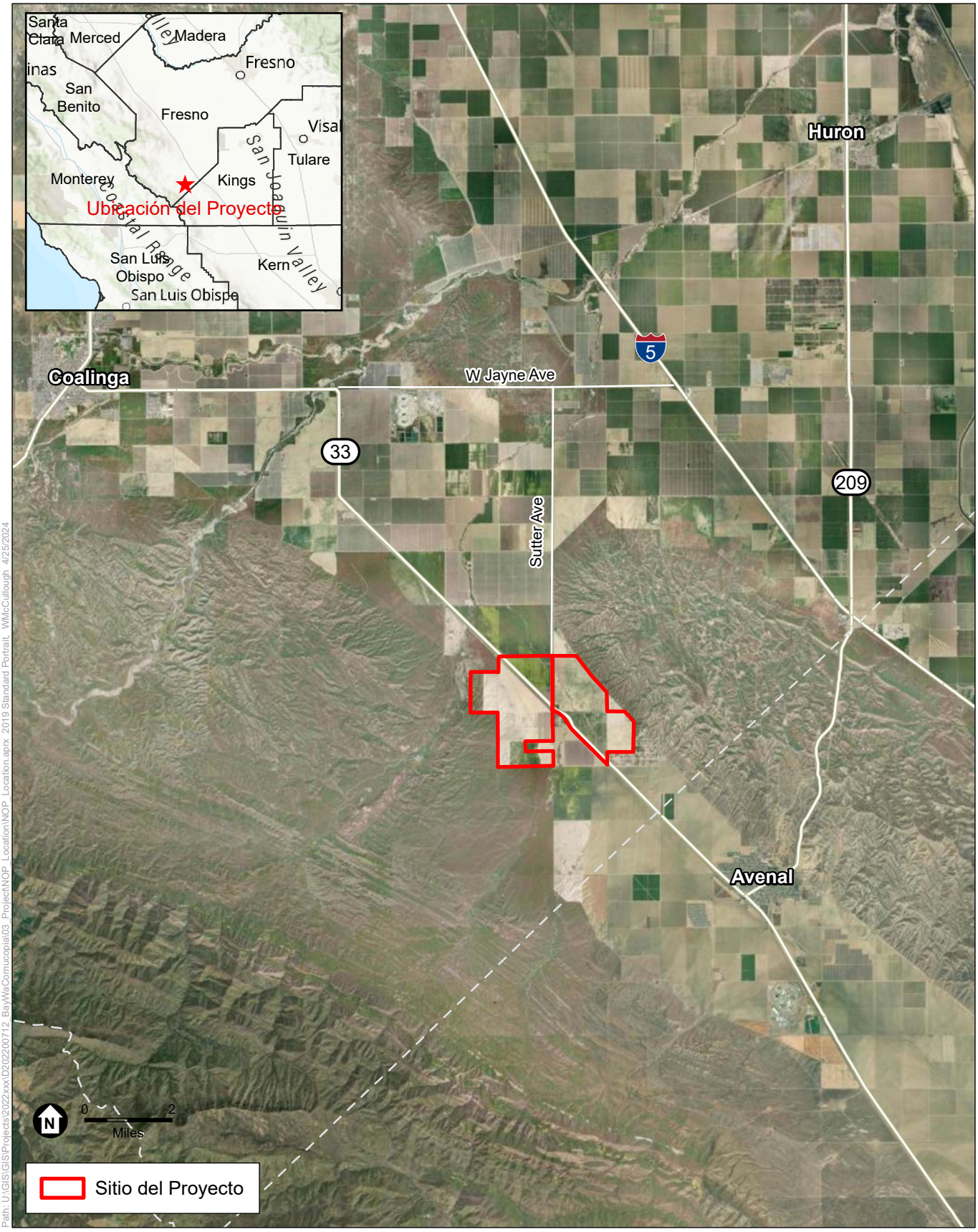
De acuerdo con la Ordenanza de Zonificación del Condado de Fresno, Capítulo 842.5, Permisos de Uso Condicional, la propuesta instalación de generación de energía solar se encuentra bajo la Sección 842.5.020, Artículo B.14, que permite los siguientes usos con un Permiso de Uso Condicional No Clasificado (CUP): instalaciones de producción y generación de energía, incluidas las instalaciones fotovoltaicas a escala de servicios públicos sujetas a las Directrices de Instalaciones Solares adoptadas por el Condado.

Alternativas para ser analizadas en el Informe de Impacto Ambiental:
De acuerdo con la Sección 15126.6 de las Directrices de CEQA, el borrador del Informe de Impacto Ambiental evaluará una serie de alternativas al Proyecto, incluida una Alternativa sin Proyecto y una o más alternativas que alcanzarían la mayoría de los objetivos básicos del Proyecto, evitando o reduciendo cualquiera de sus efectos ambientales significativos. Se identificarán posibles alternativas durante el proceso de determinación del alcance.

Impactos Ambientales Potenciales:
De acuerdo con la Sección 15060(d) de las Directrices de CEQA, el Condado ha determinado que este Proyecto podría resultar en uno o más impactos significativos en el medioambiente físico, lo que requiere la preparación de un Informe de Impacto Ambiental, por lo tanto, no se ha preparado un Estudio Inicial. El Informe de Impacto

Ambiental analizará los problemas ambientales identificados en el Apéndice G de la Lista de Verificación Ambiental de las Directrices CEQA (enumerados a continuación) después de establecer el entorno ambiental, o línea de base, para el análisis. El Informe de Impacto Ambiental identificará los posibles efectos directos, indirectos y acumulativos significativos del Proyecto y las alternativas relacionadas con:

- Calidad estética y vistas, especialmente en las proximidades de las comunidades existentes;
- Recursos agrícolas y forestales, incluido el uso de propiedades actualmente sujetas a contratos del Acta Williamson para un uso de almacenamiento de energía durante el plazo del permiso, algunas porciones de la tierra pueden considerarse tierras de cultivo principales o tierras de cultivo de importancia estatal;
- La calidad del aire y el ruido en las proximidades de receptores sensibles, en particular debido a los equipos;
- La intersección de la calidad del aire, el uso de energía, el transporte y las emisiones de gases de efecto invernadero (GEI);
- Recursos biológicos, incluidas especies y hábitats, basados en consultas a bases de datos, estudios de campo y consultas con agencias, si es necesario;
- Recursos culturales y tribales que podrían ser perturbados durante la construcción, basados en búsquedas de registros, estudios de campo y aportes que se puedan recibir de las tribus nativas americanas de California;
- Geología y suelos, recursos paleontológicos, peligros y materiales peligrosos, hidrología y calidad del agua, y consideraciones y limitaciones conexas;
- La relación del Proyecto con el uso del suelo y la planificación, así como con las tierras sujetas a actividades especiales de gestión de recursos, como los recursos minerales y la recreación;
- Población y vivienda, servicios públicos, y sistemas de servicios y utilidades;
- Incendios forestales, incluida la posibilidad de agravar los riesgos de incendios forestales y, por lo tanto, exponer a las personas a concentraciones de contaminantes provenientes de un incendio forestal o la propagación incontrolada de un incendio forestal; y
- Incentivos al crecimiento, particularmente en relación con los planes de desarrollo existentes y adoptados para el Condado de Fresno.



Fuente: ESA, 2024

Proyecto Solar Híbrido Cornucopia

Figura 1
Ubicación del Proyecto

ESA

Cornucopia Hybrid Project-specific Distribution List
CUP No. TBD; EIR No. TBD

Delivery Method	Agencies, Tribes, Other Stakeholders	Contact	Address	City, State, ZIP	Email	Alternate E-Mail	Questions/Notes	Email NOP notification	Scoping Input Rec'd
Project-specific recipients									
Email-only	Fresno County	Jeremy Shaw	2220 Tulare St. 6th Floor	Fresno, CA 93721	jshaw@fresnocountyca.gov				
Email-only	Fresno County	David Randall	2220 Tulare St. 6th Floor	Fresno, CA 93721	drandall@fresnocountyca.gov				
Email-only	Environmental Science Associates	Janna Scott	787 The Alameda, Suite 250	San Jose, CA 95126	Jscott@esassoc.com				
Email-only	Environmental Science Associates	Selena Whitney	550 Kearny St, Suite 800	San Francisco, CA 94108	swhitney@esassoc.com				
Email-only	Environmental Science Associates	Savannah Battista	550 Kearny St, Suite 800	San Francisco, CA 94108	SBattista@esassoc.com				
Email-only	BayWa	Will Geoghegan	18575 Jamboree Road, Suite 850	Irvine, CA 92612	will.geoghegan@baywa-re.com				
Email-only	BayWa	John Crosby	18575 Jamboree Road, Suite 850	Irvine, CA 92612	john.crosby@baywa-re.com				
Email-only	BayWa	Martin Nascimento	18575 Jamboree Road, Suite 850	Irvine, CA 92612	martin.nascimento@baywa-re.com				
Email-only	BayWa	Annaka Egan	18575 Jamboree Road, Suite 850	Irvine, CA 92612	annaka.egan@baywa-re.com				
Possible responsible agencies, trustee agencies, or potentially affected Federal agencies									
Certified	California Department of Conservation, Division of Land Resource Protection	Keali'i Bright, Assistant Director	715 P Street, MS 1904	Sacramento, CA 95814	dlrp@conservation.ca.gov	DLRP_webmaster@conservation.ca.gov			
Certified	California Department of Conservation, Geologic Energy Management Division	Chris Jones, Acting District Deputy	715 P Street, MS 1803	Sacramento, CA 95814	calgemcentral@conservation.ca.gov	calgem_webmaster@conservation.ca.gov			
Certified	California Department of Fish & Wildlife, Region 4	Julie Vance	1234 E. Shaw Avenue	Fresno, CA 93710	reg4assistant@wildlife.ca.gov				
Certified	California Department of Forestry and Fire Protection, Fresno-Kings Unit	Dave Fulcher, Southern Region Chief	210 S. Academy Ave.	Sanger, CA 93657-9306	FKU.Prevention-Planning@fire.ca.gov				
Certified	California Department of Transportation, District 6	Dave Padilla, Branch Chief, Senior Transportation Planner – North	P.O. Box 12616	Fresno, CA 93778-2616	dave.padilla@dot.ca.gov	d6.public.info@dot.ca.gov			
Certified	California Energy Commission	Jennifer Martin-Gallardo, Deputy Executive Director	715 P Street	Sacramento, CA 95814	executiveoffice@energy.ca.gov	webmaster@energy.ca.gov			
Certified	California Environmental Protection Agency, Department of Toxic Substance Control	Meredith Williams, Director	1515 Tollhouse Road	Clovis, CA 93611-0522	RAO@dtsc.ca.gov				
Certified	California Highway Patrol	Eric Walker, Captain	1380 E. Fortune Ave	Frenso, CA 93725					
Certified	California Native American Heritage Commission	Cameron Vela	1550 Harbor Boulevard, Suite 100	West Sacramento, CA 95691	Cameron.Vela@nahc.ca.gov	nahc@nahc.ca.gov			
Certified	California Public Utilities Commission	Roxanne Henriquez	505 Van Ness Avenue	San Francisco, CA 94102	Roxanne.Henriquez@cpuc.ca.gov				
Certified	California Regional Water Quality Control Board, Region 5	Lewis Lummen	1685 E. Street	Fresno, CA 93706-2020	centralvalleyfresno@waterboards.ca.gov	Lewis.Lummen@waterboards.ca.gov; scott.hatton@waterboards.ca.gov			
Certified	San Joaquin Valley Air Pollution Control District	Brian Clements, Director of Permit Services	1990 E. Gettysburg Avenue	Fresno, CA 93726	sjvapcd@valleyair.org	brian.clements@valleyair.gov, keanu.morin@valleyair.org, Matt.Crow@valleyair.org			
Certified	Southern San Joaquin Valley Archaeological Info Center	Celeste Thompson	9001 Stockdale Ave., MS 72 DOB	Bakersfield, CA 93311-1099	ssjvic@csub.edu				
Certified	State Office of Historic Preservation, Department of Parks & Recreation	Shannon Pries	1725 23rd Street, Ste. 100	Sacramento CA 95816	info.calshpo@parks.ca.gov	Shannon.Pries@parks.ca.gov			
Certified	United States Department of the Interior, Fish & Wildlife Services - Endangered Species Div.	Matthew J. Nelson, Wildlife Biologist/ Patricia Cole Division Supervis	2800 Cottage Way	Sacramento, CA 95825-1888	matthew_nelson@fws.gov	patricia_cole@fws.gov			
Certified	State Water Resources Control Board, Division of Drinking Water	Sudarshan Poudyal/Cinthia Reyes	265 W. Bullard, Suite 101	Fresno, CA 93704	DWPDIST23@waterboards.ca.gov	Cinthia.Reyes@Waterboards.ca.gov			
Native American Tribes									
US Mail	Dumna Wo Wah	Chris Acree, Cultural Resources Manager	262 N. Glenn Avenue	Fresno, CA 93701	cacree@hotmail.com				
US Mail	Dumna Wo Wah Government	Robert Ledger, Tribal Chairman	2191 W. Pico Avenue	Fresno, CA 93705	ledgerrobert@ymail.com				
US Mail	Picayune Rancheria of the Chukchansi Indians	Heather Airey - Cultural Resources Director	PO Box 2226	Oakhurst, CA 93644	hairey@chukchansi-nsn.gov				
US Mail	Santa Rosa Rancheria Tachi Yokut Tribe	Ruben Barrios, Tribal Chairman, c/o Cultural Department	PO Box 8	Lemoore, CA 93245	SMcCarty@tachi-yokut-nsn.gov	spowers@tachi-yokut-nsn.gov			
US Mail	Table Mountain Rancheria	Robert Pennell, Tribal Cultural Resources Director	P.O. BOX 410	Friant, CA 93626	rpennell@tmr.org				
Other agencies									
US Mail	Central Valley Flood Protection Board	Chris Lief, Executive Officer/Michael Wright, Chief Engineer	3310 El Camino, Suite 170	Sacramento, CA 95821	questions@cvflood.ca.gov	michael.wright@cvflood.ca.gov			
US Mail	City of Kerman, Community Development Department	Jesus R. Orozco	850 S. Madera Avenue	Kerman, CA 93630-1741	mcampos@cityofkerman.org				
US Mail	City of Mendota, Planning and Community Development	Cristian Gonzalez	643 Quince Street	Mendota, CA 93640	cristian@cityofmendota.com				
US Mail	City of San Joaquin	Lupe Estrada	21900 W Colorado Avenue	San Joaquin, CA 93660					
US Mail	City of Coalinga, Community Development Department	Sean Brewer, Assistant City Manager	155 W. Durian	Coalinga, CA 93210	sbrewer@coalinga.com	rsmith@coalinga.com			
US Mail	City of Avenal, Community Development Department	Tyler Naranjo, Planning Commission Chairperson	919 Skyline Blvd.	Avenal, CA 93204	alopez@cityofavenal.us				
US Mail	City of Huron	Virginia Penaloza, City Manager	36311 S. Lassen Ave/P.O. Box 339	Huron, CA 93234	virginia@cityofhuron.com				
US Mail	Consolidated Mosquito Abatement District	Jodi Holeman	P.O. Box 784	Parlier, CA 93648	jholeman@mosquitobuzz.net				
US Mail	Fresno Council of Governments	Rober Phipps, Interrim Executive Director	2035 Tulare St Ste 201	Fresno CA 93721	comment@fresnocog.org	rphipps@fresnocog.org			
US Mail	Fresno Metropolitan Flood Control District	Frank Fowler	5469 E. Olive Avenue	Fresno, CA 93727	developmentreview@fresnofloodcontrol.org				
US Mail	Coalinga-Huron Unified School District	Lori L. Villanueva, Superintendent	657 Sunset St	Coalinga, CA 93210					
US Mail	Reef-Sunset Unified School District	Juan Ruiz, Superintendent/Lorena Venegas, Senior Executive Assis	657 Sunset St	Coalinga, CA 93210	lvenegas@rsusd.org				
US Mail	Mendota Unified School District	Dr. Paul Lopez, Superinendent	115 McCabe Ave.	Mendota, CA 93640	plopez@mendotaschools.org				
US Mail	City of Coalinga, Water Treatment & Distribution	Kristi Anderson	155 W. Durian	Coalinga, CA 93210	kanderson@coalinga.com				
US Mail	James Irrigation District	Manny Amorelli, Manager/ Donna Hanneman, Exc Assistant	P.O. Box 757	San Joaquin, CA 93660	manmorelli@jamesid.org	dhanneman@jamesid.org			
US Mail	Kings Basin Water Authority	Soua Lee, Supervisor of Water Resources	4886 E. Jensen Avenue	FRESNO, CA 93725					
US Mail	Kings River Conservation District	David Merritt	4886 E. Jensen Avenue	Fresno, CA 93725	dmerritt@krcd.org	comments@krcd.org			
US Mail	NAVFACSW INTERGOVERNMENTAL BRANCH	Captain James "Gordie" Meyer	750 Pacific Highway	SAN DIEGO, CA 92132-5190	usn.san-diego-ca.navfacswsanca.mbx.navfac-sw-pao-mailbox@us.navy.mil				
US Mail	State of California Reclamation Board		P.O. Box 942836	Sacramento, CA 94236					
US Mail	Tranquillity Irrigation District	Liz Reeves	Box 487	Tranquillity, CA 93668	liz@trqid.com				
US Mail	Tranquillity Resource Conservation District	Danny Wade	PO Box 487	Tranquillity, CA 93668-0487	easyrider@netptc.net				
US Mail	United State Department of Agriculture, Natural Resources Conservation Service	Johnnie Silizinoff, Assistant State Conservationist for Field Operation	4625 W. Jennifer Ave, Suite 125	Fresno, CA 93722	Johnnie.Siliznoff@usda.gov				
US Mail	United States Army Corp of Engineers, Sacramento District	William Ness	1325 J Street, Room 1350	Sacramento CA 95814-2922	william.w.ness@usace.army.mil	SPKRegulatoryMailbox@usace.army.mil			
US Mail	United States Environmental Protection Agency Region 9	Dawn Richmond	75 Hawthorne Street (WTR-9)	San Francisco, CA 94105	richmond.dawn@epa.gov				
US Mail	Westlands Water District	Russ Freeman/ Jose Gutierrez	32450 Lassen Ave	Huron, CA 93234	rfreeman@wwd.ca.gov	jgutierrez@wwd.ca.gov; kcampbell@wwd.ca.gov			
US Mail	Westlands Water District (Westside Subbasin GSA)	Kiti Buelna Campbell	PO Box 6056	Fresno, CA 93703	kcampbell@wwd.ca.gov				
US Mail	Westside Resources Conservation District		P.O. Box 6079	Tranquility, California 93624-0038					
Other stakeholders and special interests									
US Mail	Adams Broadwell Joseph & Cardozo	Maya Smith	601 Gateway Blvd, Suite 1000	South San Francisco, CA 94080-7037					
US Mail	Laborers Intl Union of N. America, Local Union 294		1939 Harrison St Suite 150	Oakland, CA 94612					
US Mail	Lozeau Drury, LLP	R. Drury, M. Lozeau, T. Rettinghouse, S. Osborne, H. Hughes, K. T	1939 Harrison St Suite 150	Oakland, CA 94612	admin@lozeaudrury.com				
US Mail	Downey Brand LLP	C/O LUCIA RUIZ	621 Capitol Mall, 18th Floor	Sacramento, CA 95814	KingsRiverNotices@downeybrand.com				
US Mail	Ann Dresick Family Trust		PO BOX 1260	Huron, CA 93234					
US Mail	Rebecca Avellar Turst		466 W FALLBROOK #107	Fresno, CA 93711					
US Mail	Key Energy Storage, LLC		700 Universe Blvd.	June Beach, Fl 33408					
US Mail	John Dresick		PO BOX 1260	Huron, CA 93234					
US Mail	Rebecca Kaser		466 W FALLBROOK #107	Fresno, CA 93711					
US Mail	Sutter Avenue Coalinga CA LP		1521 Westbranch Dr #100	McLean, VA 22102					
US Mail	Hewitson Cattle Co Inc		HC 1 Box 1 39482 HWY 33	Avenal, CA 93204					
US Mail	William J Mouren Farming Inc		35244 Oil City Rd	Coalinga, CA 93210					
US Mail	NBINV AF4 LLC		PO Box 16016	Fresno, CA 93755					
US Mail	Firestone Ave Coaling CA LP		1521 Westbranch Dr #100	McLean, VA 22102					
US Mail	Barbour Benjamin R	Barbour Benjamin Jr et al W J Mouren	35244 Oil City Rd	Coalinga, CA 93210					
US Mail	Chevron USA Inc	Property Tax Dept	PO Box 1392	Bakersfield, CA 93302					
US Mail	Kreyenhagen LTD	James Kreyenhagen	2211 E Newton St	Seattle, WA 98112					
US Mail	Maldonado Martin	Maldonado Benjamin	501 Fresno	Avenal, CA 93204					
US Mail	Wheat Land Inc		35244 Oil City Rd	Coalinga, CA 93210					
US Mail	Crow Oil Co		22130 River Rd	Crows Landing, CA 95313					
US Mail	Hewitson Farms		HC 1 Box 1 39482 Hwy 33	Avenal, CA 93204					
US Mail	Kreyenhagen Edward L & Sheilah C TRS	Edward L Kreyenhagen	1001 Folsom Rd	Coalinga, CA 93210					
US Mail	SoCal Land Portfolio LLC	T Elkins	PO Box 2461	Malibu, CA 90265					
US Mail	Chooljian A J & Rosalee		381 E Nees #130	Fresno, CA 93720					
US Mail	Thampy Leon D & Anila C		10069 N Spanish Bay	Fresno, CA 93720					
US Mail	Empire Lands Investments LLC		3207 Hibiscus Dr W	Belleair Beach, FL 33786					
US Mail	Mauldin Carl L		35244 Oil City Rd	Coalinga, CA 93210					
US Mail	Bunker Frank	Wood Edith Etal	35244 Oil City Rd	Coalinga, CA 93210					
US Mail	McDonald George E Trustee	McDonald Marisa Etal Trustee	524 14th St NE	Rochester, MN 55906					
US Mail	Anderson James S		35244 Oil City Rd	Coalinga, CA 93210					
US Mail	Pawloski Antoinette		35244 Oil City Rd	Coalinga, CA 93210					
US Mail	Lambert Judith	Lambert Marvin R & Elva M	559 Starboard Dr	San Mateo, CA 94404					
US Mail	Wolfe Cora		35244 Oil City Rd	Coalinga, CA 93210					
US Mail	Emerson Rachel B		35244 Oil City Rd	Coalinga, CA 93210					
US Mail	Contreras Guadalupe E		1407 Nevada	Coalinga, CA 93210					
US Mail	Wortley Donald S Trustee		PO Box 311	Lodi, CA 95241					
US Mail	Mouren Farming Inc William J		35244 Oil City Rd	Coalinga, CA 93210					
US Mail	Quuinones Juan M		PO Box 4006	Salinas, CA 93912					
US Mail	Kevin Johnston		2476 BUENA VISTA AVE	LIVERMORE, CA 94550					

Exhibit B

Newspaper Notifications

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Telephone (559) 490-3400

(Space Below for use of County Clerk only)

IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND PUBLIC SCOPING MEETING FOR THE CORNUCOPIA HYBRID SOLAR PROJECT

Public Scoping Meeting:
Date: Tuesday, May 14, 2024
Time: 3:30 pm

MISC. NOTICE

DECLARATION OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA

COUNTY OF FRESNO

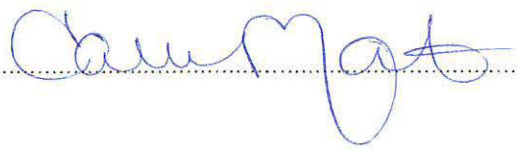
I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of **THE BUSINESS JOURNAL** published in the city of Fresno, County of Fresno, State of California, Monday, Wednesday, Friday, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Fresno, State of California, under the date of March 4, 1911, in Action No.14315; that the notice of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

MAY 8, 2024

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed at Fresno, California,

MAY 8, 2024

ON .....



NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT AND PUBLIC SCOPING MEETING FOR THE CORNUCOPIA HYBRID SOLAR PROJECT

TO: Responsible and Trustee Agencies, other interested agencies, and members of the public

FROM: County of Fresno, Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

SUBJECT: Notice of Preparation of Draft Environmental Impact Report No. 8511 for the Cornucopia Hybrid Solar Project

Date: May 3, 2024

Action: The County of Fresno (County) will be the Lead Agency pursuant to the California Environmental Quality Act (CEQA) and will be responsible for preparing an Environmental Impact Report (EIR) pursuant to CEQA and the CEQA Guidelines for the Cornucopia Hybrid Solar Project.

Project Title: Cornucopia Hybrid Solar Project, Unclassified Conditional Use Permit Application No. 3777

Project Applicant: BayWa r.e. Solar Projects LLC

Project Location and Summary:
The applicant proposes to construct, operate, and maintain a new solar energy generation facility capable of generating approximately 300 MW of energy and an approximately 300 MW of alternating current (MWac) battery storage system and associated infrastructure and buildings (Project). The proposed Project would be located on approximately 2,446 acres of private land within portions of Assessor Parcel Numbers 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S in western Fresno County. The site is located approximately 11 miles southeast of the City of Coalinga in Fresno County, 2.75 miles northwest of the City of Avenal in Kings County, and 4 miles west of Interstate 5 (I-5). The disadvantaged unincorporated community of Lost Hills is contiguous to the southeast portion of the project of the site off SR 33. The Project site is intersected north to south by State Route (SR) 33 (South Lost Hills Road) and east to west by Sutter Avenue. The Project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36; Township 22 South, Range 16 East, Sections 1, 2; and Range 17 East, Section 6 of the Avenal, California United States Geological Survey (USGS) 7.5-minute Topographical Quadrangle Map.

The solar energy generation facility would consist of photovoltaic (PV) solar modules, a substation and switching station, an energy storage system, and two prefabricated structures to be used for maintenance and operation services and for control services. The PV solar modules would be arranged into arrays supported by racking systems and units that track the sun. The modules would be connected to power inverters to convert the sunlight energy into usable alternating current power. The energy would then be transferred from the inverters to a Pacific Gas and Electric (PG&E) switching station, to ultimately transfer the power to the local electrical grid. The substation and the PG&E switching station would be located within the southeast corner of the Project boundaries. The substation would include an electrical control building and would tie into the PG&E switching station via a new transmission line. The energy storage system would consist of a battery storage system comprising of lithium-ion, flow, or sodium sulfur batteries and would be able to store approximately 300 MWac of electricity. The energy storage system would be located adjacent to the substation, with a footprint of approximately 12 acres in size. The Project site is located on parcels subject to Williamson Act agricultural preserve contracts. The applicant proposes to retain agricultural preserve status by providing sheep grazing lands within and surrounding the proposed solar PV panels and equipment.

A project description, maps, and figures are available for review at the following locations:

- Fresno County Public Works and Planning Department, 2220 Tulare Street, Suite A Street Level, Fresno, CA 93721
- Fresno County website: https://www.fresnocountyca.gov/eir8511

Written Comments:

This Notice of Preparation (NOP) solicits comments from Responsible and Trustee Agencies and other public agencies so that Project-related concerns relevant to each agency's statutory responsibilities can be addressed in the EIR. This NOP also solicits input from other interested parties, including Tribes and members of the public. The County requests that any potential Responsible or Trustee Agencies responding to this NOP reply in a manner consistent with CEQA Guidelines Section 15082(b), which allows for submittal of any comments in response to this notice no later than 30 days after receipt of the NOP. Comments in response to this NOP will be accepted through June 3, 2024.

Please send written scoping input to:

Attn: Jeremy Shaw
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Phone: (559) 600-4207 Fax: (559) 600-4200
Email: jshaw@FresnoCountyCA.gov

Please reference EIR #8511, Cornucopia Hybrid Solar Project. Please include your name, address, phone number, and/or email address so that we may contact you for clarification if necessary.

Public Scoping Meeting:

The CEQA process encourages comments and questions from the public throughout the planning process. Consistent with the California Public Resources Code and Section 15083(c)(1), (2)(A) to (D) of the CEQA Guidelines, a Public Scoping Meeting will be held to solicit public and agency comments on the scope and content of the Draft EIR. Oral and/or written comments also may be presented at the Public Scoping Meeting. The Public Scoping Meeting will be held online on:

Date: Tuesday, May 14, 2024
Time: 3:30 p.m.
If joining from a computer: https://bit.ly/CornucopiaScopingMtg
Webinar ID: 881 1371 1821
If joining by phone: (888) 788-0099

Potential Environmental Impacts:

Pursuant to CEQA Guidelines Section 15060(d), the County has determined that this Project could result in one or more significant impacts on the physical environment, thereby necessitating the preparation of an EIR, and so has not prepared an Initial Study. The EIR will analyze the environmental issues identified in the CEQA Guidelines Appendix G Environmental Checklist (listed below) after establishing the environmental setting, or baseline, for the analysis. The EIR will identify potential significant direct, indirect, and cumulative effects of the Project and alternatives related to:

- Aesthetic quality and views, particularly in the vicinity of existing communities;
- Agriculture and forestry resources, including the use of property currently subject to Williamson Act contracts to an energy storage use for the duration of the permit term, some portions of the land may be considered prime farmland or farmland of statewide importance;
- Air quality and noise in the vicinity of sensitive receptors, particularly from equipment;
- The intersection of air quality, energy use, transportation, and greenhouse gas (GHG) emissions;
- Biological resources, including species and habitats, based on database queries, field surveys, and agency consultations, if required;
- Cultural and tribal cultural resources that could be disturbed during construction, based on record searches, field surveys, and input that may be received from California Native American Tribes;
- Geology and soils, paleontological resources, hazards and hazardous materials, hydrology and water quality, and related considerations and constraints;
- The Project's relationship to land use and planning, as well as lands subject to special resources management activities, such as mineral resources and recreation;
- Population and housing, public services, and utilities and service systems;
- Wildfire, including the potential to exacerbate wildfire risks, and thereby expose people to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire; and
- Growth inducement, particularly in relation to existing, adopted development plans for Fresno County.

05/08/2024

THE BUSINESS JOURNAL
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P.O. Box 126
Fresno, CA 93707
Telephone (559) 490-3400

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IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA

AVISO DE PREPARACIÓN DE INFORME DE IMPACTO AMBIENTAL Y REUNIÓN PÚBLICA DE ALCANCE PARA EL PROYECTO SOLAR CORNUCOPIA

Reunión Pública de Alcance:
Fecha: martes, 14 de mayo de 2024
Time: 3:30 pm

MISC. NOTICE

DECLARATION OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA

COUNTY OF FRESNO

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of **THE BUSINESS JOURNAL** published in the city of Fresno, County of Fresno, State of California, Monday, Wednesday, Friday, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Fresno, State of California, under the date of March 4, 1911, in Action No.14315; that the notice of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

MAY 8, 2024

I declare under penalty of perjury that the foregoing is true and correct and that this declaration was executed at Fresno, California,

MAY 8, 2024

ON .....

AVISO DE PREPARACIÓN DE INFORME DE IMPACTO AMBIENTAL Y REUNIÓN PÚBLICA DE ALCANCE PARA EL PROYECTO SOLAR CORNUCOPIA

PARA: Agencias Responsables y Fiduciarias, otras agencias interesadas, y miembros del público

DE: Condado de Fresno, Departamento de Obras Públicas y Planificación
Divisiones de Servicios de Desarrollo y de Proyectos Capitales
2220 Tulare Street, Sexto Piso
Fresno, CA 93721

ASUNTO: Aviso de Preparación de un Informe de Impacto Ambiental para el Proyecto Solar Híbrido Cornucopia

Fecha: 3 de mayo de 2024

Acción: El Condado de Fresno (Condado) será la Agencia Principal de conformidad con la Ley de Calidad Ambiental de California (CEQA, por sus siglas en ingles) y será responsable de preparar un Informe de Impacto Ambiental (EIR, por sus siglas en ingles) de conformidad con CEQA y las Directrices de CEQA para el Proyecto Solar Híbrido Cornucopia.

Título del Proyecto: Proyecto Solar Híbrido Cornucopia, Solicitud de Permiso de Uso Condicional No Clasificado No. 3777

Solicitante del Proyecto: BayWa r.e. Solar Projects LLC

Ubicación y Resumen del Proyecto: El solicitante propone construir, operar y mantener una nueva instalación de generación de energía solar capaz de generar aproximadamente 300 MW de energía y un sistema de baterías de almacenamiento de aproximadamente 300 MW de corriente alterna (MWac), junto con la infraestructura y los edificios asociados (Proyecto). El proyecto propuesto se ubicaría en aproximadamente 2,446 acres de terreno privado dentro de partes de las parcelas con números del asesor 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12 y 085-110-13S en el oeste del condado de Fresno. El sitio se encuentra aproximadamente a 11 millas al sureste de la ciudad de Coalinga en el condado de Fresno, a 2.75 millas al noroeste de la ciudad de Avenal en el condado de Kings, y a 4 millas al oeste de la Interestatal 5 (I-5). La comunidad desfavorecida no incorporada de Lost Hills está contigua a la porción sureste del proyecto cerca de la Ruta Estatal 33. El sitio del proyecto está atravesado de norte a sur por la Ruta Estatal (SR) 33 (South Lost Hills Road) y de este a oeste por la Avenida Sutter. El sitio del proyecto está ubicado dentro del Municipio 21 Sur, Rango 16 Este, Secciones 34, 35 y 36; Municipio 22 Sur, Rango 16 Este, Secciones 1, 2; y Rango 17 Este, Sección 6 del Mapa Cuadrangular Topográfico de 7.5 minutos de Avenal, California del Servicio Geológico de los Estados Unidos (USGS).

La instalación de generación de energía solar consistiría en módulos solares fotovoltaicos (VF), una subestación y estación de conmutación, un sistema de almacenamiento de energía y dos estructuras prefabricadas para ser utilizadas para servicios de mantenimiento y operación y para servicios de control. Los módulos solares fotovoltaicos se colocarían en matrices sostenidas por sistemas de bastidores y seguidores solares. Los módulos se conectarían a inversores de energía para convertir la energía solar en corriente alterna utilizable. Luego, la energía sería transferida de los inversores a una estación de conmutación de Pacific Gas and Electric (PG&E), para finalmente transferir la energía a la red eléctrica local. La subestación y la estación de conmutación de PG&E estarían ubicadas dentro de la esquina sureste de los límites del proyecto. La subestación incluiría un edificio de control eléctrico y se conectaría a la estación de conmutación de PG&E a través de una nueva línea de transmisión. El sistema de almacenamiento de energía consistiría en una batería compuesta por pilas de iones de litio, flujo, o azufre de sodio y sería capaz de almacenar aproximadamente 300 MW de electricidad. El sistema de almacenamiento de energía se ubicaría junto a la subestación, con una huella de aproximadamente 12 acres de tamaño. El sitio del proyecto está ubicado en parcelas sujetas a

contratos de preservación agrícola del Acta Williamson. El solicitante propone mantener el estatus de reserva agrícola al proporcionar tierras para pastoreo de ovejas dentro y alrededor de los paneles solares fotovoltaicos y el equipo propuesto.

Una descripción del proyecto, mapas y figuras están disponibles para su revisión en las siguientes ubicaciones:

- Departamento de Obras Públicas y Planificación del Condado de Fresno, 2220 Tulare Street, Suite A, Nivel de la Calle, Fresno, CA 93721
- Sitio web del Condado de Fresno: https://www.fresnocountyca.gov/eir8511

Comentarios Escritos:

Este Aviso de Preparación (NOP, por sus siglas en inglés) solicita comentarios de las Agencias Responsables y Fiduciarias y otras agencias públicas para que las preocupaciones relacionadas con el Proyecto relevantes para las responsabilidades estatutarias de cada agencia puedan ser abordadas en el Informe de Impacto Ambiental. Este NOP también solicita aportes de otras partes interesadas, incluías Tribus y miembros del público. El condado solicita que cualquier posible Agencia Responsable o Fiduciaria que responda a este Aviso de Preparación lo haga de manera consistente con la Sección 15082(b) de las Directrices de CEQA, que permite la presentación de cualquier comentario en respuesta a este aviso no más tarde de 30 días después de recibir el Aviso de Preparación. Los comentarios en respuesta a este Aviso de Preparación se aceptarán hasta el 3 de junio de 2024.

Por favor, envíe sus comentarios por escrito a:

A la atención de: Jeremy Shaw
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare Street, Sixth Floor
Fresno, CA 93721
Teléfono: (559) 600-4207 Fax: (559) 600-4200
Correo electrónico: jshaw@FresnoCountyCA.gov

Por favor, refiérase al EIR 8511, Cornucopia Hybrid Solar Project. Incluya su nombre, dirección y número de teléfono y/o dirección de correo electrónico para que podamos comunicarnos con usted para obtener una aclaración, si es necesario.

Reunión Pública de Alcance:

El proceso de CEQA fomenta comentarios y preguntas del público durante el proceso de planificación. En conformidad con el Código de Recursos Públicos de California y la Sección 15083(c)(1), (2)(A) a (D) de las Directrices de CEQA, se llevará a cabo una Reunión Pública de Alcance para solicitar comentarios del público y las agencias sobre el alcance y el contenido del EIR Preliminar. Los comentarios orales y/o escritos también podrán presentarse en la Reunión Pública de Alcance. La Reunión Pública de Alcance se llevará a cabo en línea el:

Fecha: martes, 14 de mayo de 2024
Time: 3:30 p.m.
Si desea unirse por computadora: https://bit.ly/CornucopiaScopingMtg
Webinar ID: 881 1371 1821
Si desea unirse por teléfono: (888) 788-0099

Impactos Ambientales Potenciales:

De acuerdo con la Sección 15060(d) de las Directrices de CEQA, el Condado ha determinado que este Proyecto podría resultar en uno o más impactos significativos en el medioambiente físico, lo que requiere la preparación de un Informe de Impacto Ambiental, por lo tanto, no se ha preparado un Estudio Inicial. El Informe de Impacto Ambiental analizará los problemas ambientales identificados en el Apéndice G de la Lista de Verificación Ambiental de las Directrices CEQA (enumerados a continuación) después de establecer el entorno ambiental, o línea de base, para el análisis. El Informe de Impacto Ambiental identificará los posibles efectos directos, indirectos y acumulativos significativos del Proyecto y las alternativas relacionadas con:

- Calidad estética y vistas, especialmente en las proximidades de las comunidades existentes;
- Recursos agrícolas y forestales, incluido el uso de propiedades actualmente sujetas a contratos del Acta Williamson para un uso de almacenamiento de energía durante el plazo del permiso, algunas porciones de la tierra pueden considerarse tierras de cultivo principales o tierras de cultivo de importancia estatal;
- La calidad del aire y el ruido en las proximidades de receptores sensibles, en particular debido a los equipos;
- La intersección de la calidad del aire, el uso de energía, el transporte y las emisiones de gases de efecto invernadero (GEI);
- Recursos biológicos, incluidas especies y hábitats, basados en consultas a bases de datos, estudios de campo y consultas con agencias, si es necesario;
- Recursos culturales y tribales que podrían ser perturbados durante la construcción, basados en búsquedas de registros, estudios de campo y aportes que se puedan recibir de las tribus nativas americanas de California;
- Geología y suelos, recursos paleontológicos, peligros y materiales peligrosos, hidrología y calidad del agua, y consideraciones y limitaciones conexas;
- La relación del Proyecto con el uso del suelo y la planificación, así como con las tierras sujetas a actividades especiales de gestión de recursos, como los recursos minerales y la recreación;
- Población y vivienda, servicios públicos, y sistemas de servicios y utilidades;
- Incendios forestales, incluida la posibilidad de agravar los riesgos de incendios forestales y, por lo tanto, exponer a las personas a concentraciones de contaminantes provenientes de un incendio forestal o la propagación incontrolada de un incendio forestal; y
- Incentivos al crecimiento, particularmente en relación con los planes de desarrollo existentes y adoptados para el Condado de Fresno.

05/08/2024

Exhibit C

Scoping Meeting Presentation and Meeting Notes

Cornucopia Hybrid Project Environmental Impact Report

Public Scoping Meeting | Tuesday, May 14, 2024, 3:30 p.m.

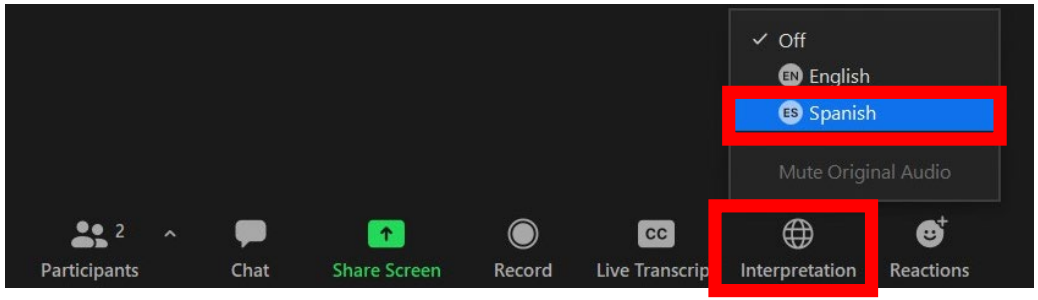
Agency Presentation and Public Input

Select Your Preferred Language / Seleccione su idioma

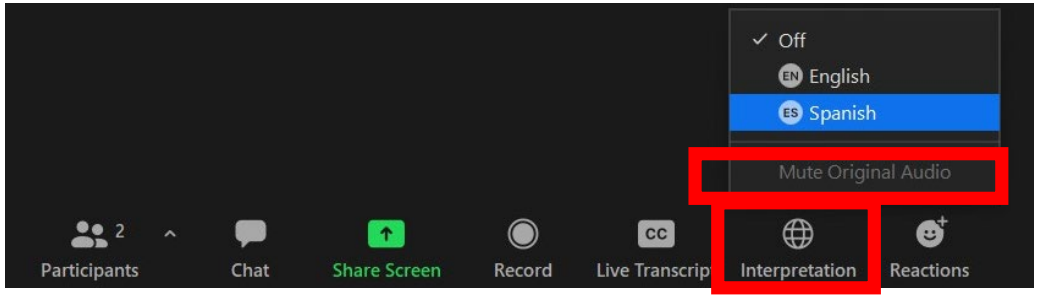
For English, click the interpretation button and select English.

For Spanish/ *Para español:*

1. **Click the Interpretation button and select Spanish** / *Haga clic en el boton Interpretacion y seleccione Espanol*



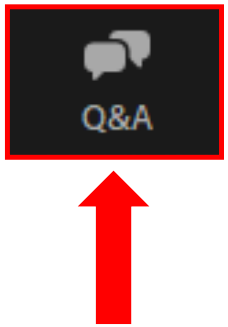
2. **Click the Interpretation button again and then click "Mute Original Audio"** / *Haga clic en el boton Interpretacion nuevamente y luego haga clic en " Silenciar audio original"*



Link to Spanish-language presentation slides on County's website:
https://www.fresnocountyca.gov/eir8511

Zoom Technical Difficulties /

If you're having technical difficulties with Zoom, including language translation, use the Q&A feature and someone from our team will assist with resolving the issue.



Please save your comments related to the scoping meeting for the end of the meeting and only use the Q&A if you're having issues with the Zoom application.

Agenda

- Introductions
- Purpose of the Meeting
- Project Overview
- County Permitting Process
- Environmental Review Process (CEQA)
- Scoping: Environmental Impacts and Alternatives
- Public Comments
- Next Steps

Introductions

- Fresno County
  - Department of Public Works and Planning, Development Services and Capital Projects Division
    Jeremy Shaw, Planner, jshaw@FresnoCountyCA.gov
  - CEQA Lead Agency responsible for preparation of EIR 8511
  - Decision-maker for the requested Unclassified Conditional Use Permit Application No. 3777

- Environmental Science Associates
  - Environmental Consultant to the County

- Cornucopia Hybrid, LLC
  - Project Applicant

Purpose of the Meeting

For us to hear from YOU!
Your questions and ideas are welcome and invited.

Public Participation Opportunities

Participate at this meeting by submitting verbal comments (by telephone or Zoom)

Submit written comments before 5 p.m. June 3, 2024 to:

- Email: jshaw@FresnoCountyCA.gov
- Mail: Fresno County Department of Public Works and Planning, Development Services and Capital Projects Division, Attn: Jeremy Shaw
  2220 Tulare Street, Sixth Floor, Fresno, CA 93721

Stay informed:

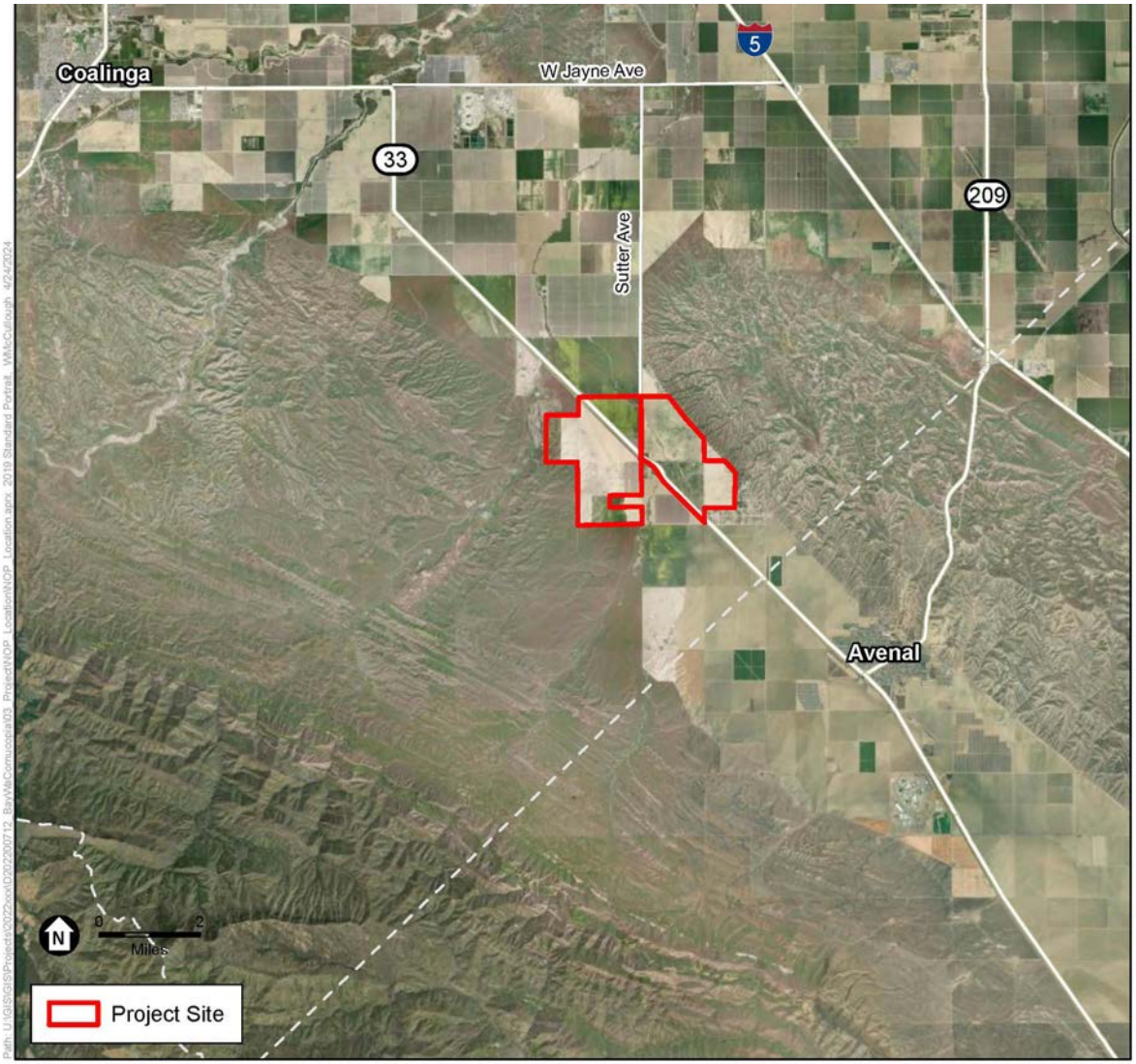
- Email jshaw@fresnocountyca.gov to receive future project notices
- Review the project website: www.co.fresno.ca.us/EIR

Provide comments on the Draft EIR

Participate in public hearings on the project

Project Vicinity

- Located in southwestern Fresno County between the cities of Coalinga and Avenal, approximately four (4) miles southwest of Interstate 5.
- Area characterized by agriculture and vacant, undeveloped grazing land.

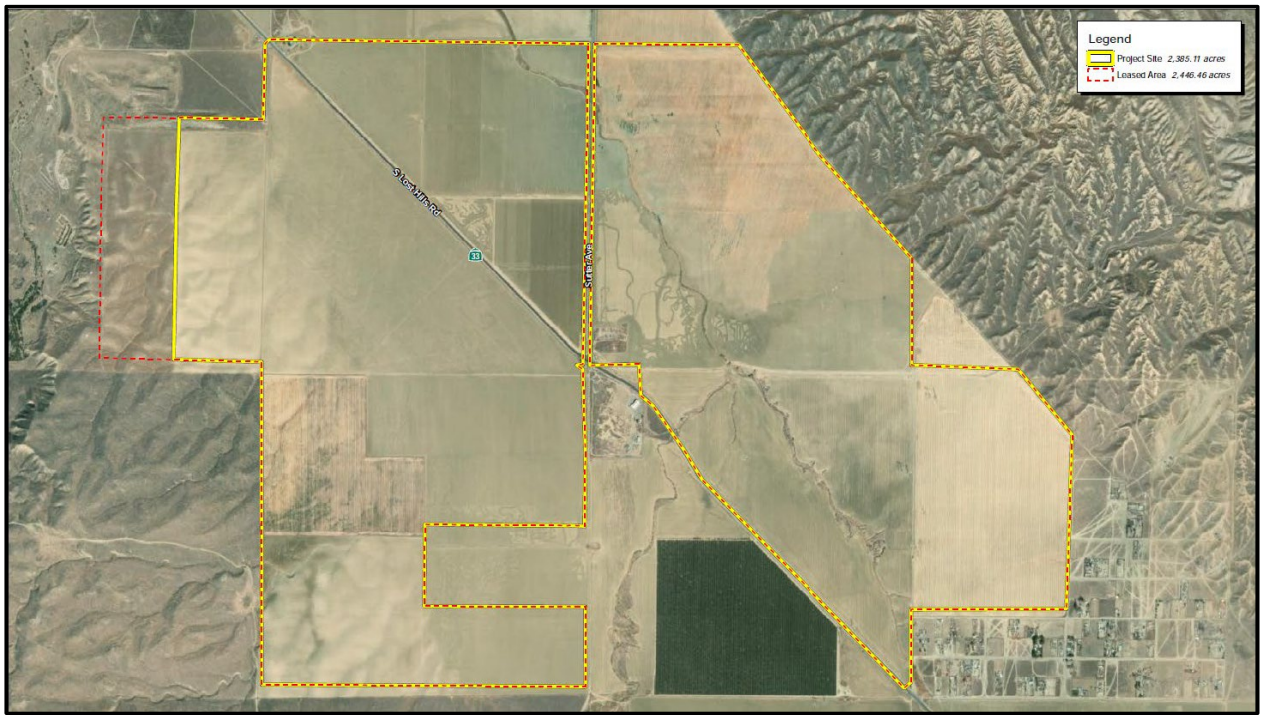


SOURCE: ESA, 2024

Cornucopia Hybrid Solar Project

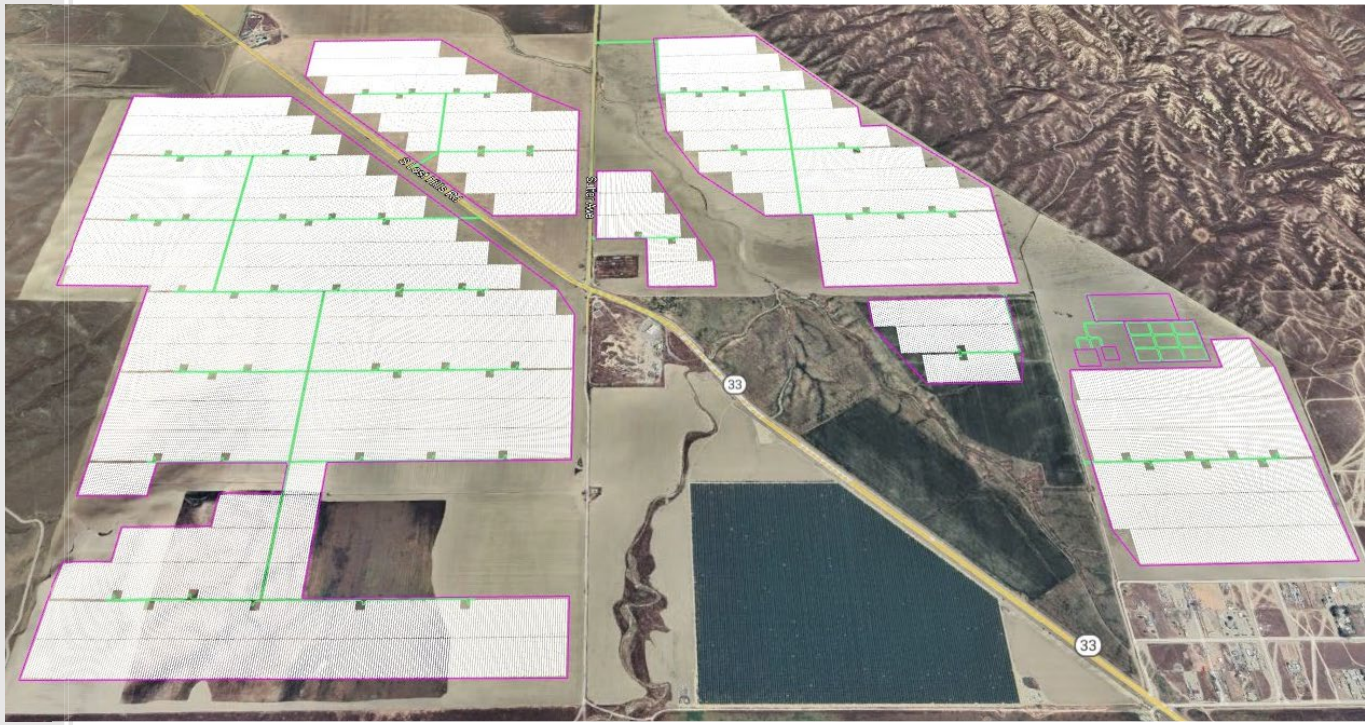
Project Site

- 8 parcels
- Approximately 2,446 total acres
  - Approximately 2,385 acres to be developed
- Intersected by State Route 33 (S. Lost Hills Road) and Sutter Avenue
- Unincorporated community of Lost Hills located southeasterly adjacent to the project boundary



Project Details

- Construction of a new utility-scale, approximately 300 megawatt (MW) solar energy generation facility
- Anticipated energy storage capacity: Approximately 300 Mwac/1200MWh battery storage system
- Addition of a new PG&E Switching Station near southeast corner of project boundary
- Onsite support facilities
- Overhead transmission line connecting to nearby PG&E transmission line



Land Use and Permitting Processes

Conditional Use Permit Process

Williamson Act Contract Review Process

- Application
- Agency Review of Application
- CEQA Review:
  - Scoping
  - Issuance of Draft EIR
  - Issuance of Final EIR

- Planning Commission
  - Certification of EIR
  - Consideration of CUP
- Board of Supervisors (if appealed)

- Assess project conformance with County Program Guidelines & Procedures

Use Permit Process

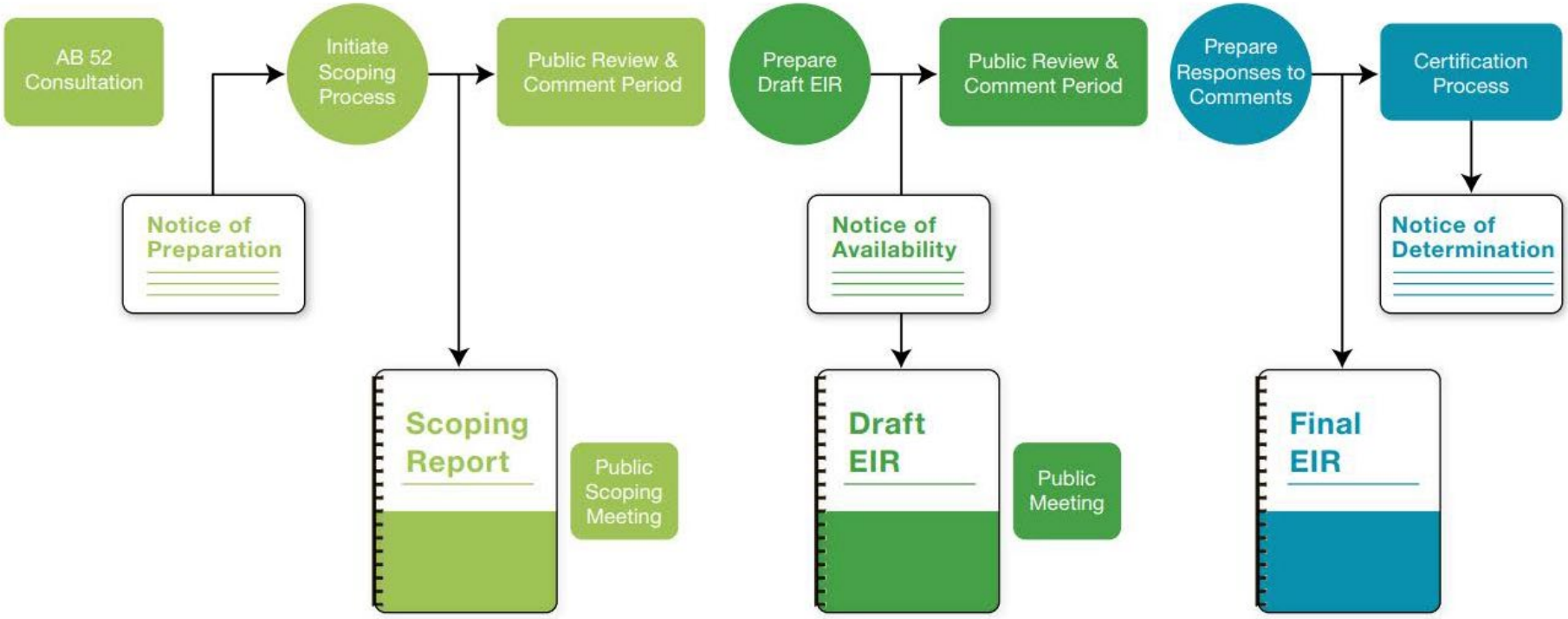
Before the Commission approves a CUP, it must make the following findings:

1. That the site is adequate in size and shape to accommodate the proposed use; and
2. That the site relates to streets and highways, adequate in width and pavement type to carry the traffic generated by the proposed use; and
3. That the proposed use would have no adverse impacts on abutting property or the surrounding area, or allowed use thereof; and
4. That the project is consistent with the General Plan.

Williamson Act Contract Review Process

- Applicant proposes that the project parcels be allowed to remain under contract in consideration of utilizing the land for sheep grazing in addition to the proposed solar generation and energy storage facility.
- The Williamson Act requires that any proposed development must be compatible with commercial agriculture.
- Proposed project to be reviewed against County's Interim Program Guidelines and Procedures.
- If needed, the Agricultural Lands Conservation Commission would make a recommendation to the Board on the contract status.
- The effect of the contract's status will be considered within the scope of the EIR under agricultural impacts.

Environmental Review: The CEQA Process



Cornucopia Solar Project (EIR 8511)

Scoping

Comment Period: May 3 – June 3, 2024, at 5:00 p.m.

Purpose of Scoping

- Solicit input as to the scope and content of the EIR, including potential impacts of concern and mitigation measures or alternatives that should be considered.
- Scoping tells us what we should study, not what the answers are.

Agency Scoping

Public Scoping

Scoping: Resources to be Evaluated

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality and Greenhouse Gas Emissions
- Biological Resources
- Cultural and Tribal Cultural Resources
- Energy
- Geology, Soils, and Paleontology
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Utilities and Service Systems
- Wildfire

Cornucopia Solar Project (EIR 8511)

Scoping: Potential Alternatives

- Project Alternatives
  - Reasonable or feasible alternatives to the proposed project or its location
  - Capable of avoiding or substantially lessening any significant project impacts
  - Ok to impede to some degree the attainment of the objectives or be costlier

- No Project Alternative
  - What would be reasonably expected to occur in the foreseeable future if the proposed project were not approved
  - Based on current plans, consistent with available infrastructure and services

Scoping: Potential Alternatives

Reasonable

- The range of alternatives required in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.

Feasible

- Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, and whether the proponent can reasonably acquire, control or otherwise have access to an alternative site (or the site is already owned by the proponent)

Scoping: Potential Alternatives

Proposed Project	No Project Alternative	Potential Alternatives
❑ Unclassified Conditional Use Permit Application 3777 ❑ Williamson Act contracts remain in place ❑ Approximately 300 Mega Watt Photo Voltaic Solar energy generating facility with approximately 300 MW AC Energy Storage Capacity and related uses including a xx kv transmission line connecting to the PG&E switching station. ❑ Within approximately 2,446 acres of private property	❑ No Use Permit ❑ Williamson Act contracts remain in place ❑ No solar energy generation facility or related uses would be developed on the proposed site ❑ Continued agricultural uses would occur ❑ Potential would remain for other uses consistent with the General Plan and Zoning Ordinance	❑ Reasonable ❑ Feasible ❑ Capable of avoiding or substantially lessening significant project impacts

The County's Next Steps

Summer/Fall 2024: Prepare the Draft EIR

Winter 2024: Issue Draft EIR for Agency and Public Review

Winter 2025: Prepare Responses to Comments

Spring/Summer 2025: Issue Final EIR, Hold Public Hearings

Public Participation Opportunities

Participate at this meeting by submitting verbal comments (by telephone or Zoom)

Submit written comments before 5 p.m. June 3, 2024 to:

- Email: jshaw@FresnoCountyCA.gov
- Mail: Fresno County Department of Public Works and Planning, Development Services and Capital Projects Division, Attn: Jeremy Shaw
  2220 Tulare Street, Sixth Floor, Fresno, CA 93721

Stay informed:

- Email jshaw@fresnocountyca.gov to receive future project notices
- Review the project website: www.co.fresno.ca.us/EIR

Provide comments on the Draft EIR

Participate in public hearings on the project

During Today's Meeting

1. One speaker at a time
2. State and spell your name clearly
3. Limit comments to 3 minutes
4. Respect others' opinions
5. Written comments by email to:

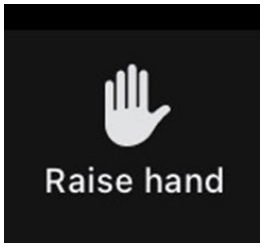
   jshaw@fresnocountyca.gov

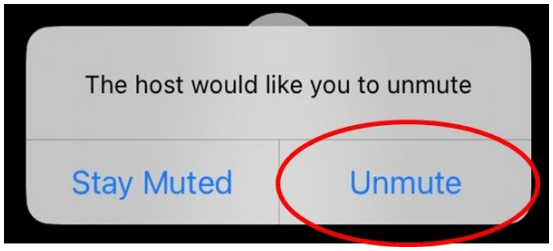
By telephone:

- Dial *9 to "Raise Hand"

Via the Zoom platform:

- Click the *Raise Hand* icon to be called on





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- Review the project website: www.co.fresno.ca.us/EIR

Provide comments on the Draft EIR

Participate in public hearings on the project

Thank you for participating

Break

We are currently on a break until there are more comments or until we reach 4:00 PM.

If you would like to provide a comment:

By telephone

- Dial *9 to "Raise Hand"

Via the Zoom platform

- Click the *Raise Hand* icon to be called on

EIR* del Proyecto Solar Híbrido Cornucopia

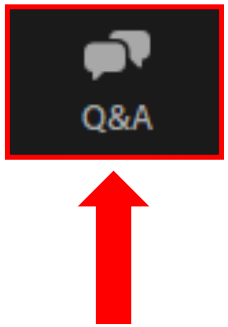
Reunion Publica de Alcance | miercoles,14 de mayo de 2024, 3:30 p.m.

Presentación de la Agencia y Aportaciones Públicas

* **EIR** = Siglas en ingles por **Informe de Impacto Ambiental**

Dificultades Técnicas de Zoom

Si tiene dificultades técnicas con Zoom, incluida la traducción de idiomas, utilice la función de preguntas y respuestas (Q&A, por sus siglas en ingles) y alguien de nuestro equipo le ayudará a resolver el problema.



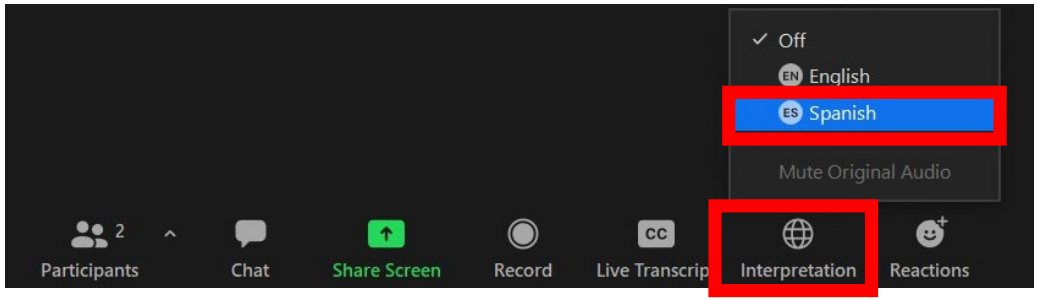
Guarde sus comentarios relacionados con la reunión de alcance para el final de la reunión y solo use las preguntas y respuestas si tiene problemas con la aplicación Zoom.

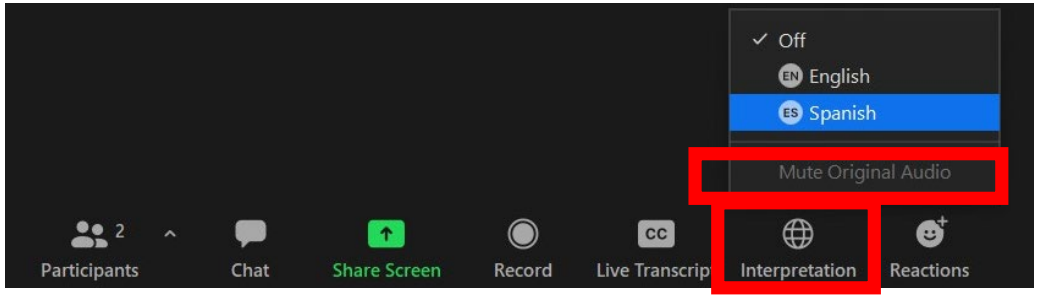
Seleccione su idioma

Para Ingles, haga clic en el boton Interpretacion y seleccione Ingles.

Para español:

1. Haga clic en el boton Interpretacion y seleccione español
2. Haga clic en el boton Interpretacion nuevamente y luego haga clic en " Silenciar audio original"





Enlace para las diapositivas de presentación en español en el sitio web del Condado: https://www.fresnocountyca.gov/eir8511

Agenda

- Introducciones
- Objetivo de la Reunión
- Descripción General del Proyecto
- Proceso de Obtención de Permisos del Condado
- Proceso de Revisión Ambiental (CEQA)
- Alcance: Impactos Ambientales y Alternativas
- Comentarios Públicos
- Próximos Pasos

Introducciones

- Condado de Fresno
  - Departamento de Obras Públicas y Planificación,
    División de Servicios de Desarrollo y Proyectos de Capital
    Jeremy Shaw, Planificador, jshaw@FresnoCountyCA.gov
  - Agencia Principal CEQA responsable de la preparación del EIR 8511
  - Responsable de la toma de decisiones para la solicitud del permiso de uso condicional no clasificado No. 3777
- Environmental Science Associates
  - Consultor Ambiental del Condado
- Cornucopia Hybrid, LLC
  - Solicitante del Proyecto

Descripción General del Proyecto

Queremos saber lo que piensa USTED!
Sus preguntas e ideas son bienvenidas e invitadas.

Oportunidades de Participación Pública

Participe en esta reunión, aportando comentarios verbales (por teléfono o Zoom)

Envíe sus comentarios por escrito antes de las 5 p.m. el 3 de junio del 2024

- Correo electrónico: jshaw@FresnoCountyCA.gov
- Correo: Fresno County Department of Public Works and Planning, Development Services and Capital Projects Division, Attn: Jeremy Shaw
  2220 Tulare Street, Sixth Floor, Fresno, CA 93721

Manténgase informado:

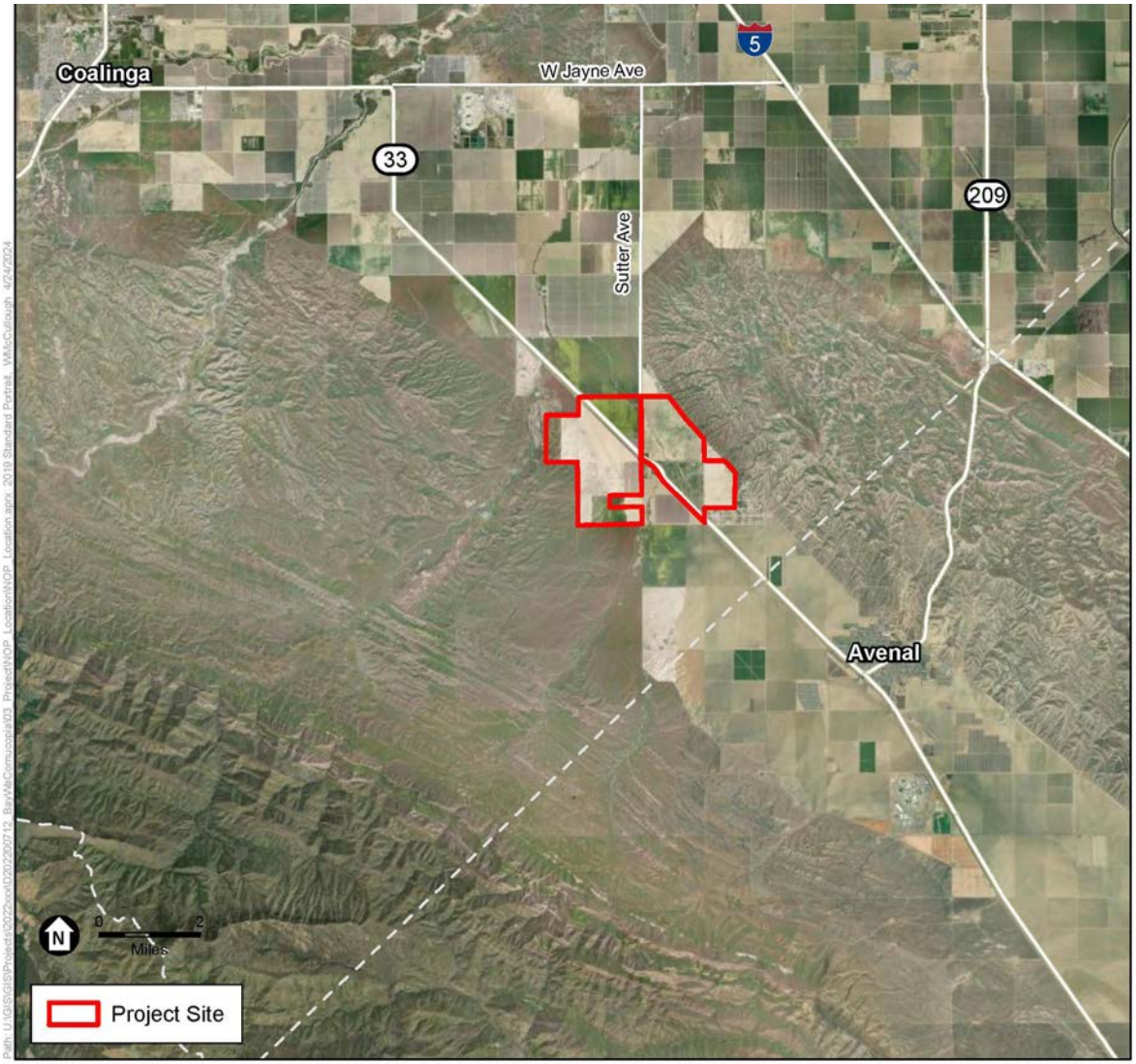
- Envíe un mensaje por correo electrónico a jshaw@fresnocountyca.gov para recibir avisos de proyectos en el futuro
- Revise el sitio web del proyecto: www.co.fresno.ca.us/EIR

Proporcionar comentarios sobre el borrador de EIR

Participar en audiencias públicas sobre el proyecto

Vecindad del Proyecto

- Ubicado en el suroeste del condado de Fresno entre las ciudades de Coalinga y Avenal, aproximadamente cuatro (4) millas al sureste de la Interestatal 5.
- Zona caracterizada por tierras agrícolas y terrenos de pastoreo, vacantes y no desarrollados.

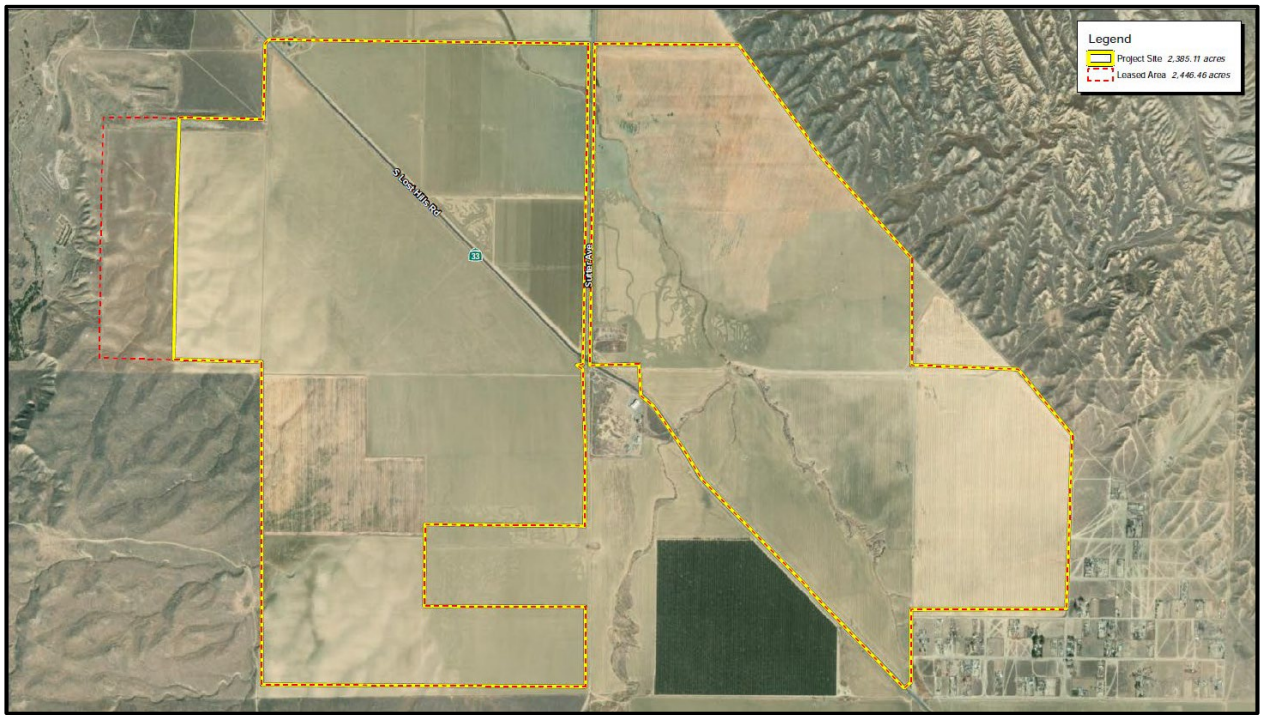


SOURCE: ESA, 2024

Cornucopia Hybrid Solar Project

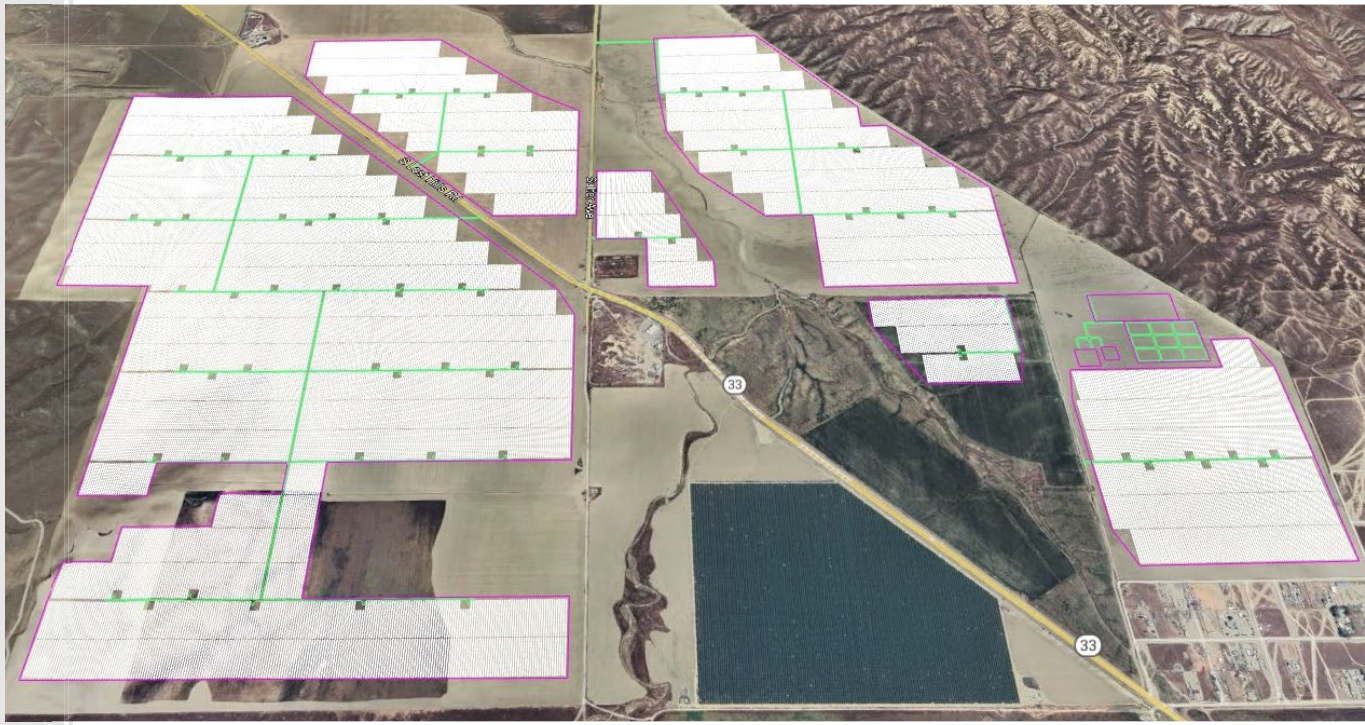
Sitio del Proyecto

- 8 parcelas
- Aproximadamente 2,446 acres en total
  - Aproximadamente 2,385 acres para ser desarrollados
- Atravesado por la Ruta Estatal 33 (S. Lost Hills Road) y Sutter Avenue
- Comunidad no incorporada de Lost Hills se ubica junto al límite sur del proyecto



Detalles del proyecto

- Construcción de una nueva instalación de generación de energía solar de 300 megavatios (MW) a gran escala.
- Capacidad de almacenamiento de energía prevista: Sistema de almacenamiento de baterías de 300 MWac /(1200 MWh).
- Adición de la estación de conmutación de Pacific Gas and Electric (PG&E) en la esquina sureste de los límites del proyecto.
- Instalaciones de apoyo en el sitio
- Línea de transmisión aérea que se conectara a la línea cercana de Pacific Gas and Electric (PG&E)



Uso de la Tierra y Procesos de Obtención de Permisos

Proceso de Obtención de Permiso de Uso Condicional

Proceso de Revisión de Contratos de la Ley Williamson

- Aplicación
- Revisión de solicitud por parte de la agencia
- Revisión de CEQA:
  - Alcance
  - Emisión del borrador del EIR
  - Emisión de EIR final

- Comisión de Planificación
  - Certificación del EIR
  - Consideración del CUP
- Junta de Supervisores (si se apela)

- Evaluar la conformidad del proyecto con las Directrices y Procedimientos del Programa del Condado

Proceso de Obtención de Permiso de Uso

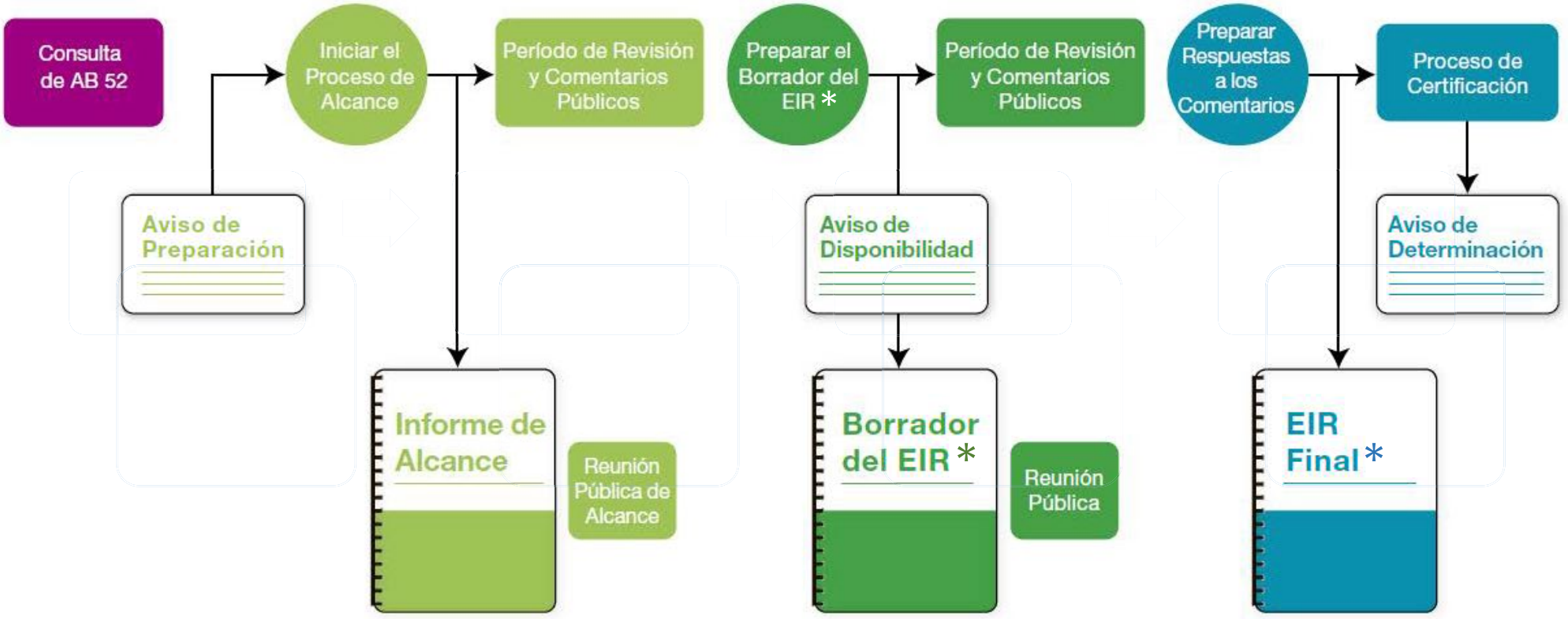
Antes de aprobar un CUP, la Comisión debe hacer las siguientes cinco conclusiones:

1. Tamaño y forma adecuados de la parcela
2. Carreteras adecuadas que dan servicio al sitio del proyecto
3. No habría impactos adversos en las propiedades circundantes
4. El proyecto es coherente con el Plan General
5. Las condiciones requeridas son necesarias para garantizar la seguridad y el bienestar público

Proceso de Revisión de Contratos de la Ley Williamson

- El solicitante propone que se permita que las parcelas del proyecto permanezcan bajo contrato considerando la utilización la tierra para el pastoreo de ovejas, además del propuesto generación/almacenamiento de energía solar.
- La Ley Williamson requiere que cualquier desarrollo propuesto sea compatible con la agricultura comercial.
- El proyecto propuesto se revisará según las Directrices y Procedimientos del Programa Provisional del Condado.
- Si fuera necesario, la Comisión de Conservación de Tierras Agrícolas haría una recomendación a la Junta sobre el estado del contrato.
- El efecto del estado del contrato será considerado dentro del alcance del EIR bajo los impactos agrícolas.

Revisión Ambiental: El Proceso de CEQA



Proyecto Solar Cornucopia (EIR 8511)

*__EIR__ = Siglas en ingles por __Informe de Impacto Ambiental__

Alcance

Período de comentarios: 3 de mayo – 3 de junio del 2024, a las 5:00 p.m.

Propósito del Alcance

- Solicitar información sobre el alcance y el contenido del EIR, incluyendo los posibles impactos de preocupación y las medidas de mitigación o alternativas que deben considerarse.
- El alcance nos dice lo que deber

Alcance de la Agencia

Alcance Público

Alcance: Recursos a Evaluar

- Estética
- Recursos Agrícolas y Forestales
- Calidad del aire y emisiones de gases de efecto invernadero
- Recursos biológicos
- Recursos culturales y tribales
- Energía
- Geología, Suelos y Paleontología
- Peligros y Materiales Peligrosos
- Hidrología y calidad del agua
- Uso y Planificación del Suelo
- Recursos Minerals
- Ruido
- Población y Vivienda
- Servicios Públicos
- Recreación
- Transporte
- Utilidades y sistemas de servicios
- Incendio forestal

Proyecto Solar Cornucopia (EIR 8511)

Alcance: Posibles Alternativas

- Alternativas del Proyecto
  - Alternativas razonables o factibles al proyecto propuesto o su ubicación
  - Capaz de evitar o reducir sustancialmente cualquier impacto significativo en el proyecto
  - De acuerdo a impedir el logro de los objetivos o ser más costoso hasta cierto punto

- No hay Alternativa del Proyecto
  - Lo que se esperaría que ocurriera razonablemente en el futuro previsible si el proyecto propuesto no fuera aprobado
  - Basado en los planes actuales, coherente con la infraestructura y los servicios disponibles

Alcance: Posibles Alternativas

Razonable

- La gama de alternativas requeridas en un EIR se rige por una "regla de la razón" que requiere que el EIR establezca solo aquellas alternativas necesarias para permitir una elección razonada. Las alternativas se limitarán a aquellas que eviten o reducen sustancialmente los efectos significativos del proyecto.

Factible

- Entre los factores que pueden tenerse en cuenta al abordar la viabilidad de las alternativas se encuentran la idoneidad del sitio, la viabilidad económica, la disponibilidad de infraestructura, la coherencia general del plan, otros planes o limitaciones reglamentarias, y si el proponente puede adquirir, controlar o tener acceso a un sitio alternativo (o si el sitio ya es propiedad del proponente)

Alcance: Posibles Alternativas

Proyecto Propuesto

- Solicitud de Permiso de Uso Condicional No Clasificado 3777
- Los contratos de la Ley Williamson siguen vigentes
- Proyecto solar fotovoltaico de 300 MW con capacidad de almacenamiento de energía de 300 MWac /1200 MWh-y usos relacionados
- Dentro de aproximadamente 2,446 acres de propiedad privada

No hay alternativa del Proyecto

- Permiso de no uso
- Los contratos de la Ley Williamson siguen vigentes
- No se desarrollaría ninguna instalación de generación de energía solar ni usos relacionados en el sitio propuesto
- Se continuarían los usos agrícolas
- Quedaría potencial para otros usos consistentes con el Plan General y la Ordenanza de Zonificación

Posibles Alternativas

- Razonable
- Factible
- Capaz de evitar o reducir sustancialmente los impactos significativos del proyecto

Los Próximos Pasos del Condado

Verano/Otoño del 2024: Preparar el borrador del EIR

Invierno del 2024: Publicar el borrador del EIR para su revisión por parte de la agencia y el público

Invierno del 2025: Preparar respuestas a los comentarios

Primavera/Verano del 2025: Publicar el EIR final y organizar audiencias públicas

Oportunidades de Participación Pública

Participe en esta reunión, aportando comentarios verbales (por teléfono o Zoom)

Envíe sus comentarios por escrito antes de las 5 p.m. el 3 de junio del 2024

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Manténgase informado:

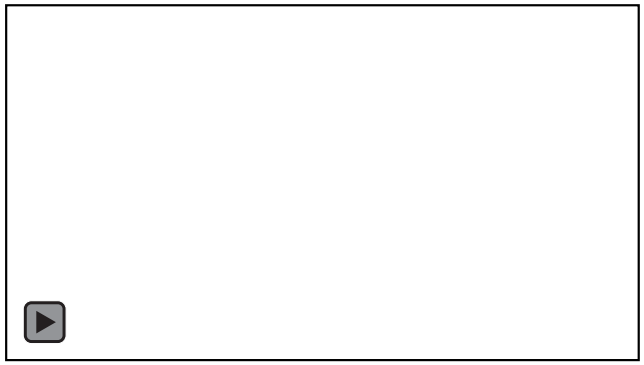
- Envíe un mensaje por correo electrónico a jshaw@fresnocountyca.gov para recibir avisos de proyectos en el futuro
- Revise el sitio web del proyecto: www.co.fresno.ca.us/EIR

Proporcionar comentarios sobre el borrador de EIR

Participar en audiencias públicas sobre el proyecto

Durante la reunión de hoy

1. Una persona a la vez
2. Diga y deletree su nombre claramente
3. Limite sus comentarios a 3 minutos
4. Respete las opiniones de los demás
5. Comentarios por escrito por correo electrónico a: jshaw@fresnocountyca.gov

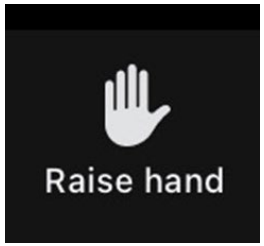


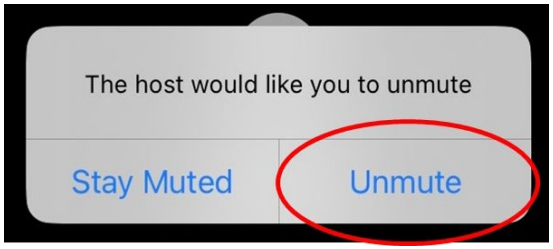
Por teléfono:

- Marque *9 para "Levantar la mano"

A través de la plataforma Zoom:

- Haga clic en el icono *Raise Hand* para ser llamado





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- Revise el sitio web del proyecto: www.co.fresno.ca.us/EIR

Proporcionar comentarios sobre el borrador de EIR

Participar en audiencias públicas sobre el proyecto

Gracias por su participación

Descanso

Estamos en descanso hasta que haya más comentarios o hasta que lleguemos a las 4:00 PM.

Si le gustaría enviar un comentario:

Por teléfono

- Marque *9 para "Levantar la mano"

A través de la plataforma Zoom

- Haga clic en el icono *Raise Hand* para ser llamado

Meeting Notes
Public Scoping Meeting
Cornucopia Hybrid Project
May 14, 2024

Meeting Details:

- Tuesday, May 14, 2024
- Start time: 3:30 p.m.
- End time: 4:15 p.m.
- Virtual (online) meeting held using Zoom

Attendees:

- Six panelists and Zoom hosts
- 13 attendees
    - 10 online attendees
    - 3 telephone-only attendees

Presentation: (see attached copy of the English-language presentation slides)

- Presenters in English: Jeremy Shaw (Fresno County), Selena Whitney (ESA)
- Presenters in Spanish: Larry Kass (ESA), Marisol Guzman (ESA)
- Zoom meeting facilitation: Stephen Johnson (ESA)
- Public Comment facilitation: Nicole Lobodzinski (ESA)

Public Comments:

1. Facilitator Nicole Lobodzinski (ESA): The purpose of this meeting is for the County to hear from you about your questions and comments. Questions are also considered comments. And for folks on the phone who may not be able to see the chat, I'll just describe that you can email your comments to jshaw@fresnocounty.gov. And you can also mail your comments to Fresno County Department of Public Works and Planning, Development Services and Capital Projects Division, with attention to Jeremy Shaw. And that address is 2220 Tulare Street, Sixth floor, Fresno, California, 93721. And that information is also on the county's website for folks who may not have been able to record that.

2. Diana Carroll: I live in this community further up, so my APN is not included on the list. However, I was wondering what would be done to help the rest of the community that is not on the list, to have road access as far as access and entrance. Is that going to come along further in the planning?

3. Dirk Poeschel: Would you be so kind as to get the ladies' name and address so that we can understand when she talked about access, does she mean through the existing community around the solar field? Just get more definition as to what her comment was focused on? It would be helpful for us as we evaluate circulation and access. But also, if she's interested in the project, we want to make sure she gets on the mailing list.

Exhibit D
Scoping Comment Letters

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

May 23, 2024

Jeremy Shaw
County of Fresno
Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, CA 93721

Project: Notice of Preparation of a Draft Environmental Impact Report for the Cornucopia Solar Project

District CEQA Reference No: 20240568

Dear Mr. Shaw:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) from the County of Fresno (County) for the Cornucopia Solar Project. Per the NOP, the project consists of a photovoltaic (PV) solar facility that will generate 300 megawatts (MW) of renewable electrical energy, and a 300 MW of alternating current battery storage system with associated infrastructure on 2,446 acres (Project). The Project is located at State Route 33 and Sutter Avenue in Fresno County, CA.

The District offers the following comments regarding the Project:

1) Project Related Emissions

The District's initial review of the Project concludes that emissions resulting from construction and operation of the Project may exceed any of the following significance thresholds as identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://www.valleyair.org/transportation/GAMAQI.pdf. The District recommends that a more detailed preliminary review of the Project be conducted for the Project's construction and operational emissions.

1a) Construction Emissions

The District recommends, to reduce impacts from construction-related diesel exhaust emissions, the Project should utilize the cleanest available off-road construction equipment, including the latest tier equipment.

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

www.valleyair.org www.healthyairliving.com

Printed on recycled paper.

1b) Operational Emissions

Operational (ongoing) air emissions from mobile sources and stationary sources should be analyzed separately. For reference, the District's significance thresholds are identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://www.valleyair.org/transportation/GAMAQI.pdf.

Recommended Mitigation Measure: At a minimum, project related impacts on air quality should be reduced to levels of significance through incorporation of design elements such as the use of cleaner Heavy Heavy-Duty (HHD) trucks and vehicles, measures that reduce Vehicle Miles Traveled (VMTs), and measures that increase energy efficiency. More information on transportation mitigation measures can be found at: http://www.valleyair.org/transportation/Mitigation-Measures.pdf.

1c) Recommended Model for Quantifying Air Emissions

Project-related criteria pollutant emissions from construction and operational sources should be identified and quantified. Emissions analysis should be performed using the California Emission Estimator Model (CalEEMod), which uses the most recent CARB-approved version of relevant emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

2) Health Risk Screening/Assessment

The County should evaluate the risk associated with the Project for sensitive receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) in the area and mitigate any potentially significant risk to help limit exposure of sensitive receptors to emissions.

To determine potential health impacts on surrounding receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) a Prioritization and/or a Health Risk Assessment (HRA) should be performed for the Project. These health risk determinations should quantify and characterize potential Toxic Air Contaminants (TACs) identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) that pose a present or potential hazard to human health.

Health risk analyses should include all potential air emissions from the project, which include emissions from construction of the project, including multi-year construction, as well as ongoing operational activities of the project.

Note, two common sources of TACs can be attributed to diesel exhaust emitted from heavy-duty off-road earth moving equipment during construction, and from ongoing operation of heavy-duty on-road trucks.

Prioritization (Screening Health Risk Assessment):
A "Prioritization" is the recommended method for a conservative screening-level health risk assessment. The Prioritization should be performed using the California Air Pollution Control Officers Association's (CAPCOA) methodology.

The District recommends that a more refined analysis, in the form of an HRA, be performed for any project resulting in a Prioritization score of 10 or greater. This is because the prioritization results are a conservative health risk representation, while the detailed HRA provides a more accurate health risk evaluation.

To assist land use agencies and project proponents with Prioritization analyses, the District has created a prioritization calculator based on the aforementioned CAPCOA guidelines, which can be found here: http://www.valleyair.org/busind/pto/emission_factors/Criteria/Toxics/Utilities/PRIORI TIZATION-CALCULATOR.xls

Health Risk Assessment:
Prior to performing an HRA, it is strongly recommended that land use agencies/ project proponents develop and submit for District review a health risk modeling protocol that outlines the sources and methodologies that will be used to perform the HRA. This step will ensure all components are addressed when performing the HRA.

A development project would be considered to have a potentially significant health risk if the HRA demonstrates that the project-related health impacts would exceed the District's significance threshold of 20 in a million for carcinogenic risk, or 1.0 for either the Acute or Chronic Hazard Indices.

A project with a significant health risk would trigger all feasible mitigation measures. The District strongly recommends that development projects that result in a significant health risk not be approved by the land use agency.

The District is available to review HRA protocols and analyses. For HRA submittals please provide the following information electronically to the District for review:

- HRA (AERMOD) modeling files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodologies.

For assistance, please contact the District's Technical Services Department by:

- E-Mailing inquiries to: hramodeler@valleyair.org
- Calling (559) 230-5900

Recommended Measure: Development projects resulting in TAC emissions should be located an adequate distance from residential areas and other sensitive receptors in accordance to CARB's Air Quality and Land Use Handbook: A Community Health Perspective located at https://ww3.arb.ca.gov/ch/handbook.pdf.

3) Ambient Air Quality Analysis

An Ambient Air Quality Analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of State or National Ambient Air Quality Standards. The District recommends an AAQA be performed for the Project if emissions exceed 100 pounds per day of any pollutant

An acceptable analysis would include emissions from both project-specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance, is available online at the District's website: www.valleyair.org/ceqa.

4) Voluntary Emission Reduction Agreement

Criteria pollutant emissions may result in emissions exceeding the District's significance thresholds, potentially resulting in a significant impact on air quality. When a project is expected to have a significant impact, the District recommends the DEIR also include a discussion on the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA) for this Project.

A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's incentives programs. The funds are disbursed by the District in the form of grants for projects that achieve emission reductions. Thus, project-related impacts on air quality can be mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural

irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project-related emissions have been mitigated. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the environmental document includes an assessment of the feasibility of implementing a VERA.

5) District Rules and Regulations

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm. To identify other District rules or regulations that apply to future projects, or to obtain information about District permit requirements, the project proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

5a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) requires that new and modified stationary sources of emissions mitigate their emissions using Best Available Control Technology (BACT).

This Project may be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and may require District permits. Prior to construction, the Project proponent should submit to the District an application for an ATC. For further information or assistance, the project proponent may contact the District's SBA Office at (559) 230-5888 or (661) 392-5665.

5b) District Rule 9510 - Indirect Source Review (ISR)

The Project is subject to District Rule 9510 because it will receives a project-level discretionary approval from a public agency and will equal or exceed 9,000 square feet of space.

The purpose of District Rule 9510 is to reduce the growth in both NOx and PM emissions associated with development and transportation projects from mobile and area sources; specifically, the emissions associated with the construction and subsequent operation of development projects. The ISR Rule requires developers to mitigate their NOx and PM emissions by incorporating clean air design elements into their projects. Should the proposed development project clean air design elements be insufficient to meet the required emission reductions, developers must pay a fee that ultimately funds incentive projects to achieve off-site emissions reductions.

Per Section 5.0 of the ISR Rule, an Air Impact Assessment (AIA) application is required to be submitted no later than applying for project-level approval from a public agency. As of the date of this letter, the District has not received an AIA application for this Project. Please inform the project proponent to immediately submit an AIA application to the District to comply with District Rule 9510. One AIA application should be submitted for the entire Project. It is preferable for the applicant to submit an AIA application as early as possible in the County's approval process so that proper mitigation and clean air design under ISR can be incorporated into the County's analysis.

Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

The AIA application form can be found online at: http://www.valleyair.org/ISR/ISRFormsAndApplications.htm.

5c) District Rule 4601 (Architectural Coatings)

The Project may be subject to District Rule 4601 since it may utilize architectural coatings. Architectural coatings are paints, varnishes, sealers, or stains that are applied to structures, portable buildings, pavements or curbs. The purpose of this rule is to limit VOC emissions from architectural coatings. In addition, this rule specifies architectural coatings storage, cleanup and labeling requirements. Additional information on how to comply with District Rule 4601 requirements can be found online at: http://www.valleyair.org/rules/currntrules/r4601.pdf

5d) District Regulation VIII (Fugitive PM10 Prohibitions)

The project proponent may be required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in Regulation VIII, specifically Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.*

Should the project result in at least 1-acre in size, the project proponent shall provide written notification to the District at least 48 hours prior to the project proponents intent to commence any earthmoving activities pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). Also, should the project result in the disturbance of 5-acres or more, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials, the project proponent shall submit to the District a Dust Control Plan pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). For additional information regarding the written notification or Dust Control Plan requirements, please contact District Compliance staff at (559) 230-5950.

The application for both the Construction Notification and Dust Control Plan can be found online at: https://www.valleyair.org/busind/comply/PM10/forms/DCP-Form.docx

Information about District Regulation VIII can be found online at: http://www.valleyair.org/busind/comply/pm10/compliance_pm10.htm

5e) Other District Rules and Regulations

The Project may also be subject to the following District rules: Rule 4102 (Nuisance) and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

6) District Comment Letter

The District recommends that a copy of the District's comments be provided to the Project proponent.

If you have any questions or require further information, please contact Eric McLaughlin by e-mail at Eric.McLaughlin@valleyair.org or by phone at (559) 230-5808.

Sincerely,

Tom Jordan
Director of Policy and Government Affairs

For: Mark Montelongo
Program Manager

MAY 28, 2024

VIA EMAIL: JSHAW@FRESNOCOUNTYCA.GOV
ATTN: JEREMY SHAW
FRESNO COUNTY DEPARTMENT OF PUBLIC WORKS AND PLANNING
DEVELOPMENT SERVICES AND CAPITAL PROJECTS DIVISION
2220 TULARE STREET, SIXTH FLOOR
FRESNO, CA 93721

Dear Mr. Shaw:

NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT REPORT FOR THE CORNUCOPIA SOLAR PROJECT, SCH# 2024050219

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice of Preparation of an Environmental Impact Report for the Cornucopia Solar Project (Project).

The Division monitors and maps farmland conversion on a statewide basis, provides technical assistance regarding the Williamson Act, and administers various agricultural land conservation programs. Public Resources Code, section 614, subdivision (b) authorizes the Department to provide soil conservation advisory services to local governments, including review of CEQA documents.

Protection of the state's agricultural land resources is part of the Department's mission and central to many of its programs. The CEQA process gives the Department an opportunity to acknowledge the value of the resource, identify areas of Department interest, and offer information on how to assess potential impacts or mitigation opportunities.

The Department respects local decision-making by informing the CEQA process, and is not taking a position or providing legal or policy interpretation.

We offer the following comments for consideration with respect to the project's potential impacts on agricultural land and resources within the Department's purview.

PROJECT ATTRIBUTES

The applicant proposes to construct, operate, and maintain a new solar energy generation facility capable of generating approximately 300 megawatts (MW) of energy and an approximately 300 MW of alternating current battery storage system and associated infrastructure and buildings. The proposed project would be located on approximately 2,446 acres of private land approximately 11 miles southeast of the City

of Coalinga in Fresno County, 2.75 miles northwest of the City of Avenal in Kings County, and 4 miles west of Interstate 5. The solar energy generation facility would consist of photovoltaic (PV) solar modules, a substation and switching station, an energy storage system, and two prefabricated structures to be used for maintenance and operation services and for control services.

The project site contains Prime Farmland, Farmland of Statewide Importance, and Unique Farmland as designated by DOC's Farmland Mapping and Monitoring Program. A portion of the project site is subject to a Williamson Act contract.

PROJECT CONSIDERATIONS

The conversion of agricultural land represents a permanent reduction and impact to California's agricultural land resources. The Department generally advises discussion of the following in any environmental review for the loss or conversion of agricultural land:

- Type, amount, and location of farmland conversion resulting directly and indirectly from implementation of the proposed project.
- Impacts on any current and future agricultural operations in the vicinity; e.g., land-use conflicts, increases in land values and taxes, loss of agricultural support infrastructure such as processing facilities, etc.
- Incremental impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed project, as well as impacts from past, current, and likely future projects.
- Proposed mitigation measures for impacted agricultural lands within the proposed project area.
- The project's compatibility with lands within an agricultural preserve and/or enrolled in a Williamson Act contract.

WILLIAMSON ACT

Where, as here, the project site is located on land subject to a Williamson Act contract, the Department advises that the environmental review discuss the compatibility of the project with the contract and local Williamson Act program requirements.

MITIGATING AGRICULTURAL LAND LOSS OR CONVERSION

Consistent with CEQA Guidelines, the Department advises that the environmental review address mitigation for the loss or conversion of agricultural land. An agricultural conservation easement is one potential method for mitigating loss or conversion of agricultural land. (*See* Cal. Code Regs., tit. 14, § 15370 [mitigation includes "compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements."]; *see also King and Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814.)

Mitigation through agricultural conservation easements can take at least two forms: the outright purchase of easements or the donation of mitigation fees to a local, regional, or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural easements. The conversion of agricultural land may be viewed as an impact of at least regional significance. Hence, the search for replacement lands may not need to be limited strictly to lands within the project's surrounding area. A helpful source for regional and statewide agricultural mitigation banks is the California Council of Land Trusts. They provide helpful insight into farmland mitigation policies and implementation strategies, including a guidebook with model policies and a model local ordinance. The guidebook can be found at:

California Council of Land Trusts

Of course, the use of conservation easements is only one form of mitigation, and the Department urges consideration of any other feasible measures necessary to mitigate project impacts.

Thank you for giving us the opportunity to comment on the Notice of Preparation of an Environmental Impact Report for the Cornucopia Solar Project. Please provide the Department with notices of any future hearing dates as well as any staff reports pertaining to this project. If you have any questions regarding our comments, please contact Farl Grundy, Associate Environmental Planner via email at Farl.Grundy@conservation.ca.gov.

Sincerely,

Monique Wilber

Monique Wilber

Conservation Program Support Supervisor

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

June 03, 2024

Jeremy Shaw
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
2220 Tulare St, Sixth Floor
Fresno, California 93721
jshaw@FresnoCountyCA.gov
(559) 600-4207

Subject: Cornucopia Hybrid Solar Project (Project)
Unclassified Conditional Use Permit Application No. 3777 & EIR No. 8511 Notice of Preparation (NOP)
SCH No.: 2024050219

Dear Jeremy Shaw:

The California Department of Fish and Wildlife (CDFW) received a NOP from Fresno County for the above-referenced Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under Fish and Game Code. While the comment period may have ended, CDFW respectfully requests that the County of Fresno still consider our comments.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statue for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 et seq.). Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code may be required.

Fully Protected Species: CDFW has jurisdiction over fully protected species of birds, mammals, amphibians and reptiles, and fish, pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except as follows:

Take is for necessary scientific research,

Efforts to recover a fully protected, endangered, or threatened species, live capture, and relocation of a bird species for the protection of livestock, or

They are a covered species whose conservation and management is provided for in a Natural Community Conservation Plan (Fish & G. Code, §§ 3511, 4700, 5050, & 5515)

Additionally, specified types of infrastructure projects may be eligible for an Incidental Take Permit (ITP) for unavoidable impacts to fully protected species if certain conditions are met (see Fish & G. Code §2081.15). Project proponents should consult with CDFW early in the project planning process if an ITP may be pursued for the Project.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include, sections 3503 (regarding unlawful take, possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines section 15380, CDFW recommends it be fully considered in the environmental analysis for the Project.

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PROJECT DESCRIPTION SUMMARY

Proponent: BayWa r.e. Solar Projects LLC

Objective: The Project proposes to construct, operate, and maintain a solar energy generation facility capable of generating approximately 300 MW of energy, an approximately 300 MW of alternating current (MWac) battery storage system, and associated infrastructure and buildings. The solar energy generation facility would consist of photovoltaic (PV) solar modules, a substation and switching station, an energy storage system, and two prefabricated structures to be used for maintenance and operation services and for control services. The generated energy would then be transferred from the inverters to a Pacific Gas and Electric (PG&E) switching station, to ultimately transfer the power to the local electrical grid. The substation would include an electrical control building and would tie into the PG&E switching station via a new transmission line. The energy storage system would consist of a battery storage system comprising of lithium-ion, flow, or sodium sulfur batteries and would be able to store approximately 300 MWac of electricity. The energy storage system would be located adjacent to the substation, with a footprint of approximately 12 acres in size.

Location: The proposed Project would be located on approximately 2,446 acres of private land within portions of Assessor Parcel Numbers (APNs) 090-030-065, 090-030-045, 090-030-025, 090-030-03, 090-040-01, 085-110-235, 085-110-12, and 085-110-135, in western Fresno County. The site is located approximately 11 miles southeast of the City of Coalinga in Fresno County, 2.75 miles northwest of the City of Avenal in Kings County, and 4 miles west of Interstate 5 (1-5). The community of Lost Hills is contiguous to the southeast portion of the Project of the site off SR 33. The Project site is intersected north to south by State Route (SR) 33 (South Lost Hills Road) and east to west by Sutter Avenue. The Project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36; Township 22 South, Range 16 East, Sections 1, 2; and Range 17 East, Section 6 of the Avenal, California United States Geological Survey (USGS) 7.5-minute Topographical Quadrangle Map.

Timeline: Unspecified

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist Fresno County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the CEQA document prepared for this Project.

Aerial imagery of the Project site and its surroundings show the area contains several natural and agricultural habitats including tilled row crops and fallow fields. Annual grassland may also be present within the western portion of the Project site. These

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habitats have suitable habitat for special status species. Based on a review of the Project description, a review of California Natural Diversity Database (CNDDB) records, and the surrounding habitat, the Project is within the geographic range of several special-status animal species including, but not limited to, the State and federally endangered giant kangaroo rat (*Dipodomys ingens*), the State threatened San Joaquin [Nelson's] antelope squirrel (*Ammospermophilus nelson*), the State threatened and federally endangered San Joaquin kit fox (*Vulpes macrotis mutica)*, the State threatened Swainson's hawk (*Buteo swainsoni*) and tricolored blackbird (*Agelaius tricolor*), the state and federally endangered blunt-nosed leopard lizard (*Gambelia sila),* the State candidate endangered Temblor legless lizard (*Anniella alexanderae)* and Crotch's bumblebee (*Bombus crotchii)*, the State species of special concern American badger (*Taxidea taxus)*, San Joaquin pocket mouse (*Perognathus inornatus)*, short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus),* Tulare grasshopper mouse (*Onychomys torridus tularensis)*, burrowing owl (*Athene cunnicularia*), loggerhead shrike (*Lanius ludovicianus)*, northern harrier (*Circus cyaneus)*, prairie falcon (Falco mexicanus), Blainville's horned lizard (*Phrynosoma coronatum blainsvillii),* California glossy snake *(Arizona elegans occidentalis*), and San Joaquin coachwhip (*Masticophis flagellum*), and the federally proposed threatened and State species of special concern western spadefoot (*Spea hammondii*).

Additionally, the Project area is within the geographic range of several special status plant species including, but not limited to, the State and federally endangered and California Rare Plant Rank CRPR 1B.1 California jewelflower (*Caulanthus californicus*), and the CRPR1B.2 and federally endangered Kern mallow (*Eremalche parryi ssp. kernensis*) and San Joaquin woollythreads (*Monolopia congdonii*). Finally, the Project is within the geographic range of many migratory and non-migratory nesting birds.

In order to support the adequate assessment of potential impacts to biological resources in the Draft Environmental Impact Report (DEIR), CDFW recommends that a qualified biologist perform relevant database reviews and other research of the Project area, then conduct focused habitat assessments and/or focused biological surveys during the appropriate survey period(s) in order to determine whether any special-status species may be present within the Project site.

CDFW recommends this initial work be documented within the DEIR and used to inform further efforts that may be needed thereafter including the need for additional protocol surveys and/or the development of avoidance, minimization, and/or mitigation measures. This information and analysis may then be used in the DEIR to consider the development of modified or new Project alternatives to avoid and minimize potentially significant environmental impacts on the biological environment. This information is critical to make an informed decision during the CEQA process and to ensure Project compliance with CESA, Fish and Game code, and other applicable State and federal laws and regulations.

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Giant kangaroo rat

The Project site is within the known geographic range of giant kangaroo rat (GKR). GKR are known to inhabit grassland and scrub communities with sandy-loam soils and gentle slopes vegetated with annual grasses and scattered shrubs. Based on a review of aerial imagery, portions of the Project site may contain habitat for GKR. In order to determine if GKR currently occupy the Project site, CDFW recommends that a qualified biologist conduct a habitat assessment for GKR within the Project area as part of the biological studies conducted in support of the DEIR. CDFW also recommends that focused protocol-level live trapping surveys be conducted in areas of suitable habitat and that a trapping plan for determining presence of GKR be submitted to and approved by CDFW prior to subsequent trapping efforts. If surveys indicate the presence or potential presence of GKR, consultation with the CDFW is recommended for guidance on the development of mitigation measures such as take avoidance, minimization, and mitigation.

San Joaquin Antelope Squirrel

The Project site is within the known geographic range of San Joaquin antelope squirrel (SJAS) and there are historical occurrences of the species approximately three miles southeast of the Project site (CDFW 2024). Suitable habitat for SJAS includes areas of grassland, upland scrub, and alkali sink habitats that contain requisite habitat elements, such as small mammal burrows. Based on a review of aerial imagery, portions of the Project site may contain habitat for SJAS. In order to determine if SJAS currently occupy the Project site, CDFW recommends that a qualified biologist conduct a habitat assessment for SJAS within the Project site as part of the biological studies conducted in support of the DEIR. If suitable habitat is determined to be present, CDFW recommends that a qualified biologist conduct focused daytime visual surveys for SJAS in areas of suitable habitat as part of the biological studies conducted in support of the DEIR. If surveys indicate the presence or potential presence of SJAS, consultation with the CDFW is recommended for guidance on the development of mitigation measures such as take avoidance, minimization, and mitigation.

San Joaquin Kit Fox

The Project site is within the known geographic range of San Joaquin kit fox (SJKF) and the species is known to inhabit the Project area and there are multiple nearby occurrences listed on CNDDB (CDFW 2024). SJKF den in a variety of areas such as arid grassland and alkali scrub/shrub habitats in open areas with sandy soils (Grinnel et al. 1937), agricultural and fallow/ruderal habitat, and dry stream channels, and populations can fluctuate over time. SJKF may be attracted to Project areas due to the type and level of ground disturbing activities and the loose, friable soils resulting from intensive ground disturbance. Based on aerial imagery and the information provided in

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the NOP, most of the Project site contains suitable habitat for SJKF denning and foraging.

As SJKF have a high potential to den and/or forage within the Project site and have been documented within the Project footprint, CDFW recommends that a qualified biologist assess the presence/absence of SJKF by conducting focused surveys to detect SJKF and their sign in all Project areas and a 500-foot buffer of Project areas as part of the biological studies conducted in support of the DEIR. In addition to the focused SJKF surveys, CDFW recommends the DEIR include the following measures:

Recommended Mitigation Measure 1: SJKF Avoidance Buffer

CDFW recommends implementing no-disturbance buffers, as described in the USFWS' "Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance" (2011) (USFWS Protocol) around potentially suitable or known SJKF den sites.

Recommended Mitigation Measure 2: SJKF Take Authorization

If the no-disturbance buffers outlined in the USFWS Protocol for SJKF is not feasible, CDFW recommends that consultation with CDFW occur to discuss how to implement the Project and avoid take. If take cannot be avoided, CDFW recommends the Project proponent pursue take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) to comply with CESA.

Recommended Mitigation Measure 3: SJKF Fencing

CDFW recommends that all fencing installed on the perimeter of the solar Project be designed to allow for passage of SJKF their prey and other wildlife, while impeding the passage of larger predators such as coyotes and similar species. Perimeter fencing should be installed with a four (4) to six (6) inch gap from the bottom of the fencing material and knuckled back to form a smooth edge and allow permeability for wildlife.

Swainson's hawk

The Project is within the known geographic range of Swainson's hawk (SWHA), and recent occurrences have been documented within the vicinity of the Project site (CDFW 2024). SWHA are known to breed within the Central Valley of California and prefer to nest and forage in alfalfa, fallow fields, field crops, and grassland habitats with a sufficient source of small mammals (CDFG 1994). Based on aerial imagery and the information provided in the NOP, most of the Project site contains suitable habitat for

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SWHA foraging. In addition, there may be trees and structures located within the vicinity of the Project area that may provide suitable nesting habitat.

As SWHA have a high potential to use the Project site and have been documented within the Project vicinity, CDFW recommends that a qualified wildlife biologist conduct surveys for nesting SWHA following the entire survey methodology developed by the SWHA Technical Advisory Committee (SWHA TAC 2000) as part of the biological technical studies conducted in support of the DEIR.

In addition to conducting SWHA surveys, CDFW recommends the DEIR include the following measures:

Recommended Mitigation Measure 4: SWHA Surveys Prior to Construction

Depending on the time between the initial survey efforts conducted in support of the DEIR and Project construction, CDFW recommends that additional surveys, following the survey methodology developed by the SWHA Technical Advisory Committee, be repeated the survey season immediately prior to construction.

Recommended Mitigation Measure 5: SWHA Avoidance Buffer

If Project-specific activities will take place during the SWHA nesting season (i.e., March 1 through September 15), and active SWHA nests are present, CDFW recommends a minimum ½-mile no-disturbance buffer be delineated and maintained around each nest, regardless of whether it was detected by surveys or observed incidentally. These buffers would remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, to prevent nest abandonment and other take of SWHA as a result of Project activities.

Recommended Mitigation Measure 6: SWHA Take Authorization

CDFW also recommends that in the event an active SWHA nest is detected, and a ½-mile no-disturbance buffer is not feasible, consultation with CDFW is warranted to discuss how to implement the Project and avoid take. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

Recommended Mitigation Measure 7: SWHA Foraging Habitat Mitigation

Finally, CDFW recommends compensation for the loss of SWHA foraging habitat as described in CDFW's "Staff Report Regarding Mitigation for Impacts to Swainson's Hawks" (CDFG 1994) to reduce impacts to foraging habitat to less

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than significant. The Staff Report recommends that mitigation for habitat loss occur within a minimum distance of 10 miles from known nest sites. CDFW has the following recommendations based on the Staff Report:

- For projects within 1 mile of an active nest tree, a minimum of 1 acre of habitat management (HM) land for each acre of development is advised.
- For projects within 5 miles of an active nest but greater than 1 mile, a minimum of ¾ acre of HM land for each acre of development is advised.
- For projects within 10 miles of an active nest tree but greater than 5 miles from an active nest tree, a minimum of ½ acre of HM land for each acre of development is advised.

Tricolored blackbird

The Project site is within the known geographic range of tricolored blackbird (TRBL) and a historical occurrence was documented within 10 miles of the Project site (CDFW 2024). TRBL breed within the vicinity of fresh water, primarily in marshy areas. Important sites for nesting colonies include heavy growths of cattails, tules, thistles, willows, blackberries, mustard, nettles, and salt cedar (Grinnell and Miller 1944). TRBL are also known to breed in alfalfa, wheat, and other low agricultural crop fields, and these fields are becoming an increasingly important nesting habitat type, particularly in the San Joaquin Valley (Beedy et al. 2023). Based on aerial imagery and the information provided in the NOP, portions of the Project site could provide potential foraging and nesting habitat for TRBL.

CDFW recommends that a qualified biologist conduct a habitat assessment as part of the biological technical studies conducted in support of the DEIR. If potentially suitable habitat is identified, consultation with CDFW is recommended for guidance on focused survey methods and mitigation measures such avoidance, minimization, and mitigation.

Blunt-nosed Leopard Lizard

The Project site is within the known geographic range of Blunt-nosed leopard lizard (BNLL) and a historical occurrence was documented directly adjacent to the Project site (CDFW 2024). Suitable BNLL habitat includes all areas of grassland and shrub habitat that contains required habitat elements, such as small mammal burrows and open areas for basking. BNLL are also known to utilize open space patches between suitable habitat features including disturbed sites and unpaved access roadways. Based on aerial imagery and the information provided in the NOP, portions of the Project site may contain suitable habitat for BNLL.

As BNLL have the potential to occupy the Project site and have been documented within the Project vicinity, CDFW recommends that a qualified biologist conduct focused

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protocol surveys in accordance with the “Approved Survey Methodology for the Blunt-nosed Leopard Lizard” (CDFW 2019) as part of as part of the biological technical studies conducted in support of the DEIR. This survey protocol, designed to optimize BNLL detectability, reasonably assures CDFW that ground disturbance will not result in take of this fully protected species.

In addition to conducting BNLL surveys, CDFW recommends the DEIR include the following measures:

> **Recommended Mitigation Measure 8: BNLL Consultation**
>
> CDFW recommends that consultation with CDFW occur to discuss how to implement the Project and avoid take over the life of the Project. With the passage of Senate Bill No. 147, the incidental take of BNLL may be authorized for certain categories of projects, including industrial solar photovoltaic projects. If take cannot be avoided, the potential to pursue an ITP pursuant Fish and Game Code section 2081 subdivision (b) will be discussed during the consultation process.

Temblor legless lizard

The Project site is within the known geographic range of Temblor legless lizard (TLL) and recent occurrences were documented within the annual grassland located west of the Project site (CDFW 2024). TLL occupy sparsely vegetated areas of desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Often can be found under surface objects such as rocks, boards, driftwood, and logs. Based on aerial imagery and the information provided in the NOP, portions of the Project site may contain suitable habitat for TLL. CDFW recommends that a qualified biologist conduct a habitat assessment as part of the biological technical studies conducted in support of the DEIR. If potentially suitable habitat is identified, consultation with CDFW is recommended for guidance on focused survey methods and mitigation measures such avoidance, minimization, and mitigation.

Crotch’s bumblebee

The Project site is within the known geographic range of Crotch bumble bee (CBB) and a historical occurrence has been documented approximately five miles west of the Project site (CDFW 2024). CBB was once common throughout most of central and southern California. CBB are known to inhabit areas of grasslands and scrub that contain requisite habitat elements for nesting, such as small mammal burrows and bunch/thatched grasses. CBB was once common throughout most of central and southern California. However, it now appears to be absent from most of their range, especially in the central portion of its historic range within California’s Central Valley (Hatfield et al. 2015). Analyses by the Xerces Society et al. (2018) suggest there have

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been sharp declines in relative abundance by 98% and persistence by 80% over the last ten years.

CDFW recommends a qualified biologist conduct a habitat assessment to determine if the Project area and the immediate surrounding vicinity contain habitat suitable to support CBB. Potential nesting sites, which include all small mammal burrows, perennial bunch grasses, thatched annual grasses, brush piles, old bird nests, dead trees, and hollow logs would need to be documented as part of the assessment. If potentially suitable habitat is identified, CDFW recommends that a qualified biologist conduct focused surveys for CBB, and their requisite habitat features following the methodology outlined in the Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023). If surveys indicate the presence or potential presence of CBB, consultation with the CDFW is recommended for guidance on the development of mitigation measures such as take avoidance, minimization, and mitigation.

American Badger

The Project site is within the geographic range of American Badger (AMBA) and multiple historic and recent occurrences have been documented adjacent to the Project site (CDFW 2024). AMBA occupy sparsely vegetated land cover with dry, friable soils to excavate dens, which they use for cover, and that support fossorial rodent prey populations (i.e., ground squirrels, pocket gophers, etc.). They can also burrow in dry farmed agricultural lands or lands that have been fallowed. As AMBA have the potential to den and/or forage within the Project area, CDFW recommends that a qualified biologist assess the presence/absence of AMBA by conducting a focused field survey in all areas of potentially suitable habitat as part of the biological studies conducted in support of the DEIR. If surveys indicate the presence or potential presence of AMBA, consultation with the CDFW is recommended for guidance on mitigation measures such as avoidance, minimization, and mitigation.

Burrowing owl

The Project site is within the known geographic range of burrowing owl (BUOW) and there are multiple historic and recent occurrences located adjacent to the Project site (CDFW 2024). BUOW inhabit open grasslands and desert scrublands containing small mammal burrows, a requisite habitat feature used by BUOW for nesting and cover. Based on aerial imagery and the information provided in the NOP, most of the Project site contains suitable habitat for BUOW nesting and foraging.

As BUOW have the potential to nest and/or forage within the Project site, CDFW recommends assessing presence/absence of BUOW by having a qualified biologist conduct surveys following the California Burrowing Owl Consortium's (CBOC) "Burrowing Owl Survey Protocol and Mitigation Guidelines" (CBOC 1993) and CDFW's

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"Staff Report on Burrowing Owl Mitigation" (CDFG 2012) as part of the biological studies conducted in support of the DEIR.

In addition to conducting BUOW surveys, CDFW recommends the DEIR include the following measures:

Recommended Mitigation Measure 9: BUOW Surveys Prior to Construction

Depending on the time between the initial survey efforts conducted in support of the DEIR and Project construction, CDFW recommends that additional surveys, following the "Burrowing Owl Survey Protocol and Mitigation Guidelines" (CBOC 1993) and CDFW's "Staff Report on Burrowing Owl Mitigation" (CDFG 2012) be repeated the survey season immediately prior to construction.

Recommended Mitigation Measure 10: BUOW Avoidance Buffer

Should a BUOW be detected, CDFW recommends that no-disturbance buffers, as outlined in the "Staff Report on Burrowing Owl Mitigation" (CDFG 2012), be implemented prior to and during any ground-disturbing activities. Specifically, CDFW's Staff Report recommends that impacts to occupied burrows be avoided in accordance with the following table unless a qualified biologist approved by CDFW verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

* meters (m)

Recommended Mitigation Measure 11: BUOW Consultation

If BUOW are found within these recommended buffers and avoidance is not possible, consultation with the CDFW is recommended for guidance on the development of mitigation measures such as take avoidance, minimization, and mitigation.

Other State Species of Special Concern

The Project site is within the known geographic range of the San Joaquin pocket mouse, short-nosed kangaroo rat, Tulare grasshopper mouse, Blainville's horned lizard,

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California glossy snake, San Joaquin coachwhip, and Western spadefoot, , and, to evaluate Project-related impacts to these species, CDFW recommends that a general habitat assessment be conducted as part of the biological technical studies conducted in support of the DEIR.

Special-Status Plant Species

The Project site is within the known geographic range of several special status plant species including California jewelflower, Kern mallow, and San Joaquin woollythreads, and these species were documented historically within the Project vicinity (CDFW 2024). The Project site may contain suitable habitat for special status plant species, including the species mentioned above.

CDFW recommends that the Project site(s) be surveyed for special status plants within areas of suitable habitat by a qualified botanist following the “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities” (CDFW 2018) as part of the biological technical studies conducted in support of the DEIR. This protocol, which is intended to maximize detectability, includes the identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. If surveys indicate the presence or potential presence of special status plants, consultation with CDFW is recommended for guidance on mitigation measures such as avoidance, minimization, and mitigation.

Editorial Comments and/or Suggestions

Federally Listed Species: CDFW recommends consulting with USFWS regarding potential impacts to federally listed species including, but not limited to the, GKR, SJKF, BNLL, California jewelflower, Kern Mallow, and San Joaquin woollythreads . Take under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; take under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of any Project activities.

Lake and Streambed Alteration: Multiple streams subject to CDFW’s regulatory authority pursuant Fish and Game Code section 1600 et seq. appear to be present within the Project site based on a review of aerial imagery. Project activities that substantially change the bed, bank, and channel of any river, stream, or lake are subject to CDFW’s regulatory authority pursuant Fish and Game Code section 1600 et seq. Fish and Game Code section 1602 requires an entity to notify CDFW prior to commencing any activity that may (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation): (c) deposit debris, waste or other materials that could pass into any river,

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stream, or lake. “Any river, stream, or lake” includes those that are ephemeral or intermittent as well as those that are perennial and may include those that are highly modified such as canals and retention basins.

CDFW is required to comply with CEQA in the issuance of a Lake or Streambed Alteration Agreement (LSAA); therefore, if the CEQA document approved for the Project does not adequately describe the Project and its impacts to lakes or streams, a subsequent CEQA analysis may be necessary for LSAA issuance. For information on notification requirements, please refer to CDFW’s website (https://wildlife.ca.gov/Conservation/LSA) or contact CDFW staff in the Central Region Lake and Streambed Alteration Program at (559) 243-4593.

Nesting birds: CDFW encourages that Project ground-disturbing activities occur during the bird non-nesting season; however, if ground-disturbing or vegetation-disturbing activities must occur during the nesting season (February 1st through September 15th), the Project applicant is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Code sections as referenced above.

To evaluate Project-related impacts on nesting birds, CDFW recommends that a general habitat assessment for nesting birds, including loggerhead shrike, northern harrier, and prairie falcon be conducted as part of the biological technical studies conducted in support of the CEQA document. Depending on the results of that assessment, CDFW further recommends that the CEQA document for this Project include that a qualified biologist conduct a pre-construction survey for active nests no more than 10 days prior to the start of ground or vegetation disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected, either directly or indirectly, by the Project. In addition to direct impacts (i.e., nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. CDFW recommends that a qualified biologist establish a behavioral baseline of all identified nests. Once Project activities begin, CDFW recommends having a qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is a compelling biological or ecological

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reason to do so, such as when the Project site would be concealed from a nest site by topography. CDFW recommends that a qualified wildlife biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

California Natural Diversity Database: Please note that the CNDDB is populated by records through voluntary submissions of species detections. As a result, species may be present in locations not depicted in the CNDDB but where there is suitable habitat features capable of supporting species. A lack of an occurrence record in the CNDDB does not mean a species is not present. In order to adequately assess any potential Project-related impacts to biological resources, surveys conducted by a qualified biologist during the appropriate survey period(s) using the appropriate protocol survey methodology are warranted in order to determine whether or not any special status species are present at or near the Project site.

Artificial Lighting: Installation of outdoor artificial night lighting can disrupt the circadian rhythms of many wildlife species. Many species use photoperiod cues for communication, determining when to begin foraging, thermoregulation behavior, and migration (Longcore and Rich 2004, Miller 2006, Nightingale et al. 2006, Perry et al. 2008, Stone et al. 2009). Phototaxis, a phenomenon which results in attraction and movement towards light, can disorient, entrap, and temporarily blind wildlife species that experience it (Longcore and Rich 2004). Project activities could result in disruption of wildlife behavior, inadvertent injury, or mortality.

CDFW recommends that the DEIR for the Project include an analysis of artificial lighting as it relates to biological resources and incorporate enforceable mitigation measures to decrease the impacts of artificial outdoor lighting on wildlife species. Potentially feasible mitigation measures include motion sensitive lighting; mounting light fixtures as low as possible to minimize light trespass; use of light fittings that direct and confine the spread of light downward; and use of long-wavelength light sources. In addition, CDFW recommends that lighting is not installed in ecologically sensitive areas (e.g., streams, wetlands, and habitat used by special status species, such as nesting/roosting sites and riparian corridors) and the use of the white/blue wavelengths of the light spectrum be avoided.

Wildlife Movement and Connectivity: The Project area supports significant biological resources and contains habitat connections and supports movement across the broader landscape, sustaining both transitory and permanent wildlife populations. CDFW recommends that on-site features that contribute to habitat connectivity should be evaluated and maintained. Aspects of the Project that could create physical barriers to wildlife movement, including direct or indirect Project-related activities, should be identified, and addressed in the DEIR.

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Project Alternatives Analysis: CDFW recommends that the information and results obtained from the biological technical surveys, studies, and analysis conducted in support of the Project's DEIR be used to develop and modify the Project's alternatives to avoid and minimize impacts to biological resources to the maximum extent possible. When efforts to avoid and minimize have been exhausted, CDFW advises that remaining impacts to sensitive biological resources be mitigated to reduce impacts to a less than significant level, if feasible.

Cumulative Impacts: CDFW recommends that a cumulative impact analysis be conducted for all biological resources that will either be significantly or potentially significantly impacted by implementation of the Project, including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by the Project, even if those impacts are relatively small (i.e., less than significant). Cumulative impacts are recommended to be analyzed using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on resources and be focused specifically on the resource, not the Project. An appropriate resource study area should also be identified and mapped for each resource being analyzed and utilized for this analysis. CDFW recommends closely evaluating the need for a cumulative impacts analysis for the following species as part of the DEIR due to these species being in poor or declining health or at risk: GKR, SJAS, SJKF, SWHA, TRBL, BNLL, TLL, CBB, AMBA, San Joaquin pocket mouse, short-nosed kangaroo rat, Tulare grasshopper mouse, BUOW, loggerhead shrike, northern harrier, prairie falcon, Blainville's horned lizard, California glossy snake, San Joaquin coachwhip, western spadefoot, California jewelflower, Kern mallow, and San Joaquin woollythreads. CDFW staff is available for consultation in support of cumulative impacts analyses as a trustee and responsible agency under CEQA.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination

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by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

CDFW appreciates the opportunity to comment to assist Fresno County in identifying and mitigating Project impacts on biological resources. Please see the enclosed Mitigation Monitoring and Reporting Program (MMRP) table which corresponds with recommended mitigation measures in this comment letter. If you have any questions, please contact Ren Cotter, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 767-0956, or by electronic mail at Ren.Cotter@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Julie Vance
FA83F09FE08945A...

Julie A. Vance
Regional Manager

ec: State Clearinghouse
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Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: Cornucopia Hybrid Solar
SCH No.: 2024050219

RECOMMENDED MITIGATION MEASURE	**STATUS/DATE/INITIALS**
Before Disturbing Soil or Vegetation	
SJKF	
Recommended Mitigation Measure 1: SJKF take authorization	
Recommended Mitigation Measure 3: SJKF fencing	
SWHA	
Recommended Mitigation Measure 4: SWHA surveys prior to construction	
Recommended Mitigation Measure 6: SWHA take authorization	
Recommended Mitigation Measure 7: SWHA foraging habitat mitigation	
BNLL	
Recommended Mitigation Measure 8: BNLL consultation	
BUOW	
Recommended Mitigation Measure 9: BUOW surveys prior to construction	
Recommended Mitigation Measure 11: BUOW consultation	
During Construction	
SJKF	
Recommended Mitigation Measure 2: SJKF avoidance buffer	
SWHA	
Recommended Mitigation Measure 5: SWHA avoidance buffer	

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Recommended Mitigation Measure 10 BUOW avoidance buffer	

California Program Office
P.O. Box 401, Folsom, California 95763 | 916-313-5800
www.defenders.org

June 3, 2024

Jeremy Shaw, Planner
Fresno County Department of Public Works and Planning
Development Services and Capital Projects Division
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Fresno, CA 93721
Delivered via email to: Jshaw@fresnocountyca.gov

RE: Notice of Preparation of a Draft Environmental Impact Report (EIR 8511) – Cornucopia Hybrid Solar Project (SCH 2024050219)

Dear Mr. Shaw:

Thank you for the opportunity to provide comments in response to the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the proposed Cornucopia Hybrid Solar Project (Project). Defenders of Wildlife (Defenders) is dedicated to protecting all wild animals and plants in their natural communities and has nearly 2.1 million members and supporters in the United States, with more than 316,000 residing in California.

Defenders strongly supports generation of electricity from renewable energy sources. A low-carbon energy future is critical for California's economy, communities and environment. Achieving this future—and how we achieve it—is critical for protecting California's internationally treasured wildlife, landscapes and diverse habitats. We believe transitioning to a renewable energy future need not exacerbate the ongoing extinction crisis by thoughtfully planning projects while protecting habitat critical to species.

The proposed Project is a solar photovoltaic facility that would generate up to 300 MW of renewable energy and includes a 300 MW battery storage system. The proposed project site is 2,444 acres of private land within Fresno County 11 miles southeast of Coalinga, 2.75 miles northwest of Avenal and 4 miles west of Interstate 5. The site consists of agricultural and vacant, undeveloped land and is currently under Williamson Act contracts; the applicant proposes to retain Williamson Act status by providing sheep grazing lands within and surrounding the solar PV panels and equipment.

Comments
We offer the following comments on the scope of the DEIR for the proposed Project:

1. **Project Location**

The proposed Project site contains sensitive, high-value biological resources and provides important habitat to numerous special-status wildlife species, including but not limited to the following:[1]

Table 1**:** Special-Status Species' Habitat Within the Project Site

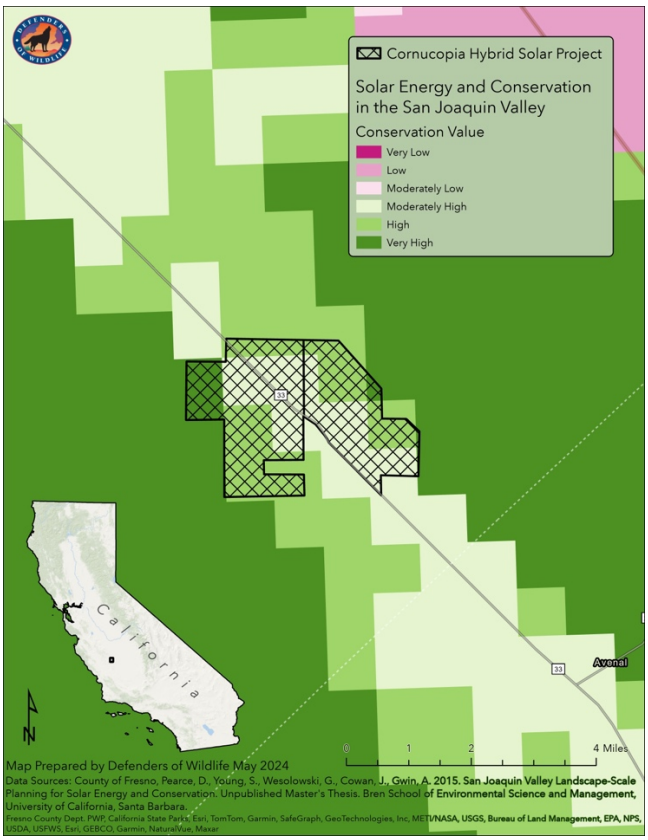
Common Name	**Scientific Name**	**Status**
Blunt-nosed leopard lizard	*Gambelia sila*	Federal and State Endangered
Burrowing owl	*Athene cunicularia*	State Species of Special Concern
California jewelflower	*Caulanthus californicus*	Federally and State Endangered
Nelson's antelope squirrel	*Ammospermophilus nelsoni*	State Threatened
San Joaquin kit fox	*Vulpes macrotis mutica*	Federal Endangered and State Threatened
San Joaquin woollythreads	*Monolopia congdonii*	Federal Endangered

Per the San Joaquin Valley Least Conflict Solar Study, the proposed Project is located on lands that are considered to be sensitive with moderately high, high, and very high conservation values (see Figure 1 below with the black crosshatch representing the approximate outline of the Project area).[2] The San Joaquin Least Conflict Solar Study was a stakeholder-driven geospatial analysis of the San Joaquin Valley to identify the least conflict lands for solar PV development in the region. Leaders from the agricultural, conservation, solar development communities, tribes and key agencies identified this area as "high conflict" and "high value" area based on the present biological resources as depicted by the gradient within the map. Projects located on land identified as "high value" may face substantial delays, that in turn, cause viability and cost issues due to permitting requirements under state and federal laws and the costs and time associated with establishing and implementing avoidance, minimization and mitigation measures for impacts to biological resources.

[1] California Natural Diversity Database. Accessed 05/23/2024. https://wildlife.ca.gov/Data/CNDDB/Maps-and-Data.

[2] See https://www.law.berkeley.edu/research/clee/research/climate/solar-pv-in-the-sjv/

Figure 1: Approximate Vicinity of the Project with the Environmental Conservation Value



Development projects should avoid areas with high conservation values for natural resources, such as special-status species, areas of high biodiversity or habitat connectivity corridors. While mitigation is an essential tool for conservation, it is difficult and expensive to mitigate for special-status species when a project is located in a high-value habitat such as portions of this Project site. We encourage the project proponent to fully site development projects on land identified as least conflict with a low conservation value and to avoid high conservation value lands. We request the alternatives analysis within the DEIR examine an alternative location that is situated on land with low conservation value.

2. Agency Coordination

The NOP states the DEIR will include impacts to biological resources and consultation with the appropriate agencies will occur, if required. Given the Project is proposed to be located on land with “moderately high” to “very high” conservation value, it is reasonable to expect there will be significant impacts on biological resources, and therefore, agency consultation will be required. It is in the best interest of the applicant to conduct consultation with the appropriate wildlife agencies early and often as it could reduce costs associated with delays due to establishing mitigation measures or securing an Incidental Take Permit (ITP). We recommend coordination with the appropriate agencies as early as possible to help identify appropriate survey guidelines and avoidance, minimization and mitigation measures and not wait until it is deemed required.

3. Protocol Surveys

Considering the high potential for sensitive species and habitat to be located on the Project site, the biological resources surveys must adhere to wildlife agency-approved species-specific protocols and must identify the appropriate avoidance, minimization and mitigation measures based on survey results. Defenders recommends consultation with the responsible trustee wildlife agencies to determine the scope and appropriate protocols for the biological surveys. Species-specific surveys should cover 100 percent of the Project area and adjacent habitat within wildlife agency-recommended survey buffers. If special-status species are observed, Defenders recommends consultation with the California Department of Fish and Wildlife (CDFW) and the US Fish and Wildlife Service (USFWS) to establish the recommended impact avoidance, minimization, and mitigation measures, including compensatory mitigation and the need to obtain an ITP.

If habitat management (HM) lands are deemed necessary due to survey results, the HM lands must contain suitable habitat for the species and be managed in perpetuity by a qualified conservation organization as defined by CA Civil Code Section 815.3. Alternatively, credits could be purchased in a CDFW-approved mitigation bank.

a. Blunt-Nosed Leopard Lizard

The proposed Project site and surrounding area may provide suitable habitat for blunt-nosed leopard lizard (BNLL) and has a probability of BNLL occurrence.[3] According to USFWS, BNLL has been reduced to 15% of its historical range due to widespread agricultural development of the San Joaquin Valley. Given the extreme habitat loss, the BNLL is a federal and state-listed endangered species. It is also a fully protected species that requires – under the recently revised fully protected statute – that take is avoided to the maximum extent possible. If take cannot be avoided to the maximum extent possible, then a project applicant must fully mitigate that take, ensure that all further measures necessary to satisfy the conservation standard of Section 2805(d) of the Fish and Game Code are in place, and provide for monitoring and adaptive management. Defenders requests surveys for the species be performed that, at a minimum, conform to the current survey standards established in CDFW's *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard*.[4] Additionally, we recommend consultation with the state and federal wildlife agencies to ensure compliance with the state fully protected species law and state and federal endangered species acts.

b. Burrowing Owl

Suitable burrowing owl (BUOW) habitat is present within the Project Area, and there is a high probability of occurrence.[5] BUOWs are listed as a Species of Special Concern by CDFW, and it is estimated that there are fewer than 10,000 breeding pairs in the state, with most existing on privately owned land.[6] Protocol-level surveys for BUOW must be performed

[3] See https://databasin.org/maps/new/#datasets=e02db184ff08428eb9a6da4072a4ebfd

[4] California Department of Fish and Wildlife. 2019. *Approved Survey Methodology for the Blunt-Nosed Leopard Lizard*.

[5] See https://databasin.org/datasets/421e63060890432d82027edc117dd661/

[6] California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*.

across the entirety of the site and must conform to the current survey standards established in *Burrowing Owl Survey Protocol and Mitigation Guidelines*[7] and the *Staff Report on Burrowing Owl Mitigation*.[8]

If occupied burrows are observed, we request artificial replacement burrows at a ratio of 1:1.[9] Furthermore, Defenders recommends consultation with CDFW to establish an appropriate ratio for BUOW HM lands. If adhering to the recommended buffers and avoidance is impossible, we emphasize that burrow exclusion is not considered a take avoidance, minimization or mitigation method.[10] However, if burrow exclusion is necessary, we recommend consultation with CDFW for the creation of an exclusion plan.

c. San Joaquin Kit Fox

San Joaquin kit fox (SJKF) is listed as Federally endangered and State threatened, and it has a moderate probability of occurrence on the proposed Project site due to the suitable habitat.[11] Defenders requests protocol-level surveys for the species be performed that, at a minimum, conform to the current survey standards established in the USFWS *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior To or During Ground Disturbance*.[12] Additionally, the Project impacts to SJKF connectivity should be examined within the DEIR.

d. Special-Status Plants and Botanical Surveys

Robust floristic surveys should be conducted that adhere to CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*.[13] These guidelines include ensuring surveys are accurately timed to identify all rare plants, which may mean multiple surveys throughout the growing season are necessary. Additionally, reference sites must be utilized to determine if the special-status plant species are identifiable at the time of the year that the botanical field surveys take place.

4. Cumulative Impacts

The ever-increasing large-scale renewable energy footprint within the San Joaquin Valley is significantly impacting biological resources in the region. As the number of projects increases, so does the loss, degradation and fragmentation of crucial habitat for a suite of highly imperiled San Joaquin Valley-associated species. This proposed Project, the surrounding solar projects, and other regional development such as housing, distribution centers and fossil fuel extraction significantly

[7] California Burrowing Owl Consortium. 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*.

[8] California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*.

[9] California Burrowing Owl Consortium. 1993. *Burrowing Owl Survey Protocol and Mitigation Guidelines*.

[10] California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*

[11] See https://databasin.org/datasets/db0d750efaf54842b7069f8cd41264ad/

[12] U.S. Fish and Wildlife Service. 2011. *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior To or During Ground Disturbance*. Sacramento, California.

[13] See https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline

contribute to the already considerable adverse cumulative impacts on biological resources, including but not limited to BNLL, BUOW and SJKF.

We request that this analysis closely examine the population status and direct and indirect cumulative impact of past, present and reasonably foreseeable activities that adversely impact biological resources with the potential to occur on or near the proposed Project site. Furthermore, we recommend the analysis include a detailed map of all existing and planned development within the remaining habitat and connectivity corridors for BNLL and SJKF. CDFW has stated in several previous comments on proposed solar projects that its staff is available for consultation in support of cumulative impact analyses.[14,15] We recommend consultation with CDFW to identify an acceptable methodology to evaluate cumulative impacts at the resource level.

Thank you once again for the opportunity to provide scoping comments on the proposed Cornucopia Hybrid Solar Project and for considering our comments. Defenders looks forward to reviewing the DEIR for the Project and request to be notified when it is available. Please feel free to contact me with any questions.

Respectfully submitted,

Sophia Markowska
Senior California Representative
Defenders of Wildlife
Smarkowska@defenders.org

[14] California Department of Fish and Wildlife. 2022. *Pelican's Jaw Hybrid Solar Project by Pelican's Jaw Solar, LLC. Notice of Preparatrion (NOP). State Clearinghouse No. 2022110559.*

[15] California Department of Fish and Wildlife. 2022. *Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Jasmine Solar Project (Project) in Kern County. SCH No. 2022060193.*

[redacted]

Subject: FW: Accessibility Concerns Regarding Solar Project Planning

From: Diana Carroll [redacted]
Sent: Monday, June 3, 2024 4:59 PM
To: Shaw, Jeremy <jshaw@fresnocountyca.gov>
Subject: Accessibility Concerns Regarding Solar Project Planning

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Hi there, Jeremy.
My name is Diana Carroll. I attended the public scoping meeting on May 14 via phone call.
I had raised the question regarding access to and from the "Disadvantaged Community of Lost Hills Rd."
My folks have a homestead property out there and like everyone else, rely on the little dirt paths that lead to various lots, ranches, and dwellings.
These little paths are directly off of Hwy 33. There is currently no other way to exit or enter.
As per the outline of proposed project, perimeters, it seems this entry to our properties, will be wiped out.
Or perhaps, there was going to be an alternative route to gain access to our properties, that hasn't been formally mentioned?
I was hoping you might share information regarding this little conundrum that's been a topic of concern.

My folks APN:
[redacted]

Property Owners:
[redacted] and
[redacted]

I thank you so much for your time.
Looking forward to hearing from you.

Kind regards,

Diana Carroll

From: Shaw, Jeremy
To: Selena Whitney
Cc: Janna Scott; Martin Nascimento; John Crosby; Melanie Halajian
Subject: FW: Preparation of EIR for the Cornucopia Hybrid Solar Project
Date: Tuesday, June 4, 2024 12:05:48 PM
Importance: High

From: Nichole Escalon <nescalon@tachi-yokut-nsn.gov>
Sent: Tuesday, June 4, 2024 11:58 AM
To: Shaw, Jeremy <jshaw@fresnocountyca.gov>
Cc: Samantha McCarty <SMcCarty@tachi-yokut-nsn.gov>; Shana Powers <SPowers@tachi-yokut-nsn.gov>
Subject: Preparation of EIR for the Cornucopia Hybrid Solar Project

CAUTION!!! - EXTERNAL EMAIL - THINK BEFORE YOU CLICK

Dear Jeremy,
Thank you for contacting the Santa Rosa Ranchera Tachi Yokut Tribe regarding the Preparation of EIR for the Cornucopia Hybrid Solar Project. Due to the location and tribal knowledge of this area the tribe is requesting:

1. SLF Search and the results
2. Record Search and the results
3. Cultural Presentation
4. Tribal Monitor
5. Burial Treatment
6. Curation Agreement
7. Tribal Monitors during the decommissioning of the project
8. Native Plants in the seed mix
9. KMZ file of the project location

If you have any questions, comments, or concerns please contact myself or the SRR Cultural Department. Thank you.

Nichole Escalon
Cultural Monitor Specialist 1
Santa Rosa Rancheria Tachi Yokut Tribe
(559) 924-1278 x 4092

Appendix B
Project Description

B.1 Integrated Pest Management Plan

Integrated Pest Management Plan
Cornucopia Hybrid Project
Fresno County, California

Project Applicant:
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

Contact: Martin Nascimento, Senior Development Manager

Lead Agency:
Fresno County Department of Public Works and Planning
Development Services Division
2220 Tulare Street, 6th Floor
Fresno, California 93721

Date: April 16, 2024

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APN	Assessor's Parcel Number
BMP	Best Management Practices
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CUP	Conditional Use Permit
EPA	United States Environmental Protection Agency
mph	miles per hour
MW	megawatt
NRCS	Natural Resource Conservation Service
PPE	Personal Protective Equipment
SR	State Route
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WEAP	Worker Environmental Awareness Program
WSS	Web Soil Survey

1.1 - Purpose of the Plan

This Integrated Pest Management Plan (Plan) was done so in support of the Cornucopia Hybrid Project (proposed project) in Fresno County, California. The purpose of this plan is to provide guidance and a process to control the introduction and spread of invasive species on the project site. Invasive species are non-native organisms whose introduction causes or is likely to cause economic or environmental harm or harm to human, animal, or plant health (Executive Order No. 13751, 2016).

The objectives of this plan are as follows:

- Describe the project and the need for invasive species management on the project site;
- Describe existing conditions on the project site, including vegetation communities and soils;
- Describe the goals of the invasive species/pest control efforts, including description(s) of area(s) that would be managed for invasive species occurrence, and targets for assessing and maintaining conditions on the project site;
- Describe how the use of sheep for vegetation maintenance will not negatively impact pest management practices described in this plan;
- Describe methods that would be used to monitor, manage, and report invasive species on the project site; and
- Provide a structure for adaptive management, identify roles and responsibilities, and provide communications pathways.

1.2 - Need for the Plan

The project applicant, Cornucopia, proposes to construct a new utility-scale 300-megawatt (MW) solar project consisting of 686,880 solar modules rated at 585 watts (W), a 300MW battery storage system area, and two fabricated structures, one to be used for maintenance and operation and the second for control services. This plan also plays a critical role in allowing for sheep grazing on the proposed project as a method of vegetation maintenance. Through this plan, methods are detailed on how to eliminate invasive species in manner that is conducive with sheep grazing.

This Plan fulfills a requirement of the Conditional Use Permit (CUP) for the project. The CUP requires that a pest management plan be submitted to the Fresno County Department of Public Works and Planning Development Services Division (County) for approval and implementation on the proposed project.

SECTION 2: PROJECT DESCRIPTION

2.1 - Project Location

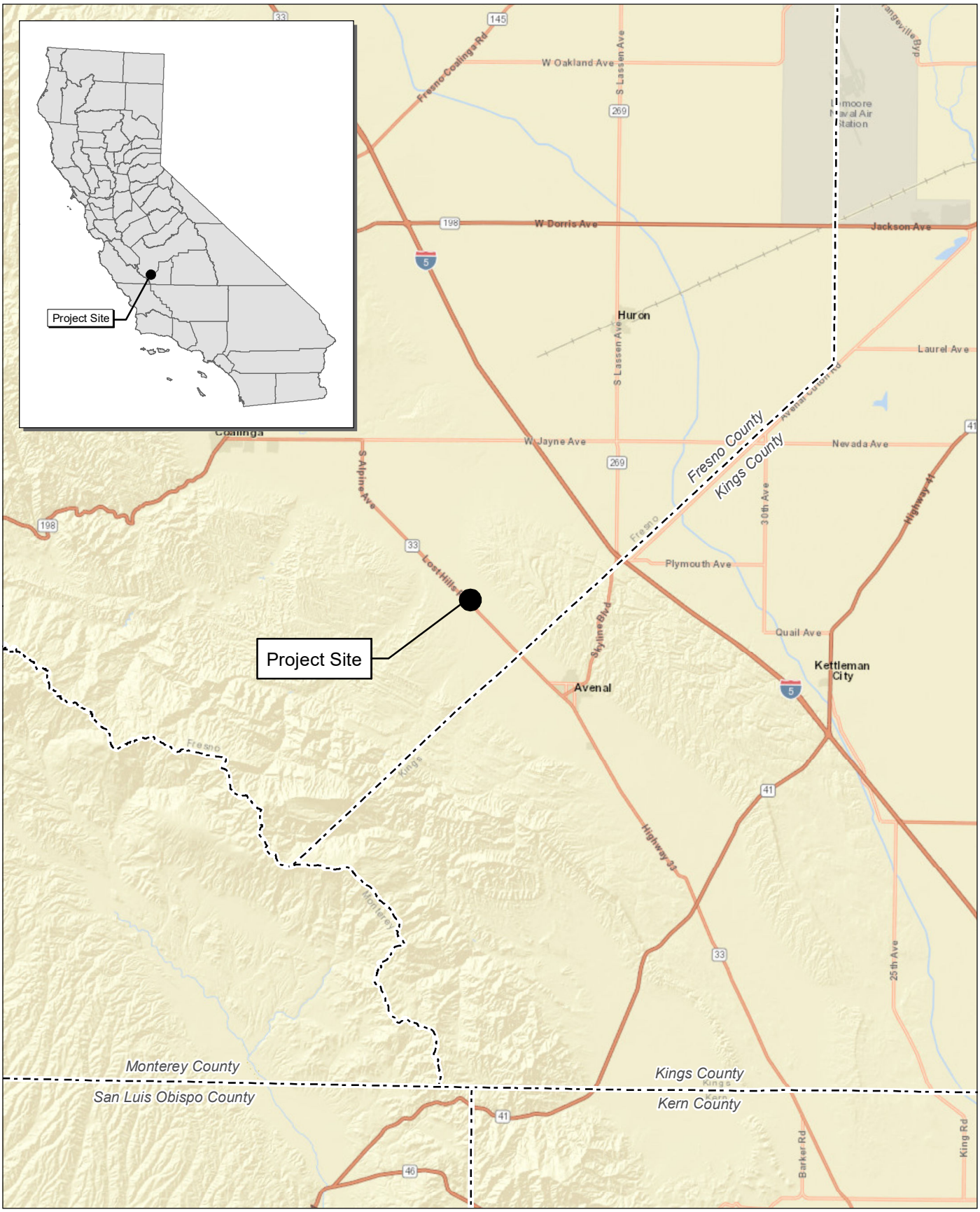
The approximately 2,446.46 -acre project site is located in an unincorporated area of western Fresno County, California. For the purposes of evaluating impacts under the California Environmental Quality Act (CEQA), approximately 2,385.11 acres of the 2,446.46 acres were evaluated. The project site is situated between the unincorporated communities of Coalinga and Avenal at the base of the eastern slope of the Diablo Range. Interstate 5 (I-5) is located approximately 4 miles east of the project site (Exhibit 1). The project site is bifurcated by State Route (SR) 33 (South Lost Hills Road) and Sutter Avenue (Exhibit 2). I-5 and SR33 provide regional access to the site. SR-33 and Sutter Avenue provide local access to the site.

The site is located within portions of eight parcels associated with Assessor's Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, and 090-030-03, 090-040-01; and 085-110-23S, 085-110-12, and 085-110-13S (totaling approximately 2,905.80 acres). The project site is located within Township 1 South, Range 16 East, Sections 34, 35, and 36, Township 22 South, Range 17 East, Sections 1, 2, and 3, and Range 17 East, Section 6 of the *Avenal, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map.

The project site is located in a relatively flat area within the western portion of the San Joaquin Valley. The area surrounding the project site is predominantly agricultural and industrial land, with large areas of vacant, undeveloped land. The project site consists of agricultural and vacant, undeveloped land. Utility poles/power lines are located around the perimeter of the site. There is a water well located near the intersection of Sutter Avenue and S Lost Hills Road (SR-33) which would supply water during construction and operations. The project site is surrounded by vacant land and agricultural land to the north and south, a rural residential area and vacant land to the east, and vacant, undeveloped land to the west. SR-33 runs through the project site from northwest to southeast, and Sutter Avenue transects the site from north to south.

2.2 - Project Description

The project applicant, Cornucopia, proposes to construct a new utility-scale 300-megawatt (MW) solar project consisting of 686,880 solar modules rated at 585 W, a 300MW battery storage system area, and two fabricated structures, one to be used for maintenance and operation and the second for control services (proposed project).

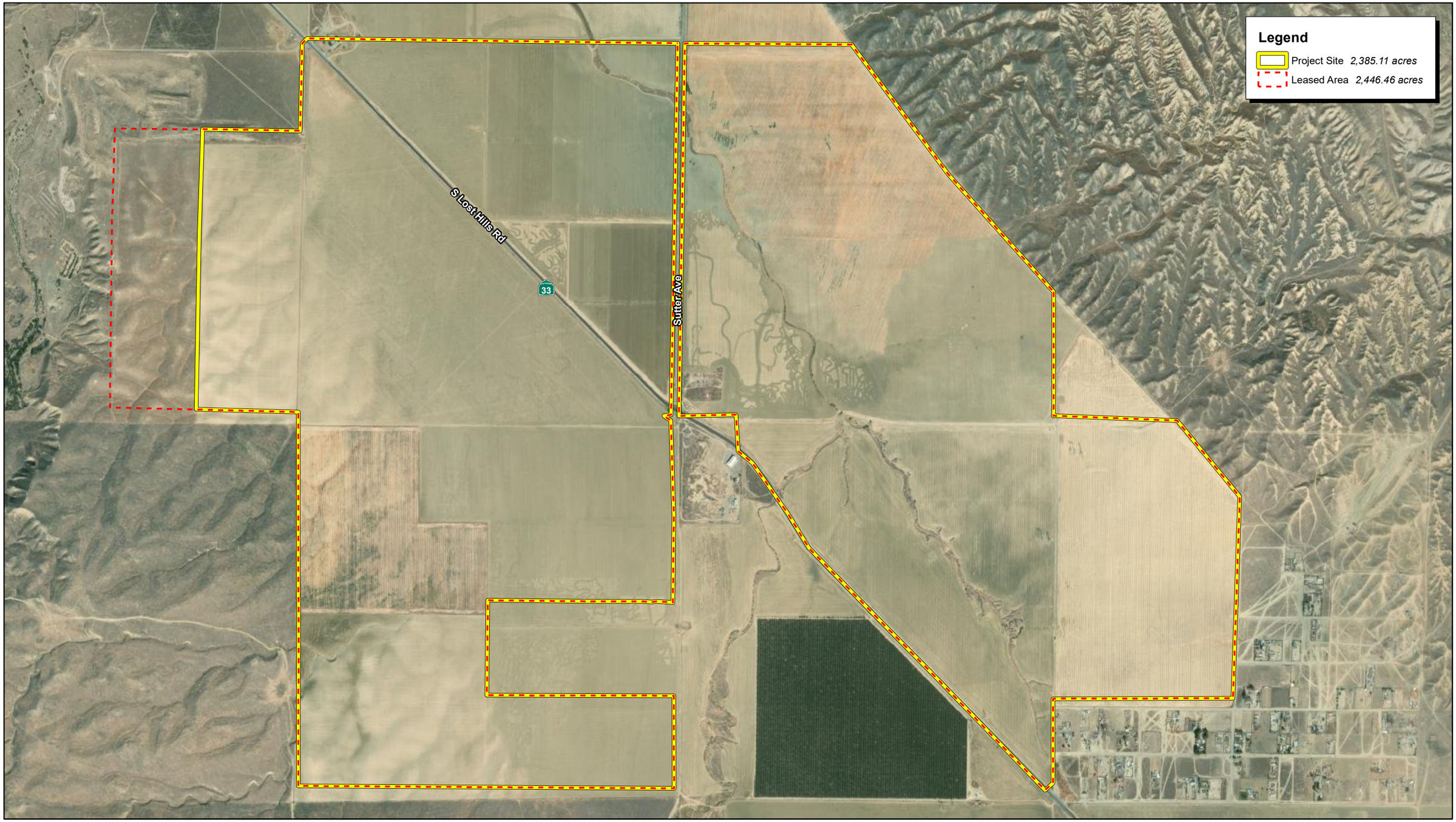


Source: Census 2000 Data, The California Spatial Information Library (CaSIL). ESRI World Street Map.

5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
INTEGRATED PEST MANAGEMENT PLAN



Source: ESRI Aerial Imagery. Fresno County. BayWa r.e. Solar Projects, LLC

1,300 650 0 1,300
Feet

Exhibit 2
Local Vicinity Map

CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
INTEGRATED PEST MANAGEMENT PLAN

SECTION 3: EXISTING CONDITIONS

3.1 - Topography and Hydrology

The project site ranges in elevation from roughly 680 to 810 feet above sea level with elevation gradually sloping upward from south to north. Canoas Creek traverses through the project site from its northern to southeastern portions, where it diverges and continues within drainages that flow to the south and southeast.

3.2 - Vegetation Communities

The project site includes vegetation communities that were influenced by current and past uses, which consist predominantly of agriculture. The vegetation communities and land cover types are described below and depicted in Exhibit 3.

3.2.1 - Fallow Land

Fallow land is the most extensive land cover type present on-site. Fallow lands are agricultural lands that are out of crop rotation for the current growing season. Vegetation on fallow lands may include annual, weedy species, but more typically these lands are devoid of vegetation following discing efforts performed in order to promote seasonal crop cultivation. Fallow lands do not typically provide good foraging or breeding habitats for wildlife but allow for dispersal. This community comprises 2,209.60 acres of the project site and 2,481.67 acres of the site and 500-foot buffer.

Historic aerial photography indicates the project site has gone through periods of fallowness as part of its agricultural usage, usually alternating between fallow and cultivated. Previous disturbance events likely included repeated discing and other vegetation control activities associated with agricultural practices.

Very sparse weed vegetation was observed within the fallowed land during the field survey including black mustard (*Brassica nigra*), London rocket *(Sisymbrium irio),* prickly Russian thistle *(Salsola tragus),* ripgut brome *(Bromus diandrus)*, and slender oat *(Avena barbata).*

3.2.2 - Dirt Access Roads

Dirt access roads traverse the northwestern, southwestern, and central portions of the project site between areas of fallowed land and are characterized by bare areas with some ruderal vegetation. Non-native grasses and forbs were observed on the edges of the roads, including London rocket and turkey mullein (*Croton setiger*). This land cover type composes 5.31 acres of the project site and 11.83 acres of the site and 500-foot buffer.

3.2.3 - Irrigated Crops

Areas within the southern and central portions of the project site consist of irrigated croplands for common wheat (*Triticum aestivum*) production. Historic aerial photography indicates that this area

of the project site is cycled through fallow periods. This land cover type comprises 109.89 acres of the project site and 110.45 acres of the site and 500-foot buffer.

A field survey conducted by biologists on October 3, 2023, to verify vegetation types within additions to the project area found that the irrigated cropland had been fallowed sometime within the previous months. No wheat fields or vegetation were present within areas mapped as irrigated cropland during the time of the October survey.

3.2.4 - Wild Oats and Annual Brome Grasslands

Wild oats and annual brome grasslands (*Avena* spp.–*Bromus* spp. Herbaceous Semi-Natural Alliance) are present in a small amount on the project site but are mostly located within its 500-foot buffer to the east and west of the site. Dominant grass species observed include slender oat and ripgut brome, with small fescue, shining pepper grass, and adobe popcornflower *(Plagiobothrys acanthocarpus*) as co-dominant species. This community composes 10.81 acres of the project site and 303.06 acres of the site and 500-foot buffer.

3.2.5 - Developed Access Roads

Developed access roads are characterized by a combination of developed and hardscaped areas, including paved roads, with little or no exposed soil substrates. SR-33 and Sutter Avenue traverse through and adjacent to the project site and are frequently used roadways. Additionally, paved access roads in varying degrees of condition can be found interspersed throughout the central portion of the project area. These roadways have the potential to provide barriers to wildlife movement. This land cover type composes 20.15 acres of the project site and 32.01 acres of the site and 500-foot buffer.

3.2.6 - Developed/Barren

The project site contains a small amount of developed land coverage and the northwestern, southern and central portions of the 500-foot buffer surrounding the project site contain developed areas with associated barren areas. Developments are characterized by a combination of developed and hardscaped areas and manicured vegetation, including street/shade trees, lawns, and shrubs, and barren/exposed soil substrates. Irrigation and fertilization allow for tropical and other non-native and ornamental species to flourish in these developed areas. Trees are often grown in a spaced pattern with an open understory. These conditions provide habitat to a low diversity of wildlife that are tolerant of human-modified environments. The developed/barren land uses adjacent to the project site include a trailer park to the southeast, a car scrap lot within the center of the site, a homestead to the northwest, and an abandoned structure in the far northwestern corner of the site. No landscaping is present in the developed/barren areas, though weedy, ruderal species were evident in these areas along with ornamental vegetation including poplar trees (*Populus* spp.), eucalyptus (*Eucalyptus globulus Labill*), and oleander bushes (*Nerium oleander L*). 2.63 acres of developed land are present in the project site and 76.13 acres are present in the site and 500-foot buffer.

3.2.7 - Pistachio Orchard

A 22.57-acre orchard is located within the 500-foot buffer area around the southern portion of the project site. No portion of the orchard is located within the project site boundaries. The irrigated orchard consists of pistachio *(Pistacia vera)*. The trees are arranged in rows and the orchards are actively managed, with sparse herbaceous understory plant cover that consists of sparse ruderal vegetation.

3.2.8 - Black Poplar Hedgerow

A hedgerow of ornamental black poplar trees *(Populus nigra)* is located along the southern project site boundary, adjacent to the pistachio orchard. The black poplar trees are arranged in a single 1,500-foot hedgerow, dividing fallowed land, within project site boundaries, and the adjacent pistachio orchard south of the project site. The hedgerow comprises 0.51 acres within the 500-foot buffer.

3.2.9 - Ruderal

Ruderal habitat is classified as areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association but continue to retain a soil substrate. Typically, if any vegetation is present, it is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance or show signs of past or present animal usage that precludes them from providing viable natural habitat for uses other than dispersal. Examples of ruderal land include areas that have been graded, land that is repeatedly cleared for fuel management purposes and/or experienced repeated use that prevents natural revegetation (i.e., dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old home-sites. Ruderal areas are not present within the project boundary and comprises 38.41 acres of the 500-foot buffer.

Areas of ruderal habitat present within the project site are primarily located within the central portion of the site west of SR-33. Disturbance within the ruderal habitat has eliminated native vegetation. Vegetation that was present within this habitat type includes Russian thistle, annual bursage (*Ambrosia acanthicarpa*), dry grasses (*Poaceae* spp.), prickly lettuce (*Lactuca serriola*), and California broomsage (*Lepidospartum squamatum*).

3.3 - Soils

The Natural Resource Conservation Service (NRCS) Web Soil Survey (WSS) mapped 14 soil types within the 2,385.11-acre site (Exhibit 4). These soils are very deep, moderate to well drained soils. The soils that dominate the project site include Cerini, Ciervo clay, Milham, Milham-Guijarral, and Panoche soils. These soil types, and other soils present within the project site and their primary characteristics are summarized in Table 1.

Table 1: Soil Types Present on the Project Site

Soil Name	Slope	Description	Acres of Project Site (AC)
Milham-Guijarral association	5–15%	The Milham-Guijarral series consists of very deep (more than 80 inches), well drained soils that formed from calcareous sedimentary rock sources. Milham-Guijarral soil is found on fan remnants.	285.54
Guijarral sandy loam	2–5%	The Guijarral series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Guijarral soil is found on fan remnants.	57.44
Yribarren clay loam	0–2%	The Yaribarren series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Yribarren soil is found on alluvial fans.	86.48
Panoche loam	0–2%	The Panoche (loam) series consists of very deep, well drained soils that formed from sedimentary rock sources. Panoche soil is found on alluvial fans.	201.85
Panoche sandy loam	0–2%	The Panoche (sandy loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Panoche soil is found on alluvial fans.	149.23
Panoche loam	2–5%	The Panoche (loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Panoche soil is found on alluvial fans.	190.96
Panoche clay loam	0–2%	The Panoche (clay loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Panoche soil is found on alluvial fans.	13.51
Excelsior sandy loam	0–2%	The Excelsior (sandy loam) series consists of very deep, well drained soils that formed from calcareous coarse-loamy sedimentary rock sources. Excelsior soil is found on alluvial fans.	140.75
Milham sandy loam	0–2%	Milham (sandy loam) series consists of very deep, well drained soils that formed from igneous and sedimentary rock sources. Milham soil is found on terraces, fan remnants, plains, and alluvial fans.	233.10
Milham sandy loam	2–5%	Milham (sandy loam) series consists of very deep, well drained soils that formed from igneous and sedimentary rock sources. Milham soil is found on terraces, fan remnants, plains, and alluvial fans.	85.54
Ciervo clay	0–2%	Ciervo (clay) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Ciervo soil is found on fan skirts.	451.91
Cerini sandy loam	0–2%	Cerini (sandy loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Cerini soil is found on alluvial fans.	221.03

Soil Name	Slope	Description	Acres of Project Site (AC)
Cerini clay loam	0–2%	Cerini (clay loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Cerini soil is found on alluvial fans.	265.30
Excelsior, sandy substratum-westhaven association, flooded	0–2%	Excelsior (sandy loam, sandy substratum) series and westhaven (loam) series consist of very deep, well drained soils that formed from calcareous sedimentary rock sources. These soils are found on alluvial fans and flood plains.	2.47
Source: Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey (WSS). United States Department of Agriculture (USDA). Website: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed May 24, 2023 and September 25, 2023.			

3.4 - Occurrence of Invasive Species and Pests

3.4.1 - Non-native Plants

Several non-native species that are ranked by California Invasive Plant Council (Cal-IPC) occur in vegetation communities on and adjacent to the project site, including black mustard, London rocket, prickly Russian thistle, ripgut brome, red brome, slender oat, salt cedars, and farmer's foxtail, among others. Non-native species with Cal-IPC rankings are described further below. The Cal-IPC rankings are as follows:

- **High:** Species rated as High have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment, and most are widely distributed ecologically.
- **Moderate:** Species rated as Moderate have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, and their occurrence may range from limited to widespread.
- **Limited:** Species ranked as Limited are invasive, but their ecological impacts are minor on a Statewide level or there is not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness, though they may be locally persistent and problematic.

Black Mustard

Black mustard is ranked as Moderate by the Cal-IPC. This species is a winter annual herb/forb (family Brassicaceae) that occurs in open disturbed areas, roadsides, fields, rangelands, agronomic crops, orchards, forestry sites, and many natural communities. The spread of black mustard can increase

the frequency of fires in chaparral and coastal sage scrub, changing these habitats to annual grassland. Black mustard occurs across the project site but in sparse distribution.

Saharan Mustard

Saharan mustard, also known as African mustard, is ranked as High by Cal-IPC. Saharan mustard is a winter annual (family Brassicaceae) found in the Sonoran and Mojave Deserts of southwestern California, where it occurs in desert scrub and desert dune communities. This species readily invades recently burned areas and is known to increase fuel load and fire frequency, often leading to conversion of scrubland to grassland. The high biomass that Saharan mustard populations achieve, along with frequent fires, may deplete soils of important nutrients, making native habitat recovery more difficult. Saharan mustard is sparsely distributed across the project site.

London Rocket

The London rocket is ranked as Limited by Cal-IPC. This species is a winter annual (family Brassicaceae) that is found in abandoned fields, waste places, roadsides, and orchards. It is an early season species that matures before most native species and can outcompete them. London rocket occurs across the project site but in sparse distribution.

Prickly Russian Thistle

Prickly Russian thistle is ranked as Limited by Cal-IPC. This species is known to occur in the project vicinity and could readily spread during project implementation. Prickly Russian thistle is a large, bushy summer annual (family Chenopodiaceae) that occurs in agricultural areas, roadsides, disturbed areas, and desert scrub communities throughout California. Russian thistle can impede traffic and create fire hazards, and is a host of the beet leaf-hopper, an agricultural insect pest. Prickly Russian thistle occurs across the project site, but in sparse distribution.

Red-stem Filaree

Red-stem filaree is ranked as Limited by Cal-IPC. Red-stem filaree is an aggressive annual/biannual (family Geraniaceae) that is commonly found along roadsides, grasslands, fields, and semi-deserted areas throughout California. It can outcompete native grasses and forbs. Red-stem filaree is common across the entire project site.

Ripgut Brome

Ripgut brome is rated Moderate by Cal-IPC. Ripgut brome is an annual grass (family Poaceae) that occurs in grasslands, scrublands, and woodlands throughout California. Ripgut brome becomes very dry and flammable during the dry season, increasing wildfire frequency and conversion of scrubland and woodland to grassland. Ripgut brome seeds are barbed and stick to fur and fabric, and the seeds may spread great distances via transport by animals and people. Ripgut brome occurs across the project site, but in sparse distribution, and is co-dominant in the wild oats and annual brome grasslands in the 500-foot buffer. It is also present in Canoas Creek.

Red Brome

Red brome, also known as foxtail chess, is rated as High by the Cal-IPC. Red brome is a cool season annual grass (family Poaceae) that invades disturbed areas, roadsides, agricultural fields, rangelands, forestry sites, and native vegetation communities throughout California. Red brome spreads rapidly in desert scrub and pinyon pine-juniper woodlands, three-needle pine woodlands, and coastal scrub, where it increases fire frequency and converts natural communities to non-native, annual grassland. Red brome is highly flammable and promotes wildfires in desert scrub communities that are not adapted to fire. Populations increase during years of average to high rainfall. During years of low rainfall, a high percentage of seedlings die prior to reproducing, thereby depleting the seedbank. Seed dormancy may not last more than two to three years. Red brome is common in the wild oats and annual brome grasslands in the western portion of the project site.

Rattail Fescue

Rattail fescue (*Festuca myuros*) is rated as Moderate by Cal-IPC. This species is an annual grass (family Poaceae) that is widely distributed in California, where it is commonly found in disturbed areas. This species may also occur in grasslands, where it reduces habitat for native perennial grasses. This species is present in patchy areas across the project site and in greater abundance in the wild oats and annual brome grasslands.

Slender Oat

Slender oat is rated as Moderate by Cal-IPC. This species is a winter annual grass (family Poaceae) that occurs in grasslands, crop fields, orchards, vineyards, gardens, roadsides, and other disturbed sites. Slender oat occurs across the project site, but in sparse distribution, and is co-dominant in the wild oats and annual brome grasslands. It is also present in Canoas Creek.

Farmer's Foxtail

Farmer's foxtail (*Hordeum murinum*) is ranked as Moderate by Cal-IPC. It is an annual grass (family Poaceae) that is native to the Mediterranean, northern Africa, and temperate Asia. This species is common at disturbed sites and can outcompete native plants. Farmer's foxtail is uncommon on the project site and is distributed mostly in the wild oats and annual brome grasslands, in Canoas Creek, and near roadsides.

Kentucky Bluegrass

Kentucky bluegrass (*Poa pratensis*) is rated as Limited by Cal-IPC. This species is a perennial grass (family Poaceae) that is traditionally used in landscaped lawns and has escaped cultivation. It is found sporadically in many different habitats in California and increases in distribution and density with grazing and burning. Kentucky bluegrass out competes with native species, reducing overall diversity and altering species composition. Kentucky bluegrass is uncommon on the project site and is distributed mostly in the wild oats and annual brome grasslands, in Canoas Creek, and near roadsides.

Curly Dock

Curly dock (*Rumex crispus*) is rated as Limited by Cal-IPC. This species is a perennial herb (family Polygonaceae) found throughout California. It grows in a variety of habitats, including grassy areas,

waste ground, roadsides, and near sand dunes but is primarily found in flood plains and in seasonally flooded or irrigated agricultural areas. Curly dock is uncommon on the project site and is distributed mostly in Canoas Creek and along roadsides.

Salt Cedar

Salt cedar is rated as High by Cal-IPC. This species is a shrub or a tree (family Tamaricaceae) that occurs along streams and lake shores throughout California. It is associated with dramatic changes in geomorphology, groundwater availability, soil chemistry, fire frequency, plant community composition, and native wildlife diversity. Salt cedar is restricted to the Canoas Creek channel within the project site.

3.4.2 - Non-native Wildlife

Several non-native wildlife species occur in the project vicinity, including rock pigeon (*Columba livia*), Eurasian collared dove (*Streptopelia decaocto*), European starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*). Avian species may find nesting habitat throughout the project site on bare ground, in grasses, shrubs, and on trees adjacent to the site.

3.5 - Other Invasive Species in Project Vicinity

Additional non-native or invasive plant and wildlife species occur in the Fresno County vicinity and may be spread onto the project site. Major pest species with a potential to spread onto the project site are described below.

3.5.1 - Non-native Plants

Yellow Star Thistle

Yellow star thistle (*Centaurea solstitialis*) is rated as High by Cal-IPC. This species is a bushy winter annual (family Asteraceae) that propagates rapidly by seed and is found in open hills, grasslands, open woodlands, fields, roadsides, and rangelands. It is considered one of the most serious invasive plants in the State and Fresno County is one of the most affected counties in California.

Perennial Pepperweed

Perennial pepperweed (*Lepidium latifolium*) is rated as High by Cal-IPC. This species is a perennial herb (family Brassicaceae) found in moist or seasonally wet sites throughout California and is most problematic in riparian and wetland areas. It grows very aggressively, forming dense colonies that exclude native species. Seeds and root fragments are spread easily by flooding and soil movement, and seeds stick to tires, shoes, and animals, making continued dispersion difficult to avoid.

Heart-podded Hoary Cress

Heart-podded hoary cress (*Lepidium draba*) is rated as Moderate by Cal-IPC. This species is a perennial herb (family Brassicaceae) found most commonly in riparian areas and marshes. It quickly colonizes disturbed sites, irrigated agricultural fields, roadsides, and ditches and spreads rapidly due to its prolific seed production.

Lens-podded Hoary Cress

Lens-podded hoary cress (*Lepidium chalepense*) is rated as Moderate by Cal-IPC. This species is a perennial herb (family Brassicaceae) that is relatively infrequent in California. It occurs in disturbed areas, pastures, fields, and riverbanks and forms dense infestations that crowd out forage plants.

Rush Skeletonweed

Rush skeletonweed (*Chondrilla juncea*) is rated as Moderate by Cal-IPC. This species is a perennial or biennial forb (family Asteraceae) and is considered an uncommon weed. It can grow in disturbed soils of roadsides, croplands, especially irrigated grain fields, semi-arid pastures, rangelands, and residential properties.

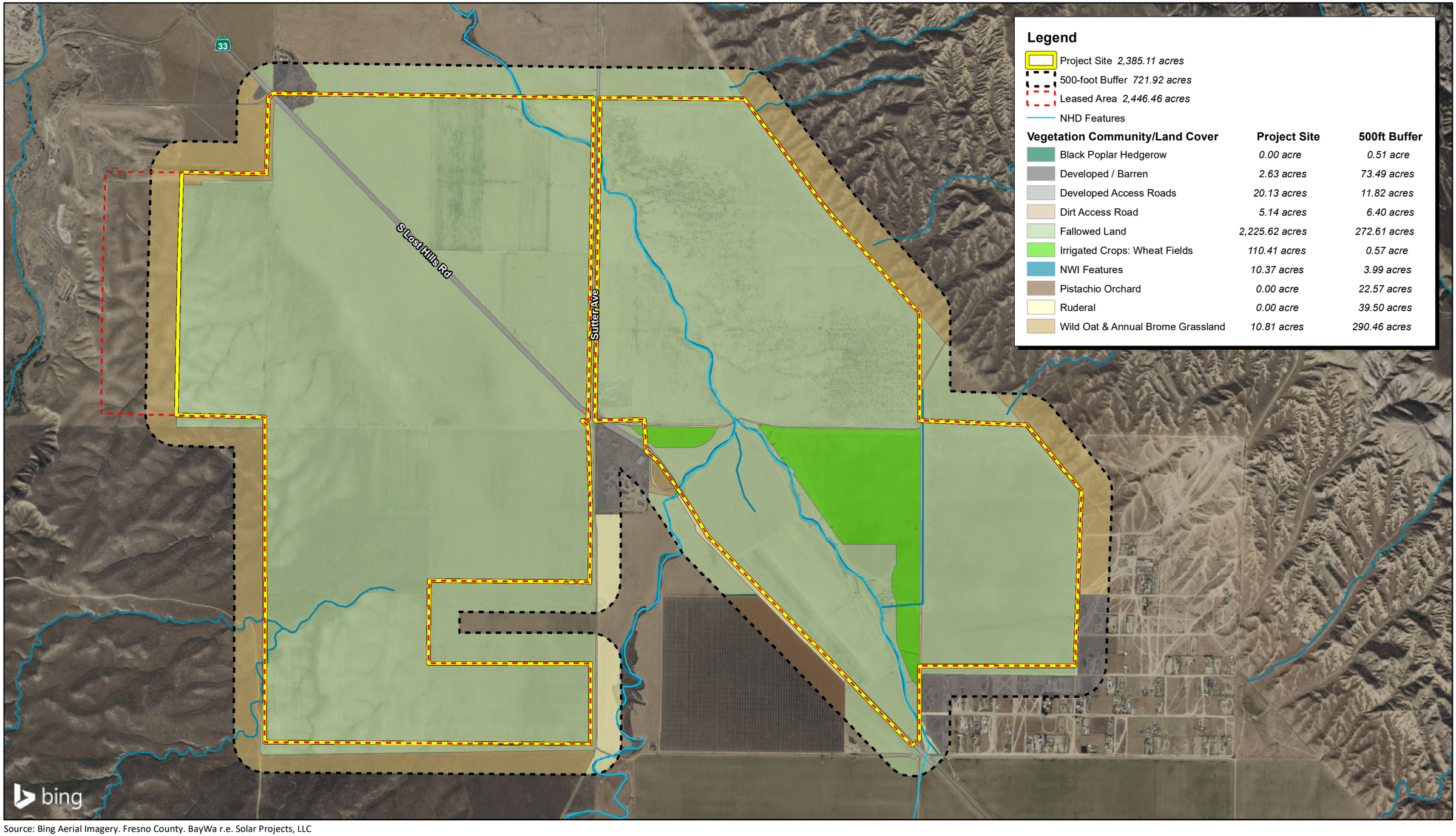
3.5.2 - Non-native Wildlife

Norway Rat

The Norway rat, also called the brown rat (*Rattus norvegicus*), is an Old World rodent species thought to have originated in northern China. This species has since spread to a nearly worldwide distribution through becoming a commensal species with humans. This species thrives in areas where humans are present, including human structures such as sewers and buildings. Brown rats may build elaborate burrows with chambers for food storage and nesting. In urban areas, rats live largely on discarded human food but may also become pests, eating food from cupboards or crops from fields. Away from urban areas, rats eat a variety of plants as well as whatever protein sources they can acquire.

House Mouse

The house mouse (*Mus musculus*) is one of the most serious rodent pests in the United States. This species thrives under a variety of conditions, including in and around homes and commercial structures, as well as in open fields and on agricultural lands. House mice consume and contaminate food meant for humans, pets, livestock, or other animals, and cause considerable damage to structures and property.



Legend

- Project Site *2,385.11 acres*
- 500-foot Buffer *721.92 acres*
- Leased Area *2,446.46 acres*
- NHD Features

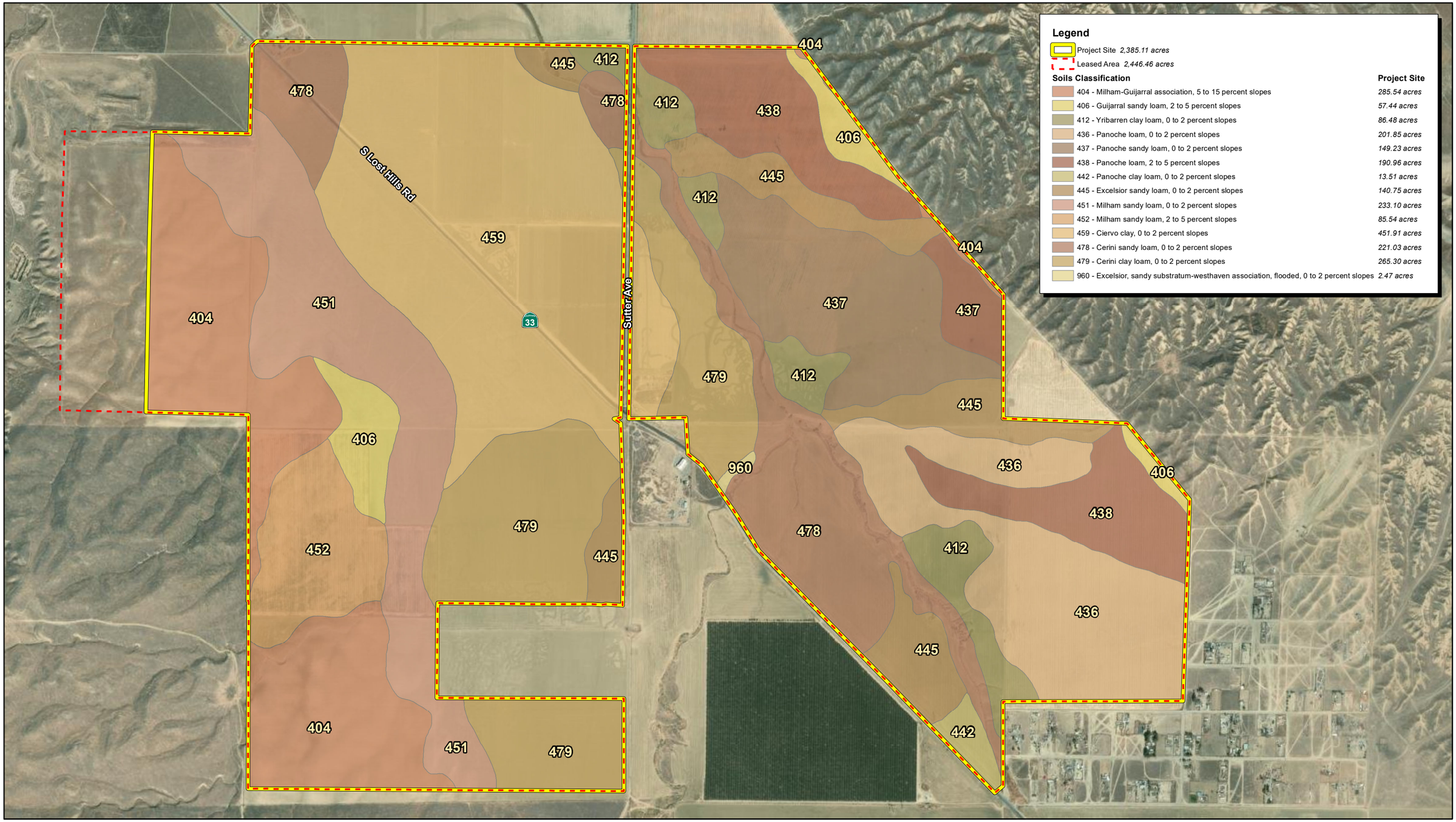
Vegetation Community/Land Cover	Project Site	500ft Buffer
Black Poplar Hedgerow	*0.00 acre*	*0.51 acre*
Developed / Barren	*2.63 acres*	*73.49 acres*
Developed Access Roads	*20.13 acres*	*11.82 acres*
Dirt Access Road	*5.14 acres*	*6.40 acres*
Fallowed Land	*2,225.62 acres*	*272.61 acres*
Irrigated Crops: Wheat Fields	*110.41 acres*	*0.57 acre*
NWI Features	*10.37 acres*	*3.99 acres*
Pistachio Orchard	*0.00 acre*	*22.57 acres*
Ruderal	*0.00 acre*	*39.50 acres*
Wild Oat & Annual Brome Grassland	*10.81 acres*	*290.46 acres*

Source: Bing Aerial Imagery. Fresno County. BayWa r.e. Solar Projects, LLC

1,500 750 0 1,500
Feet

Exhibit 3
Land Cover and Vegetation

CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
INTEGRATED PEST MANAGEMENT PLAN



Source: ESRI Aerial Imagery. BayWa r.e. Solar Projects, LLC. USDA Web Soil Survey, Fresno Western.

1,300 650 0 1,300 Feet

Exhibit 4
Soils Map

CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
INTEGRATED PEST MANAGEMENT PLAN

SECTION 4: GOALS OF INVASIVE SPECIES MANAGEMENT

4.1 - Target Species

4.1.1 - Invasive Plants

Because of High ratings by Cal-IPC and potential for spreading on the project site, the following non-native plants are target species for this Plan:

- yellow star thistle
- Saharan mustard
- perennial pepperweed
- red brome
- salt cedar

Other non-native plant species that occur or could occur on the project site may receive management actions intended for target species if their status on the project site changes.

4.1.2 - Non-native Wildlife

Because of the potential for the following non-native wildlife species to occupy portions of the project site, they are considered target species for this Plan:

- Norway rat
- house mouse

4.2 - Management Goals

Goal 1 **Prevent spread of target invasive species populations during construction of the project.**

The objectives of Goal 1 are to prevent the spread of target species into on-site and off-site areas that are disturbed by project construction activities. This goal will be achieved through implementation of the Invasive Species Monitoring and Management Programs, as outlined below. The Invasive Species Management Program includes Best Management Practices (BMPs) that are recommended by Cal-IPC.

Goal 2 **Prevent spread of novel invasive species into the project site.**

The objective of Goal 2 is to prevent spread of novel invasive species to areas that are disturbed by project construction activities. This goal will be achieved through implementation of the Invasive Species Monitoring and Management Programs, as outlined below. The Invasive Species Management Program includes BMPs that are recommended by Cal-IPC.

Goal 3 **Prevent spread of target invasive species populations during the post-construction phase of the project.**

The objective of Goal 3 is to prevent spread of target species on the project site following conclusion of construction. This goal will be achieved through implementation of the Invasive Species Monitoring and Management Programs, as outlined below. The Invasive Species Management Program includes BMPs that are recommended by Cal-IPC.

SECTION 5: MANAGEMENT PROCEDURES

The following activities shall be implemented by the Permittee to control invasive species on the project site. The invasive species management activities shall be implemented by the project owner and construction contractor. During construction, vegetation management processes will be implemented as stated below by the construction contractor. Since the proposed project will utilize grazing on site, an important goal for this plan is the eliminate the presence of invasive species such as Russian thistle, ripgut brome, and farmers foxtail. Efforts to control these species in order to utilize sheep for vegetation maintenance on the proposed project are listed below.

5.1 - Invasive Species Management Program

5.1.1 - Target Invasive Plant Species

Construction Phase Prevention Practices

Inspection and Cleaning of Vehicles, Equipment, and Materials

Project Site Entry

The Permittee and construction contractor shall ensure that all workers and delivery staff have been notified to remove all visible soil/mud, plant materials, and animal remnants prior to entering the project site. All vehicles, machinery, equipment, and materials that could contain sediments or propagules of target invasive species shall be inspected upon arrival on the project site. If it is determined that the equipment or materials has sediments that could contain seeds of invasive plant species, the driver will be directed to an off-site commercial wash location that provides filtration of seeds and other large sediments from the refuse water. An on-site wash-out area may be used only if the sediments are filtered from the refuse water in a manner that would capture and retain targets species seeds for removal to an off-site disposal site.

Project Site Egress

The project owner and construction contractor shall ensure that all workers and delivery staff have been notified to remove all visible soil/mud, plant materials, and animal remnants prior to exiting the project site. All vehicles, machinery, equipment, and materials that could contain sediments or propagules of target invasive species shall be inspected prior to its departure from the project site. If it is determined that the equipment or materials has sediments that could contain seeds of invasive plant species, the driver will be directed to an on-site wash-out location provided by the project owner. This wash-out area will be used to wash sediments from machinery used on the project site that may contain invasive plant seeds picked up on the project site.

Implement Cal-IPC Best Management Practices

To ensure that project construction activities proceed in a manner that prevents the introduction, transfer, and spread of invasive species, the project owner and construction contractor shall ensure applicable measures contained in the Cal-IPC Best Management Practices for Transportation and Utility Corridors[1] are implemented during the construction phase of the project. Applicable portions of the BMPs listed below shall be implemented during the construction phase of the project:

[1] Cal-IPC. 2012. Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors. Cal-IPC Publication 2012-01. California Invasive Plant Council, Berkeley, CA. Available at www.cal-ipc.org.

- *GN3: Schedule activities to minimize potential for introduction and spread of invasive plants.* Vegetation removal activities should be implemented, to the extent possible, during a non-seeding season for target species. Prior to the initiation of ground-disturbing construction activities in an area known to contain target invasive species, the condition of vegetating, fruiting, and seeding plants shall be assessed to determine the predominant life stage of the population. If dry seed heads are present, plants shall be removed by hand or by cutting prior to the initiation of ground-disturbing construction activities. If mature seed heads are not present, the activities may proceed without removal.
- *GN4 (paraphrased): Designate specific areas for cleaning tools, vehicles, equipment, and gear.* The project owner will provide an on-site wash-out area that will be used to clean prior to its departure from the site any earthmoving equipment that has been used on-site.
- *GN5: Designate waste disposal areas for invasive plant materials and contain invasive plant material during transport.* The project owner shall ensure that any cuttings from invasive plants are collected, stored, and removed from the project site appropriately.
- *GN7 (paraphrased): Clean tools, equipment, and vehicles, as needed, before entering and leaving worksites.* As described above, vehicles, machinery, equipment, and materials entering and exiting the site must be clean. All equipment that arrives on-site shall be inspected. Any earthmoving equipment used on the project site shall be inspected prior to its demobilization from the site. Workers should ensure that any tools and equipment brought onto the project site does not contain sediments from another site.
- *GN10: Minimize soil and vegetation disturbance.* The project owner shall ensure that soil disturbances are kept to a minimum and that only the areas needed for developing the site will be disturbed.
- *MM1: Use a weed-free source for project materials.* Any erosion-preventing materials or mulch that contains organic or vegetable matter must be free of invasive species propagules.
- *MM2 (paraphrased): Prevent invasive plant germination by covering soil stockpiles.* The project owner shall ensure that any soil that is stockpiled for more than 48 hours is covered and fitted with erosion-prevention BMPs.
- *VM5: Render invasive plant material nonviable when disposing materials on-site.* Any vegetation cuttings containing target species seeds must be disposed of in a manner that minimizes the viability of the plant seeds.
- *SD1: Minimize soil disturbance and transport during project implementation.* The project owner shall ensure that soil disturbances are kept to a minimum and that only the areas needed for developing the site will be disturbed. The project owner shall also ensure that soil is not moved excessively around the site.
- *SD2: Implement erosion control practices.* The project owner shall implement BMPs that prevent erosion in accordance with local, State, and federal regulations.
- *SD3: Manage existing topsoil and duff material.* The project owner shall ensure that any soil that is stockpiled for more than 48 hours is covered and fitted with erosion-prevention BMPs.

Construction and Post-Construction Phase Treatment Practices

Mechanical Treatment

A dense or extensive invasive species population may be deemed problematic and worthy of removal or reduction actions via mechanical means. To ensure that project construction activities proceed in a manner that prevents the introduction, transfer, and spread of invasive species, the project owner may elect to implement applicable mechanical removal methods contained in the Cal-IPC Best Management Practices for Non-Chemical Weed Control[2] during the construction phase of the project. Applicable portions of the BMPs contained in Chapters 1 (Removing Whole Plants) and 2 (Controlling Plants By Cutting) may be implemented, as needed, during the construction phase of the project.

Chemical Treatment

If mechanical treatment of annual invasive plant populations does not sufficiently control their spread on the project site, herbicides may be used in a manner consistent with labeling requirements and applicable local regulation. Chemical treatment of annual invasive plant species may include use of pre- and/or post-emergent herbicides. In California, annual invasive plant species are predominantly cool season species that germinate following winter precipitation events. Pre-emergent herbicides would be applied to the soil in the early fall period (September through November) prior to the onset of winter rains and before the seeds germinate. These treatments typically work by seeping into the soil during a rainfall event and inhibiting the growth of seeding plant structures. Post-emergent herbicides would be applied following germination of seeds when vegetative structures of the plants have emerged from the soil, typically and most effectively during early spring (February through April). These treatments are applied directly to the plants and work by killing the vegetative structures.

Herbicide Application

Weed management contractors/personnel responsible for herbicide application shall obtain required federal, State, or local agency permits, as needed, hold all necessary certifications and have received all relevant training. A licensed contractor shall apply herbicides in accordance with all applicable laws, regulations, and permit stipulation, including Environmental United States Protection Agency (EPA) label instructions. Vehicle-mounted applicators may be used for invasive plant infestations readily accessible and passable by vehicle. Manual application methods may be used for controlling invasive plant occurrences that are relatively small, inaccessible by vehicle, or in rough, varied terrain. All herbicide applicators, spreaders and sprayers shall be calibrated before each use to ensure all applications rates and procedures are appropriately implemented. Site staff shall maintain records of any herbicide use on the project site. Herbicides shall not be applied during the following conditions:

- Wind velocities are in excess of 10 miles per hour (mph) during application of liquid herbicides and 15 mph during application of dry herbicides;

[2] Cal-IPC. 2020. Best Management Practices for Non-Chemical Weed Control. Report to California Department of Pesticide Regulation under grant number 18-PML-G002.

- Snow or ice is present on plant foliage; or
- Within 12 hours of forecasted rain, or when plant surfaces are covered with water from recent rainfall or dew.

Herbicide Handling and Transport

Herbicides shall be handled and transported accordingly:

- No herbicides shall be stored in bulk on-site.
- Only the quantity of herbicide expected for each day's use shall be transported.
- Herbicide concentrate shall be transported in approved containers in a controlled manner to prevent spills. Concentrate shall be positioned in delivery or work vehicles in a secured manner and separated from the driving compartment, food, clothing, and safety equipment.
- All mixing shall take place over a drip/spill containment device and at a distance more than 200 feet from open or flowing water, wetlands, or other sensitive resources.
- Herbicides shall not be applied to areas of open or flowing water, wetlands, or other sensitive resources unless authorized by the appropriate regulatory agency.
- All equipment and containers used for herbicide storage, application, and transport shall subject to inspection for leaks or damage.
- Emptied herbicide containers shall be disposed of in accordance with instructions provided on the label.

Herbicide Spills and Cleanup

All spills and inadvertent releases of herbicides shall be addressed immediately upon detection. Spill response kits shall be readily available in herbicide contractor vehicles. Spill shall be addressed accordingly:

- On-site managers and responsible agency personal shall be notified of spills.
- The affected area shall be secured to prevent pedestrian and vehicle traffic through the area.
- All spill response personnel shall use appropriate Personal Protective Equipment (PPE) prior to entering the spill containment area.
- Personnel, while wearing the appropriate PPE, and equipped with the necessary tools and equipment, shall stop the herbicide leak or release.
- All materials associated with spill response, including the released herbicide, affected soils and plants, absorptive material, clothing, and PPE shall be collected and stored in appropriate containers and removed according to appropriate regulations and procedures.
- All generated spill response containers shall be transported, following appropriate regulations, and disposed of legally at an approved disposal facility.

5.1.2 - Target Invasive Wildlife Species

The target pest wildlife species, Norway rat and house mouse, would likely colonize the project site after construction of the project but may become an issue during the construction phase under certain conditions. During the construction phase, pest rodents may become attracted to and colonize areas where human food and sufficient cover exist, such as an on-site construction trailer. During the post-construction phase, these species are not expected to colonize areas supporting the solar array but may be attracted to buildings on-site. Therefore, monitoring and control of pest rodent populations will be implemented during the construction and post-construction phases of the project and will target on-site buildings and other areas frequented by workers that have potential to provide habitat for these species. Monitoring and control of these species is detailed below.

Construction Phase Prevention Practices

Trash Receptacle Use and Maintenance

The project Permittee, contractors, and all on-site workers shall receive training in the requirements of utilizing approved, rodent-proof trash receptacles. The project Permittee and contractors shall use, cover, and empty trash receptacles appropriately. The project Permittee and contractors shall monitor trash receptacles to ensure that they are used properly, kept covered, and emptied regularly. Any potential problems (e.g., food spills, water pooling) that could attract pest rodents shall be corrected by the contractor.

Post-construction Phase Prevention Practices

Building Inspections

During the post-construction phase, the project owner shall periodically inspect on-site buildings and areas around building foundations for signs of rodent activity. The project owner shall seal or cover cracks or openings in building foundations, doors, windows, or other access points, as needed, to prevent access by rodents. The project owner shall ensure that food trash is not made available to pest rodents through use, covering, and emptying of rodent-proof trash receptacles.

Pest Removal Options

If preventive methods have not been effective or sufficient in preventing colonization of the project site during the construction or post-construction phases, trapping shall be implemented to manage rodent pests. Trapping shall be done in accordance with management methods such as those provided in the University of California Integrated Pest Management guidelines.[3]

Because of the proximity of the project site near known San Joaquin kit fox populations, the use of rodenticides shall be prohibited on the project site.

[3] University of California Statewide Pest Management Program. 2023. Pest Notes: Rats. UC ANR Publication 74106. Website: https://ipm.ucanr.edu/home-and-landscape/rats/pest-notes/. Accessed August 24, 2023.

5.2 - Adaptive Management

The goals of invasive species management, target species, and management procedures outlined within this Plan may be modified at any point during its implementation if it is determined that new goals, species, or management methods are more pertinent or need to be updated.

B.2 Cornucopia Hybrid Project Solar Reclamation Plan

Cornucopia Hybrid Project
Solar Reclamation Plan

Fresno County, California

Prepared for

FirstCarbon Solutions
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Prepared by

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December 2023
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EA Project No. 1641501

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LIST OF ACRONYMS AND ABBREVIATIONS

APN	Assessor's Parcel Number
DTSC	Department of Toxic Substances Control
ESS	Energy Storage System
kV	Kilovolt
MW_{AC}	Alternative Current Megawatt
O&M	Operation and Maintenance
PG&E	Pacific Gas & Electric
PV	Photovoltaic
W	Watt

1. INTRODUCTION

The proposed project, Cornucopia Hybrid Project (proposed project), is a 300-megawatt (MW_{AC}) alternative current photovoltaic (PV) solar project located on approximately 2,446.46 leased acres in an unincorporated area (site) of western Fresno County. However, for the purposes of this analysis 2,385.11 acres were evaluated for impacts[1]. It is anticipated that the solar facility has an approximately 35-year project lifespan for solar energy production, unless the facility is repowered using updated equipment. This Solar Reclamation Plan (plan) describes the methodology to remove infrastructure and restore the site to a condition like that found prior to construction.

1.1 DESCRIPTION OF CURRENT LAND USE

The site is located within portions of eight parcels associated with Assessor's Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S (totaling approximately 2,905.80 acres) which are located between the communities of Coalinga and Avenal, near Highway 33 and Sutter Avenue. The project site consists of agricultural and vacant, undeveloped land. The area is relatively flat and currently zoned for agricultural use. The area surrounding the site is predominantly agricultural land, with large areas of vacant, undeveloped land from northwest to southeast. Sutter Avenue transects the site from north to south. The Site Development Plan Drawings are available in Appendix A.

The project site would be leased by Cornucopia Hyrbid LLC. from current landowners.

1 Currently, the proposed project holds lease agreements on 2,446.46 acres; however, the fenced acreage of the proposed site is approximately 1,617.89 acres. All equipment would be situated and installed within the boundaries of the fenced area, but this area is subject to change based on the results of environmental surveys. The proposed project currently contains additional acreage within the northwestern portion of its boundaries that can be utilized if panel areas need to be shifted due to avoidance of identified environmental features.

2. PROJECT DESCRIPTION

Of the approximately 2,446.46 leased acres at the site, approximately 1,617.89 acres would be fenced to contain the solar equipment. The equipment includes 686,880 solar modules rated at 585 watts (W) mounted on single axis tracking racking and connected to 74 power electronics inverter (inverter) units. In addition to the solar array systems, an energy storage system (ESS), a substation, and a utility switching station would be constructed just north of the most southeastern array area. The proposed project and features are shown in the Site Development Plan Drawings within Appendix A.

2.1 SOLAR EQUIPMENT

The proposed project equipment would include approximately 686,880 single-axis PV panels on single access tracking racking. PV panels would be mounted at an orientation to optimize sun both daily and seasonally and to allow for maximum rotation of the panel. The piers to support that tracking system would be installed to accommodate maintenance personnel and design parameters that meet applicable Fresno County fire safety requirements. The panels would be connected to the inverter units. Each unit includes four input panels, one transformer, and one power distribution cabinet.

Equipment selection details are described in Table 2-1.

Table 2-1. Solar Equipment Details

EQUIPMENT	DETAIL	SPECIFICATION
MODULES	Manufacturer	JINKO SOLAR
	Model	JKM585-72HL4-TV
	Wattage	585
	Models per String	27
INVERTERS	Manufacturer	SUNGROW
	Model	SG4400UD-MV-US
RACKING	Manufacturer	ATI
	Model	ATI DURATRACK V3

Due to the evolving nature of the industry and shifting supply landscape, the specific quantities and equipment are subject to change.

2.2 ENERGY STORAGE SYSTEM

The ESS would include a battery storage system capable of storing up to 300 MW_{AC} of electricity and conducting energy to the regional electricity grid. The ESS would include 536 battery enclosures.

Table 2-2. ESS Equipment Details

EQUIPMENT	DETAIL	SPECIFICATION
BATTERY	Manufacturer	SUNGROW
	Model	ST2752UX-US
	Capacity	300 MW
INVERTERS	Manufacturer	SUNGROW
	Model	SC5000UD-MV-US

2.3 SUBSTATION AND SWITCHING STATION

A substation and the Pacific Gas & Electric (PG&E) Switching Station would be located in the southeast corner of the project boundaries as shown on the site map. The substation would tie into PG&E's high-voltage 230 kilovolt (kV) Switching Station via a new transmission line. The 230 kV Switching Station would connect to PG&E's existing 230 kV transmission lines located directly adjacent to the Switching Station.

2.4 BUILDINGS

The proposed project would include two prefabricated buildings: electrical control building and operation and maintenance (O&M) trailer. Both buildings are intended to be prefabricated and would be used for maintenance and service purposes would. These buildings would be located near the substation and only used as needed.

2.5 SITE SECURITY, FENCING, AND LIGHTING

The proposed project would be enclosed by a 6-foot chain-link fence with an additional foot containing three strands of barbed wire around the proposed facility, enclosing a total of approximately 1,617.89 acres of the project site. Locked access gates would be provided at each site access point as seen on Drawing PV-D1.08 in Appendix A. Each gate would have a 24-foot opening.

At each access gate, a solar/battery powered motion LED light would be installed at a height not taller than 14 feet. The lighting would be motion-activated and have a manual activation switch available. Lighting would illuminate all safety and emergency services signage. Additional lighting may be installed where necessary for safety, security, and operations purposes such as near the substation/switching station.

2.6 ACCESS ROADS

A network of access roads will be installed throughout the project site and along its perimeter. In addition, two permanent parking spaces will be installed to accommodate standard work and equipment trucks near the substation/switching station. The roads and parking area would be made of gravel/stone-aggregate and would not be paved.

3. DURATION AND DECOMMISSIONING OF PROJECT

The anticipated service life of this project is 35 years. This may be extended with formal permissions from required local, state, or federal agencies. This plan would be implemented upon closure of the facility, or in the event that no power is produced by the proposed facility for a period of 12 months. Decommissioning operations are assumed to span approximately 10 to 12 months; therefore, fencing, electrical power, and water facilities would be maintained in place and operational to be available for limited use by decommissioning and site restoration workers.

Decommissioning tasks would include

- Approval of all required local, state, and federal permits,
- Installation of erosion and sediment controls,
- Removal all of liquids and batteries,
- Demolition of buildings, foundations, and fencing,
- Removal of wiring and power stations,
- Removal of photovoltaic modules and supporting structures,
- Removal of gravel roads and gravel beds,
- Placement of backfill in excavated areas,
- Seeding of disturbed areas to stabilize soils not currently used for agricultural purposes,
- Hauling of universal waste to appropriate facility, and
- Hauling and disposal of construction and demolition waste at a local landfill.

3.1 TEMPORARY EROSION CONTROL

The site is relatively flat and level, requiring minimum erosion and sediment controls. However, appropriate temporary/construction-related controls would be implemented during the decommissioning. They would be inspected regularly to ensure their function throughout the decommissioning process. In addition to installing these best management practices, all appropriate local, state, and federal permits would be acquired prior to beginning decommissioning.

3.2 PRE-DEMOLITION ACTIVITIES

Prior to demolition or removal of any equipment, the site must be completely disconnected from the substation. Any remaining connections to be used during the duration of the decommissioning and site restoration shall be noted with appropriate signs. These remaining connections would be disconnected from the substation prior to project closeout.

3.3 REMOVAL OF LIQUIDS AND BATTERIES

Once the solar facility is no longer operational, but prior to equipment structure demolition, all liquids onsite would be removed. This includes but is not limited to transformer oil, maintenance fuels (such as gasoline for a lawn mover), and cooling liquid (for battery units). All materials would be disposed through a registered hazardous waste transporter as issued by the

California Department of Toxic Substances Control (DTSC). Batteries would also be removed and recycled to the maximum extent practicable. If the batteries are not salvageable, they would be disposed of by a universal waste handler as defined by California Code of Regulations, title 22, Chapter 23.

3.4 DEMOLITION AND REMOVAL OF SOLAR EQUIPMENT

The PV panels would be disconnected and removed from racks. The modules would be loaded onto trucks and hauled to the nearest universal waste facility. Mechanized equipment operated by trained personnel would be used to dismantle the racking and other aboveground structures. The racking systems consist of steel rails and posts. Steel posts would be pulled from the ground. All electrical cabling would be disconnected from inverters, transformers, overhead transmission poles, and other equipment. Electrical cables would be above and below ground. For the purposes of the cost estimate, a total length of buried and above ground 4-gauge electrical wire is 2.8 million linear feet at a weight of 0.127 pounds per linear foot. Burial depth was estimated at 18 inches. Inverter and battery units would be electrically disconnected, unbolted, and lifted onto trucks for removal from the site.

Concrete foundations for inverters and battery units would be removed using heavy equipment. Additionally, all gravel roads and parking spaces would also be removed. All these materials would be hauled to the nearest landfill upon removal.

As sections of arrays are removed, fencing would be demolished, removed, and hauled to the nearest landfill. Lighting and fence posts would be removed in their entirety, including buried sections. The O&M building would be emptied of all materials by Lessee before the unit is hauled offsite.

The substation, switching station, and related utilities would be owned by PG&E; therefore, would remain on site after decommissioning. Access roads, gates, parking spaces, and the electronic control building associated with these areas would also remain.

3.5 RESTORING LAND USE

The site may be converted to other uses in accordance with applicable land use regulations in effect at that time of decommissioning. Because the site is relatively flat, minimal grading would be needed. County approved backfill would be required where foundations or posts were removed. Topsoil would be added where gravel roads and parking spaces would be removed, as requested by landowners. Those areas would also be reseeded with a native species seed mix upon removal. Seeding should be scheduled to be completed before the onset of seasonal rain and to minimize potential seed loss due feeding by native bird and small mammals.

4. DEMOLITION AND RECLAMATION COSTS

An itemized cost estimate for the removal of all structures and equipment in accordance with this plan and County requirements has been prepared, see Cost Estimate within Appendix B.

Exclusions and Assumptions
The following exclusions and major assumptions were considered during development of the cost estimate include:

- Wetland restoration would not be required
- Lease termination and service disconnect fees are not included
- Grouting and abandonment of municipal underground utilities is not included
- Nearest landfill and universal waste facilities found at the time of this estimate are still active
- California Prevailing Wages issues August 22, 2023 were used in the labor cost per hour
- R. S. Means labor crew and daily outputs were used to determine reasonable number of labors per day and duration of demolition.

5. FINANCING OF DECOMMISSIONING AND RECLAMATION

As per the requirements of the County, cash escrow would be secured prior to the issuance of grading or building permits. The total estimated cost of restoration is $23,114,745.90. The detailed estimate of the restoration costs is provided in Appendix B.

Appendix A

Site Development Plan Drawings

Appendix B

Cost Estimate

Category	Assumptions	Labor Cost					Major Equipment Cost					Total Cost
		Personnel	Total $/ Hr *	Total Hours	Hours Per Laborer	Total Labor	Amount of Equipment	Equipment Type	$/ Month	Months	Total Equipment	Labor + Major Equipment Cost
Dismantling Civil Components												
Solar Photovoltaic Modules/ Panels	Total # of Panels = 686880; Lb/Panel = 61.73	Total process to be completed in 7.2 months										
Electrician de-energizes circuits and disconnects module	Electrician can disconnect 50 panels per hour	12	$66.47	13738	1145	$913,138.27						**$3,843,749.57**
General laborer dismounts modules and palletizes (for shipping)	1 laborers can dismount about 20 panels per hour	30	$63.81	34344	1145	$2,191,490.64						
Equipment operator utilizes forklift (to transfer onto transport truck)	Stack of panels for forklift is 20 panels; forklift can move 5 stacks in an hour	6	$88.67	6869	1145	$609,056.50	6	forklifts	$3,029.68	7.16	$130,064.16	
Battery Modules + Containers	Total # of Batteries = 536 Total # of Battery Units = 67	Total process to be completed in 1 months										
Electrician/ BESS technician de-energizes circuits, disconnects BESS containers from distribution system, and ensures safe and secure container removal	2 electricians can disconnect one battery per hour	8	$73.34	1072	134	$78,620.48						**$111,230.69**
General laborer performs mechanical disconnection, frees BESS container from grade beams, and performs demolition of grade beam support structures	3 laborers can unbolt battery units per hour to be ready to be craned into dump truck and batteries hauled off separate	9	$63.81	201	22	$12,825.81						
Equipment operator utilizes crane	1 crane operator can remove 2 units per hour	1	$93.03	34	34	$3,116.51	1	cranes	$11,110.44	0.21	$2,326.25	
Equipment operator utilizes end loader	1 end loader can remove 4 units per hour	1	$88.67	134	134	$11,881.78	1	Skid steer	$2,937.16	0.84	$2,459.87	
Solar Racking Structure	Total # of Panels = 686880	Total process to be completed in 5.7 month										
General laborer unbolts and disassembles	2 laborers can dismount 95 panels per hour	32	$63.81	14461	452	$922,732.90						**$1,116,193.10**
Equipment operator utilizes end loader	1 end loader can remove 4 rows of 95 panels per hour	2	$88.67	1808	904	$160,278.03	2	Skid steer	$2,937.16	5.65	$33,182.18	
Steel Piles	Total number of Racking Post = 106124	Total process to be completed in 8.5 months										
General laborer performs removal	equipment/operator removal only											
Equipment operator utilizes vibratory pier extractor	1 operator can remove 6 racking posts per hour	13	$91.37	17687	1361	$1,616,091.65	13	vibratory hydraulic extractor	$9,500.44	8.50	$1,050,234.06	**$2,666,325.70**
Fencing	Total # fencing = 93136 ft; Assume 1 post every 10ft; Total # of posts = 9314	Total process to be completed in 2 months										
General laborer detaches fence and aggregates	2 laborers can remove 50 feet of fencing per hour	24	$63.81	3725	155	$237,720.33						**$271,819.73**
Equipment operator utilizes backhoe (to pull and load fence posts)	1 backhoe can remove 30 posts per hour	2	$91.26	310	155	$28,333.19	2	backhoe	$1,485.82	1.94	$5,766.22	
Roads	Total Gravel Road = 16126.5 cu yd	Total process to be completed in 1 month										**$20,331.10**
Equipment operator utilizes end loader	1 bull dozer removing 131 cu yd per hour	1	$91.26	123	1	$11,246.34	1	dozer	$11,795.12	0.77	$9,084.76	
Support Facilities/ Buildings (including O&M building)												
General laborer performs demolition	Building is Conex box - no labor demo needed					$0.00						**$162.47**
Equipment operator utilizes end loader	One Conex box loaded onto truck via crane	1	$93.03	1		$93.03	1	crane	$11,110.44	0.01	$69.44	
Concrete Foundations (including PCS, transformer, substation structure, battery container, and O&M building support)	Total # Solar inverters = 74 Total # of Battery units = 67 Total # of batter inverters = 67	Total process to be completed in 1.3 months										
General laborer performs demolition	2 labors can remove 1/2 inverter/battery concrete pad per hour	4	$63.91	832	208	$53,173.12						**$75,434.79**
Equipment operator utilizes end loader	1 front end loader can remove 1 inverter/battery concrete pad per hour	1	$88.67	208	208	$18,443.36	1	Skid steer	$2,937.16	1.30	$3,818.31	
Transmission Line Poles	No known pole lines to remove											
General laborer performs demolition												
Equipment operator utilizes end loader												
Equipment operator utilizes crane to lift the poles out of the ground												
Dismantling Electrical Components												
Underground Conductors and Communications Cables	Total length of direct burial wire = 2811343 ft	Total process to be completed in 6 months										
General laborer pulls wire	1 laborer can remove 250 ft (direct burial) per hour	12	$63.81	11245	937	$717,567.09						**$1,853,167.11**
Equipment operator utilizes forklift	1 forklift can load about 500 ft per hour	6	$88.67	5623	6	$498,563.50	6	forklifts	$3,029.68	5.9	$106,468.36	
Equipment operator utilizes excavator	1 excavator can excavate 500 ft (18" deep/4" wide, trench) per hour using trencher chain	6	$82.18	5623	6	$462,072.27	6	trencher chain	$1,949.13	5.9	$68,495.90	
Aboveground Conductors and Messenger Support Cables	All known aboveground cable removal costs included in "Dismantling Civil Components"											
General laborer removes conductors from tracker structures												
Equipment operator utilizes forklift												
Equipment operator utilizes end loader												
Power Conversion Stations (recombiner/ inverter/ transformer units)	Total # Solar inverters = 74 Total # of Battery units = 67 Total # of batter inverters = 67	Total process to be completed in 1 month										
Electrician de-energizes circuits and removes terminations	1 electrician per inverter per hour	2	$73.34	208	104	$15,254.72						**$45,424.11**
General laborer cuts and removes conduit	1 laborer per inverter per hour	2	$63.81	208	104	$13,272.48						
Equipment operator utilizes crane to place in truck	1 crane operator can remove 2 units per hour	1	$93.03	104	1	$9,675.12	1	crane	$11,110.44	0.7	$7,221.79	

Exclusions and Assumptions

- Wetland restoration will not be required
- Grouting and abandonment of underground utilities is not included
- Nearest landfill and universal waste facilities found at the time of this estimate are still active
- Lease termination and service disconnect fees are not included
- California Prevailing Wages issues August 22, 2023 were used in the labor cost per hour
- *K. S. Means labor crew and daily outputs were used to determine reasonable number of labors per day and duration of demolition.

References

Jeremy Shaw, County of Fresco, (email communication, June 13, 2023)

Raymond Martin, County of Fresco, (email communication, August 29, 2023)

Category	Assumptions	Labor Cost					Major Equipment Cost					Total Cost
		Personnel	Total $/ Hr *	Total Hours	Hours Per Laborer	Total Labor	Amount of Equipment	Equipment Type	$/ Month	Months	Total Equipment	Labor + Major Equipment Cost
Load Break Disconnect Switches	No known Load Break Disconnect Switches to remove											
Electrician de-energizes circuits and removes terminations												
General laborer cuts conduit/ wire												
Equipment operator utilizes end loader												
Additional Electrical Equipment (including sensors and weather stations)	No known other items to remove											
Electrician de-energizes circuits and removes terminations												
General laborer cuts conduit/ wire												
Equipment operator utilizes end loader												
MV Underground Collection Cabling (34.5 kV)	All known underground cable removal costs included in "Underground Conductors and Communications Cables"											
General laborer decouples and loads on forklift												
Equipment operator utilizes forklift												
Equipment operator utilizes end loader												
Equipment operator utilizes excavator												
Aboveground Cables (including project transmission line)	All known aboveground cable removal costs included in "Dismantling Civil Components"											
Electrician disconnects cables												
Equipment operator utilizes crane to lower cable to the ground												
General laborer coils cable												
Equipment operator utilizes forklift to place cable on truck												
Site Final Restoration												
Re-Grading of Site (after excavation and removal of underground materials and foundations)		Total process to be completed in 3.3 months										**$155,930.05**
General operator utilizes grader	Regrading of road areas and inverter pads; 10000 SF per day = 1250 sq per hr	2	$82.27	1067	534	$87,802.33	2	grader	$10,213.61	3.3	$68,127.72	
Site Rehabilitation (including seeding)**	Total acreage = 1,618	Total process to be completed a week										**$5,611.87**
General laborer mows/ disks area with seeding	1 laborer can seed 150 acre per 8 hr day	2	$57.50	86	43	$4,961.87	2	seeder	$1,300.00	0.25	$650.00	
						Applicant Sum					**Applicant Sum**	
						$8,677,411.29					$1,487,969.00	**$10,165,380.30**

Exclusions and Assumptions

- Wetland restoration will not be required
- Grouting and abandonment of underground utilities is not included
- Nearest landfill and universal waste facilities found at the time of this estimate are still active
- Lease termination and service disconnect fees are not included
- California Prevailing Wages issues August 22, 2023 were used in the labor cost per hour
- R. S. Means labor crew and daily outputs were used to determine reasonable number of labors per day and duration of demolition.

References

Jeremy Shaw, County of Fresco, (email communication, June 13, 2023)
Raymond Martin, County of Fresco, (email communication, August 29, 2023)

Project Administrative Fees			
County Administrative Costs (including legal services, preparation of bid plans and specs, contract development and awarding, project management and monitoring of contractors)		-	**$20,000.00**

Hauling

Driving Trucks to General Disposal Site (glass/ metal/ other non-hazardous materials)	**Assumptions and Calculation Notes** (total weight Calcs under disposal section)	**Quote Reference**	**Total Weight (Tons)**	**Price per ton**	**Disposal Location**	**Distance to Disposal**	**$ per ton/mile**		**Sub totals**
Solar Panel Racking Vertical	Total # of posts = 106,124 (Source - email from BayWa r.e. Solar Projects, LLC) W6x8.5 posts (assumption) = 8.5 lb per post	Average cost of hauling from quotes included milage; Average was $85 per ton. Refer to Attachment C	451.03	$85	Fresno County Environmental Compliance Center (ECC Facility) at 1327 West Dan Ronquillo Drive, Fresno, CA 93706.	61.8	$1.38		$38,337.30
Solar Panel Racking Horizonal	Total # of Panels = 686,880 (Source - project drawings) Width of panel = 3.721' (Source - Tiger Neo N-type 72HL4-(V) 556-585 Watt Cutsheet) ∴ panels * width = 2,555,766 OD = 6.625 inch diam pipe WT = 0.4in (assumption) Round Tubing = 10.68 x (O.D. – W.T.) x W.T. = weight per linear foot (standard weight formula) ∴ 10.68 x (6.625 – 0.4) x 0.4 = 26.59 lb/unit		33983.00	$85		61.8	$1.38		$2,888,554.85
Solar Inverters	# of inverters = 74 (Source - project drawings) weight of inverter = 36376 lb (Source - Sungrow SG4400UD data sheet) oil per inverter = 600 gal (assumption) Weight of oil = 7lb/gal (standard) ∴ 36376 - (600 *7) = 32176 lb		1190.51	$85	Avenal Landfill 1200 Skyline Blvd, Avenal, CA 93204	6.1	$13.93		$101,193.52
Solal Panel aboveground wire	Total # of Panels = 686,880 (Source - project drawings) Width of panel = 3.721' (Source - Tiger Neo N-type 72HL4-(V) 556-585 Watt Cutsheet) Length of wire = length of all panels + 10% (assumption) ∴ 686880*3.721*1.1 = total length = 2555766 ft 4 gauge copper wire (assumption) at 0.127lb/foot (stanard)		178.52	$85		6.1	$13.93		$15,174.22
Solar Panel belowground wire	Total # of Panels = 686,880 (Source - project drawings) Width of panel = 3.721' (Source - Tiger Neo N-type 72HL4-(V) 556-585 Watt Cutsheet) Length of wire = length of all panels + 10% (assumption) ∴ 686880*3.721*1.1 = total length = 2555766 ft 4 gauge copper wire (assumption) at 0.127lb/foot (stanard)		178.52	$85		6.1	$13.93		$15,174.22
Battery Units	# of units = 67 (Source - project drawings) weight = 58202lb (Source - ST2752UX-US data sheet) oil per inverter = 800 gal (assumption) Weight of oil = 7lb/gal (standard) 8 batteries @ 5224.8lb/battery (Source - drawings and ST2752UX-US datasheet and O&M) ∴ 58202 -(800*7) -(5224.8 *8) =10803.60 lb		361.92	$85		6.1	$13.93		$30,763.25
Battery Inverters	# of units = 67 (Source - project drawings) weight = 39683lb (Source - SC5000UD-MV data shee) oil per inverter = 800 gal (assumption) Weight of oil = 7lb/gal (standard) cooling liquid per inverter = 14.93 gal (assumption) Cooling liquid = weight of water (assumption) ∴ 39683 -(800*7) -(14.93*8.341) =33958.5 lb		1137.62	$85		6.1	$13.93		$96,697.44
Perimeter Fencing	Total length of fencing = 93136' (Source - project drawings) 6' height (Source - project drawings) ∴ 93136 * 6 =558,816 ft Galvanized 2" diamond 11 Gauge = 0.48lb/sq ft (Source - project drawings/industry standard)		134.12	$85		6.1	$13.93		$11,399.85
Gravel roads	Area of gravel roads 1,307,551 sq ft (Source - Area calculated from drawings) 4" depth (assumption) ∴ 435414.5 cu ft = 16126.5 cu yd. Gravel weighs between 2400 and 2900 lb per cubic yard (Source industrial standard) ∴ 2650lb/cu yd		21367.56	$85	Penas Disposal, Inc. 12094 Avenue 408 Cutler, CA 93615	75.2	$1.13		$1,816,242.82
					Total Average	**26.2**	**$ 9.72**	**Total**	**$5,013,537.46**

Driving Trucks to Potentially Hazardous Disposal Site (potentially hazardous components of the solar panels, batteries, and miscellaneous waste)	**Assumptions and Calculation Notes**	**Quote Reference**	**Total Weight (Tons)**	**Price per Ton**	**Disposal Location**	**Distance to Disposal**	**$ per ton/mile**		**Sub totals**
Solar Panels	Total # of Panels = 686,880 (Source - project drawings) Weight of panel = 61.73 lb (Source - Tiger Neo N-type 72HL4-(V) 556-585 Watt Cutsheet) Average Truckload = 18 tons (RS Means)	Based on C&D hauling quotes; assume universal waste hauler would be 1.5x rate per ton (includes milage)	21200.55	$128	Fresno County Environmental Compliance Center (ECC Facility) at 1327 West Dan Ronquillo Drive, Fresno, CA 93706.	61.8	$2.06		$2,703,070.28
Batteries	# of batteries = 536 (source - project drawing) 5224.7lb/battery (Source - ST2752UX-US datasheet and O&M) Average Truckload = 18 tons (RS Means)		1400.25	$128		61.8	$2.06		$178,531.42

Exclusions and Assumptions

- Wetland restoration will not be required
- Grouting and abandonment of underground utilities is not included
- Nearest landfill and universal waste facilities found at the time of this estimate are still active
- Lease termination and service disconnect fees are not included
- California Prevailing Wages issues August 22, 2023 were used in the labor cost per hour
- R. S. Means labor crew and daily outputs were used to determine reasonable number of labors per day and duration of demolition.

References

Jeremy Shaw, County of Fresco, (email communication, June 13, 2023)
Raymond Martin, County of Fresco, (email communication, August 29, 2023)

Driving Trucks to Potentially Hazardous Disposal Site (potentially hazardous components of the solar panels, batteries, and miscellaneous waste)	Assumptions and Calculation Notes	Quote Reference	Total Weight (Tons)	Price per Ton	Disposal Location	Distance to Disposal	$ per ton/mile		Sub totals
Solar Inverter Oil	# of units = 74 (Source - project drawings) oil per unit = 600 gal (assumption) Weight of oil = 7lb/gal (standard)	Dimension (Service fee only)	155.40	Service fee of $57.75	Because Dimension will transport for free and location of disposal was not included in quote (that is determined by them), no $ per ton/mile is included				$57.75
Battery Inverter Oil	# of units = 67 (Source - project drawings) oil per unit = 800 gal (assumption) Weight of oil = 7lb/gal (standard)		187.60						
Battery Units Inverter Oil	# of units = 67 (Source - project drawings) oil per inverter = 800 gal (assumption) Weight of oil = 7lb/gal (standard)		187.60						
Battery Units Cooling Liquid	# of units = 67 (Source - project drawings) cooling liquid per inverter = 14.93 gal (assumption) Cooling liquid = weight of water = 8.341(assumption)		4.17						
					Total Average	61.8	$2.06	**Total**	**$2,881,659.44**

Disposal/ Recycling (DUMPING FEES ONLY - Transportation costs discribed in previous section)

General Disposing Fees	Assumptions and Calculation Notes	Quote Reference	# of units	lb/unit	Total lbs		Total Weight (Tons)	Price/ton	Sub totals
Solar Panel Racking Vertical	Total # of posts = 106,124 (Source - email from BayWa r.e. Solar Projects, LLC) W6x8.5 posts (assumption) = 8.5 lb per post	Caglia Environmental: Cedar Avenue Recycling and Transfer Station (CARTS)	106,124	8.50	902054.00		451.03	No dumping fee for clean metal; Service fee only	$26.00
Solar Panel Racking Horizonal	Total # of Panels = 686,880 (Source - project drawings) Width of panel = 3.721' (Source - Tiger Neo N-type 72HL4-(V) 556-585 Watt Cutsheet) ∴ panels * width = 2,555,766 OD = 6.625 inch diam pipe WT = 0.4in (assumption) Round Tubing = 10.68 x (O.D. – W.T.) x W.T. = weight per linear foot (standard weight formula) ∴ 10.68 x (6.625 – 0.4) x 0.4 = 26.59 lb/unit		2,555,766	26.59	67965996.39		33983.00		
Solar Inverters	# of inverters = 74 (Source - project drawings) weight of inverter = 36376 lb (Source - Sungrow SG4400UD data sheet) oil per inverter = 600 gal (assumption) Weight of oil = 7lb/gal (standard) ∴ 36376 - (600 *7) = 32176 lb	Avenal Landfill	74	32176.00	2381024.00		1190.51	$44.00	$52,382.53
Solal Panel aboveground wire	Total # of Panels = 686,880 (Source - project drawings) Width of panel = 3.721' (Source - Tiger Neo N-type 72HL4-(V) 556-585 Watt Cutsheet) Length of wire = length of all panels + 10% (assumption) ∴ 686880*3.721*1.1 = total length = 2555766 ft 4 gauge copper wire (assumption) at 0.127lb/foot (stanard)		2,811,343	0.127	357040.51		178.52	$44.00	$7,854.89
Solar Panel belowground wire	Total # of Panels = 686,880 (Source - project drawings) Width of panel = 3.721' (Source - Tiger Neo N-type 72HL4-(V) 556-585 Watt Cutsheet) Length of wire = length of all panels + 10% (assumption) ∴ 686880*3.721*1.1 = total length = 2555766 ft 4 gauge copper wire (assumption) at 0.127lb/foot (stanard)		2,811,343	0.127	357040.51		178.52	$44.00	$7,854.89
Battery Units	# of units = 67 (Source - project drawings) weight = 58202lb (Source - ST2752UX-US data sheet) oil per inverter = 800 gal (assumption) Weight of oil = 7lb/gal (standard) 8 batteries @ 5224.8lb/battery (Source - drawings and ST2752UX-US datasheet and O&M) ∴ 58202 -(800*7) -(5224.8 *8) =10803.60 lb		67	10803.60	723841.20		361.92	$44.00	$15,924.51
Battery Inverters	# of units = 67 (Source - project drawings) weight = 39683lb (Source - SC5000UD-MV data shee) oil per inverter = 800 gal (assumption) Weight of oil = 7lb/gal (standard) cooling liquid per inverter = 14.93 gal (assumption) Cooling liquid = weight of water (assumption) ∴ 39683 -(800*7) -(14.93*8.341) =33958.5 lb		67	33958.50	2275219.50		1137.62	$44.00	$50,055.15
Perimeter Fencing	Total length of fencing = 93136' (Source - project drawings) 6' height (Source - project drawings) ∴ 93136 * 6 =558,816 ft Galvanized 2" diamond 11 Gauge = 0.48lb/sq ft (Source - project drawings/industry standard)		558,816	0.48	268231.68		134.12	$44.00	$5,901.10
Gravel roads	Area of gravel roads 1,307,551 sq ft (Source - Area calculated from drawings) 4" depth (assumption) ∴ 435414.5 cu ft = 16126.5 cu yd. Gravel weighs between 2400 and 2900 lb per cubic yard (Source industrial standard) ∴ 2650lb/cu yd	Peña	16,127	2650.00	42735225.00		21367.56	$10.00	$213,675.63
								Total	**$353,674.68**

Exclusions and Assumptions

- Wetland restoration will not be required
- Grouting and abandonment of underground utilities is not included
- Nearest landfill and universal waste facilities found at the time of this estimate are still active
- Lease termination and service disconnect fees are not included
- California Prevailing Wages issues August 22, 2023 were used in the labor cost per hour
- R. S. Means labor crew and daily outputs were used to determine reasonable number of labors per day and duration of demolition.

References

Jeremy Shaw, County of Fresco, (email communication, June 13, 2023)
Raymond Martin, County of Fresco, (email communication, August 29, 2023)

Disposal Fees	Assumptions and Calculation Notes	Quote Reference	# of units	lb/unit	Total lb	Total Weight (Tons)	Price Per Truckload	Truckload tons	Cost per ton	Sub totals
Solar Panels	Total # of Panels = 686,880 (Source - project drawings) Weight of panel = 61.73 lb (Source - Tiger Neo N-type 72HL4-(V) 556-585 Watt Cutsheet) Average Truckload = 18 tons (RS Means)	ERI (Based on a conversation with ERI, an average full truckload will cost approximately $900)	686880	61.73	42401102.4	21200.55	$900.00	18	$50.00	$1,060,028
Batteries	# of batteries = 536 (source - project drawing) 5224.7lb/battery (Source - ST2752UX-US datasheet and O&M) Average Truckload = 18 tons (RS Means)		536	5224.8	2800492.8	1400	$900.00	18	$50.00	$70,012.32
Disposal Fees	**Assumptions and Calculation Notes**	**Quote Reference**	**# of units**	**gal/unit**		**Total Gal**	**Price Per drum**	**gal/drum**	**Cost per gal**	
Solar Inverter Oil	# of units = 74 (Source - project drawings) oil per unit = 600 gal (assumption) Weight of oil = 7lb/gal (standard)	Dimension Disposal (includes pickup - service fee)	74	600		44400	$193.00	55	$3.51	$155,803.64
Battery Units Inverter Oil	# of units = 67 (Source - project drawings) oil per unit = 800 gal (assumption) Weight of oil = 7lb/gal (standard)		67	800		53600	$193.00	55	$3.51	$188,087.27
Battery Inverter Oil	# of units = 67 (Source - project drawings) oil per inverter = 800 gal (assumption) Weight of oil = 7lb/gal (standard)		67	800		53600	$193.00	55	$3.51	$188,087.27
Battery Inverter Cooling Liquid	# of units = 67 (Source - project drawings) cooling liquid per inverter = 14.93 gal (assumption) Cooling liquid = weight of water = 8.341(assumption)		67	14.93		1000	$193.00	55	$3.51	$3,509.09
									Total	**$1,665,527.15**
									SUBTOTAL	**$20,099,779.04**
									Contingency (15%)	**$3,014,966.86**
									TOTAL	**$23,114,745.90**

Exclusions and Assumptions

- Wetland restoration will not be required
- Grouting and abandonment of underground utilities is not included
- Nearest landfill and universal waste facilities found at the time of this estimate are still active
- Lease termination and service disconnect fees are not included
- California Prevailing Wages issues August 22, 2023 were used in the labor cost per hour
- R. S. Means labor crew and daily outputs were used to determine reasonable number of labors per day and duration of demolition.

References

Jeremy Shaw, County of Fresco, (email communication, June 13, 2023)
Raymond Martin, County of Fresco, (email communication, August 29, 2023)

The Professional Engineer (P.E.) attests that this cost estimate has been prepared in accordance with good engineering practice. This certification is no longer valid when there is a change in design or estimate requirements.

Stan Wallace, P.E.
Certifying Professional Engineer

Signature

12/15/2023
Date

C 79920
Registration Number

California
State of Registration

Seal affixed:

Appendix C

Hauling Quotes

Hauling Cost Quotes

Construction and Demolition (C&D) Waste Only
C&D Waste Does not include potentially hazardous waste)

Location	C&D Waste $/ton
West Coast Waste	85
Orange Avenue Disposal Company Inc/Caglia/IWS	First 10 tons (each) = 116 Additional tons = 90
BRG Junk Removal & Demolition	85.33*
Mid Valley Disposal/Sunset Waste Systems	80

*$800 per 15 cu yard at 1,250 lb per cubic yard

B.3 Sheep Grazing Report

INDART RANCH
EST. 1937
CLOVIS, CA

INDART SOLAR
SHEEP GRAZING
Yesterday's solution for today's problems.

Dear Fresno County Planning Commission:

My name is Ryan Indart. I am a third generation sheep rancher from Clovis, California. We farm almonds, cherries, oranges, wheat and barley as well; however, our main business is sheep ranching, where we have been producing American lamb and wool for three generations. My grandfather started the business in 1937. The wool my grandfather produced during the early years of the business went directly to clothe American soldiers in World War II. My father purchased the business from my grandfather in 1970, and my wife and I bought it from my mother and father back in 2009. We are extremely proud of our successful ranching and farming heritage, where we have been responsible custodians and fiduciaries of the environment, our animals and our crops for three generations.

Lamb is one of the most nutritious and natural animal protiens produced and wool is nature's best fiber, from which an assortment of products such as mittens, wool caps, jackets, socks and blankets are produced. Some of the wool from our sheep goes to clothe the American military even today, of which we are very proud. In fact, sheep are one of the only "dual purpose" agricultural animals in existence today, producing millions of pounds of lamb meat and wool for consumption and use throughout the US and world. Cattle, hog, chicken and turkey farmers can't say the same thing. The vast economic and production contributions to the US economy by the American Sheep Industry are detailed in Exhibit 1 (*American Sheep Industry Association*).

Over three generations, our family is proud to have produced two very important agricultural products for wide consumption and use across all of society:

- Approximately 500,000 lambs total, which equates to roughly 33,000,000 lbs. of wholesome, lean, nutritious lamb meat that has fed millions of people and families here in the United States over the span of 86 years and three generations of our family business.
- Approximately 4,000,000 lbs. of American wool, that has produced countless wool products for many woolen retailers like to clothe Americans in the winter to keep them warm from the cold elements, including and most importantly the US Military.

In 2018, out of necessity and market demand, we launched a new business called Indart Solar Sheep Grazing, where we specialize in grazing utility scale solar projects for several trusted clients throughout California, Arizona and Colorado. Solar grazing employs sheep as a vegetation management tool by solar asset operators, managers and owners to reduce fire fuel loads risk and to prevent vegetation from encroaching on sensitive, high valued power generating equipment and infrastructure. Solar sheep grazing also enhances and improves soil health, ecology, biodiversity and function, is the only environmentally friendly vegetation management tool available for solar owners, and is becoming increasingly more widely adopted across the entire solar industry.

3826 E International Ave. Clovis, CA 93619
(559) 333-1407 - www.indartssg.com

So now, instead of being just a "dual purpose" agricultural production animal, of nutritious lamb meat and nature's best wool fiber, sheep are now a "tri-purpose" animal, engaged in grazing for fire fuel loads mitigation, creating profound environmental benefits across a multitude of applications.

The land in question pursuant to the proposed Cornucopia Hybrid Project located in Fresno County between the City of Coalinga and the City of Avenal. The project's 2,446.46 was assessed for sheep grazing in January 2024 and it is deemed to be ideally suited for sheep grazing, as that land has been grazed by cattle and sheep for over the last 100 years. This project is within Fresno County, California, which has deep roots in sheep grazing history. For example, Fresno County located in central California, was established in 1856 from parts of Mariposa, Merced, and Tulare counties and the first county seat was in the small township of Millerton. The community of Fresno began to grow from small mining settlements along the Fresno River. Moses J. Church developed canals to supply water to nascent agricultural lands and mining settlements in the region diverting water from the Kings River. The ease of access to water and the affordable land was a primary attraction to new settlers such as William Helm. In 1865, Helm purchased 2,640 acres of land in Fresno to raise sheep, eventually owning over 22,000 head of sheep.

The west side hills of the central valley, for anyone who farms and ranches here, has a good understanding that there is almost no better use to that land that that of cattle and sheep grazing. Before the American rancher utilized that land for cattle and sheep gazing, it was grazed by native deer and other native ruminants. The gentle rolling hills and intermittent valleys are custom made for livestock grazing due to the elimination of strain on precious aquifer resources. The water requirements of sheep grazing are exponentially less than that of production agriculture. Moreover, restorative sheep grazing within the Cornucopia Hybrid Project will have the following agricultural and environmental benefits:

- Soil profile enhancement through increased organic matter and biodiversity
- Top-soil preservation
- Noxious weed reduction
- Continued wool production
- Continued lamb production
- Carbon sequestration through fire fuel loads reduction and wildfire mitigation
- Sheep grazing is the environmentally friendly vegetation management option for solar operators compared to mowers and toxic herbicide use

If you have any questions or concerns in response to this letter, please don't hesitate to contact me at the number below.

Thank you,

Ryan Indart
President and CEO - Indart Group, Inc.
Indart Ranch
Indart Solar Sheep Grazing
www.Indartssg.com
(559) 333-1407

Attached:

Exhibit 2: "2022 Sheep Industry Review" - produced by the American Sheep Industry Association

Exhibit 3: "American Sheep Industry Sustainability" – produced by the American Lamb Board

Exhibit 1

U.S. Sheep Industry's Economic Contributions

The U.S. sheep industry plays an important role in supporting the economic viability and vitality of rural America and beyond. A U.S. Sheep Industry Economic Contribution Analysis was recently conducted on behalf of the American Sheep Industry Association.

The Production sector of the U.S. sheep industry is itself backlinked to the Processing and Manufacturing sector of the industry – supplying slaughter lambs and sheep, wool and fluid milk as inputs for further processed and manufactured outputs (carcasses, case-ready cuts of meat, sheep milk cheese, dog food, leather and shearling products, wool textiles and apparel, military dress uniforms, etc.).

Contributions to the U.S. Economy

Production Sector – The total contribution of the Production Sector of the U.S. sheep industry was estimated at $1.4 billion in total output (sales), supporting:

- 8,492 total jobs.
- $494 million in total labor income.
- $833.2 million in total value-added.
- $151.4 million in total local, state and federal taxes.

Processing and Manufacturing Sector – The total contribution of the Processing and Manufacturing Sector of the U.S. sheep industry was estimated at $3.7 billion in total output (sales), supporting:

- 14,153 jobs.
- $854.3 million in labor income.
- $1.4 billion in value added.
- $273.4 million in local, state and federal taxes.

Total contribution results for the Production and the Processing and Manufacturing sectors of the U.S. sheep industry are not additive due to the linkage structure of the analysis. Analysis based on 2021 data.

Click Here for more information.

Source: U.S. Sheep Industry Economic Contribution Analysis. Knob Economics. November 2023.

Exhibit 2

2022 Sheep Industry Review

Prepared by the American Sheep Industry Association

February 2023

Executive Summary

- Consumers were faced with much higher prices for lamb and everything else in 2022.
- Elevated price levels in 2022, made it difficult for lamb to compete with other proteins.
- Price inflation led to a decline in consumer's real incomes.
- High production costs made it more costly to get lamb to the consumer.
- Lower lamb prices combined with higher input costs and feed prices meant profit margins were pressured in 2022.
- Lamb imports were larger in 2022, in response to elevated retail lamb prices.

Executive Summary

- Feeder and slaughter lamb prices were 14 – 20% lower in 2022, driven by large declines in the second half of 2022.
- Wholesale lamb prices adjusted downward in response to weaker consumer demand.
- Commercial slaughter was down 9% in 2022, but lamb production was only 5.4% smaller due to heavier lamb weights.
- Total lamb and mutton imports declined 1.6% in 2022, as lamb imports at 5% larger were offset by a significantly smaller mutton imports.
- In 2022, per capita lamb consumption at the retail level was 1.28 pounds per person.

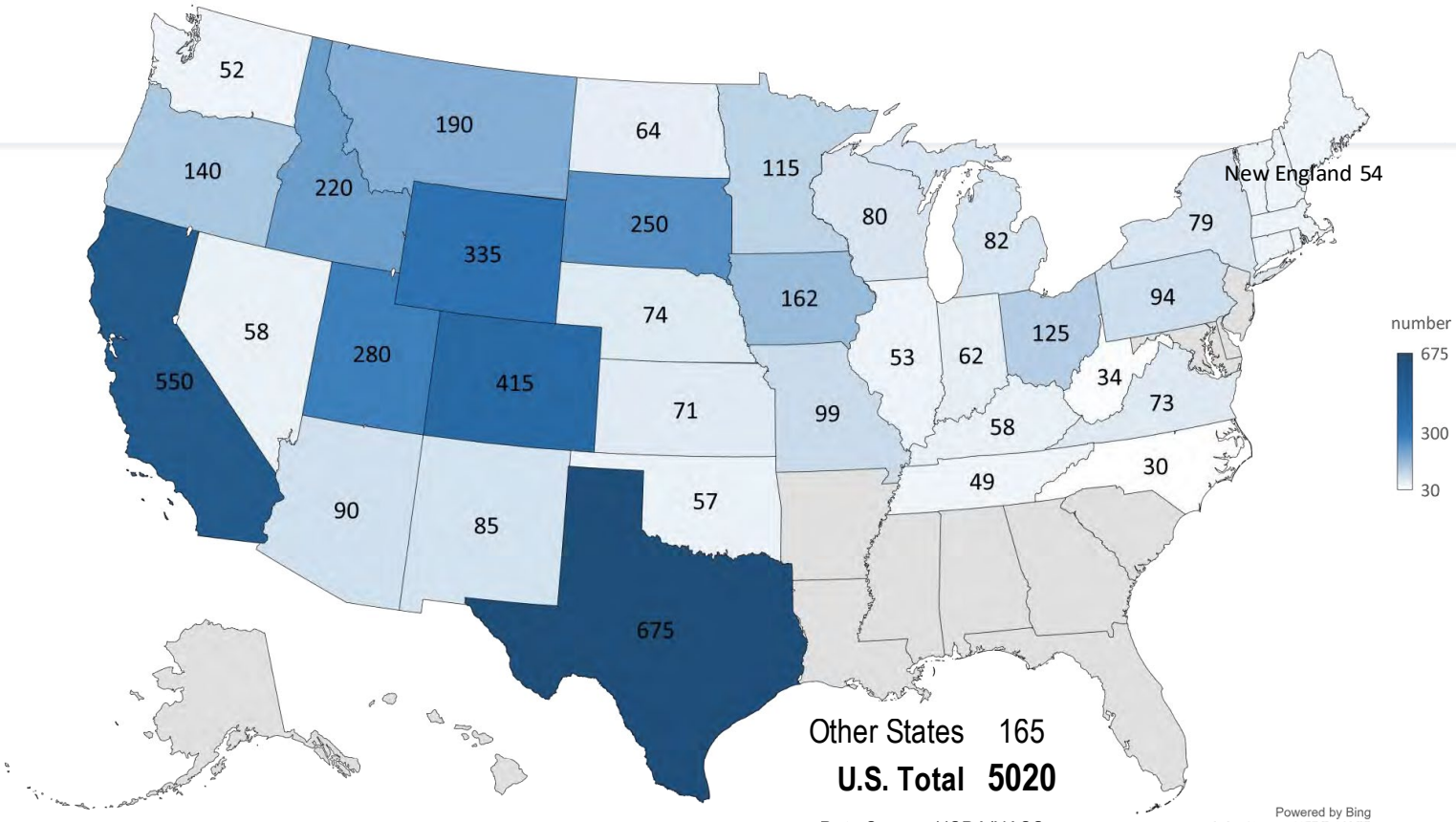
Inventory

January 1 Inventory Trends

- As of January 1st, sheep & inventory totaled 5.02 million head, down 0.9% from 2022.
- Breeding sheep inventory at 3.665 million head, an annual decline of 1.2%.
- Market lambs up 3,000 head to 1.28 million head.
- The 2022 lamb crop at 3.11 million head, down 1.6% due to lower number of ewes.
- Lambing percentage was steady at 106.9% for 2022.
- Most southwestern states reported declines in the breeding flock, while some states in the middle of the country posted increases.
- Inventory report confirms lamb supplies remain on a general decline.

Sheep & Lamb Numbers January 1, 2023

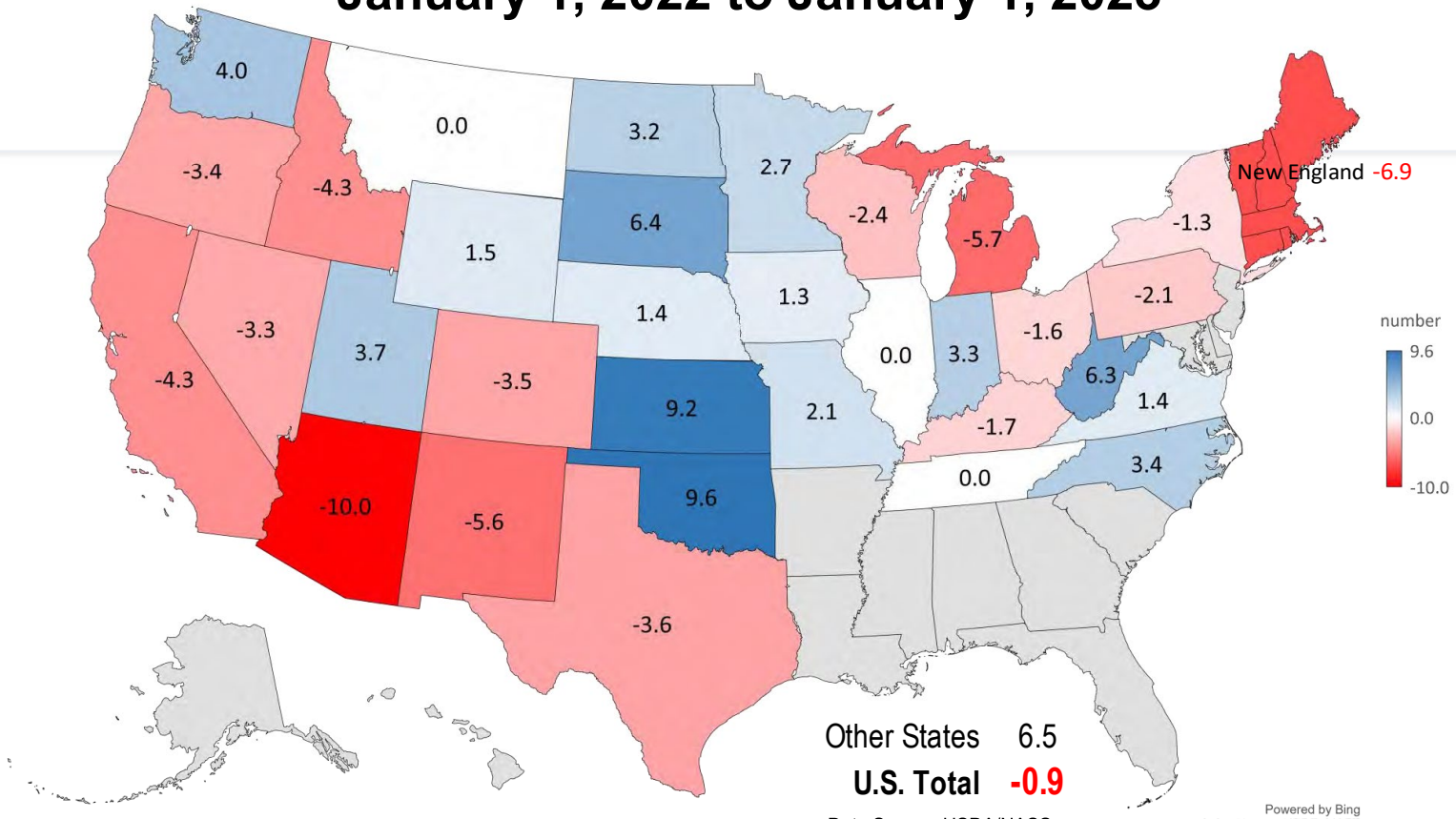
(1000 Head)



Data Source: USDA/NASS

Compiled by the Livestock Marketing Information Center

Percent Change Sheep & Lamb Inventory
January 1, 2022 to January 1, 2023

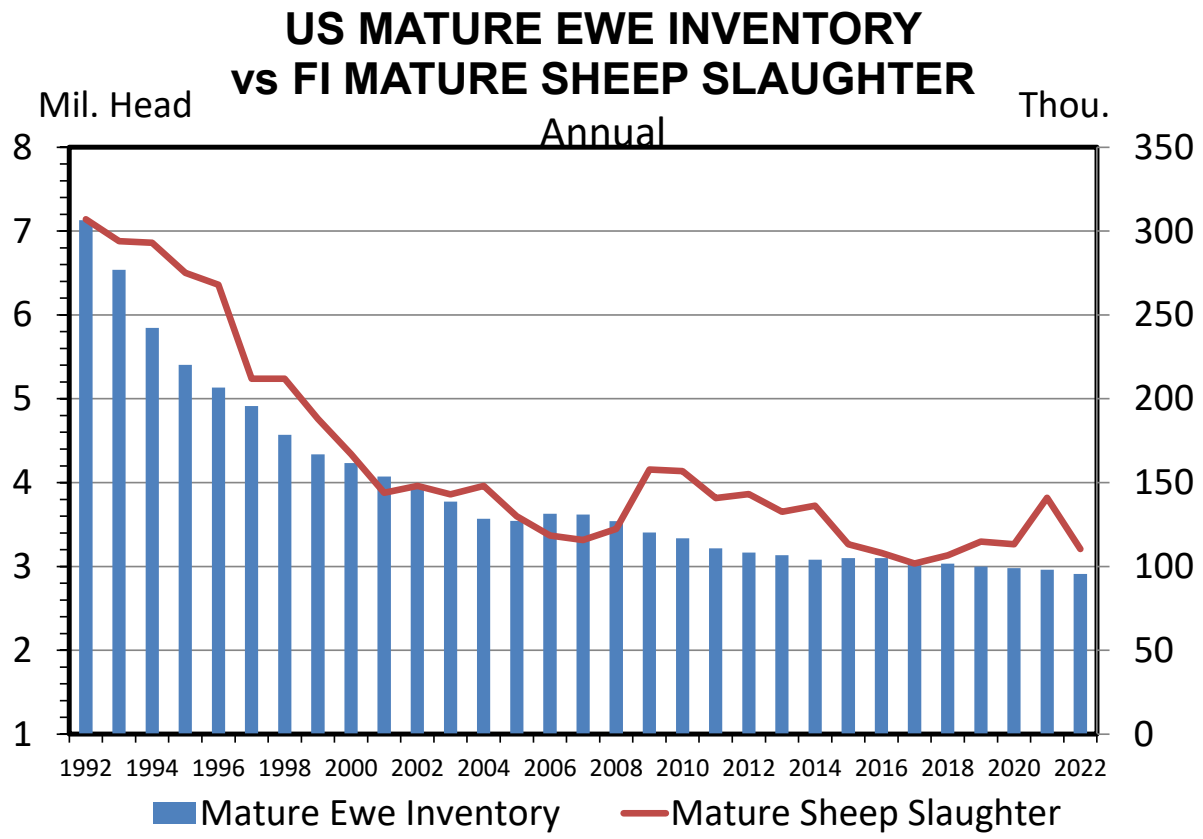


Data Source: USDA/NASS

Compiled by the Livestock Marketing Information Center

Ewe Flock

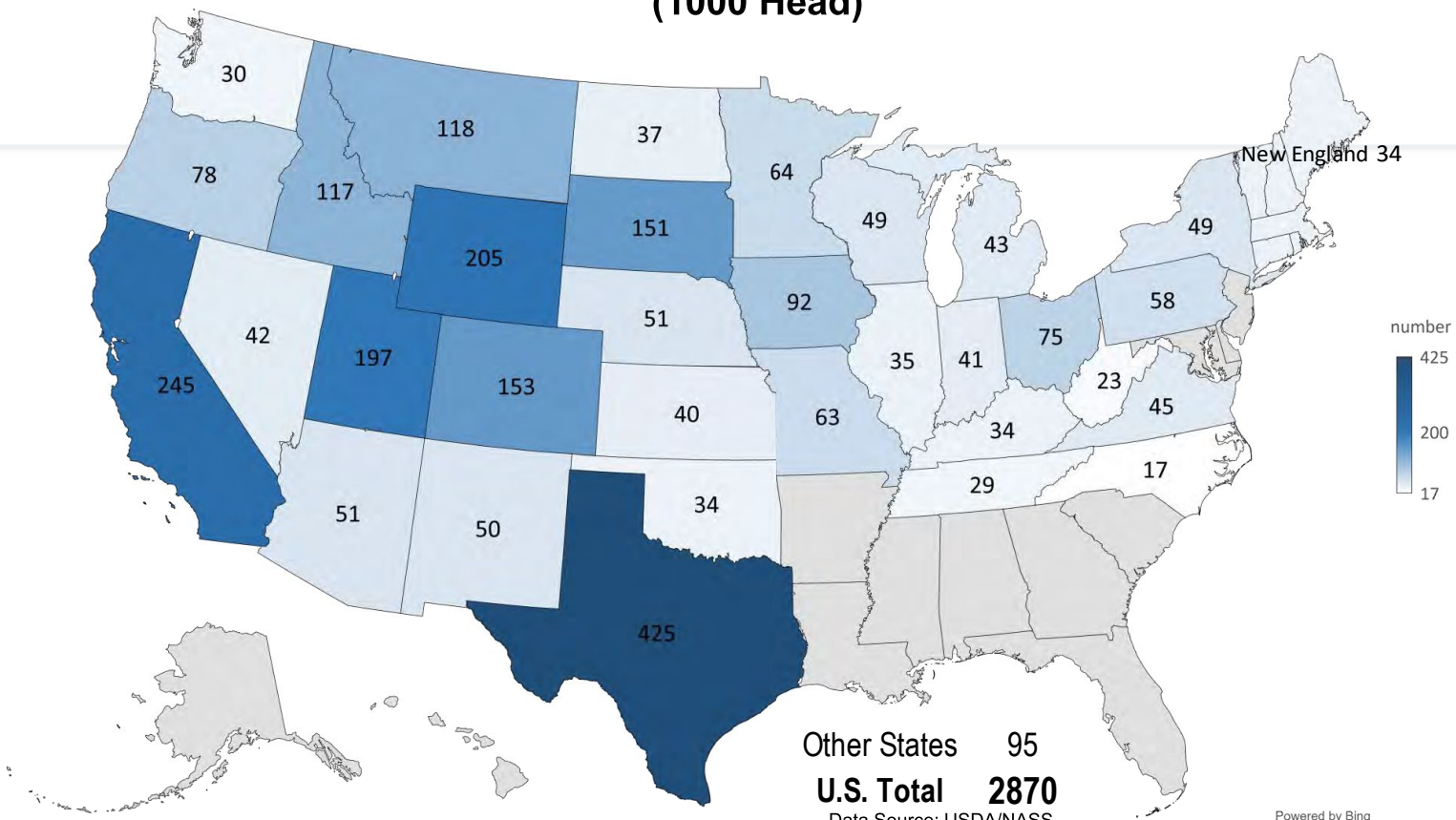
- Ewes one year & older at 2.87 million head down 1.4%.
- Mature sheep slaughter returned to normal levels.
- Sheep producers continued to face high input costs and effects of drought in 2022.
- Replacement ewe numbers at 635,000 head down 5,000 head from 2022.



Data Source: USDA/NASS, Compiled by the Livestock Marketing Information Center

Breeding Ewes One Year & Older January 1, 2023

(1000 Head)



Data Source: USDA/NASS

Compiled by the Livestock Marketing Information Center

Inventory Top Ten States, Ewes 1 Year & Older

	2019	2020	2021	2022	2023	2023 as % of 2022
Texas	455,000	445,000	445,000	430,000	**425,000**	**-1.2%**
California	250,000	260,000	250,000	270,000	**245,000**	**-9.3%**
Wyoming	215,000	215,000	220,000	215,000	**205,000**	**-4.7%**
Utah	210,000	195,000	195,000	194,000	**197,000**	**1.5%**
Colorado	150,000	156,000	169,000	155,000	**153,000**	**-1.3%**
South Dakota	157,000	152,000	153,000	146,000	**151,000**	**3.4%**
Montana	141,000	131,000	130,000	122,000	**118,000**	**-3.3%**
Idaho	130,000	125,000	120,000	113,000	**117,000**	**3.5%**
Iowa	80,000	85,000	90,000	87,000	**92,000**	**5.7%**
Oregon	95,000	89,000	85,000	82,000	**78,000**	**-4.9%**

Data Source: USDA/NASS, Compiled by ASI

Inventory Top Ten Growth States, Ewes 1 Year & Older, Percent of Prior Year

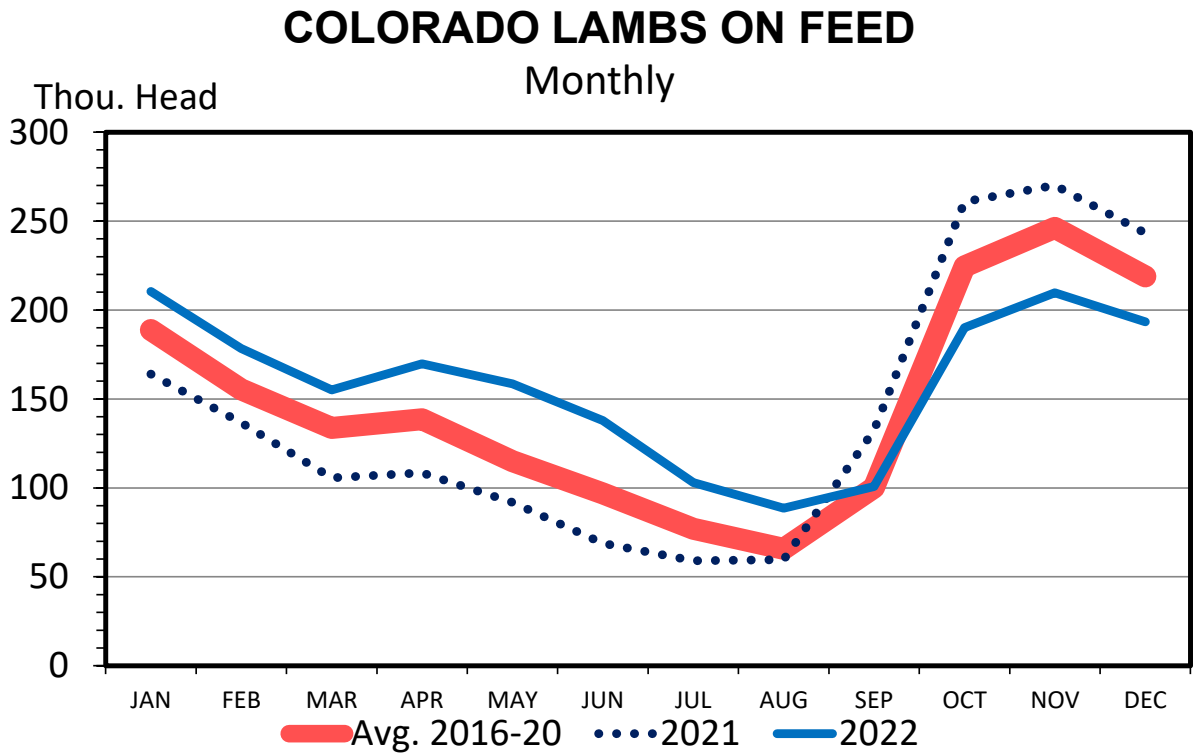
	2022	2023	2023 as % of 2022
Kansas	35,000	**40,000**	**14.3%**
Oklahoma	31,000	**34,000**	**9.7%**
Washington	28,000	**30,000**	**7.1%**
Iowa	87,000	**92,000**	**5.7%**
Indiana	39,000	**41,000**	**5.1%**
West Virginia	22,000	**23,000**	**4.5%**
Nebraska	49,000	**51,000**	**4.1%**
Idaho	113,000	**117,000**	**3.5%**
South Dakota	146,000	**151,000**	**3.4%**
Missouri	62,000	**63,000**	**1.6%**

Data Source: USDA/NASS, Compiled by ASI

Slaughter & Production

Lambs on Feed

- Weaker consumer demand reduced the demand for live lambs.
- This resulted in:
  - Lambs on-feed longer than normal
  - Large supply of old crop, over-finished lambs
  - Heavier lamb weights
  - High feeding costs
- On average, the number of lambs on-feed was 11% larger in 2022.



Note: Current as of the first day of each month. Inventory data is collected from feedlots with a capacity of 5,000 head or greater in Colorado.

Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Slaughter

- Federally Inspected (FI) slaughter was down 8.8% in 2022 to 1.76 million head.
- Lamb & yearling and mature ewe slaughter were down in 2022.
- Commercial slaughter was down 9.1% to 2.06 million head in 2022.
- FI slaughter accounted for 85.4% of commercial slaughter in 2022.

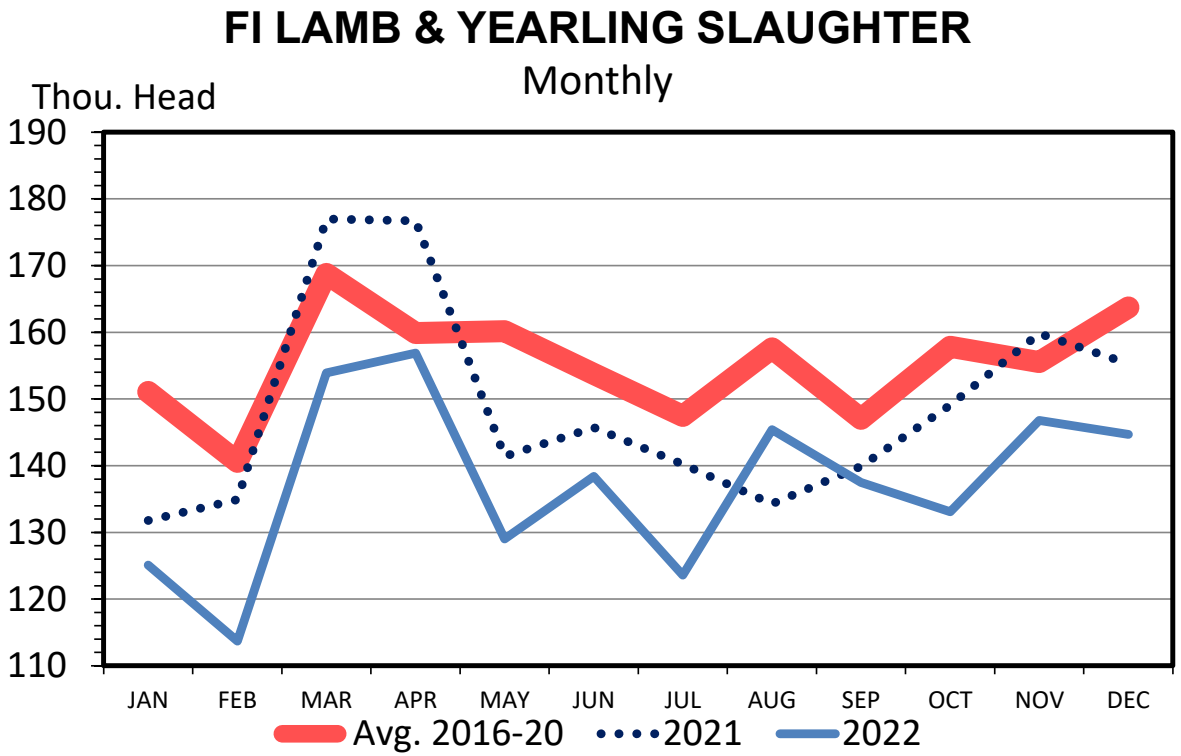
	Commercial	% of Previous Year	Federally Inspected (FI)	% of Previous Year	Non-Federally Inspected (NFI)[1]	% of Previous Year
2016	2,238	0.6%	2,010	0.6%	228	1.4%
2017	2,178	-2.7%	1,937	-3.6%	241	5.6%
2018	2,265	4.0%	2,000	3.2%	265	10.0%
2019	2,322	2.5%	2,020	1.0%	301	13.6%
2020	2,225	-4.1%	1,895	-6.2%	331	9.7%
2021	2,263	1.7%	1,927	1.7%	336	1.7%
2022	**2,058**	**-9.1%**	**1,759**	**-8.8%**	**300**	**-10.8%**

[1]Non-Federally Inspected (NFI) Plants sell and transport only intrastate. State inspectors assure compliance with individual state standards. Mobile slaughtering units are excluded and are considered farm slaughter.

Data Source: USDA/NASS, Compiled by ASI

Federally Inspected Slaughter

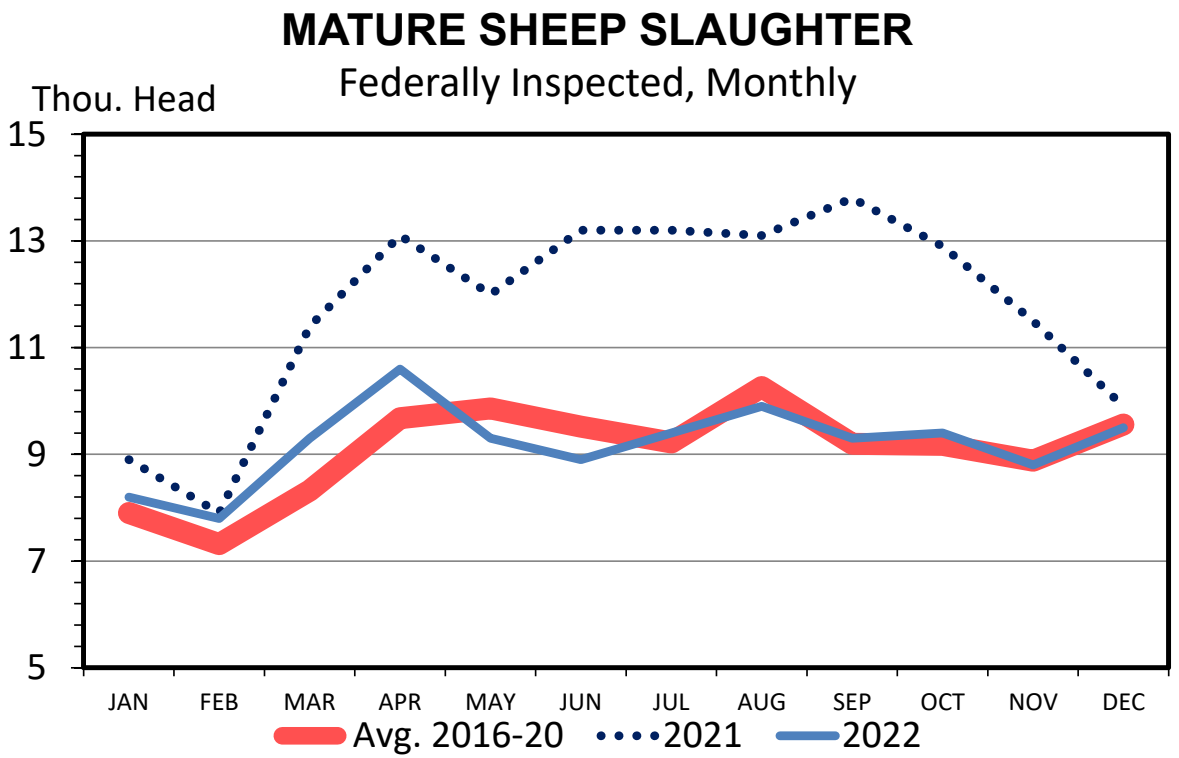
- FI lamb & yearling slaughter down 7.7%, in 2022.
- Slaughter levels were 12% lower than the 2016 – 2020 average.



Data Source: USDA/NASS, Compiled by the Livestock Marketing Information Center

Federally Inspected Slaughter

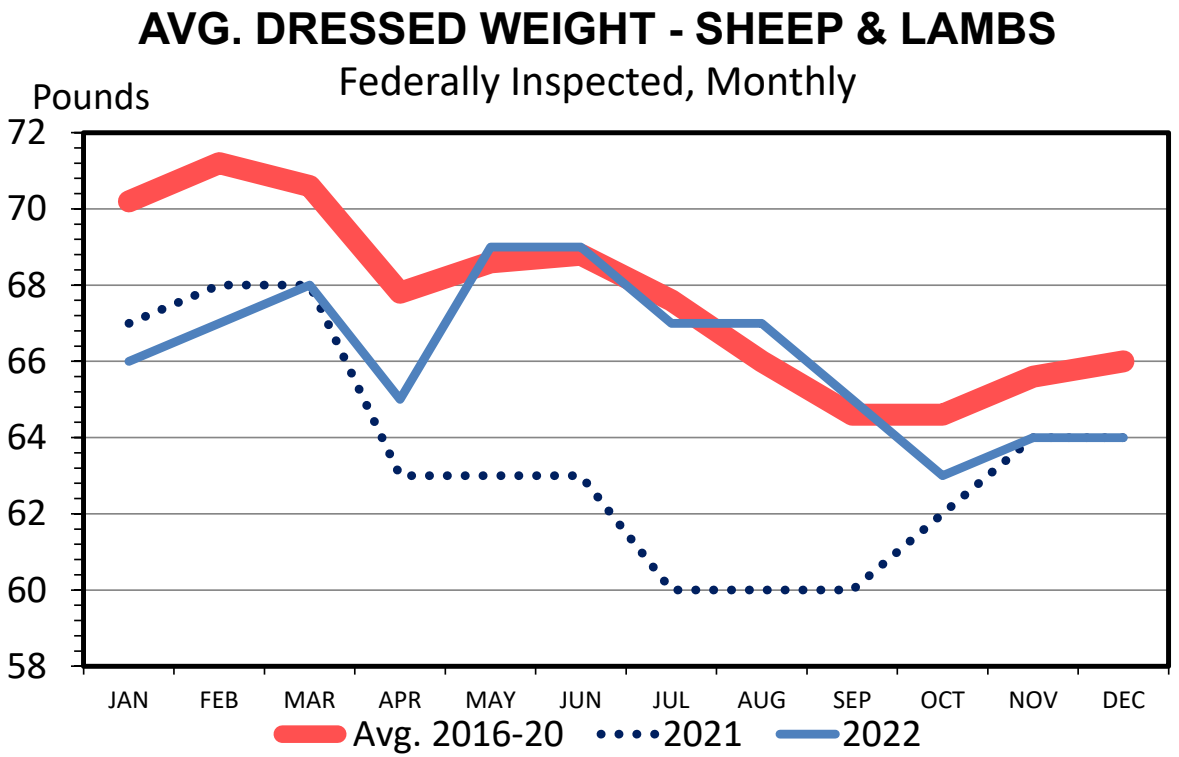
- FI mature sheep slaughter 21.6% smaller in 2022.
- Slaughter returned to more normal levels in response to lower prices.
- Mature sheep slaughter was higher in regions impacted by drought such as in Texas.



Data Source: USDA/NASS, Compiled by the Livestock Marketing Information Center

Federally Inspected Slaughter

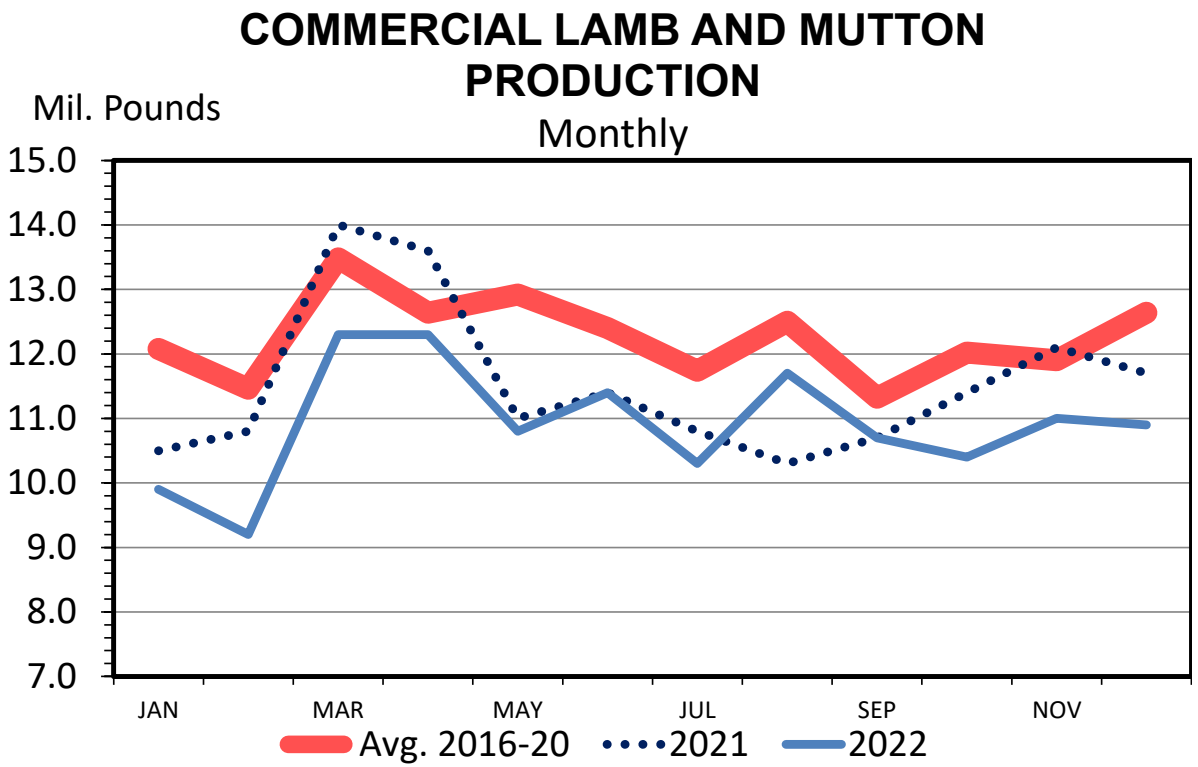
- Lamb weights were 4% heavier in 2022 due to a slowdown in slaughter lamb marketings.
- Compared to the 2016 – 2020 average, weights were 2% lower in 2022.
- Heavier weights compensated for the smaller lamb supply in 2022.



Data Source: USDA/NASS, Compiled by the Livestock Marketing Information Center

Production

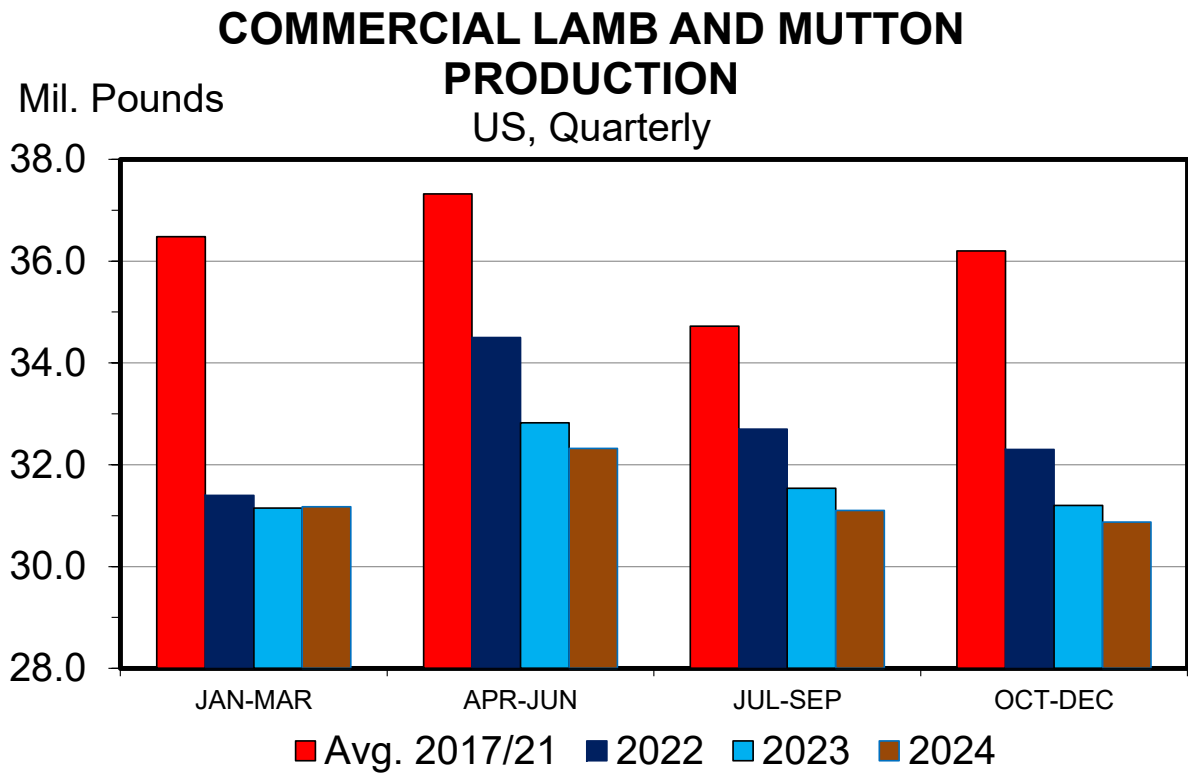
- Commercial lamb production down 5.4% in 2022, 11% lower than the 2016 – 2020 average.
- Federally Inspected (FI) lamb production down 4.6% in 2022.
- Lower production due to the smaller lamb supply.



Data Source: USDA/NASS, Compiled by the Livestock Marketing Information Center

Lamb & Mutton Production

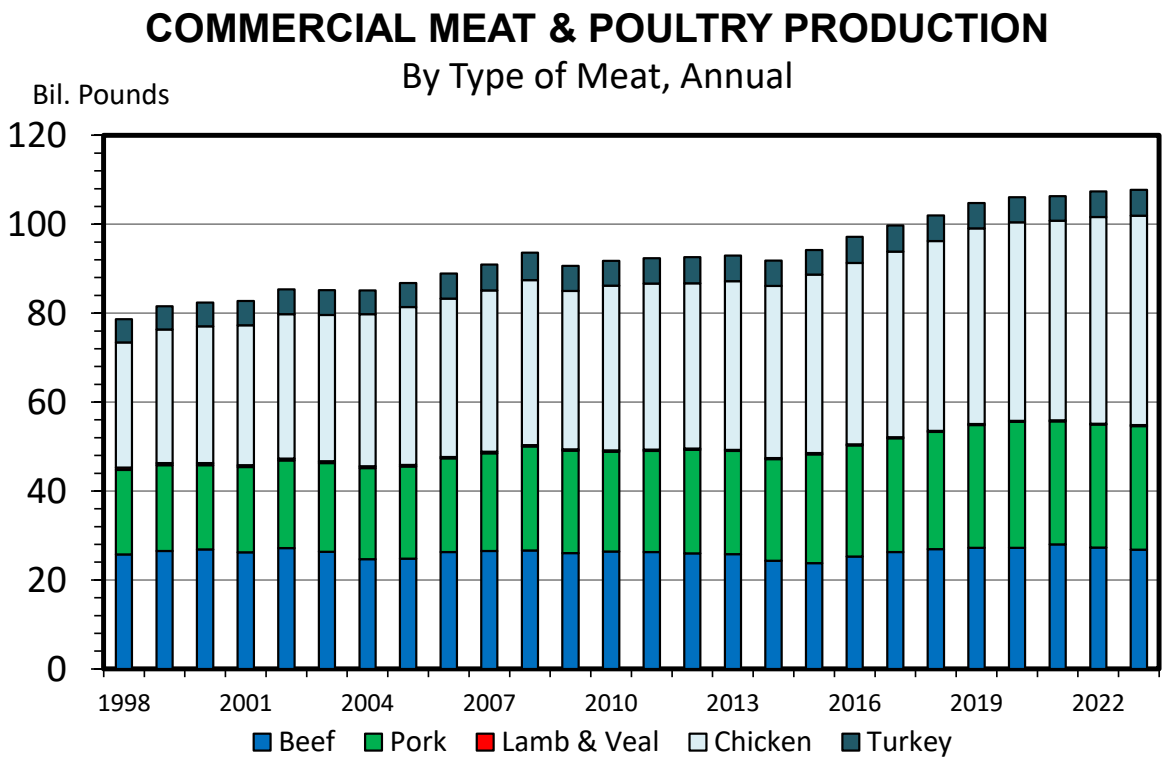
- Lamb and mutton production seasonally largest in the second quarter when spring holiday demand is at its peak.
- Commercial lamb production down 5.4% in 2022.
- Production expected to be down about 3% in 2023.



Data Source: USDA/NASS, Compiled & Forecasts by the Livestock Marketing Information Center

Meat & Poultry Production

- Meat and poultry production has increased over the last 25 years.
- Total meat and poultry supplies in 2022 were a tad higher than in 2021.
- Meat and poultry supplies are expected flatten in 2023 which will impact prices.



Data Source: USDA/NASS, Compiled & Forecasts by the Livestock Marketing Information Center

Feeder & Slaughter Lamb Prices

Feeder Lamb Prices
(60 – 90 lbs.)

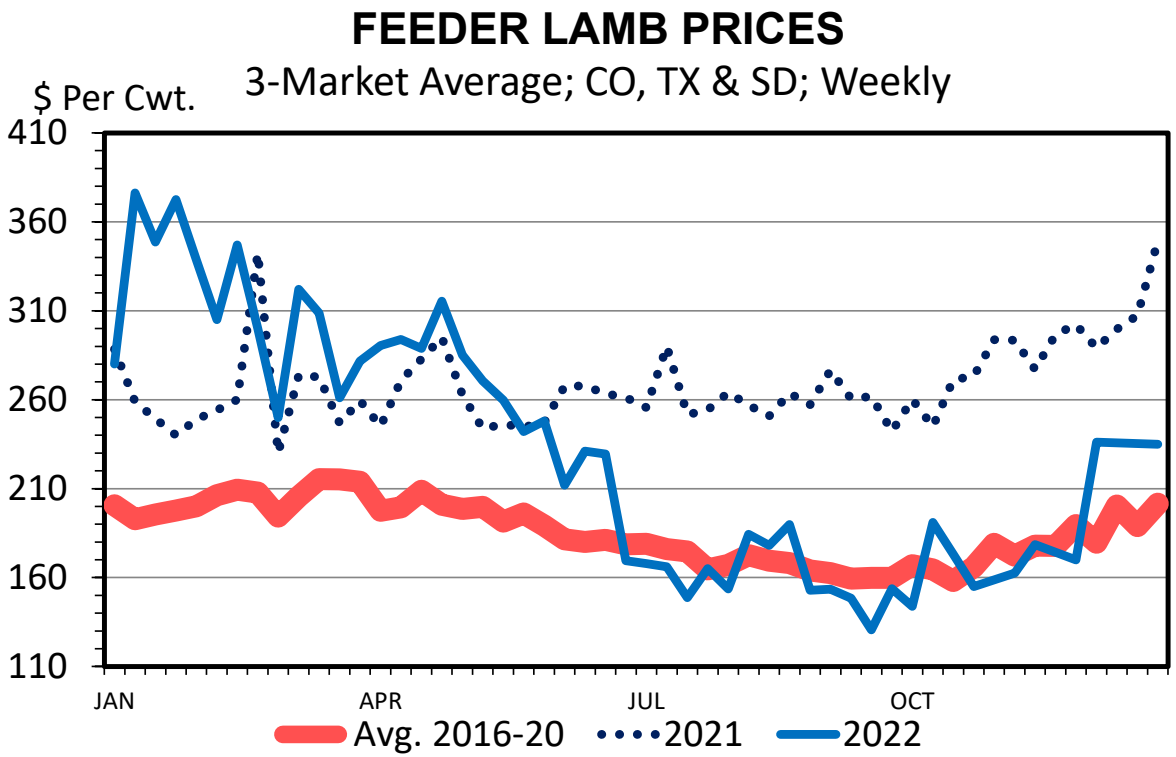
- 3-Market Average (CO, SD, TX) feeder lamb price averaged $233.85 per cwt.
- Price declines due to:
  - Softer consumer demand for lamb
  - Large supply of slaughter ready-lambs on-feed
- Prices still high compared to previous year price levels.

	San Angelo, TX ($/cwt.)	Ft. Collins, CO ($/cwt.)	Sioux Falls, SD ($/cwt.)	3-Mkt Avg. (CO, SD, TX) ($/cwt.)	% of Previous Year
2016	180.45	182.71	191.81	184.99	-3.8%
2017	191.27	182.26	204.60	192.71	4.2%
2018	171.09	154.35	186.94	177.46	-7.9%
2019	177.97	165.22	184.77	177.29	-0.1%
2020	191.17	176.08	202.28	191.75	8.2%
2021	267.37	253.53	286.50	271.26	41.5%
2022	**223.93**	**223.86**	**237.98**	**233.85**	**-13.8%**

Data Source: USDA/AMS, Compiled by ASI & the Livestock Marketing Information Center

Feeder Lamb Prices

- Feeder lamb prices below year-ago during the second half of 2022.
- Lower prices attributed to high feed costs and large supplies of slaughter lambs.
- 3-Market Average (CO, SD, TX) price averaged $233.85 per cwt. 2022.
- Lightweight feeder lamb prices remained strong in 2022.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Slaughter Lamb Prices

- Slaughter lamb prices down 20% from the record levels of 2021.
- Prices declined in 2022 due to:
  - High lamb prices and inflation resulting in a decline in consumer demand for lamb
  - Large supply of slaughter-ready lambs in feedlots
- Formula Prices on a carcass basis were not reported due to USDA/AMS confidentiality guideline.

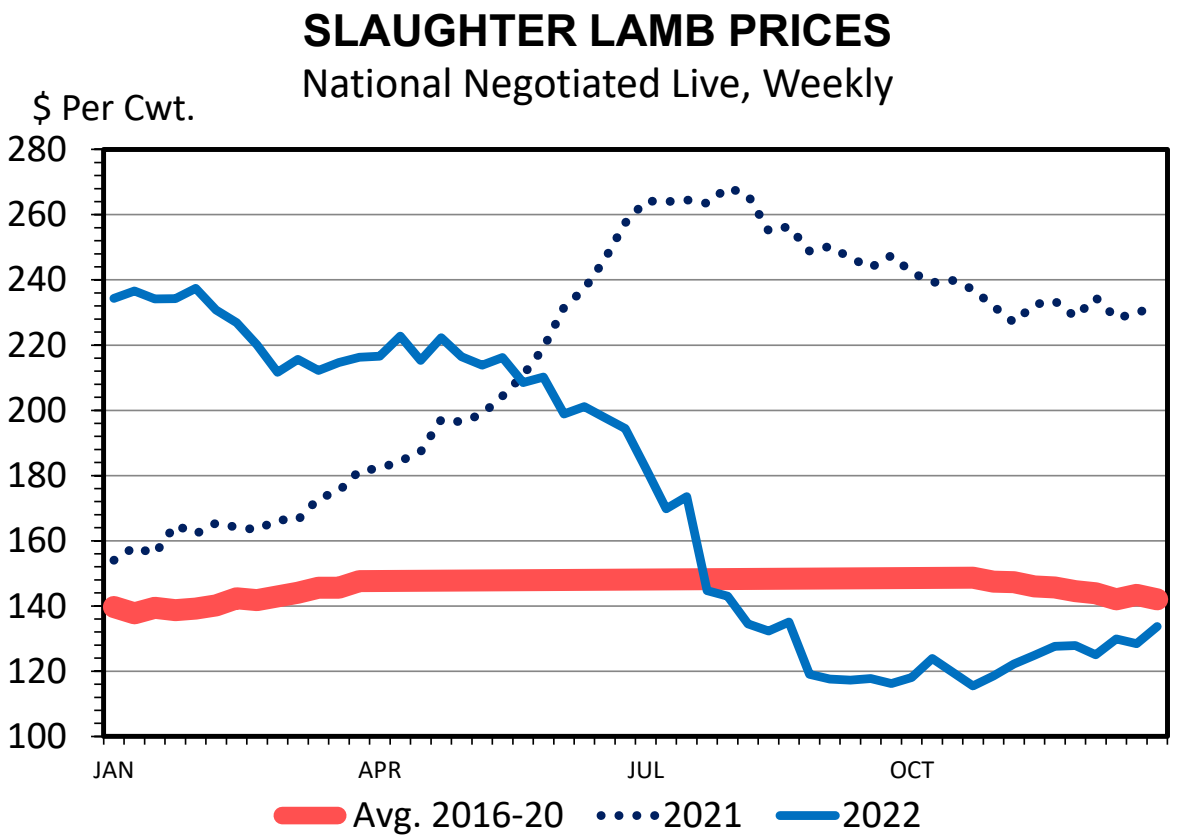
	Formula Carcass Basis[1] ($/cwt.)	% of Previous Year	Formula Live Equivalent ($/cwt.)	% of Previous Year	Negotiated Live[1] ($/cwt.)	% of Previous Year
2016	285.25	-4.6%	143.37	-4.7%	145.50	-3.3%
2017	300.21	5.2%	151.05	5.4%	151.81	4.3%
2018	272.95	-9.1%	137.63	-8.9%	143.05	-5.8%
2019	287.63	5.4%	144.06	4.7%	149.70	4.7%
2020	250.93	-12.8%	125.14	-13.1%	150.04	0.2%
2021	NQ	NQ	NQ	NQ	217.25	44.8%
2022	**NQ**	**NQ**	**NQ**	**NQ**	**173.72**	**-20.0%**

[1]Prices for 2020 are calculated from incomplete weeks of data due to confidentiality.

Data Source: USDA/AMS, Compiled by ASI & the Livestock Marketing Information Center

Slaughter Lamb Prices

- Slaughter lamb prices declined in 2022.
- Lack of demand drove prices down during the second half of the year.
- Slaughter lamb price averaged $173.72 per cwt. 2022.



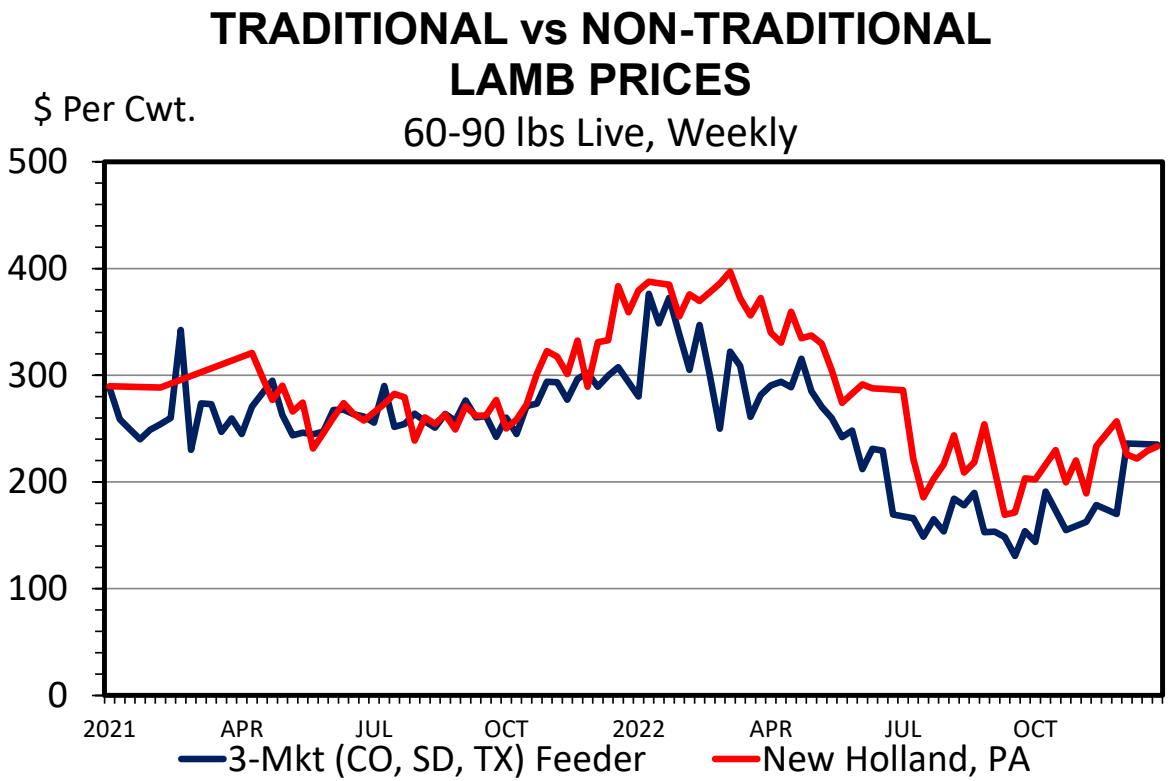
Data Source: USDA/AMS, Compiled by ASI & the Livestock Marketing Information Center

Light-Weight Lamb Market Trends

- Characterized by a lighter-weight lamb, around 100 lbs. based on the preferences of the ethnic market.
- The number of wool-breed lambs sold into this marketing channel increased in 2022 in response to market demand, price, and supply conditions.
- Largest auction markets are New Holland, PA & San Angelo, TX, but markets exists in all regions of the U.S.
- Lambs are processed by State Inspected & Federally Inspected processing plants.
- The number of lambs sold as light-weight slaughter lambs continued to impact the available supply of lambs for the feeding sector and the mainstream lamb market.

Light-Weight Slaughter Lamb Prices

- The light-weight slaughter market and feeder lamb market are correlated and follow the same price trends.
- Light-weight slaughter lamb prices averaged $50 per cwt. higher than feeder lambs prices in 2022.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Light-Weight Slaughter Lamb Prices

- Prices down from 2022.
- Price decline not as large as feeder lamb prices due to a demand premium from the ethnic market.

Light-Weight Slaughter Lamb Prices
60 – 90 Lbs.

	New Holland, PA ($/cwt)	% of Previous Year	San Angelo, TX ($/cwt)	% of Previous Year
2019	227.65	-2.3%	181.31	
2020	256.09	12.5%	213.47	17.7%
2021	349.42	36.4%	287.59	34.7%
2022	**298.61**	**-14.5%**	**270.78**	**-5.8%**

Data Source: USDA/AMS, Compiled by ASI & the Livestock Marketing Information Center

Pelt Values

Pelt Prices

- Pelt values declined over 4% in 2022 due to economic conditions.
- Export values still stronger than the market lows of 2019 and 2020.
- Rising costs and supply chain disruptions plus the effects of inflation weighed on the pelt market in 2022.

	Average Export Value ($/piece)	% of Previous Year
2016	$ 14.25	29.3%
2017	$ 15.30	7.4%
2018	$ 12.88	-15.8%
2019	$ 8.05	-37.5%
2020	$ 7.80	-3.1%
2021	$ 10.78	38.3%
2022	**$ 10.31**	**-4.4%**

Data Source: USDA/FAS, Compiled by ASI

Note: Estimated pelt credits paid to producers were not reported by USDA/AMS in 2022 due to confidentiality guidelines.

Replacement Sheep Prices

Replacement Ewe Prices

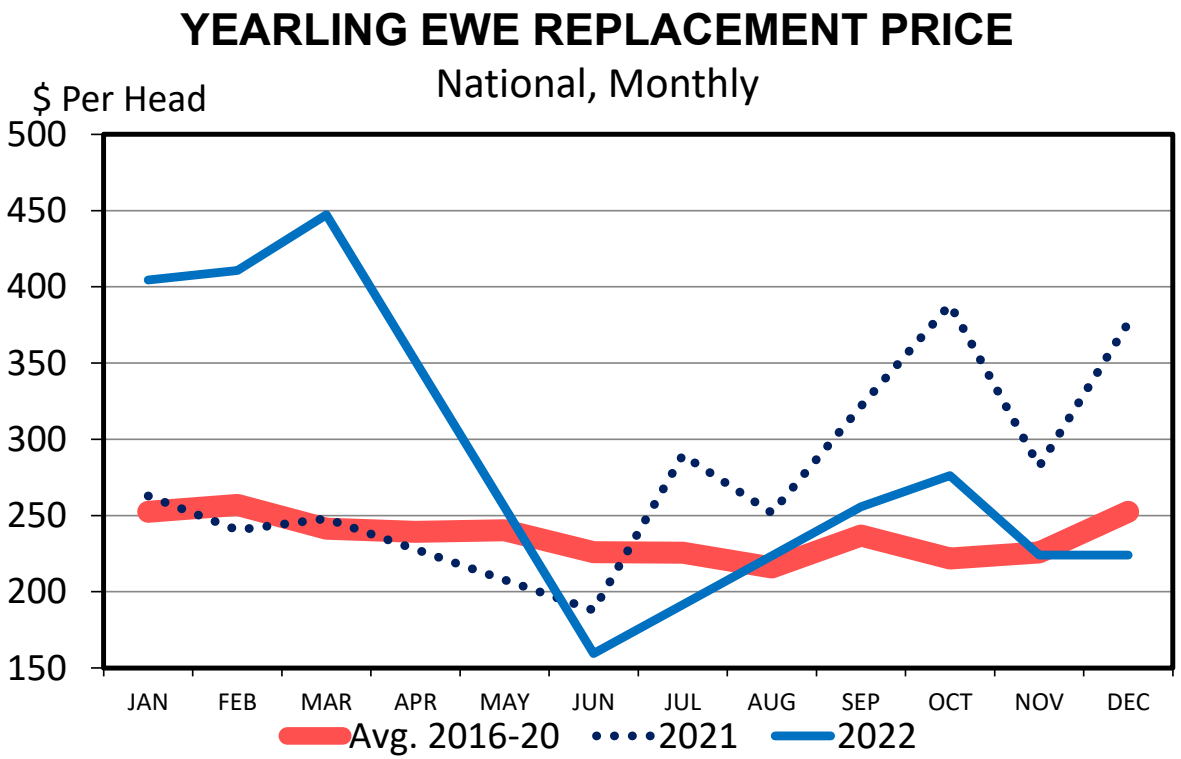
- Ewe Lamb, Yearling, Middle Aged, and Aged Ewe prices were stronger in 2022.
- Young Ewe prices declined some but still higher than historical price levels.
- Prices trends similar to live lamb and wholesale lamb prices with large year-over-year gains during the first half of 2022, and declining prices during the latter half of the year.

	Ewe Lambs ($/head)	Yearling Ewes ($/head)	Young Ewes ($/head)	Middle Aged Ewes ($/head)	Aged Ewes ($/head)
2016	NQ	225.99	186.36	151.34	96.30
2017	294.50	256.00	181.37	147.60	95.40
2018	275.78	242.07	189.30	141.10	92.09
2019	164.97	234.33	178.25	141.36	95.83
2020	185.26	193.06	181.83	160.03	127.13
2021	284.38	287.34	257.23	212.22	192.77
2022	**296.63**	**311.14**	**248.52**	**219.83**	**198.67**
% of Previous Year	**4.3%**	**8.3%**	**-3.4%**	**3.6%**	**3.1%**

Data Source: USDA/AMS, Compiled by ASI

Replacement Ewe Prices

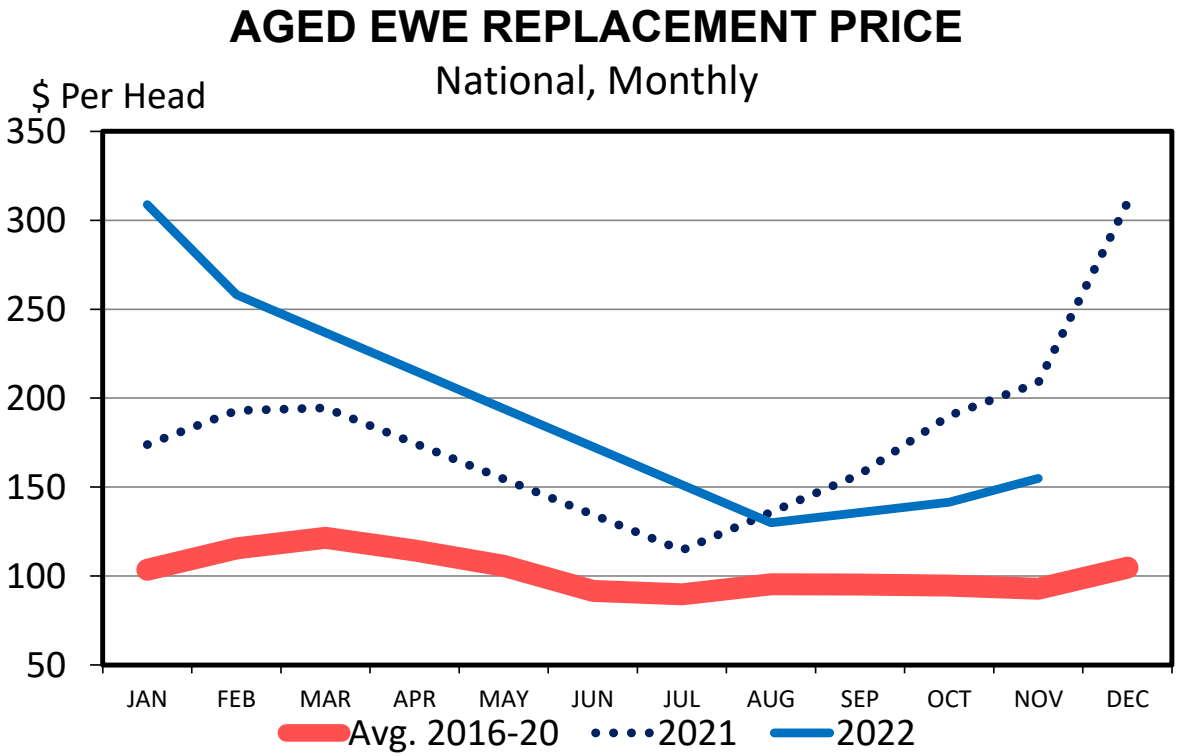
- Yearling Ewe prices hit record levels in early 2022 before declining through the second quarter.
- Prices during 2021 and 2022 exhibited large price swings given lamb market conditions, high production costs, and ongoing impacts of drought.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Replacement Ewe Prices

- Aged Ewe prices averaged slightly higher in 2022.
- Prices declined for most of the year but did post a modest increase during the fall months.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

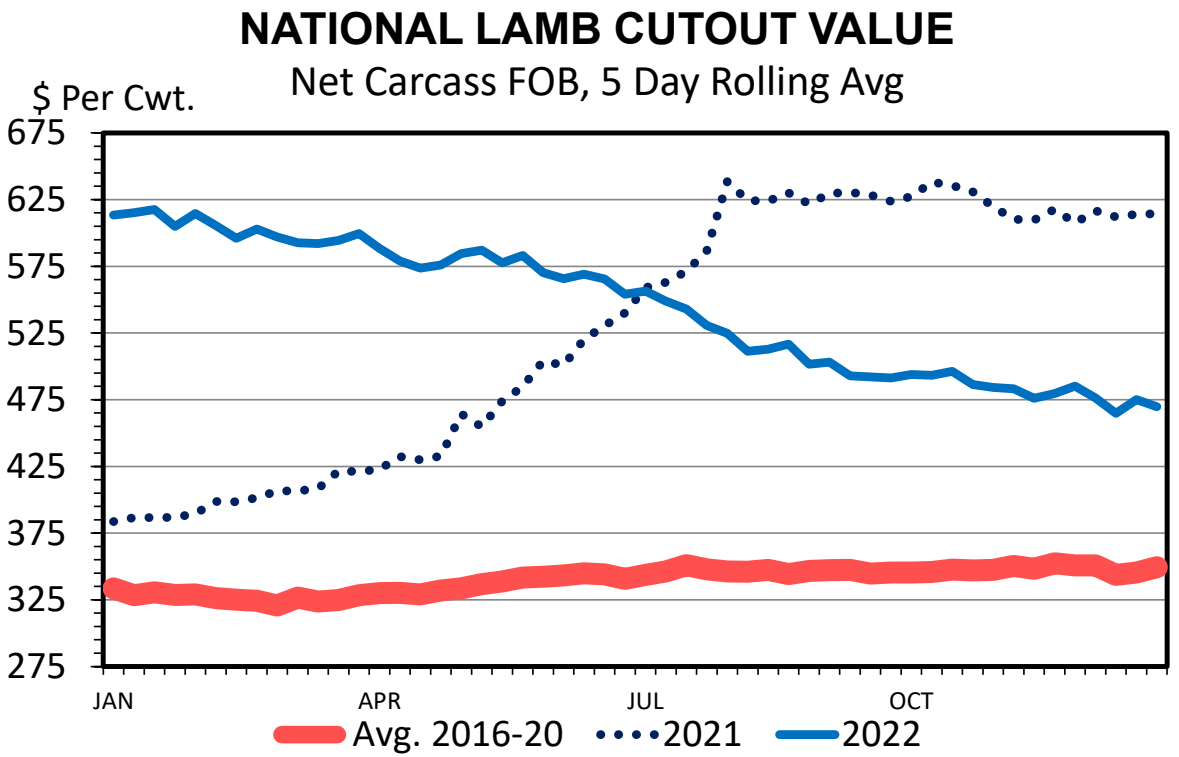
Wholesale Lamb Values

Wholesale Lamb Market Trends

- Wholesale lamb values started 2022 above normal price levels but slowly trended lower by the end of the year.
- The wholesale market was impacted by:
  - Weak consumer demand.
  - Higher input costs and inflation, requiring higher margins.
  - Continued disruptions in the economy and the labor market.
  - The price spread between domestic and imported lamb widen beyond typical levels due to domestic prices skyrocketing to record levels in late 2021 and into 2022.

Lamb Carcass Cutout Value

- Represents the estimated value of a lamb carcass based on the prices paid for individual items.
- The net cutout value averaged $544.56 per cwt. in 2022, 3.7% higher than 2021.
- Disruptions in the economy and the labor market impacted the processing and foodservice sector.



Note: The Net Carcass Cutout Value deducts $62.00 per cwt. for processing and packaging based on an average cost paid by firms covered under Livestock Mandatory Reporting (LMR).

Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

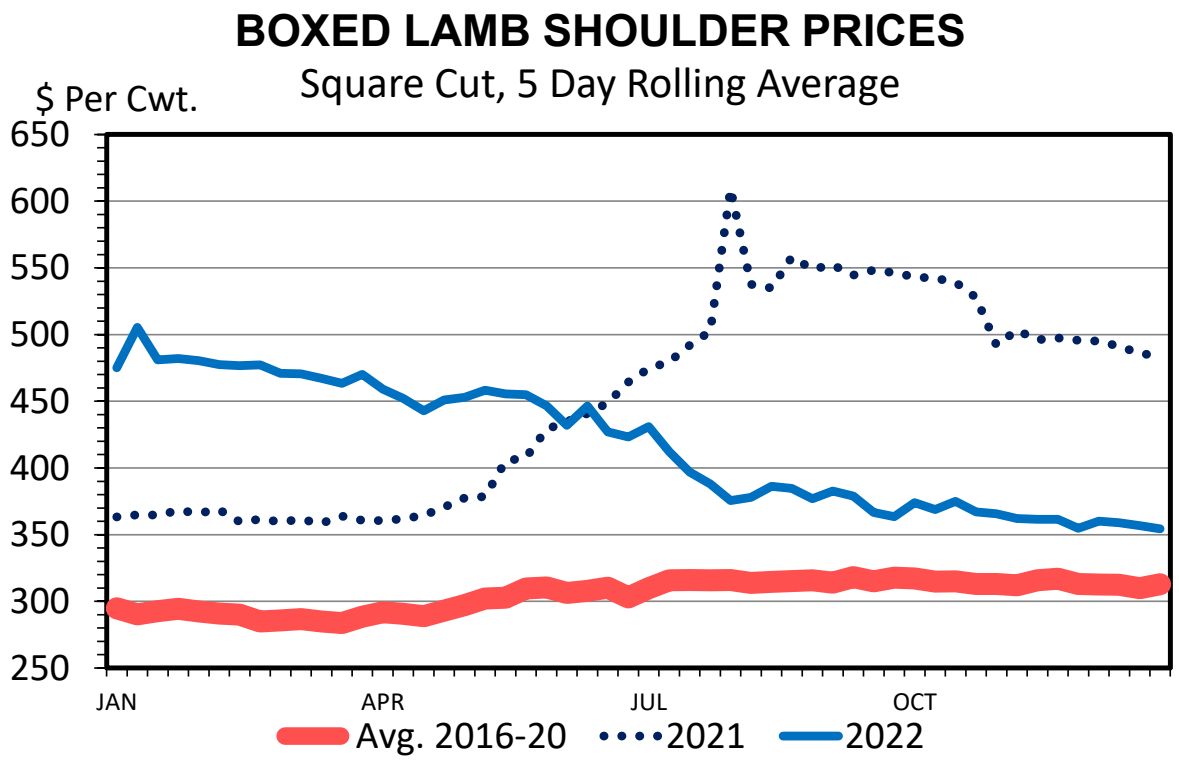
Lamb Carcass Cutout Values

	Net Value[1] ($/cwt.)	% of Previous Year	Foresaddle Value ($/cwt.)	% of Previous Year	Hindsaddle Value ($/cwt.)	% of Previous Year
2016	316.53	-12.5%	360.13	-6.4%	371.92	0.3%
2017	340.33	7.5%	413.15	14.7%	404.25	8.7%
2018	331.29	-2.7%	406.63	-1.6%	391.92	-3.0%
2019	342.13	3.3%	430.49	5.9%	395.05	0.8%
2020	368.84	7.8%	453.72	5.4%	400.97	1.5%
2021	524.96	42.3%	593.77	30.9%	579.73	44.6%
2022	**544.56**	**3.7%**	**628.69**	**5.9%**	**583.06**	**0.6%**

[1]The Net Carcass Cutout Value deducts $62.00 per cwt. for processing and packaging based on an average cost paid by firms covered under Livestock Mandatory Reporting (LMR).
Data Source: USDA/AMS, Compiled by ASI

Lamb Carcass Values - Shoulder

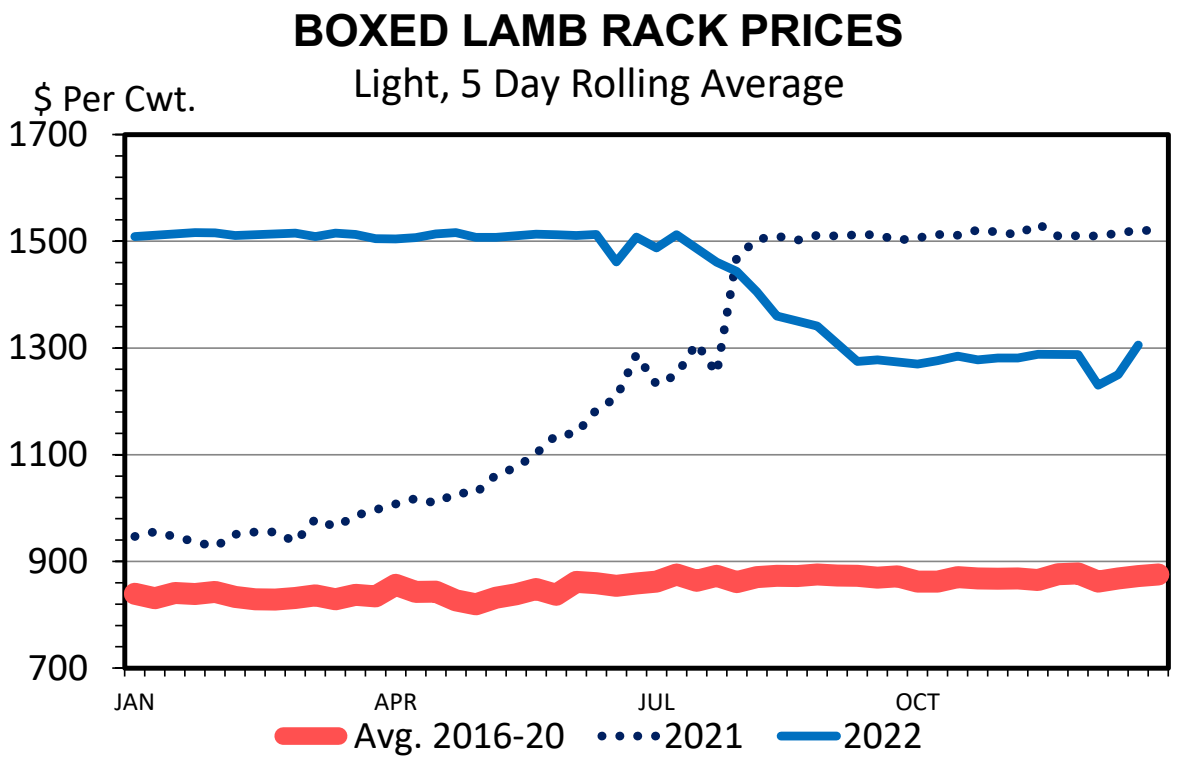
- Declines in consumer demand due to price inflation drove wholesale lamb prices lower in 2022.
- For 2022, shoulder prices averaged $418.28 per cwt., a decline of 7.2%.
- Shoulder, Square Cut, prices still stronger than 2021 and prior year price levels.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Lamb Carcass Values - Rack

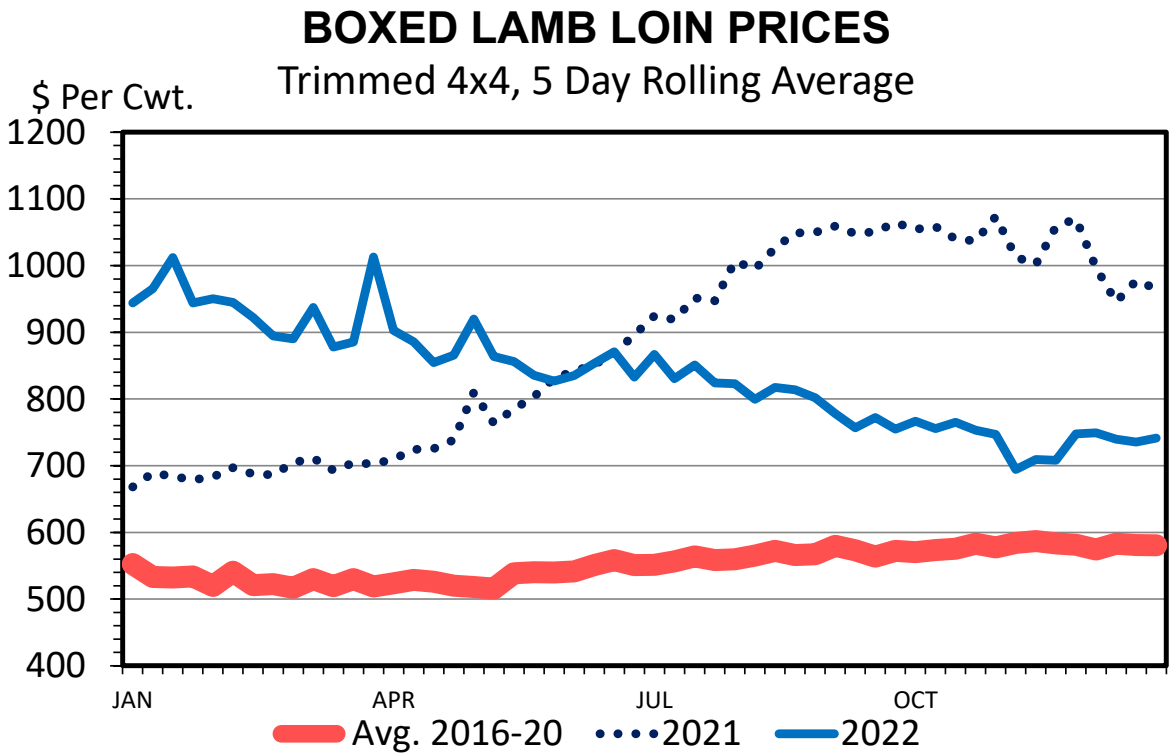
- For 2022, the Rack, 8-Rib Medium price averaged $1,291 per cwt., 7% above 2021.
- Rack, Roast Ready, Frenched prices averaged $2,562.79 per cwt., 16.7% higher in 2022.
- Rack prices lost, an average, $264 per cwt. in value between January and December of 2022.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Lamb Carcass Values - Loin

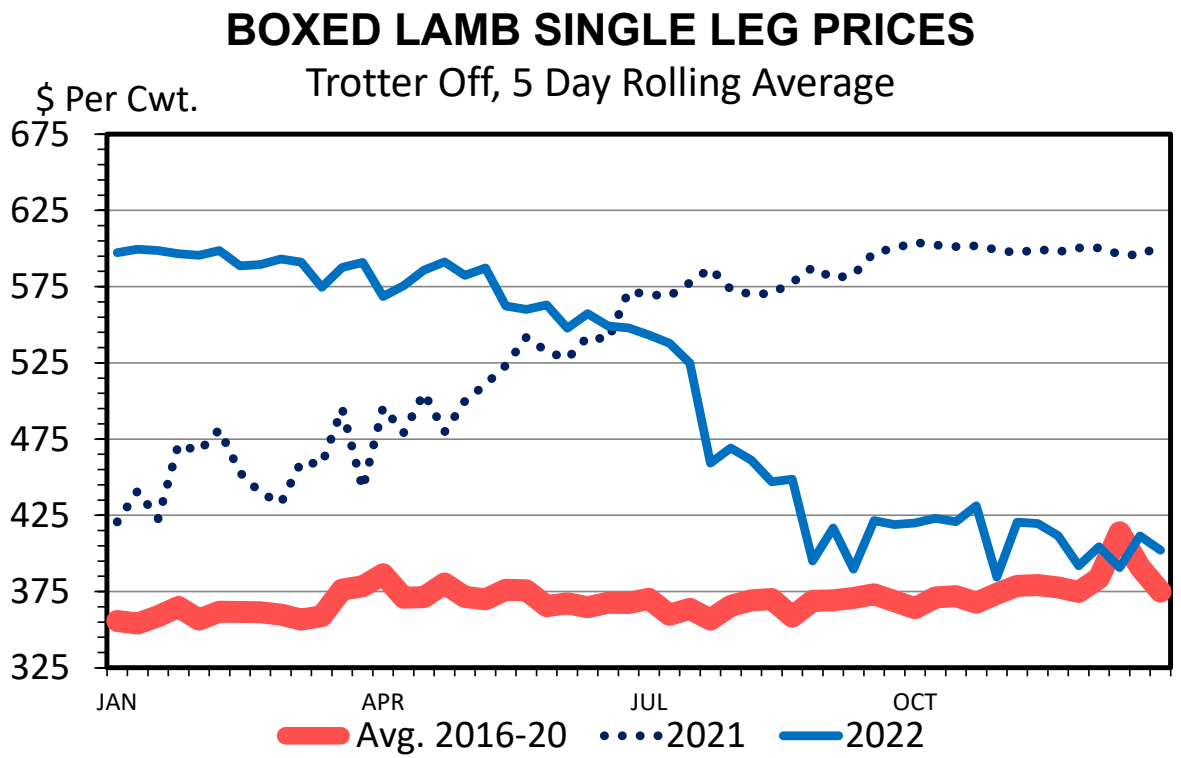
- For 2022, the Loin 4x4 price averaged $836.95 per cwt., 4.6% less than in 2021.
- The price for 1x1 Loins posted a 3% annual gain, averaging $1,211.66 per cwt. in 2022.
- Loin prices on a monthly basis started to decline in June and remained below the prior year for the balance of 2022.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Lamb Carcass Values - Leg

- The price for Legs, Trotter Off averaged $529.45 per cwt. in 2022, a tad lower than the prior year.
- Legs, Boneless Tied averaged $804.34 per cwt. in 2021, a 2% gain over the prior year.
- Leg prices declined, on average, $168 per cwt. in value between January and December 2022.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Summary of Lamb & Mutton Graded

- In 2022, 44.4% of Federally Inspected (FI) lambs were graded.
- Percent Yield Grade 4 & 5 increased due to a large supply of heavyweight lambs.
- Percent Yield Grades 1 – 3 declined in 2022.
- 90% graded Choice, 10% graded Prime in 2022.

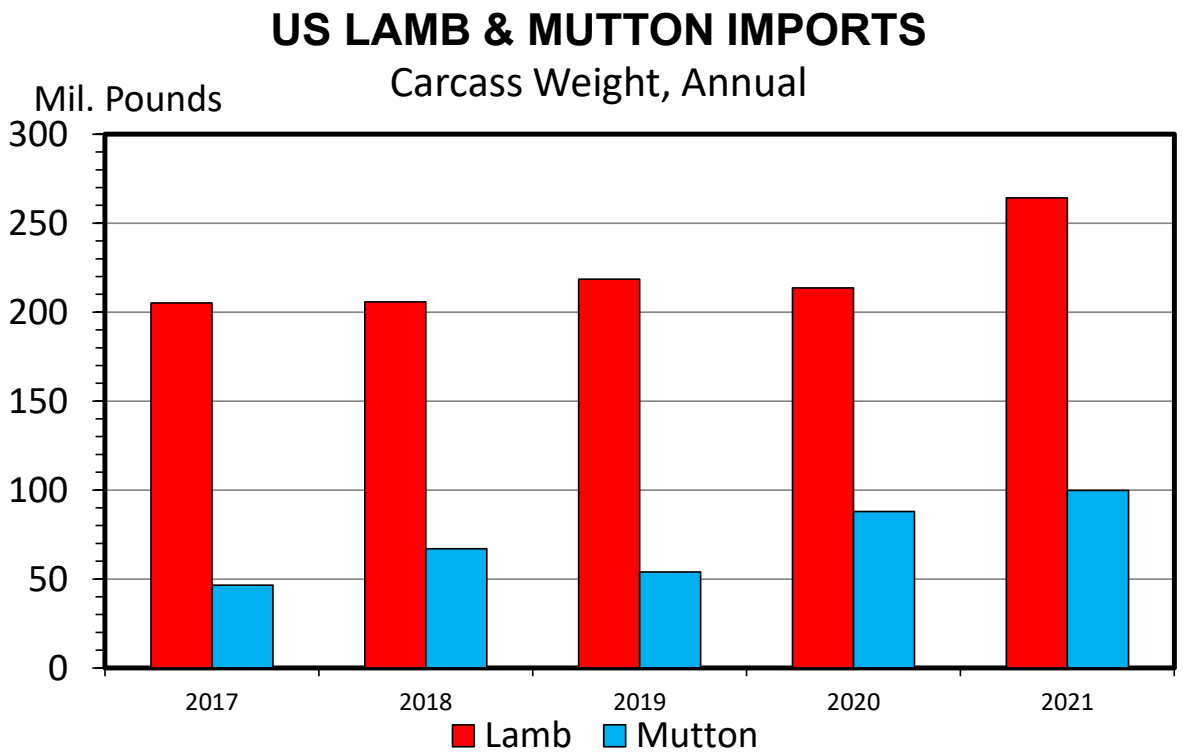
	Yield Grade 1	Yield Grade 2	Yield Grade 3	Yield Grade 4	Yield Grade 5	% Lambs Graded of FI Lamb Slaughter
2016	6.5%	30.3%	39.5%	16.0%	7.7%	61.3%
2017	5.8%	31.1%	41.4%	14.8%	7.0%	58.6%
2018	5.0%	27.1%	39.3%	17.9%	10.7%	57.3%
2019	4.8%	26.6%	41.6%	18.9%	8.2%	55.8%
2020	4.6%	29.1%	44.7%	16.5%	5.1%	50.4%
2021	6.2%	37.4%	40.8%	12.7%	2.9%	49.5%
2022	**5.4%**	**30.8%**	**36.2%**	**20.2%**	**7.4%**	**44.4%**

Data Source: USDA/AMS, Compiled by ASI

Imports & Exports

Lamb & Mutton Imports

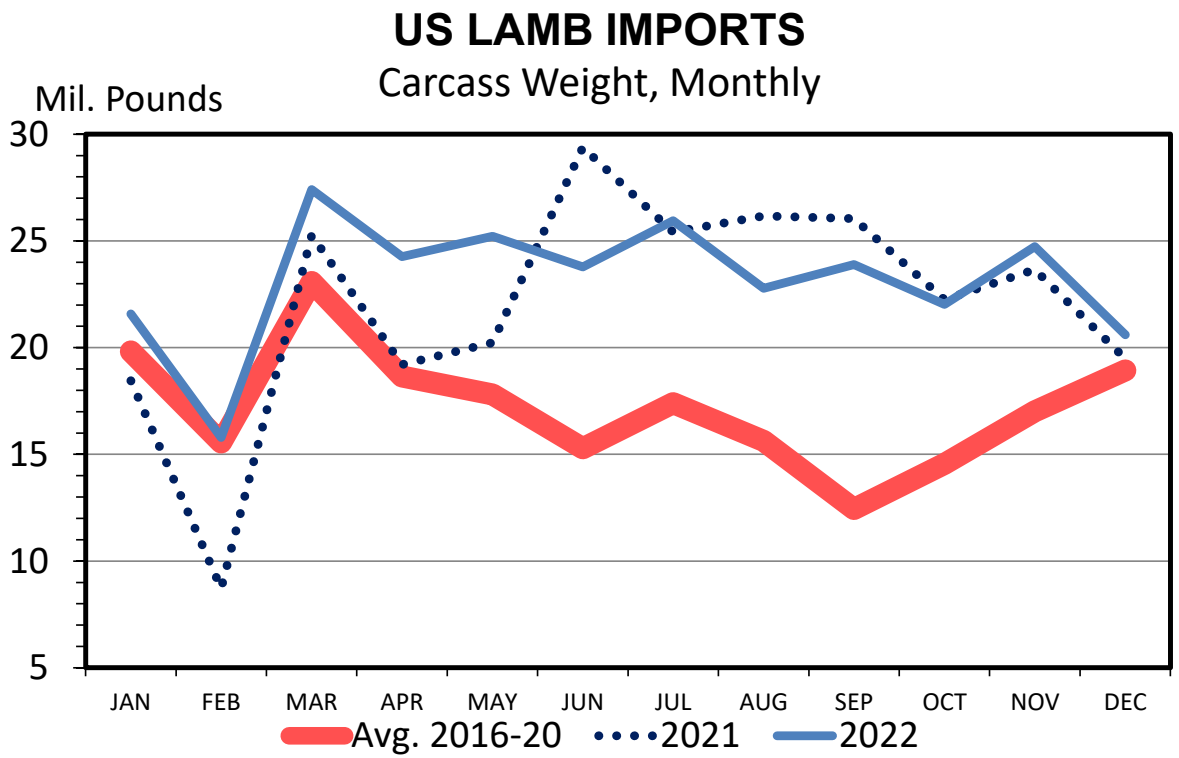
- Strong U.S. lamb prices provided an attractive market for lamb imports.
- Lamb imports up 5.2% at 278.0 million pounds in 2022.
- Mutton imports down 19.6% to 80.13 million pounds.
- Total lamb and mutton imports at 358.1 million pounds, down 1.6% from 2021.



Data Source: USDA/ERS & USDA/FAS, Compiled by the Livestock Marketing Information Center

Lamb Imports

- Imports from Australia at 207.8 million pounds were up 6.2% in 2022.
- Imports from New Zealand were 0.8% above 2021 at 64.9 million pounds.
- Imports responded to elevated U.S. retail lamb prices in 2022.



Data Source: USDA/ERS & USDA/FAS, Compiled by the Livestock Marketing Information Center

Lamb & Mutton Imports

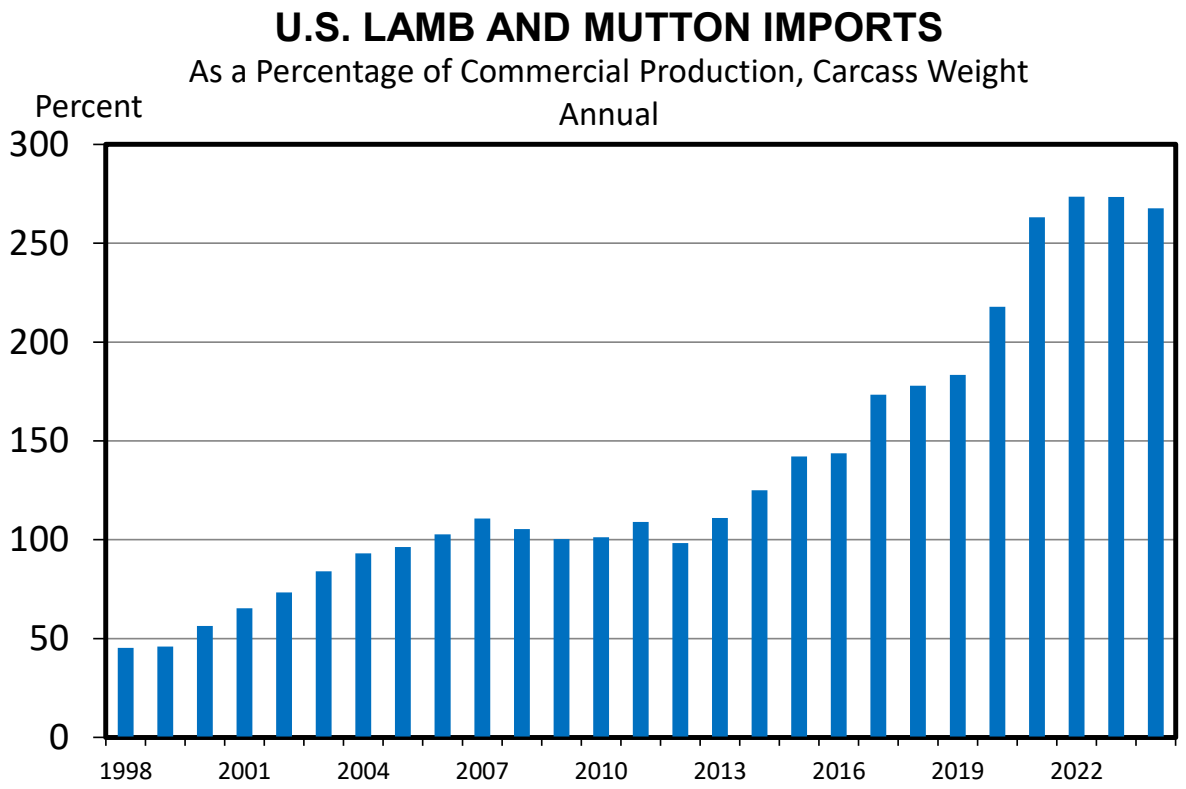
(1,000 lbs. carcass weight basis)

	Lamb	% of Previous Year	Mutton	% of Previous Year	Total Lamb & Mutton	% of Previous Year
2016	187,896	5.1%	28,024	-19.9%	215,920	1.0%
2017	205,222	9.2%	46,494	65.9%	251,716	16.6%
2018	205,678	0.2%	66,961	44.0%	272,639	8.3%
2019	218,510	6.2%	53,911	-19.5%	272,421	-0.1%
2020	213,634	-2.2%	87,916	63.1%	301,550	10.7%
2021	264,241	23.7%	99,664	13.4%	363,905	20.7%
2022	**278,003**	**5.2%**	**80,133**	**-19.6%**	**358,135**	**-1.6%**

Data Source: USDA/ERS & USDA/FAS, Compiled by ASI

Lamb & Mutton Imports

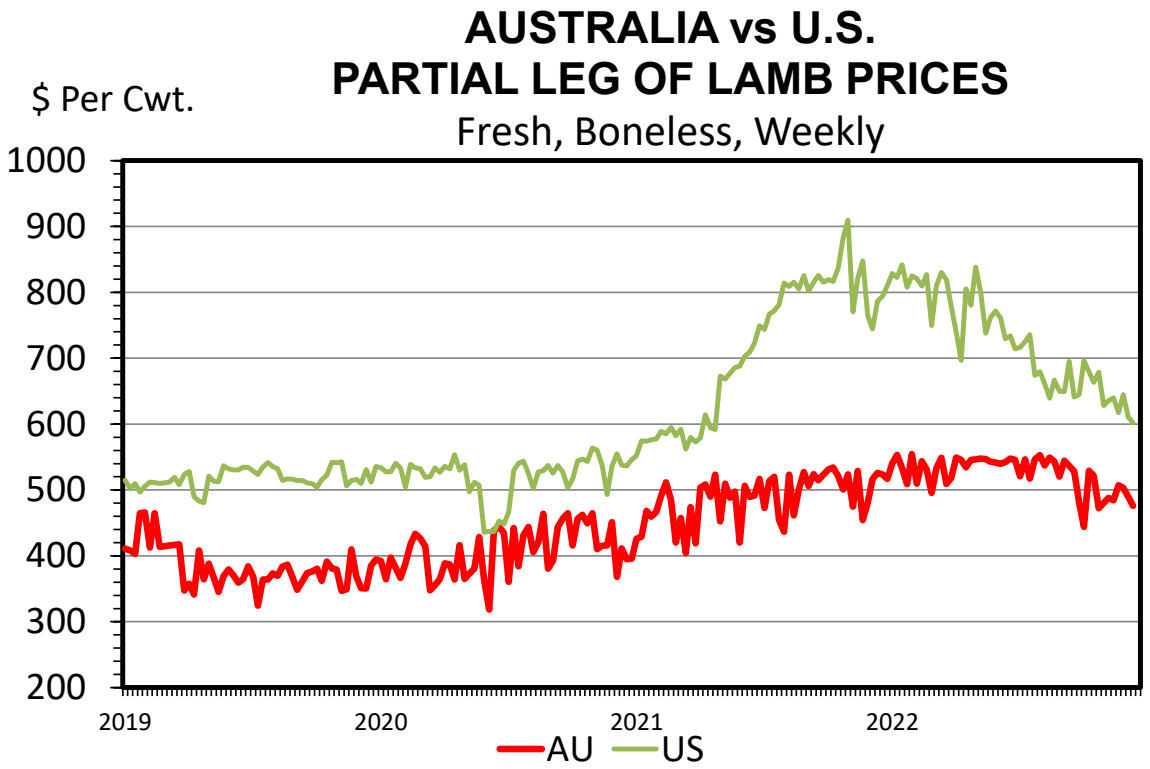
- Total imports as a percent of U.S. commercial production was 274% in 2022.
- Imports accounted for more than 70% of total U.S. lamb and mutton disappearance in 2022.
- The decline in U.S. lamb and mutton production was greater than the decline in total imports in 2022.



Data Source: USDA/ERS, USDA/FAS & USDA/NASS, Compiled & Forecasts by the Livestock Marketing Information Center

Lamb Imports

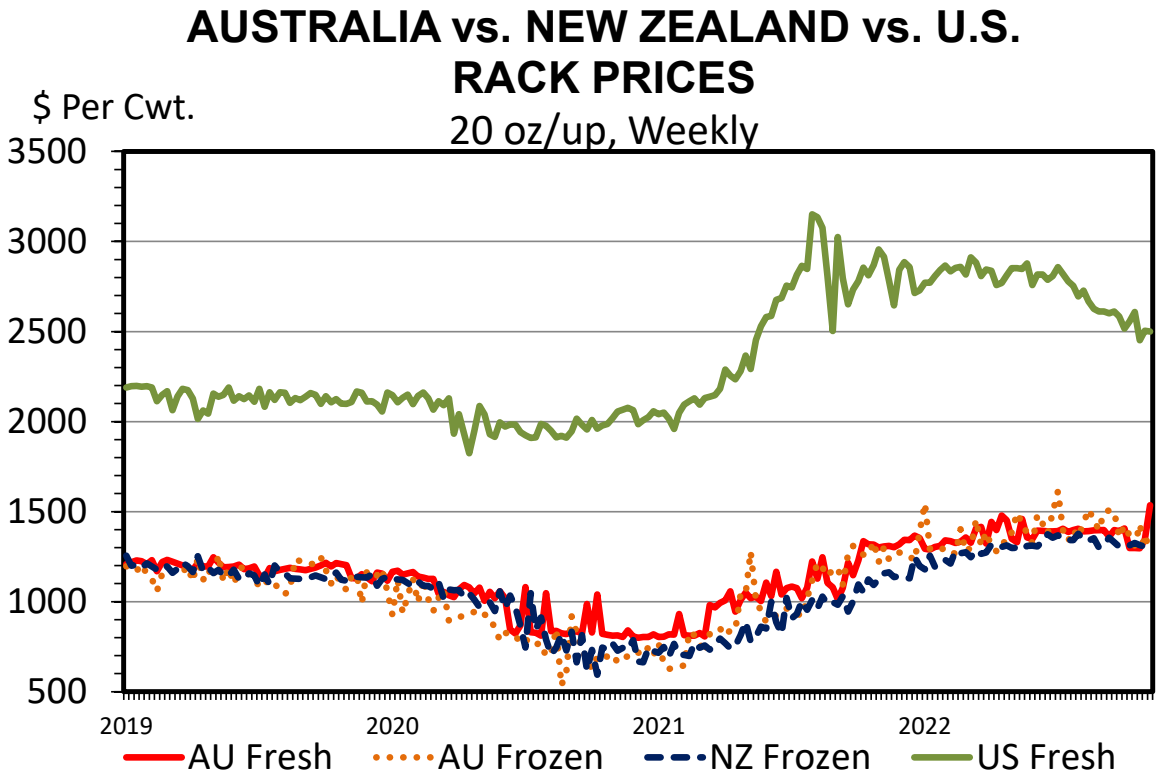
- High domestic prices led to an increase in imports in 2022.
- The price spread between domestic and imported prices widened as domestic prices rose to record high price levels.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Lamb Imports

- American lamb prices posted larger annual gains than imported lamb during 2022.
- The margin between domestic and imported prices widen in 2022.



Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Lamb & Mutton Exports

- Lamb and mutton exports totaled 5.83 million pounds, 68% higher than in 2021 and the largest since 2019.
- Export volume growth was driven primarily by stronger demand in the Caribbean.
- Exports to Mexico, Canada, the Philippines and Taiwan posted year-over-year gains.
- Export value increased 49% to $13.2 million, the highest since 2019.
- In 2022, lamb exports as a percent of lamb and mutton production was 4.5%, slightly higher than in 2021.

Lamb & Mutton Exports

(1,000 lbs. carcass weight basis)

	Lamb	% of Previous Year	Mutton	% of Previous Year	Total Lamb & Mutton	% of Previous Year
2016	828	93.4%	4,593	13.5%	5,420	21.2%
2017	922	11.4%	4,982	8.5%	5,905	8.9%
2018	785	-14.9%	5,111	2.6%	5,896	-0.1%
2019	737	-6.1%	4,958	-3.0%	5,695	-3.4%
2020	537	-27.2%	2,701	-45.5%	3,237	-43.2%
2021	477	-11.1%	3,002	11.2%	3,479	7.5%
2022	**530**	**11.2%**	**5,303**	**76.6%**	**5,834**	**67.7%**

Data Source: USDA/ERS & USDA/FAS, Compiled by ASI

Consumer Market

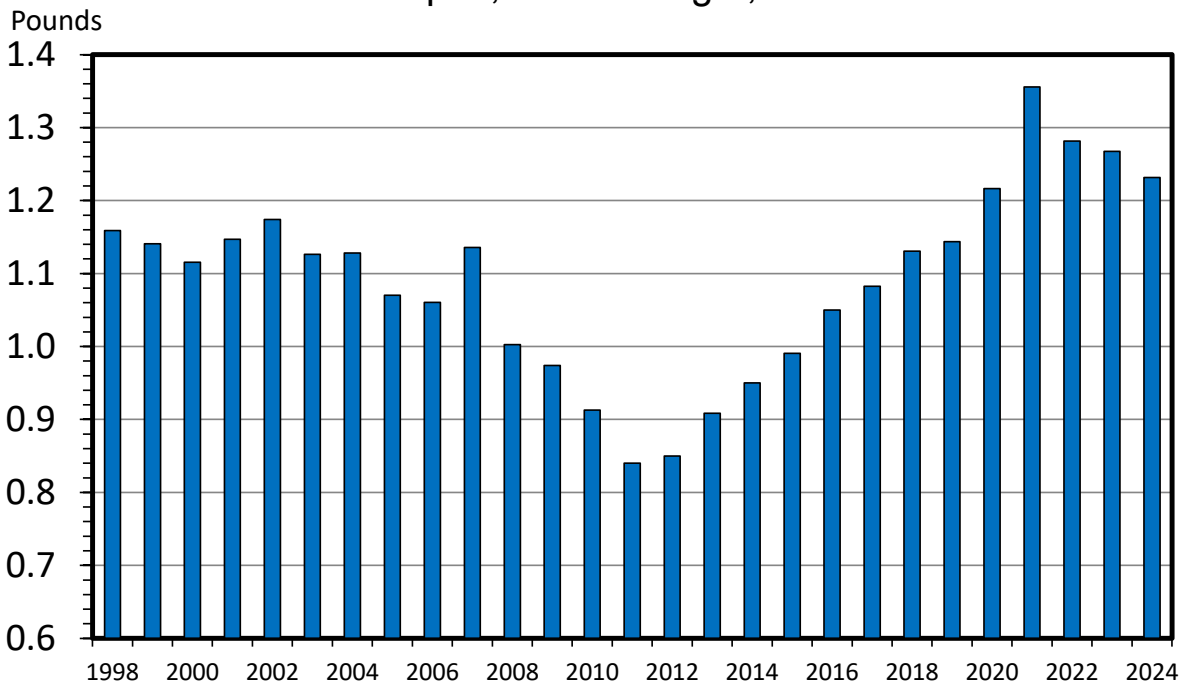
Consumer Market Trends

- Supply chain issues, particularly rising costs for such factors as transportation, labor, and processing, factored into higher prices for consumers.
- Consumer purchasing behavior changed as the cost of living increased more than earnings, due to inflation.
- Consumers were more price sensitive to higher lamb prices compared to 2021.
- Consumers pushed-back on high lamb prices in the meat case and on menus.
- Inflationary pressure has triggered money saving measures when buying groceries among a large percentage of Americans.

Lamb Consumption

- In 2022, per capita lamb consumption at the retail level was 1.28 pounds per person.
- This is the second highest since the earlier 1990's, only behind 1.36 pounds per person in 2021
- The relationship between lamb prices and per capita availability indicates that consumer demand for lamb weakened in 2022.

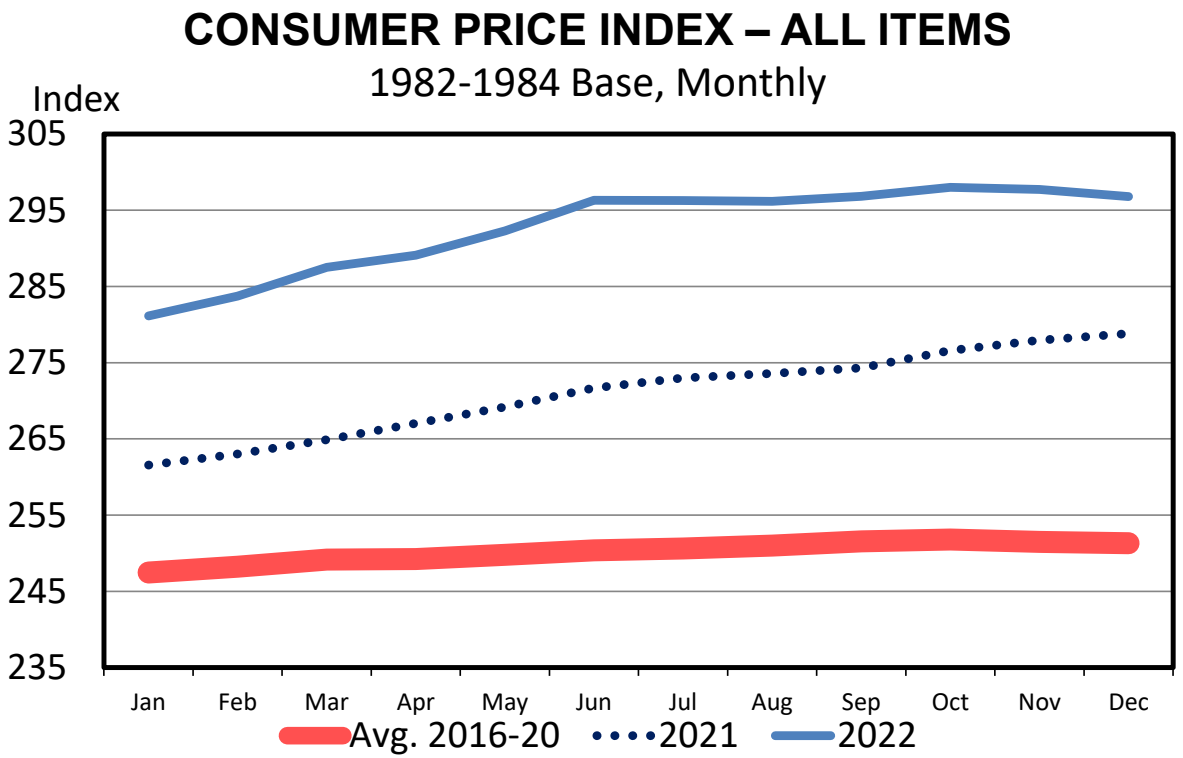
US LAMB & MUTTON CONSUMPTION
Per Capita, Retail Weight, Annual



Data Source: USDA/NASS, Compiled & Forecasts by the Livestock Marketing Information Center

Inflation

- Consumer prices rose in 2022 due to inflation.
- The Consumer Price Index (CPI) averaged 8% higher in 2022 due to higher prices for gasoline, housing, and food.
- Inflation reduced consumer real and disposable incomes which contributed to weaker lamb demand.



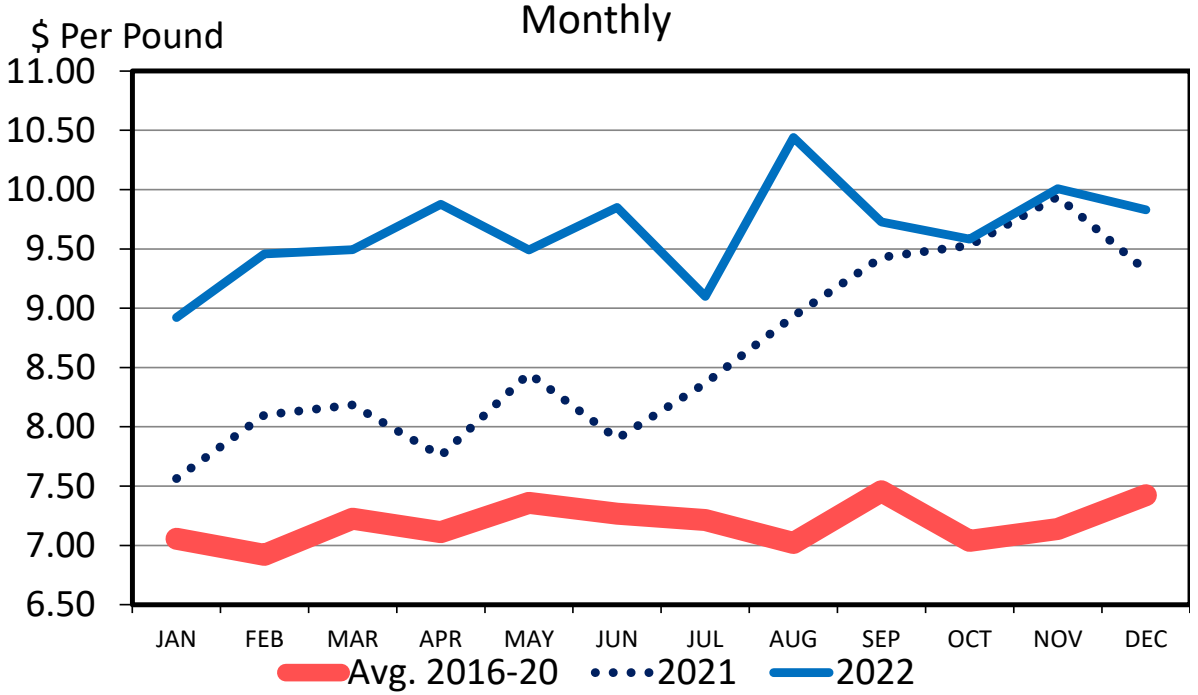
Data Source: Bureau of Labor Statistics, Compiled by the Livestock Marketing Information Center

Retail Feature Activity

- Retail prices remained elevated in 2022.
- Prices averaged a $1.00 per lb higher than in 2021 and more than $2.00 per lb higher than in 2020.
- Consumers were more sensitive to high retail prices in 2022 because of inflationary pressure on their purchasing power.

RETAIL ALL LAMB FEATURE PRICE

Monthly

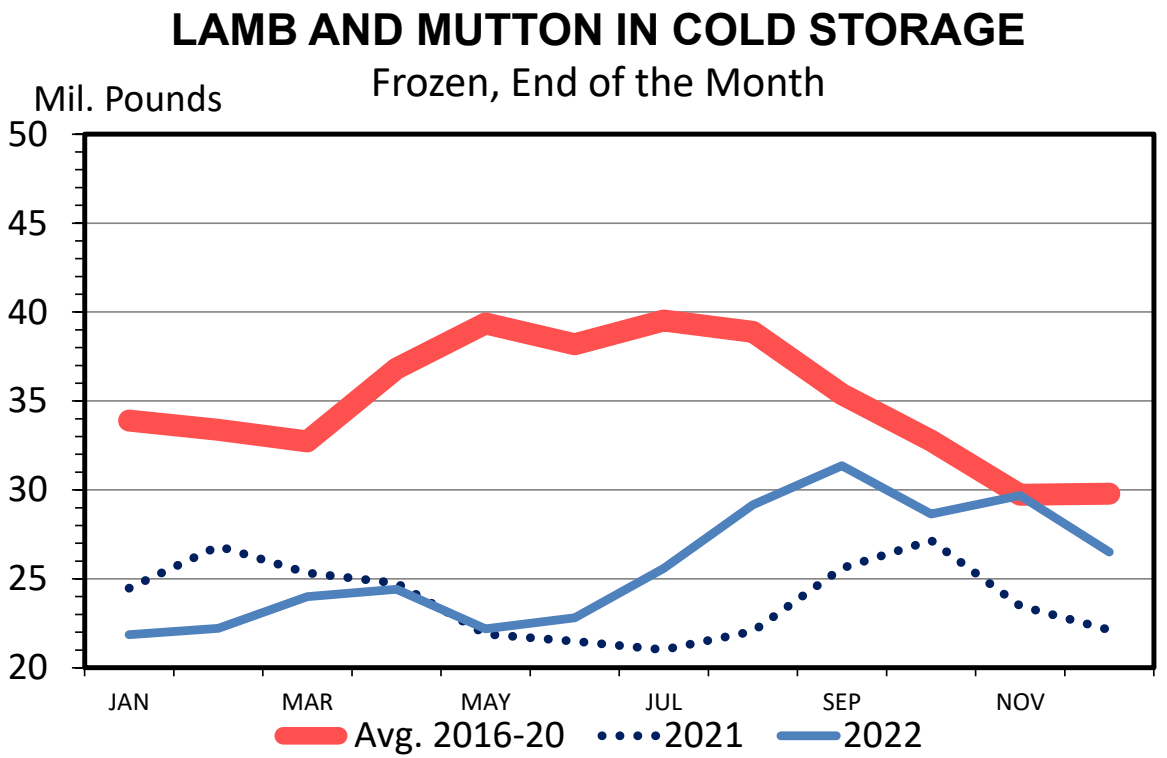


Note: Advertised Prices for Lamb and Veal at Major Retail Supermarket Outlets.

Data Source: USDA/AMS, Compiled by the Livestock Marketing Information Center

Cold Storage

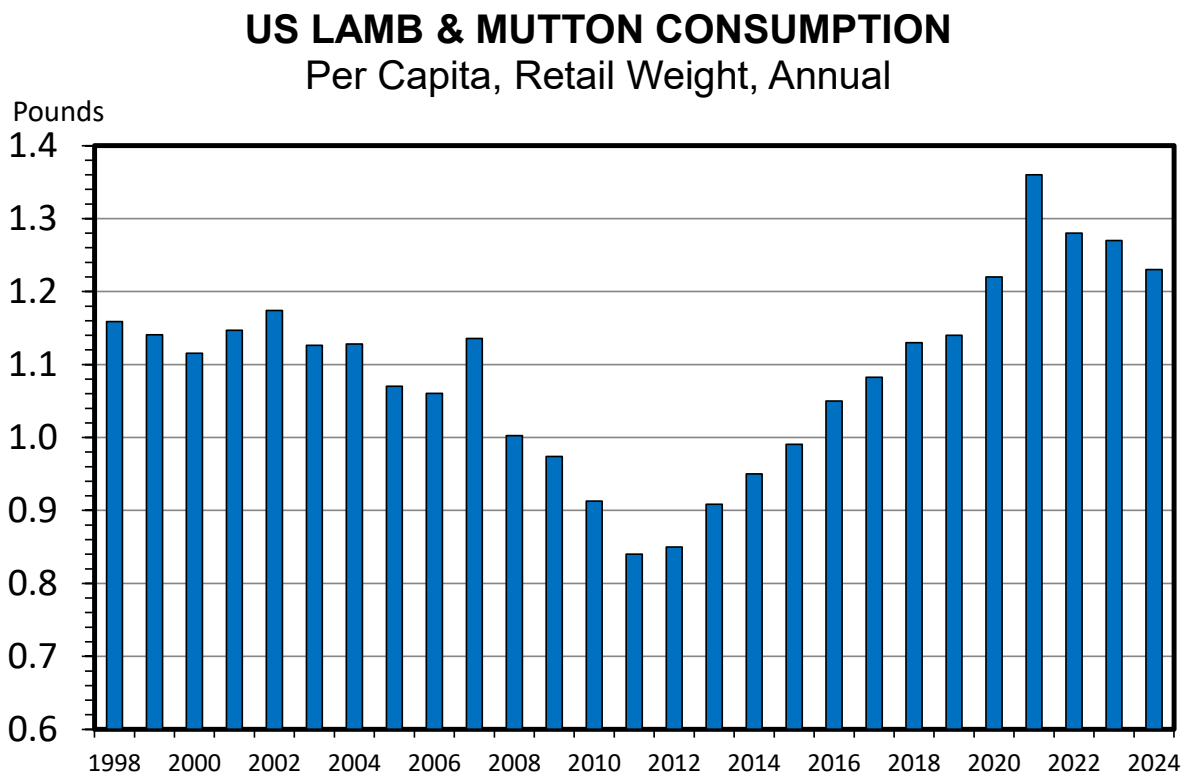
- Cold storage levels provide an insight into consumer demand.
- As consumer demand declined due to high prices, supplies of lamb and mutton in cold storage increased.
- Large cold storage stocks contributed to lower lamb prices in 2022.



Note: Cold storage data is reported on a total basis for product stored for 30 days or longer.
Data Source: USDA/NASS, Compiled by the Livestock Marketing Information Center

Lamb Consumption

- Per capita lamb consumption over 1.28 pounds per person.
- Record high prices relative to the available supply of lamb implies a decline in consumer demand in 2022.



Data Source: USDA/NASS, Compiled & Forecasts by the Livestock Marketing Information Center

Sheep & Lamb Market Outlook

Sheep & Lamb Market Outlook

- While inflation appears to be moderating and supply chains are improving, there are still concerns of a slowing U.S. economy in 2023
- Rising interest rates and high prices for housing, groceries and other items could further impact consumer incomes and challenge lamb demand in 2023.
- Wholesale lamb prices are still strong relative to pre-pandemic levels as consumers continue to demand American lamb.
- There is optimism for higher live lamb prices in 2023, with consumer demand being a key factor underlying upward movement in slaughter and feeder lamb prices.

Sheep & Lamb Market Outlook

- Drought is expected to continue into 2023.
- Much of the U.S. continues to face drought effects on feed and forage supplies, particularly hay.
- Forage availability is limited which will increase feed costs and potentially limit profitability in 2023.
- Australia is projecting record lamb production in 2023 which will translate into higher export levels.
- The U.S. market will remain an attractive market for Australia lamb in 2023.

Sheep & Lamb Market Outlook

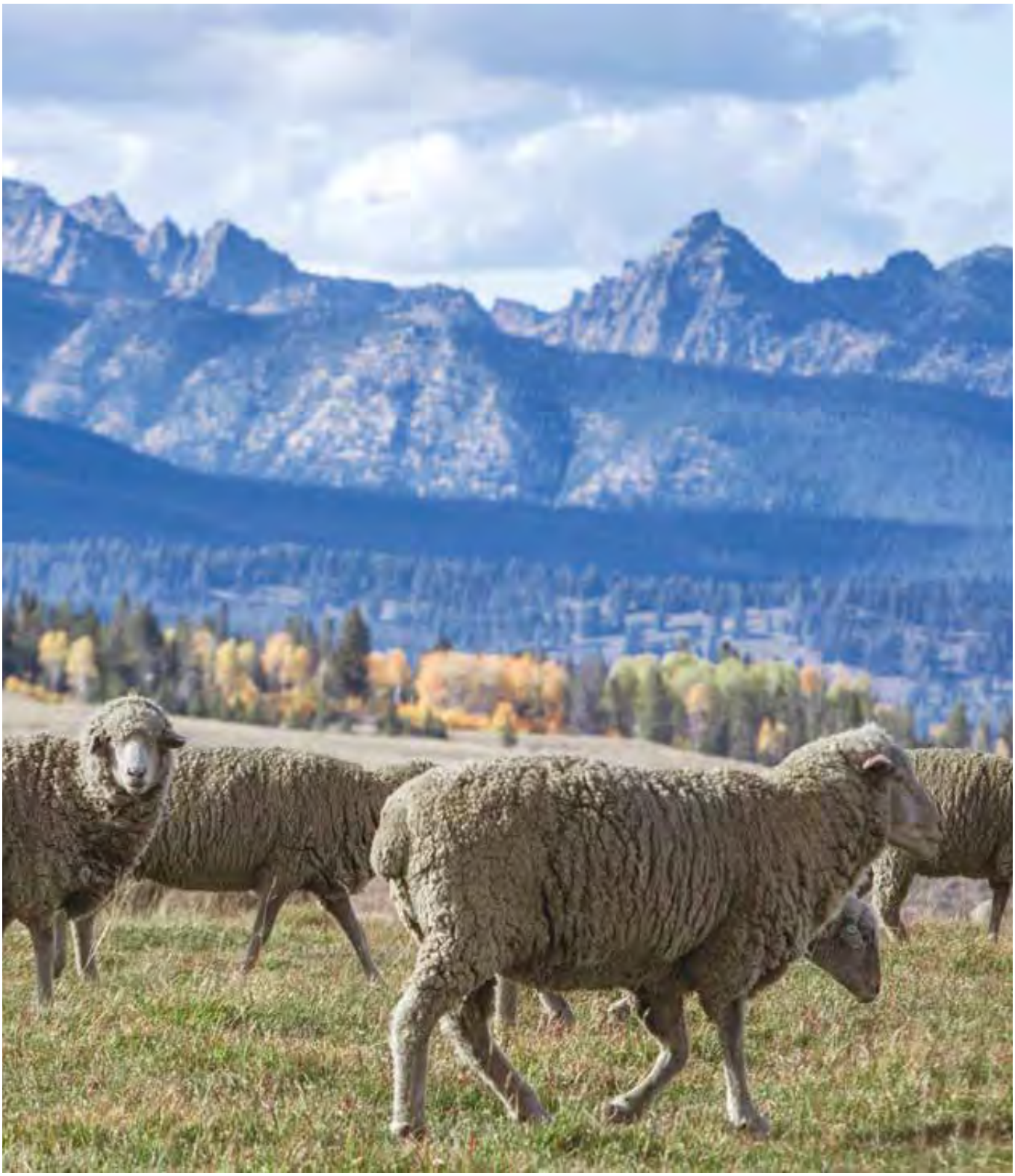
- For 2023, the Livestock Marketing Information Center is forecasting:
  - Commercial sheep and lamb slaughter to decrease slightly to 2.06 million head.
  - Lamb production to decline to 127 million lbs., down 2.8% year-on-year.
  - Imports expected to fall 2% to 349 million lbs. due to lower demand and prices.
  - Total lamb availability is expected to contract, with a decline in per capita availability to 1.27 lbs. per person.
  - Forecasts call for a return to pre-pandemic live lamb price levels in 2023.
- *Forecasts as of February 10, 2023, and subject to change.*

Thank You

Exhibit 3

American Sheep Industry Sustainability

Our commitment to care for our sheep, the environment and our communities.



Sustainability to the Sheep Industry means enhancing environmental stewardship, animal wellbeing, healthy communities, and economic viability while ensuring the vitality of our farmers, ranchers and future generations.

Sheep were among the first animals domesticated by humans as early as 11,000 B.C. in Mesopotamia. By providing a consistent source of both meat and wool for clothing, bedding and blankets, sheep played a crucial role in the spread of civilization. The first domesticated sheep were brought to the U.S. in the 16th by Spanish explorers and 17th centuries by colonists smuggling sheep from England. The U.S. sheep population peaked in 1945 at 56 million. Since then, the number of sheep in the U.S. has continually declined and today the current inventory is approximately 5 million.

Farmers, ranchers, shepherds, sheep dogs, families and communities throughout the U.S. have thrived thanks to one of the most ancient and revered domesticated animals. Passed on from generation to generation, the commitment to care and protection, along with a great appreciation for the sheep's role in environmental stewardship and the shepherd's livelihood and family, deepens.

The sheep industry is populated with family operations that have generations of experience caring for their animals and the environment. There are more than 80,000 family-owned sheep farms and ranches in the U.S. today, and sheep are raised in all states and on varied terrain. This diverse industry ranges from small farm flocks with 50 to 200 sheep, to large range operations with 1,000 to 10,000 sheep. Sheep are a dual-purpose animal one that is valued for both its meat and its wool.

Over the past several years, lamb and wool consumption in the U.S. has rebounded with nutritious food and lifestyle trends. The increasing popularity of global cuisines and international flavors, a growing interest in clothing from natural fibers that support an active, healthy lifestyle, and a renewed value for family farming and sustainability have consumers seeking out American Lamb and American Wool.

Due to the variety of breeds, sheep can be raised in multiple climates, terrains and areas with different types of vegetation. From grassy pastures with rolling hills to arid grasslands and high mountain meadows, there is a breed of sheep suited to almost any environment. Land that is unsuitable for other forms of agriculture (including plant-based alternatives to other livestock species) can sustain sheep — even thrive because of their presence. Sheep take resources useless to humans and in return create valuable and sustainable natural resources — both nourishment and protection.

Sheep are uniquely equipped for grazing in multiple climates for many reasons, not least of which is their wool, which helps sheep control body temperature and stay dry. Yearly, the sheep are carefully shorn to relieve the heavy weight of the wool and to let a fresh new

The increasing popularity of global cuisines and international flavors, a growing interest in clothing from natural fibers that support an active, healthy lifestyle, and a renewed value for family farming and sustainability have consumers seeking out American Lamb and American Wool.

wool coat grow. The wool becomes a valuable, natural fiber.

SHEEP BELONG TO THE LAND AND THE LAND TO THE SHEEP

Sheep help manage the ecological system of which they are a part of, boosting biodiversity and contributing to soil health. As ruminants, sheep easily digest grasses and weeds. They graze carefully and choose the plants and weeds that other animals ignore. Sheep prune certain plants so other species (such as cattle, goats and horses) may thrive while fertilizing the soil with vital nutrients and tamping fallen seeds with their hooves into the soil. These actions encourage native plant growth, which in turn helps minimize erosion.

Shepherds manage and care for the land with the help of their animals, moving sheep from pasture to pasture with guard dogs to protect the flocks. The plants and soil are healthier and more resilient as a result of sheep grazing and treading the land daily. As soon as the sheep move on, the pasture is ready for the next growing season.

As grazers, sheep are stewards of the land and often more effective weed mowers than tractors and other machines. In addition, they reduce fuel, pesticide and fertilizer use. In areas of the U.S. prone to wildfire, sheep are used strategically to eat dried plants that might otherwise become wildfire fuel. As sheep graze underbrush within forests, they help facilitate tree growth by removing vegetation competing with the trees, thus improving the vitality of forests. Some wineries graze sheep through the vineyards to clear weeds and reduce or even eliminate the use of herbicides. This practice also exists in many other parts of the country where sheep help control weeds along roadsides and in ditch banks. Across the U.S., sheep are used to graze stalks and seeds after harvest, "gleaning" the leftovers as a source of nutrition while preparing the fields for cover crop planting.

ANIMAL HEALTH AND COMFORT IS PARAMOUNT

Since it is in the producers' best interest to raise healthy sheep, there's an undeniable bond between the farmers and ranchers and their flocks. The sheep demand 24/7 attention, and sheep producers have built their lifestyle around this commitment and are dedicated to the job of looking after their animals and keeping them healthy. The routine care of sheep includes far more than providing fresh air, water and food. It includes providing protection from predators and a full regimen of preventative care including shearing, vaccinations, nutrition and birthing assistance. This humane and proactive approach provides uncompromising welfare standards for sheep that provide American Lamb and American Wool.

- Excellency, improvement, animal care, environmental stewardship and communities
  - Preserve and enhance the vitality of the rangeland/pastures we graze
  - Ensure a healthy, comfortable, stress-free existence for our animals, providing the most wholesome natural products possible
- Care for and improve the environment for the next generation and society as a whole
- Enhance and improve our positive contributions and the quality of our products
- Support our employees and local communities
- Provide consumers with a premium protein that is nourishing, delicious and best savored with loved ones
- Provide consumers with a natural and versatile fiber that provides unrivaled benefits – from luxurious clothing to high-performance sportswear
- Honor and preserve traditions, heritage, food cultures and authentic cuisines

Biodegradable
Perfect for all four seasons
Thermal comfort and breathable
Moisture wicking and odor resistant
Naturally durable
Both high performning and luxurious
Flame resistant

As grazing ruminants, sheep improve the ecology and quality of the land they graze by supporting soil health, sequestering carbon, encouraging plant and insect bio-diversity, and consuming vegetation that is unsuitable for other livestock. Wool growth is a continuous, naturally renewable process throughout the life of a sheep.

Environmental Stewardship

The American sheep industry is committed to combining emerging technologies, knowledge and management practices with proven stewardship strategies that protect our natural resources and positively impact the health and biodiversity of pastures and rangelands, all while reducing resource consumption and climate impact.

INDUSTRY PRIORITIES:

- Implement responsible environmental practices that improve soil health and biodiversity while protecting natural habitats and reducing Green House Gas (GHG) emissions
- Define the sheep industry's environmental impact and identify meaningful strategies to reduce GHG emissions for sheep production systems in the U.S.
- Work to maintain and restore grazing lands
- Manage water resources to maximize efficiency and support an optimal water supply

STRATEGIES:

- Determine the aggregate GHG emissions for the U.S. Sheep Industry
- Quantify and promote the benefits of targeted grazing, cover crop management, integrated pest management and other existing regenerative management practices
- Create a best practices toolkit for environmental stewardship and a wide-reaching communication and producer education plan, including partnerships with agencies and organizations that can help disseminate the information
- Increase the use of grazing plans
- Increase the use of regenerative agriculture practices

Sheep Care and Well-Being

The American sheep industry is committed to the most appropriate husbandry, health and nutrition practices that positively impact the care and well-being of our sheep.

INDUSTRY PRIORITIES:

- Allow (support) natural animal behavior
- Provide necessary natural or man-made shelter
- Provide protection from predators
- Prevent, control and manage diseases
- Ensure the sheep's nutrition needs are met
- Minimize pain (discomfort) and stress throughout the production process including transportation, shearing and processing

STRATEGIES:

- Promote body condition scoring surveys
- Take advantage of USDA National Animal Health Monitoring System (NAHMS) survey results
- Access or develop animal care surveys for lamb processors
- Survey producers to identify the participation rates in quality assurance programs and engagement with other training resources
- Promote quality assurance, training and existing sheep care resources

SUSTAINABILITY PRIORITIES AND GOALS

Sheep Industry Productivity

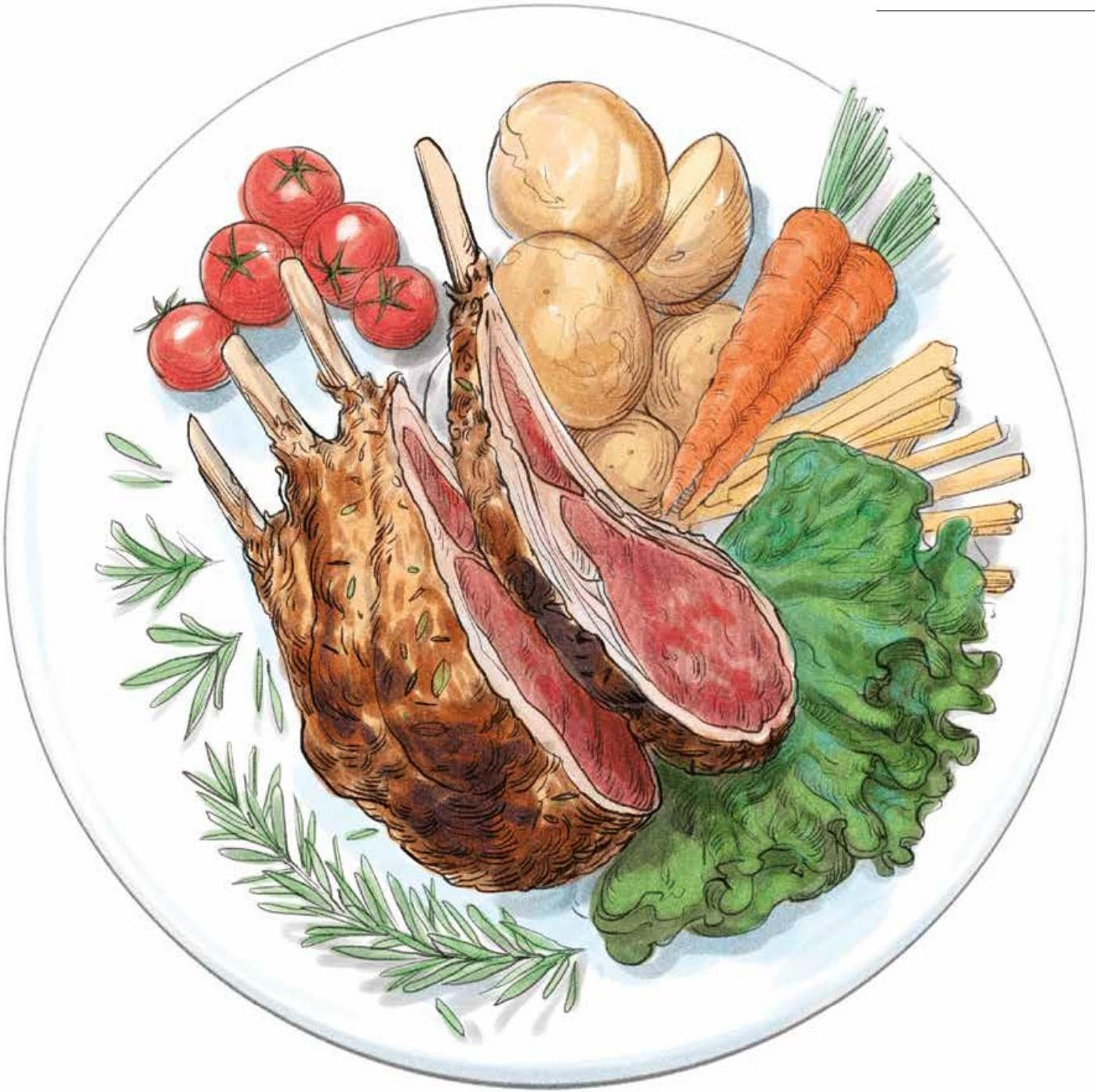
The American sheep industry is committed to improving efficiencies, enhancing product value and increasing demand, which collectively enable operations and businesses to maintain and improve long-term viability.

INDUSTRY PRIORITIES:

- Increase productivity of all industry segments
- Optimize finish/decrease excessive fat OR optimize carcass quality to deliver a consistent product that our consumers want
- Encourage innovation, technology and new product development (investment and adoption)
- Increase economic viability for all sectors including new revenue streams

STRATEGIES:

- Identify and promote management practices that increase productivity while ensuring animal well-being, such as crossbreeding, accelerated lambing, genetics, optimal feeding, increased lamb and wool yields
- Continue to grow educational programs to inspire adoption of productivity best practices and technology
- Increase participation in the National Sheep Improvement Program (NSIP) and increase the number of rams sold using Estimated Breeding Values (EBV)
- Increase participation in quality assurance programs
- Promote and increase engagement with existing resources and programs including best practice guides, training and educational programs, etc.



80,000 family farmers in the United States are committed delivering quality American lamb that was responsibly raised to consumers, chefs and butchers. Sheep in the United States graze on natural pastures consisting of high-quality grasses and forage and are never administered hormones. A 3 oz. serving of American Lamb is naturally nutrient rich. It's packed with an array of essential nutrients. On average, American Lamb is an excellent source of protein, zinc, selenium, riboflavin, niacin, vitamin B12, and good source of iron and vitamin B6. American lamb is:

- A fundamental source of complete protein
- Versitile
- Local
- Nutrient rich
- Adventurous flavor
- A vital ingredient in many international cuisines
- Elevated, memorable dining experience

Social and Economic Impacts

The American sheep industry is committed to producing high quality lamb, wool and other products, while increasing the well-being of our communities and our industry.

INDUSTRY PRIORITIES:

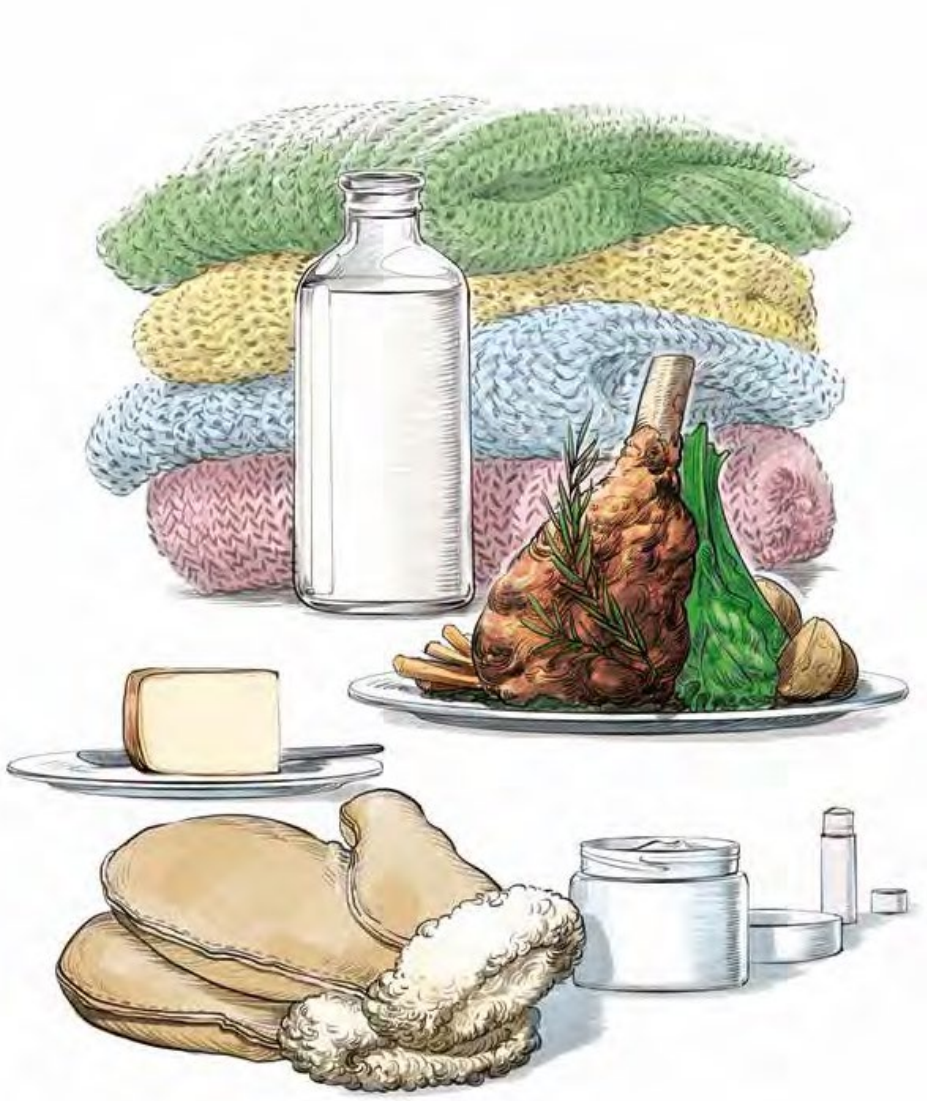
- Support a healthy community and workforce
- Ensure worker safety and well-being
- Cultivate continued trust in our products
- Respect the rich heritage of the sheep industry, supporting new producers and the next generations
- Support the sustainable use of sheep grazing services and practices in communities and public use areas
- Continue to contribute to the U.S. economy
- Provide for the traceability of our products to enhance food safety
- Maintain continued satisfaction and loyalty to our products

STRATEGIES:

- Increase employee retention and worker training program participation
- Develop employee handbook templates for sheep operations and businesses
- Continue to update the sheep economic impact study
- Support programs designed to attract new producers and encourage the next generation to stay involved in the sheep industry
- Develop succession planning tools/ programs for multigenerational ranches

By Choosing American Lamb and American Wool you are:

- Supporting American farm and ranch families
- Assuring that your lamb and wool are produced locally
- Contributing to the health of our rangelands and pastures
- Helping preserve slow fashion, natural fiber systems, food cultures and global culinary traditions



The American sheep industry is proud of the enormous value sheep contribute — we are maximizing the purposeful use of what nature provides while minimizing waste.

MSU Study Summary

The sheep industry is working with Michigan State University (MSU) to evaluate its environmental footprint and build a rigorous evidence base for decision making. At the conclusion of MSU's research, the sheep industry will use this new data to inform future strategies that will improve our industry's sustainability efforts. MSU has:

- Identified the best methodology to estimate a sheep operation's total Green House Gas (GHG) emissions
- Incorporated metrics into the GHG methodology which capture the diversity of how sheep are raised and marketed in the U.S. so that sheep operations can be compared one to another, rather than one aggregate value that does not capture the diversity of our industry
- Examined/calculated GHG emissions from different sheep production systems, including:
  - Intensive production
  - Intensive grazing
  - Extensive grazing
  - Range
  - Feedlots
- Identified major production factors contributing to GHG emissions in US sheep production
- Created mitigation strategies/best practices to reduce emissions in each production system based off their emissions profile

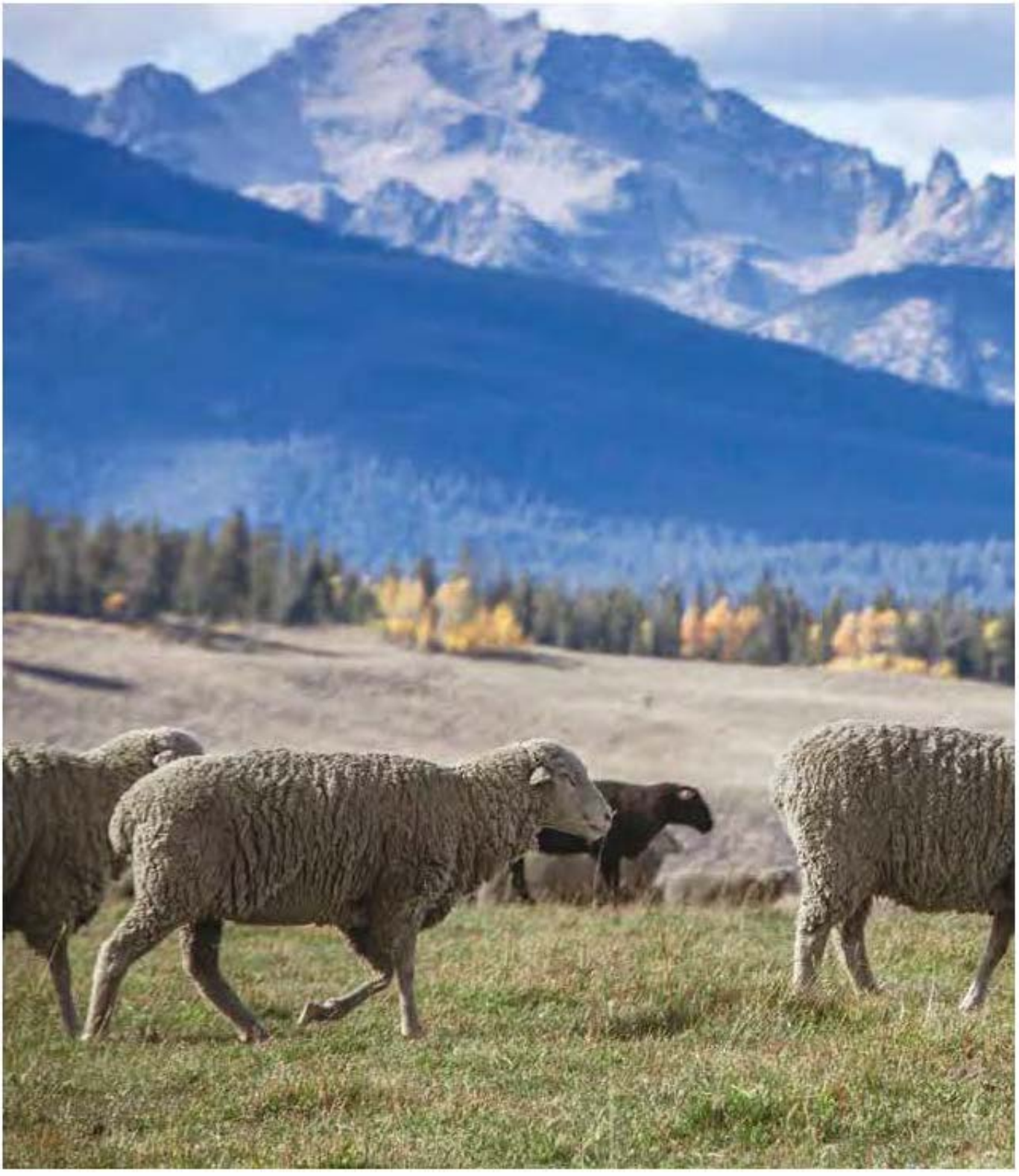
Where We've Been and Where We're Going

In 2013, the American Lamb Board initiated an assessment of the industry's operational practices as they relate to impact on economic viability of producers, worker health and safety, community development, regional employment and the environment. Sustainability consultants were hired to gather and analyze data, and to provide recommended sustainability strategies.

The assessment teams visited farms and ranches across all U.S. regions — covering the production systems that include range, intensive farm flock, forage farm flock and feeders. They focused on production inputs (fuel, feed, water), labor, animal welfare factors and community outreach/volunteerism. Individual input from each visit was used to inform/develop a larger survey of industry members. This quantitative survey generated findings that served the industry in making operational recommendations and best practice guides.

GOAL

In 2023, the sheep industry will update and repeat the quantitative sustainability survey to assess progress and inform future strategies to continue to identify ways to improve or achieve excellence.



Appendix C

Visual Resources Technical Report

Cornucopia Hybrid Project

Visual Resources Technical Report

prepared for

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July 2024

RINCON CONSULTANTS, INC. SINCE 1994

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Appendices

Appendix A Federal Highway Administration Visual Resource Survey Rating Sheets

1 Introduction

This Visual Resources Technical Report has been prepared for Cornucopia Hybrid, LLC for the Cornucopia Hybrid (battery and solar) Project (proposed project) in Fresno County, California. The purpose of this study is to analyze the aesthetic impacts of the project. Table 1 provides a summary of project impacts.

Table 1 Summary of Impacts

Impact Threshold	Proposed Project's Level of Significance	Mitigation
Would the project have a substantial adverse effect on a scenic vista?	Less than Significant Impact	None
Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	No Impact	None
Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?	Less than Significant Impact	None
Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	Less than Significant Impact	None

2 Project Description

2.1 Project Location

The project site is located in an unincorporated portion of Fresno County, California, situated between the communities of Coalinga and Avenal. The project includes approximately 2,446.46 acres of land on eight separate parcels associated with Assessor Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S at the base of the eastern slope of the Diablo Range. The project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36, Township 22 South, Range 16 East, Sections 1, 2, and Range 17 East, Section 6 of the Avenal, California United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map. The project site is bifurcated north to south by Sutter Avenue and east to west by State Route (SR) 33 (South Lost Hills Road). Figure 1 shows the regional location and Figure 2 shows the project site location and boundary.

2.2 Project Description

The proposed Cornucopia Hybrid Project (proposed project) would include the development of a new utility-scale, 300-megawatt (MW) solar facility consisting of approximately 686,880 solar modules, a 300-megawatt alternating current (MWac) energy storage system (ESS), and two prefabricated structures for maintenance, operation, and control services. Figure 3 shows a preliminary site plan for the project. The key components of the proposed project include:

- 686,880 photovoltaic (PV) solar modules rated at 585[1] watts (W), mounted on tracking devices and organized as rows in a uniform grid pattern (solar array). The PV modules would be connected to 74 power inverters and would be surrounded by a 6-foot chain link fence on all sides.
- Substations to interconnect the proposed project to the grid, including equipment such as breakers, switches, relays, meters, lightning protection, transformers, grounding, and a control enclosure.
- An ESS capable of storing up to 300 MW of electricity and conducting energy to the regional electrical grid. The ESS would consist of battery banks housed in electrical enclosures and buried electrical conduit.
- Connection to a Pacific Gas and Electric Company (PG&E) Switching Station's existing 230 kV transmission lines.
- Two prefabricated structures, of which one would be used for maintenance and operation service and one for control services.
- Access road network to be constructed throughout the project site, with entrances proposed on SR 33 and Sutter Avenue.
- Revegetation of project site with a blend of native grasses and pollinator species.

[1] This is an estimate based on currently available technology and may change as the technology advances.

Figure 1 Regional Location

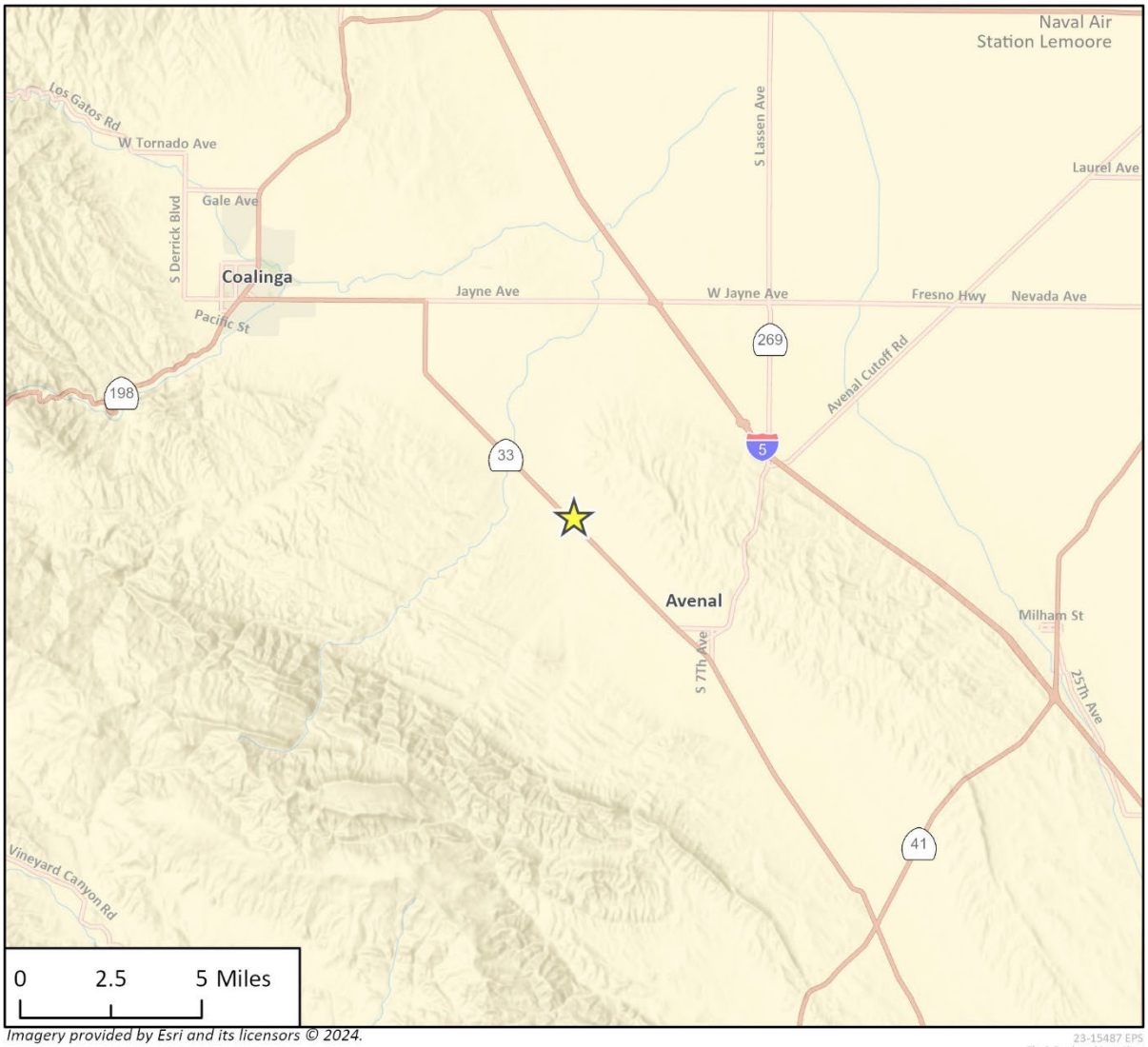
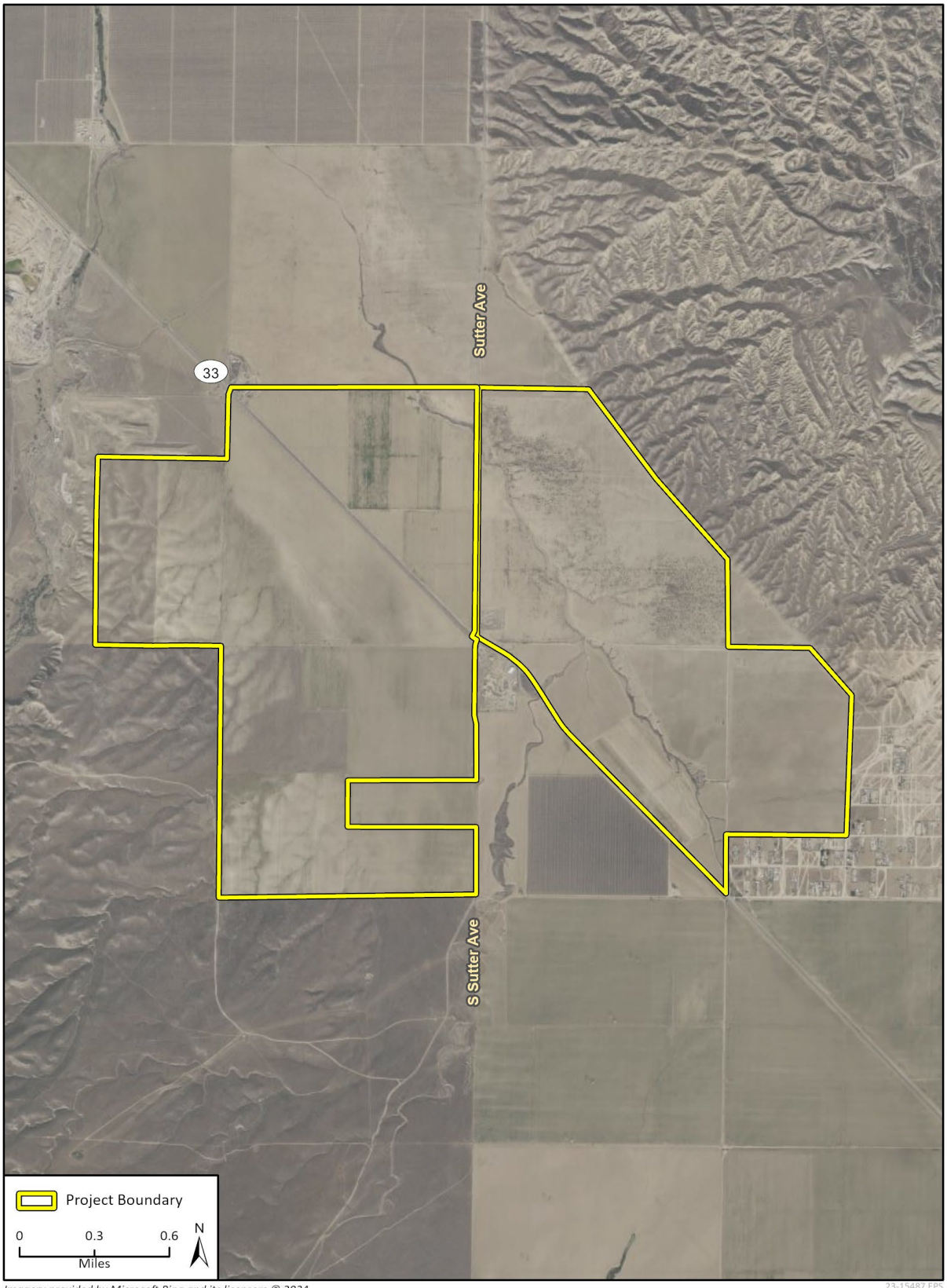


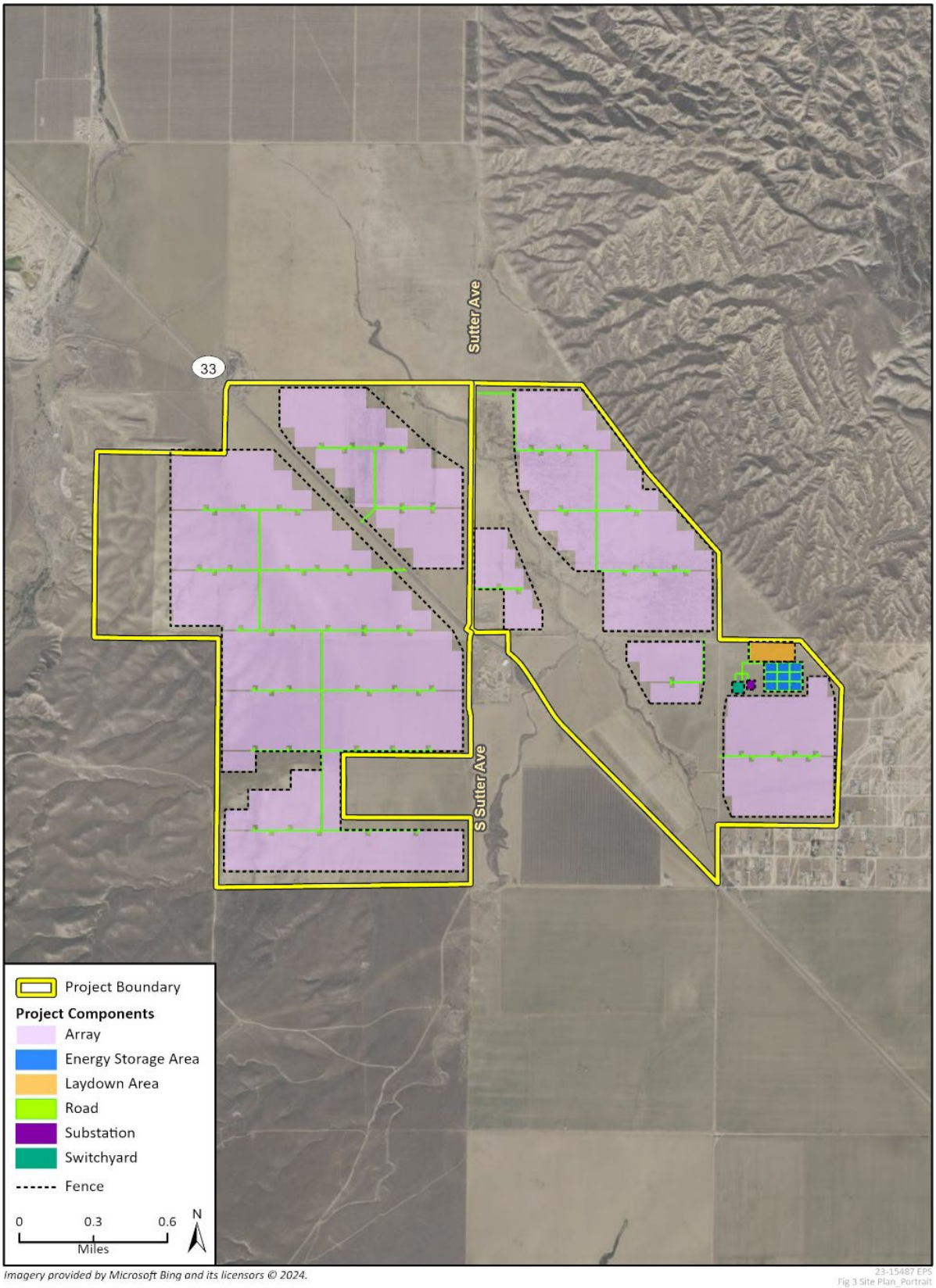
Figure 2 Project Location



Imagery provided by Microsoft Bing and its licensors © 2024.

23-15487 EPS
Fig 2 Project Location

Figure 3 Preliminary Site Plan



- Non-flashing signage located at each street frontage installed on the fence or ground mounted in the vicinity of the main entry gates. Small scale signage would be posted at the main entry gates and intermittently along the perimeter fencing on all exterior parcel boundaries, to indicate “No Trespassing” and “Private Property” for security purposes.
- Laydown area located at the southeast corner of the site to be used for material and equipment staging.

2.2.1 Construction

Construction of the proposed project is anticipated to involve the following three main project components:

- **Solar Facility.** Construction of the solar facility will be broken into three phases: site preparation, installation of the PV system, and installation of the inverters, transformers, substation, switching station, and the gen-tie line.
- **ESS.** Construction of the ESS will be broken into three phases: site preparation, installation of foundations, structures, and DC electrical system, and installation of inverters, substation, and AC electrical system.
- **PG&E Improvements.** Construction of PG&E improvements will be broken into two phases: site work and electrical work.

Construction of the project is anticipated to begin in the fourth quarter of 2026 and last approximately 39 months, with a commercial operation date of the fourth quarter of 2029.

Typical construction hours for all project components are expected to be 6:00 a.m. to 6:00 p.m. on Mondays through Fridays. Construction may occur on weekends as needed between 7:00 a.m. and 5:00 p.m. Nighttime construction may also occur on an as-needed basis for concrete pouring at the proposed EES and substation areas.

2.2.2 Operation

The proposed project is anticipated to be operational in the fourth quarter of 2029 and would operate 24 hours per day, 7 days a week, and 365 days per year. Due to the remote nature of the project site, operation and maintenance activities would be carried out by approximately six full-time employees and occur on a scheduled and as-needed basis; therefore, regular onsite staff would not be required. When technical support is needed, a small crew of technicians would enter the project site during typical business hours and complete any required operation and maintenance activities. The planned project life is 35 years.

Additionally, the applicant has partnered with a local shepherd to explore utilizing sheep grazing for vegetation management during operation of the proposed project. It is estimated that 1,500 to 2,000 sheep would be deployed onsite for grazing, to control weeds and vegetation growth. Based on information provided by the shepherd, it is assumed the grazing season would be seven months each year, between February and July. This duration is subject to change due to multiple factors, including but not limited to climatic variations.

3 Setting

3.1 Environmental Setting

3.1.1 Regional Setting

Fresno County is located within the Central Valley area of California and is bounded by Madera and Merced Counties to the north, San Benito and Monterey Counties to the west, Kings and Tulare Counties to the south, and Inyo and Mono Counties to the east. The major north-south transportation routes are Interstate 5, State Route (SR) 99, SR 33, and SR 41. The main east-west transportation routes are SR 168 and SR 180. Fresno County is historically defined by its economic base in agriculture and contains five distinct geographic areas: the Coast Range Foothill Area, the Westside Valley Area, the Eastside Valley Area, the Sierra Foothill Area, and the Sierra Nevada Mountain Area (County of Fresno 2000). The project site is in the Coastal Foothill Range area and the Westside Valley Area. The Westside Valley Area is typically used for row and field crop production. According to the Open Space and Conservation Element of the Fresno County General Plan, the County includes diverse landscapes from farmland in the valley to foothill grasslands and high mountain peaks (County of Fresno 2000).

3.1.2 Surrounding Land Uses and Setting

The project site and the surrounding vicinity is visually characterized by SR 33 and large areas of fallow agricultural land which consists primarily of grasses. There is a small residential area to the north of the project site along SR33 and a larger residential area adjacent to the southeastern edge of the project site. The topography is relatively flat, and project site vicinity offers open, expansive views of distant hills and mountains that frame the valley.

The project area includes areas zoned for agricultural and residential use. Primary uses in and immediately surrounding the project area are rural residential, and agriculture.

3.1.3 Project Site Setting

The project site consists of a generally flat land surface mostly surrounded by hills. The landscape is characterized by green grasses and light brown soil. The built environment of the project vicinity is dominated by a lattice of paved and dirt roads extending from SR 33, which runs generally north-south through the center of the project area. Several large regional power lines supported by tall steel lattice towers run east-west in the project vicinity. Low wood post and wire fences are present throughout the project vicinity. There is a neighborhood of small single-story residences adjacent to the southeastern edge of the project site. Also present and visible are the wood poles of local electrical distribution lines providing service to the residences. The visual character of the project site and vicinity is illustrated by the site photographs included in Figure 4.

3.1.4 Scenic Routes

A portion of SR 41 which is approximately 12 miles from the project site is eligible for State Scenic Highway Designation (Caltrans 2018). Additionally, a portion of SR 33 which is approximately 6 miles north of the project site is eligible for State Scenic Highway Designation. The project site is not visible from these scenic routes.

Figure 4 Project Area Character Photographs

Photograph A. View looking south along SR 33 with views of the project site on either side of the road. Photograph A is representative of views for southbound motorists on SR 33. The project site is generally flat, sloping up to the craggy mountains in the distance to the west of SR 33. The landscape is characterized by green grass and dark brown soil. Wooden utility poles run north to south along the road and a small back wire fence runs north to south along the road as well.

Photograph B. View looking north-northwest along SR 33 with views of the project site on either side of the road. Photograph B is representative of views for northbound motorists on SR 33. The project site is generally flat, sloping up to the craggy mountains in the distance to the north and west of SR 33. The landscape is characterized by green grass and dark brown soil. Steel high voltage electric transmission lines bisect SR 33.

Photograph C. View to the north-northwest from the existing residences that are adjacent to the southeastern edge of the project site. Photograph C is a representative view for residents living along the southeast edge of the property. The foreground land surface is generally level, sloping up to the mountain range in the middle ground. Green grasses and brown and yellow shrubs cover the foreground while steel high voltage electric transmission lines are visible in the distant middle ground.

Photograph D. View to the south along Sutter Avenue. Photograph D is representative of views for motorists traveling south along Sutter Avenue which is a local road that connects to I-5. Gray gravel turnouts, dark brown shrubs and green grasses cover the foreground along with wooden utility poles. The landscape is mostly flat with sloping hills in the middle ground.

3.1.5 Vista Points

There are no Department of Transportation (DOT) vista points on state highways within the project vicinity. The nearest vista point identified by Caltrans is the Arroyo Laguna Creek Vista Point along Highway 1 approximately 62 miles west of the project site (Caltrans 2015). The project site is not visible from this vista point.

3.1.6 Viewers and Viewer Sensitivity

The primary potentially affected viewer groups within the proposed project vicinity are motorists and residents located within viewing distance of the proposed project. These viewers experience the proposed project area within the context of a setting that includes an expansive agricultural landscape bisected by local roads and overhead utility structures and lines. Motorists constitute the most substantial viewer group and include both local and regional travelers who are familiar with the visual setting, as well as those using the roads on a less regular basis. Within the project area, SR 33 and Sutter Avenue carry both local and regional traffic. Viewer sensitivity for motorists ranges from low when views are at higher speed and infrequent (regional travelers) to moderate when views are at lower speeds and frequent (local travelers). Nearby residents are located at the northern and southeast extents of the proposed project area. Depending on proximity to the proposed project, residential viewers tend to have high viewer exposure and awareness; therefore, the sensitivity of residential viewers is considered high.

3.2 Regulatory Setting

State

California Scenic Highway Program

California's Scenic Highway Program designates scenic highways with the intention of protecting these corridors from change that would diminish the aesthetic value of adjacent lands. The State Legislature created the California Scenic Highway Program, maintained by Caltrans, in 1963. The purpose of the State Scenic Highway Program is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been officially designated. The status of a proposed State Scenic Highway changes officially from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a Scenic Highway. Scenic highways must have an approved Corridor Protection Program and remain in compliance to maintain scenic highway status.

Local

Fresno County General Plan

The following policies included in the Fresno County General Plan to preserve scenic resources would be applicable to the proposed project:

Policy LU-B.11: The County shall require that new development requiring a County discretionary permit be planned and designed to maintain the scenic open space character of rangelands including view corridors of highways. New development shall utilize natural landforms and vegetation in the least visually disruptive way possible, and use design, construction and maintenance techniques that minimize the visibility of structures on hillsides, ridgelines, steep slopes, and canyons.

Policy PF-J.2: The County shall work with local gas and electric utility companies to design and locate appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.

Policy OS-F.1: The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides and ridges, and along important transportation corridors, consistent with fire hazard and property line clearing requirements.

Fresno County Municipal Code

There are no sections of the Fresno County Municipal Code that preserve scenic or visual resources.

4 Methodology and Significance Criteria

This section presents the methodology and significance criteria used for the analysis of visual impacts for the proposed project.

4.1 Methodology

This visual assessment identifies and assesses potential long-term adverse visual impacts on aesthetics and visual resources that could result from implementation of the project. This assessment included the following steps to assess potential visual effects:

- Reviewing planning documents applicable to the project site vicinity to gain insight into the type of land uses intended for the general area, and the guidelines given for the protection or preservation of visual resources.
- Conducting a visit to the project site on March 22, 2024, for the purposes of:
  - Surveying the on-site and surrounding uses to identify sensitive viewers and viewpoints for assessment of potential aesthetic impacts;
  - Analyzing the baseline visual quality and character of the identified views; and,
  - Taking photographs to document observed conditions.
- Identifying project components that could affect representative views in the project site vicinity in terms of visual quality and character, as informed by plans, descriptions, simulations, aerial photographs, and street-level photography.
- Assessing the project's impacts to identified views by evaluating potential project-caused change in the affected area's baseline visual quality and character.
- Selection of the primary viewers, selection of Key Observation Point (KOP) locations, and simulation preparation methods are described below.

The initial step in the evaluation process was the review of planning documents applicable to the project site to gain insight into the type of land uses intended for the general area, and the guidelines given for the protection or preservation of visual resources. Consideration was then given to the existing visual setting within the project viewshed, which is defined as the geographical area in which the project can be seen. A desktop analysis was conducted to identify the areas from which the proposed project will have the potential to be visible. Site reconnaissance was conducted to view the project site and surrounding vicinity, identify potential KOPs, and take representative photographs of existing visual conditions. Photographs from the site reconnaissance were selected to represent the "before" conditions from each of the potential KOPs. Within the viewshed area, four KOPs were selected to be used as the basis for analysis of the proposed project's visual effects. The KOP locations are included in Figure 5.

Figure 5 Key Observation Point Locations

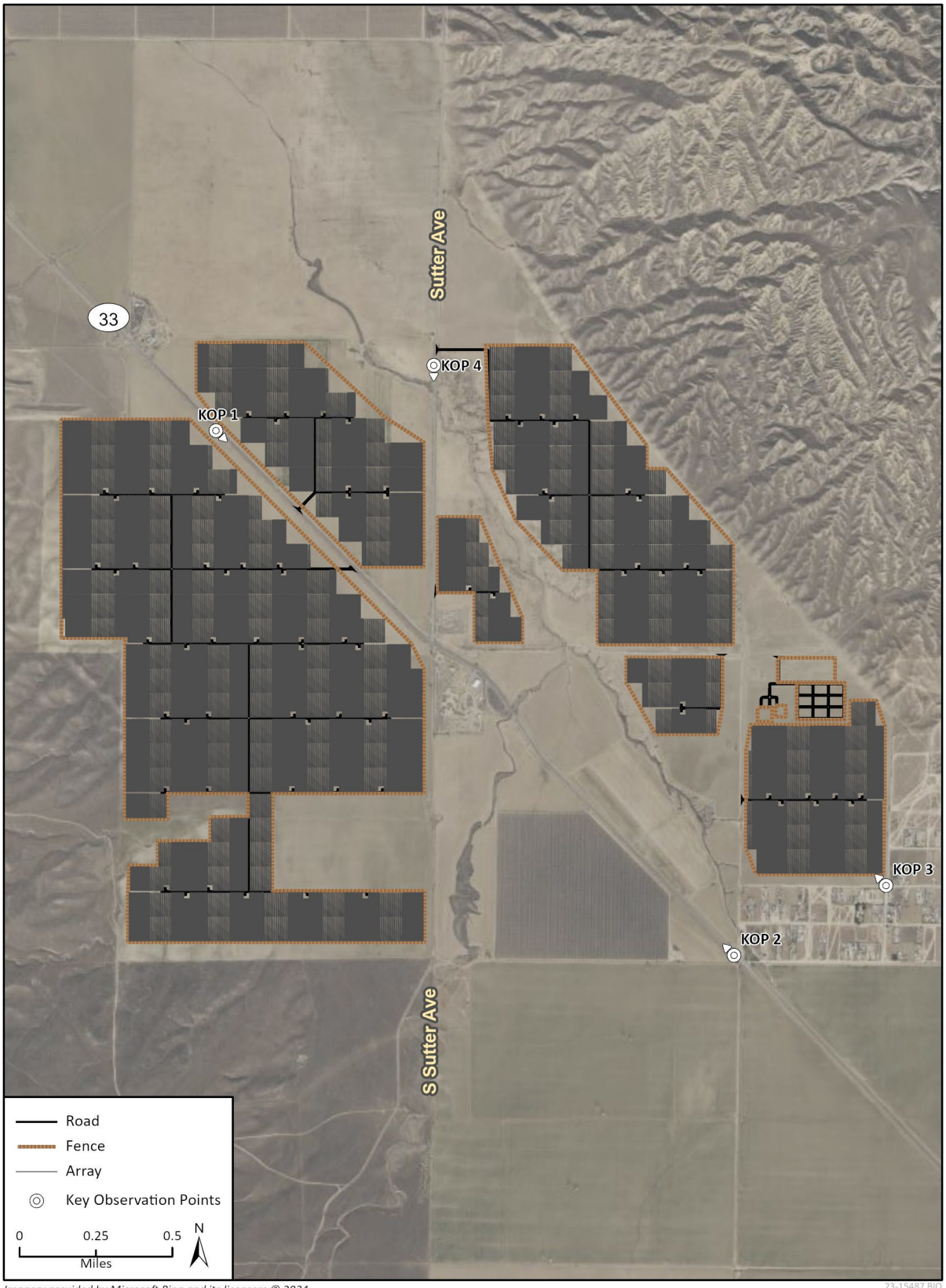


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Fig 1 KOP Locations

An effort was made to identify sensitive receptors[2] and viewing areas that would be the most sensitive to the proposed project's potential visual impacts. KOP 1 and KOP 2 are locations along SR 33 which bisects the project site. KOP 4 is along Sutter Avenue which runs north to south and also bisects the project site into east and west. KOP 1, KOP 2, and KOP 4 present representative views for motorists along SR 33 and Sutter Avenue and represent views for both local residents and local or transient motorists. KOP 3 was selected to be a representative view for local residents.

To provide a basis for evaluating the visual effect of the proposed project on these views, visual simulations were produced to illustrate the "after" visual conditions from each of the KOPs. The proposed facilities were modeled based on design information provided by the project applicant.

The simulations were produced from photography of the project site and 3D modeling of the solar array design. Time of day of the simulations matches the time of day the original photos were taken. The 3D models were rendered at the same time of day, in similar simulated weather conditions, with the same focal length, at the same camera height, and view angle as the original photos and composited into the original photos. Materials used in the model are comparative with the material properties of the proposed project elements

At each KOP, the existing visual conditions were compared to those under the development of the project site, based on the visual simulations and informed by the visual impact assessment system developed by the Federal Highway Administration (FHWA) in *Visual Impact Assessment for Highway Projects* (2015).

The existing visual conditions seen in the views from each of the KOPs were evaluated using the FHWA visual quality assessment system that entails use of a numerical rating system. Visual quality is what viewers like and dislike about visual resources that compose the visual character of a particular scene. Therefore, visual quality is a result of the interactive experience between viewers and their environment. The FHWA visual quality assessment asks: Is this particular view common or dramatic? Is it a pleasing composition (a mix of elements that seem to belong together) or not (a mix of elements that either do not belong together or contrast with the other elements in the surroundings)? Under the FHWA visual quality analysis system, the visual quality of each view is evaluated in terms of its vividness, intactness, and unity:

- **Vividness** is defined as the degree of drama, memorability, or distinctiveness of the landscape components. Overall vividness is an aggregated assessment of landform, vegetation, water features, and human-made components in views.
- **Intactness** is a measure of the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes, as well as in natural settings. High intactness means that the landscape is free of unattractive features and is not broken up by features and elements that appear out of place. Low intactness means that visual elements that are unattractive and/or detract from the quality of the view can be seen.
- **Unity** is the degree of visual coherence and compositional harmony of the landscape considered as a whole. High unity frequently attests to the careful design of individual components and their relationship in the landscape or refers to an undisturbed natural landscape.

[2] Typically, residents and recreationists are considered to be sensitive receptors to change in the landscape. This is because of the potential for effects to their long-term views or their enjoyment of a particular landscape or activity.

Each of these dimensions of visual quality is documented using an FHWA rating sheet (Appendix A), and for each of these dimensions, a numerical rating score on a scale from 1 to 7 is assigned, where a score of 1 indicates very low visual quality, a score of 4 indicates average visual quality, and a score of 7 indicates very high visual quality. The scores for each of these three dimensions are added and then averaged to generate an overall visual quality score.

The overall visual quality scores correspond to the following terms used to describe views:

Table 2 FHWA Visual Quality Score Descriptions

Score	Description
1	Very low
2	Low
3	Moderately Low
4	Average/Moderate
5	Moderately High
6	High
7	Very High

The comparison of before and after views of the project site (included in Section 3 and shown in Figure 6 through Figure 13) considers the existing quality of scenic backdrops, background vistas, and foreground views across the project site and the project's alteration of these scenic views.

The analysis also takes into account viewer sensitivity. Viewers are the population affected by the proposed project's aesthetics. Viewers are defined by their relationship to the project and their visual preferences. Viewer sensitivity is a product of *viewer exposure* (proximity, extent, and duration) and *viewer awareness* (attention, focus, and protection). As viewer sensitivity increases, viewers become more concerned about a project's impacts. The following definitions apply to viewer exposure and awareness:

- **Proximity** refers to distance from the viewing object. The farther a scene or object is from a viewer ("background views"), the less exposure that viewer has. Conversely, the closer the viewer is to an object or scene ("foreground views"), the more exposure the viewer has.
- **Extent** refers to the number of people who would be viewing the scene or object. The greater this number, the higher the overall viewer exposure.
- **Duration** measures how long the scene or object is visible to viewers. With respect to a moving observation point (e.g., a vehicle on a scenic highway), the narrower the view and the faster one travels, the shorter the duration.
- **Attention** correlates with routine. The more routine the scene is to a viewer, the less sensitive the viewer becomes. By contrast, the more unique a scene is to a viewer, the more sensitive the viewer will be to the scene.
- **Focus** refers to the ability to apprehend details. If a view has no specific visual element or point on which the viewer is focused, the viewer will be less sensitive to details of that scene.
- **Protection** is provided by restrictions that authorities and the community place on changes to a particular view or object being viewed. This protection can be legal or simply social.

4.2 Significance Criteria

The following thresholds of significance are based on Appendix G to the CEQA Guidelines. For purposes of this assessment, implementation of the project may have a significant effect on the environment if it would do any of the following:

1. Have a substantial adverse effect on a scenic vista;
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
3. 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, conflict with applicable zoning and other regulations governing scenic quality; and/or,
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

For the purposes of Threshold 3, the project site is not located in an urbanized area[3]; therefore, the project is evaluated for its potential to degrade the existing visual character or quality of public views of the site and its surroundings.

[3] Defined as an incorporated city with a population of more than 100,000 persons, or an incorporated city with a population of less than 100,000 persons if the population of that city and not more than two contiguous cities combined equals at least 100,000 persons, per Section 21071 of the Public Resources Code.

5 Impact Analysis

Threshold 1:	Would the project have a substantial adverse effect on a scenic vista?

IMPACT AES-1 THERE ARE NO DESIGNATED SCENIC VISTAS NEAR THE PROJECT SITE. THE PROJECT WOULD HAVE A LESS THAN SIGNIFICANT IMPACT ON SCENIC VISTAS.

For the purposes of this evaluation, a scenic vista is defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality. As discussed in Section 3.1.5, *Scenic Vistas*, there are no scenic vistas in the project vicinity. Additionally, the project would be consistent with policies in the Fresno County General Plan including Policy LU-B.11, PF-J.2, and OS-F.1, described in the Regulatory Setting section above, by retaining natural vegetation on the project site below the solar PV panels. Additionally, the solar array and related facilities would be generally low to the ground and would not block existing views throughout the project vicinity or of the hillsides surrounding the project site. Therefore, impacts on scenic vistas would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

IMPACT AES-2 THERE ARE NO DESIGNATED OR ELIGIBLE STATE SCENIC HIGHWAYS WITHIN THE PROJECT AREA. THEREFORE, THE PROJECT WOULD HAVE NO IMPACT ON SCENIC RESOURCES WITHIN A STATE SCENIC HIGHWAY.

As discussed in Section 3.1.4, *Scenic Routes*, the proposed project is not in the vicinity of a state scenic highway. Therefore, there would be no impact.

Mitigation Measures

No mitigation measures are required.

Threshold 3:	Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?

IMPACT AES-3 CONSTRUCTION OF THE PROJECT WOULD AFFECT EXISTING PUBLIC VIEWS IN THE PROJECT AREA. HOWEVER, THE VISUAL CHARACTER AND PUBLIC VIEWS OF THE PROJECT SITE AND SURROUNDING AREAS WOULD REMAIN LARGELY INTACT AND IMPACTS WOULD BE LESS THAN SIGNIFICANT.

KOP Evaluation

Figure 5 shows the location of the four KOPs that were selected to be used as the basis for analysis of the proposed project's visual effects. A discussion of the existing view and the anticipated visual effect of the proposed project at each of these KOPs is provided below. The analysis below is informed by the FHWA Visual Resource Survey sheets which quantitatively evaluate the change in

visual character on the project site associated with construction of the proposed project. These sheets are included in Appendix A.

KOP 1

Figure 6 documents the existing southbound view toward the project site from SR 33. The existing foreground view for motorists on SR 33 includes flat fallow agricultural land dominated by grasses on both sides of the roadway, deteriorated low post and wire fencing, and wooden distribution lines paralleling the roadway. The land surrounding the roadway is generally flat but slopes up to the craggy mountains in the middle ground to the west of SR 33. The landscape is characterized by green grass and dark brown soil. Viewers along this corridor include motorists traveling in both directions along SR 33. Motorists on SR 33 would have moderate awareness of the project site because it would be adjacent to the roadway in the foreground of views from the roadway. However, because motorists would be traveling at moderately high speeds, they would experience direct exposure to the project for only a short duration. Therefore, their sensitivity to changes in the visual quality in the area would be low. The existing visual quality of the view from KOP 1 is considered to be average due to existing manmade features in the view.

As shown in the simulated view for KOP 1 (Figure 7), the solar array presents as an indistinct dark horizontal linear feature in the foreground of motorists' view from SR 33. The array would be set back approximately 90 feet from the roadway which would further reduce its impact on motorist's views. Vegetation would remain visible as native vegetation would be replanted under the solar panels. Additionally, the low post and wire fencing, as well as wooden distribution lines paralleling the roadway, would remain visible in the foreground, as would mountain views in the background. Therefore, while the proposed project would slightly reduce the overall visual quality of the view at KOP 1 by introducing additional built linear features, visual quality would remain average.

KOP 2

Figure 8 documents the existing view looking north-northwest along SR 33 with views of the project area on either side of the road. The existing view from KOP 2 includes green grasses, patches of brown soil, low wire fencing, and large overhead electrical transmission lines which bisect SR 33. There is also a large orchard with rows of barren trees on the left side of SR 33 and a large barn with a white roof in the middleground in the center of the frame. Viewers along this corridor would include motorists traveling along SR 33. Motorists on SR 33 would have moderate awareness of the project site because it would be adjacent to the roadway in the foreground of views from the roadway. However, because motorists would be traveling at high speeds, they would experience direct exposure to the project for only a short duration. Therefore, their sensitivity to changes in the visual quality in the area would be low. The existing visual quality of the view from KOP 2 is considered to be average due to the existing manmade features within view.

As shown in the simulated view for KOP 2 (Figure 9), the solar array presents as an indistinct dark horizontal linear feature in the middleground of the view on the right hand side of the frame. Proposed solar panels on the southwest side of the road from this view would be behind the existing orchard and would not be visible to motorists. Vegetation would remain visible as native vegetation would be replanted under the solar panels. Additionally, the foreground and background views would not change, and the low post and wire fencing, orchard, low wire fencing, and overhead power distribution lines would remain visible. Therefore, while the proposed project would slightly reduce the overall visual quality of the view at KOP 2 by introducing a built linear feature in the middle ground, visual quality would remain average.

KOP 3

Figure 10 documents the existing view looking north-northwest from the existing residences that are adjacent to the southeastern edge of the project site. The existing view from KOP 3 includes green grasses, brown and yellow shrubs, distant hills and mountains and overhead power transmission lines. Viewers in this area would be residents adjacent to the project site which would be highly sensitive to changes in the visual quality of the area. The existing visual quality of the view from KOP 3 is considered to be average.

As shown in the simulated view for KOP 3 (Figure 11), the solar array and security fencing would be visible from nearby residences. Views of the battery storage facility and substation infrastructure would be very limited from nearby residences. Views of the battery enclosures would be blocked by the intervening solar array. The substation, though a greater height than the solar array, would be mostly obscured by the intervening solar array and would be located approximately .65 miles from KOP 3 and more than .50 miles from the nearest residences. Vegetation would remain visible as native vegetation would be replanted under the solar panels. Additionally, the distant views of hillsides, mountains, and power distribution lines would remain visible. Therefore, while the proposed project would slightly reduce the overall visual quality of the view at KOP 3 by introducing new built features, visual quality would remain average.

KOP 4

Figure 12 documents the existing view looking north along Sutter Avenue with views of the project area on the right side of the road. The existing view from on Sutter Avenue includes gray gravel turnouts, dark brown shrubs and green grasses cover the foreground along with utility poles. Viewers in this location would be motorists traveling southbound along Sutter Avenue. Because motorists would only pass by the project site for a short duration, their sensitivity to changes in the visual quality of the area would be low. The existing visual quality of the view from KOP 4 is considered to be average.

As shown in the simulated view for KOP 4 (Figure 13), the solar array and security fencing are a distinguishable feature in the foreground. Vegetation would remain visible as native vegetation would be replanted under the solar panels. Additionally, the distant hills and mountains as well as the wooden utility lines in the foreground would remain visible. The proposed project would slightly reduce the overall visual quality of the view at KOP 4, but visual quality would remain average.

Summary

As described above, views from the four KOPs analyzed would slightly diminish the visual character and quality of public views. The proposed project would generally be visible as a horizontal linear feature in the middleground of each view, with foreground and background views largely unaffected. Overall, impacts to visual character and quality would be less than significant.

Mitigation Measures

No mitigation measures are required.

Figure 6 KOP 1 Existing View

Figure 7 KOP 1 Simulated View with Proposed Project

Figure 8 KOP 2 Existing View

Figure 9 KOP 2 Simulated View with Proposed Project

Figure 10 KOP 3 Existing View

Figure 11 KOP 3 Simulated View with Proposed Project

Figure 12 KOP 4 Existing View

Figure 13 KOP 4 Simulated View with Proposed Project

Threshold 4:	Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

IMPACT AES-4 THE PROJECT WOULD NOT REQUIRE LIGHTING AND THE PV PANELS USED WOULD BE COATED WITH AN ANTIREFLECTIVE COATING TO MINIMIZE GLARE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Construction

The project could involve some nighttime construction for concrete pouring for the EES and substation areas. Nighttime construction activities would involve use temporary lighting. The construction phase of the project would be temporary during concrete pouring only and would be located approximately 2,650 feet (0.5 miles) from the nearest residences. At this distance, lighting would not create a substantial source of light or glare that would affect nighttime views. Therefore, impacts would be less than significant.

Operation

The project would include low elevation solar/battery powered motion LED lights at all primary access gates as well as the on-site substation. These lights would only be turned on when personnel enter the project site, which would occur infrequently as the project is an unmanned solar facility. Furthermore, all lighting would be shielded and directed downward to minimize illumination of the night sky or surrounding viewers beyond the project site. Therefore, impacts related to lighting would be less than significant.

The reflection of sunlight off solar panel surfaces would be the primary source of potential glare from the project. Solar panels comprise cells designed to capture solar energy to convert it into usable energy. Therefore, solar panels are designed to absorb as much light as possible to maximize the efficiency of energy production. The PV panels would be treated with an antireflective coating that further reduces the reflectivity of the panels and it is not anticipated that the project PV array would result in an increased amount of glare. As such, operation and maintenance of the proposed solar facility would not introduce a source of glare that would significantly impact views in the area, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

6 Conclusion

The proposed project would not result in impacts to scenic vistas or State Scenic Highways. While the project would change the visual character and quality of the project site and surrounding areas, the changes would not result in significantly diminished views or viewer experiences. Therefore, impacts to visual character and quality would be less than significant. The project would result in additional light and glare; however, construction night lighting would be temporary and construction would be restricted to primarily daytime hours in accordance with the Fresno County Municipal Code. Furthermore, operation of the project would only require lighting during maintenance activities which would occur infrequently, and the solar panels would be coated with an anti-reflective coating to reduce glare which would reduce impacts to less than significant levels. Overall, the project would have less than significant aesthetic impacts.

7 References

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Appendix A

Federal Highway Administration Visual Resource Survey Rating Sheets

Visual Resource Survey:		***Existing Conditions***	
KOP Location:	**Southbound SR 33**	Viewpoint:	**KOP 1**
Landscape Unit:	N/A	Date:	5/22/24
Viewpoint Description (Figure Caption):	Existing view traveling along SR 33 in the southbound direction.		
Photo Orientation:	South		
Viewer Position:	_____ Inferior ___X___ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	SR 33 extends south on the left side of the frame. dark grey gravel and green grass border the road. There is a small black wire fence which runs along the road on the right hand side of the frame. Beyond the fence there is brown dirt, green grass, and wooden distribution lines which run north to south along SR 33.
Middleground (1/2 - 4 miles)	Distant rolling hills and faint grey overhead electrical transmission lines are visible in the center and right hand side of the frame.
Background (> 4 miles)	There are distant mountains along the right hand side of the frame.

Vividness		
Feature	***Score****	***Notes***
Landform	4.5	Mostly flat foreground to middleground with low foothills and mountains rising in the distance.
Vegetation	4	The dark grey road and gravel fill the foreground along with green grasses and patches of brown soil. The hills and mountains in the distance are mostly bare. There is the distant outline of a barn in the center of the frame.
Water Feature	N/A	
Human-Made	3.5	The view is somewhat natural appearing but does contain many human-made elements: the road and associated signage, the wire fence, wooden distribution lines, and overhead electrical transmission lines are in view. There is also a barn in the center of the middleground.
Overall	**4.0**	

Intactness		
Overall	**5**	Intactness of the view is good, only slightly degraded by the visible human-made elements.

Unity		
Overall	**4.5**	The existing manmade features minimally block the existing views. The scene is a natural appearing view of open fields with mountains rising in the distance.

Overall Visual Quality Score	**4.5**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Proposed Project***	
KOP Location:	**Southbound SR 33**	Viewpoint:	**KOP 1**
Landscape Unit:	N/A	Date:	5/22/24
Viewpoint Description (Figure Caption):	Simulated view traveling along SR 33 in the southbound direction.		
Photo Orientation:	South		
Viewer Position:	_____ Inferior ___X___ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	The rows of solar panels are visible on the far right and left hand sides of the frame.
Middleground (1/2 - 4 miles)	The solar panels cover a very small portion of the lowest points of the foothills in the distance. The distant hilltops and mountains remain visible.
Background (> 4 miles)	No change.

Vividness		
Feature	***Score****	***Notes***
Landform	4	The solar panels cover portions of the land to the right and left of SR 33. They also obscure very small portions of the lowest points of the distant foothills.
Vegetation	4	There is minimal change to the vegetation as native vegetation will remain under the solar panels.
Water Feature	N/A	
Human-Made	3	There are now increased man made structures in the landscape with rows of solar panels and chain link fence surrounding the panels on either side of SR 33.
Overall	**3.7**	

Intactness		
Overall	**4**	The solar panels are low to the ground and have native vegtation beneath them. the distant foothills and mountains remian visible. Overall the view remains mostly intact.

Unity		
Overall	**4**	The solar panels add human made features which disrupt the previously vacant landscape, however with their low profile and native grassses beneath them, they have a minimal effect on the overall landscape.

Overall Visual Quality Score	**3.9**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Existing Conditions***	
KOP Location:	**Northbound SR 33**	Viewpoint:	**KOP 2**
Landscape Unit:	N/A	Date:	5/22/24
Viewpoint Description (Figure Caption):	Existing view traveling northbound along SR 33.		
Photo Orientation:	Northwest		
Viewer Position:	_____ Inferior ___X___ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	SR 33 extends along the right side of the frame. green grasses and brown shrubs cover the left side of the frame. There is a small black wire fence that runs alongside SR 33 and large grey overhead electrical transmission lines which cross SR 33.
Middleground (1/2 - 4 miles)	There is a barn with a white roof in the center of the middle ground with brown foothills and the outline of a large orchard along the left hand side of SR 33.
Background (> 4 miles)	Blue mountains fill the background on both side of SR 33.

Vividness		
Feature	***Score****	***Notes***
Landform	4.5	Mostly flat foreground to middleground with low foothills and mountains rising in the distance.
Vegetation	3	The roadway and green grasses cover the foreground. The hillsides in the middleground are barren and the distant mountains have limited visible vegetation.
Water Feature	N/A	
Human-Made	2.5	The view is somewhat natural appearing but does contain many human-made elements: the road , the wire fence, overhead electrical transmission lines, and the barn.
Overall	**3.3**	

Intactness		
Overall	**3.5**	Intactness of the view is average, slightly degraded by the visible human-made elements.

Unity		
Overall	**4.5**	The scene is a natural appearing view of open fields with mountains rising in the distance, however large manmade features such as the overhead electrical transmission lines disrupt the views of the distant hills and mountains.

Overall Visual Quality Score	**3.8**	

*Score Key:

1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Proposed Project***	
KOP Location:	**Northbound SR 33**	Viewpoint:	**KOP 2**
Landscape Unit:	N/A	Date:	5/22/24
Viewpoint Description (Figure Caption):	Simulated view of traveling northbound along SR 33.		
Photo Orientation:	Northwest		
Viewer Position:	_____ Inferior ___X___ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	No change.
Middleground (1/2 - 4 miles)	The solar panels are minimally visible in the distance along the righthand side of SR 33.
Background (> 4 miles)	No change.

Vividness		
Feature	***Score****	***Notes***
Landform	4.5	There is no change in the visbility of landforms.
Vegetation	3	There is no change in the visbility of vegetation.
Water Feature	N/A	
Human-Made	2	There is a slight increase in the visibility of human made objects as the solar panels are visible in the distance along the base of the foothills on the right hand side of SR 33.
Overall	**3.2**	

Intactness		
Overall	**3.5**	The solar panels do not change the intactness of the existing views.

Unity		
Overall	**4.5**	The solar panels do not change the unity of the existing views. The foreground, middleground, and background views are minimally changed.

Overall Visual Quality Score	**3.7**	

*Score Key:

1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Existing Conditions***	
KOP Location:	**Residential Views**	Viewpoint:	**KOP 3**
Landscape Unit:	N/A	Date:	5/23/24
Viewpoint Description (Figure Caption):	Views from existing residences adjacent to the southeastern edge of the project site.		
Photo Orientation:	North-northwest		
Viewer Position:	_____ Inferior ___X___ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	Green grasses and brown and yellow shrubs sover the foreground.
Middleground (1/2 - 4 miles)	Tall grey overhead electrical transmission lines and barren yellow hills are visible in the middleground.
Background (> 4 miles)	Distant blue mountains are visible in the background.

Vividness		
Feature	***Score****	***Notes***
Landform	5	Flat to gently sloped terrain in the foreground. Distant foothills and mountains are visible.
Vegetation	5	The foregound is almots completly covered in green grass except for a few patches of yellow and brown shrubs. The distant hillsides and mountains and mostly barren.
Water Feature	N/A	
Human-Made	3.5	The view, while natural-appearing, is slightly impacted by human made structures such as the distant overhead electrical transmission lines.
Overall	**4.5**	

Intactness		
Overall	**4**	Intactness of the view is good with minimal disruptions by manmade structures.

Unity		
Overall	**4**	The scene is a natural appearing view of open fields with mountains rising in the distance. The existing man made features are minimally visible and do not disrupt large portions of the existing views.

Overall Visual Quality Score	**4.2**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Proposed Project***	
KOP Location:	Residential Views	Viewpoint:	**KOP 3**
Landscape Unit:	N/A	Date:	5/23/24
Viewpoint Description (Figure Caption):	Simulated view of the project site from residences adjacent to the project site.		
Photo Orientation:	North-northwest		
Viewer Position:	_____ Inferior ___X___ Level _____ Superior		

View	***Notes***
Foreground (0 - 1/2 mile)	Green grasses and shrubs remain largely visible with the addition of black solar panels extending to the hills in the distance.
Middleground (1/2 - 4 miles)	The overhead electrical transmission lines and distant hillsides remain visible.
Background (> 4 miles)	No change.

Vividness		
Feature	***Score****	***Notes***
Landform	4	There is minimal change. Small portions of the lower foothills in the middleground are obscured by the solar panels and the battery storage infrastructure but all other landform features remain visible.
Vegetation	4	Native vegetation would be replanted under the solar panels and so minimal change would occur.
Water Feature	N/A	
Human-Made	2	The solar array and the battery storage system are prominent features within this view. Existing overhead electrical transmission lines in the distance remain visible.
Overall	**3.3**	

Intactness		
Overall	**3.5**	The solar array adds manmade fetaures to the landacpe, but the grasses in the foreground and mountains in the middle and background remain largely visible.

Unity		
Overall	**4**	The solar array is low to the ground and would have vegetation growing beneath it which matches the existing grasses in the surroudning area, helping the array to blend in. Existing views of the hillsides and mountains would remain intact.

Overall Visual Quality Score	**3.6**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Existing Conditions***	
KOP Location:	**Southbound Sutter Avenue**	Viewpoint:	**KOP 4**
Landscape Unit:	N/A	Date:	5/24/24
Viewpoint Description (Figure Caption):	Views looking north along Sutter Avenue		
Photo Orientation:	North		
Viewer Position:	_____ Inferior _____ Level ____x____ Superior (slightly)		

View	***Notes***	
Foreground (0 - 1/2 mile)	Sutter Avenue is visible on the right side of the frame. gray gravel turnouts, dark brown shrubs, and green grass cover the foreground to the left of Sutter Avenue. There are tall wooden distribution lines whch run alongside Sutter Avenue.	
Middleground (1/2 - 4 miles)	There is green grass which slopes to green and purple foothills.	
Background (> 4 miles)	There are distant views of purple mountains across the frame.	

Vividness		
Feature	***Score****	***Notes***
Landform	4	Flat to gently sloped hills and mountains in the middleground.
Vegetation	4.5	Green and brown grasses and shrubs. Patches of dirt are visible off of the roadway. There are wooden distribution lines which run parallel to Sutter Avenue visible in the foreground. the hills in the middleground are covered in yellow grasses and the mountains are blue.
Water Feature	N/A	
Human-Made	3.5	The view, while natural-appearing, is influenced by some human-made features such as the wooden distribution lines which run parallel to the roadway.
Overall	**4.0**	

Intactness		
Overall	**4**	Intactness of the view is good with minimal interruptions by human-made structures.

Unity		
Overall	**4**	The existing land blends well with the surrounding topography, providing a transition between the flat open spaces and the distant foothills. Unity is reduced by the existing wooden distribution lines.

Overall Visual Quality Score	**4.0**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Visual Resource Survey:		***Proposed Project***	
KOP Location:	**Southbound Sutter Avenue**	Viewpoint:	**KOP 4**
Landscape Unit:	N/A	Date:	5/24/24
Viewpoint Description (Figure Caption):	Views looking north along Sutter Avenue		
Photo Orientation:	North		
Viewer Position:	_____ Inferior _____ Level ____x____ Superior (slightly)		

View	***Notes***	
Foreground (0 - 1/2 mile)	The solar array and secrutiy fencing is slightly distinguishable in the foregound.	
Middleground (1/2 - 4 miles)	No change.	
Background (> 4 miles)	No change.	

Vividness		
Feature	***Score****	***Notes***
Landform	3.5	The solar array covers a large area in the foregound but is does not impede existing views of the hills and mountains in the distance.
Vegetation	4	Native vegetation would be planted under the solar arrays which would preserve the existing views of green grasses and shrubs in the foreground.
Water Feature	N/A	
Human-Made	3	The solar array becomes a prominent feature in the view but it is low to the ground and does not impeded distant views of hillsides and mountains.
Overall	**3.5**	

Intactness		
Overall	**3.5**	The solar array is visible in the forgeound but does not substantially change views of vegetation in the foreground or views of hills and mountains in the middleground.

Unity		
Overall	**3.5**	The color, height, and natural vegetation unbder the solar arrays helps it to blend in with the surrounding environment.

Overall Visual Quality Score	**3.5**	

*Score Key:
1 - Very Low; 2 - Low; 3 - Moderately Low; 4 - Average; 5 - Moderately High; 6 - High; 7 - Very High

Appendix D

Land Evaluation and Site Assessment (LESA)

Cornucopia Hybrid Project

Land Evaluation and Site Assessment

prepared for

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May 2024

RINCON CONSULTANTS, INC. SINCE 1994

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1 Introduction

This Land Evaluation and Site Assessment (LESA) has been prepared for the Cornucopia Hybrid Project (proposed project). The proposed project involves a hybrid solar energy generation and battery energy storage project. The purpose of this report is to provide agencies and decision makers with a method for quantitatively considering potential impacts on agricultural lands in the environmental review process (Public Resources Code Section 21095). Appendix G of the California Environmental Quality Act (CEQA) Guidelines identifies the California Department of Conversation's (DOC) California Agricultural LESA Model (LESA Model) as an optional model to use in assessing potential impacts to agriculture and farmland.

2 Project Description

2.1 Project Location

The project site includes approximately 2,385 acres of a 2,446-acre area leased by BayWa r.e. Solar Projects, LLC, located in unincorporated area western Fresno County, California. For the purposes of this LESA, the 2,446-acre leased area (herein referred to as the "analysis area") is discussed, as it is assumed that crop production would cease across the entirety of the 2,446-acres with implementation of the proposed project, as described in Section 2.2. The analysis area is situated between the unincorporated community of Coalinga and City of Avenal. The analysis area is located within portions of eight parcels (Assessor's Parcel Numbers [APNs] 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S). The analysis area is bisected north to south by State Route 33 and east to west by Sutter Avenue. Interstate 5 is located approximately 4 miles east of the analysis area. Land uses in the area are primarily rural residential, farmland, open space, and transportation corridors. Figure 1 depicts the regional location of the analysis area. Figure 2 depicts the analysis area. The analysis area is characterized by vacant, undeveloped land and agricultural land.

2.2 Project Description

The applicant, Cornucopia Hybrid, LLC (Cornucopia), proposes to construct a new utility-scale, 300-megawatt (MW) solar project consisting of approximately 686,880 solar modules rated at 585 watts, and a 300-MW alternating current battery energy storage system. The proposed development would occur on a 1,618-acre portion of the overall site. The project also includes two prefabricated structures, one of which would serve as the operation and maintenance structure, with the other used for control services. Cornucopia has partnered with a local shepherd to explore utilizing sheep grazing for vegetation management during operation of the proposed project.

Figure 1 Regional Location

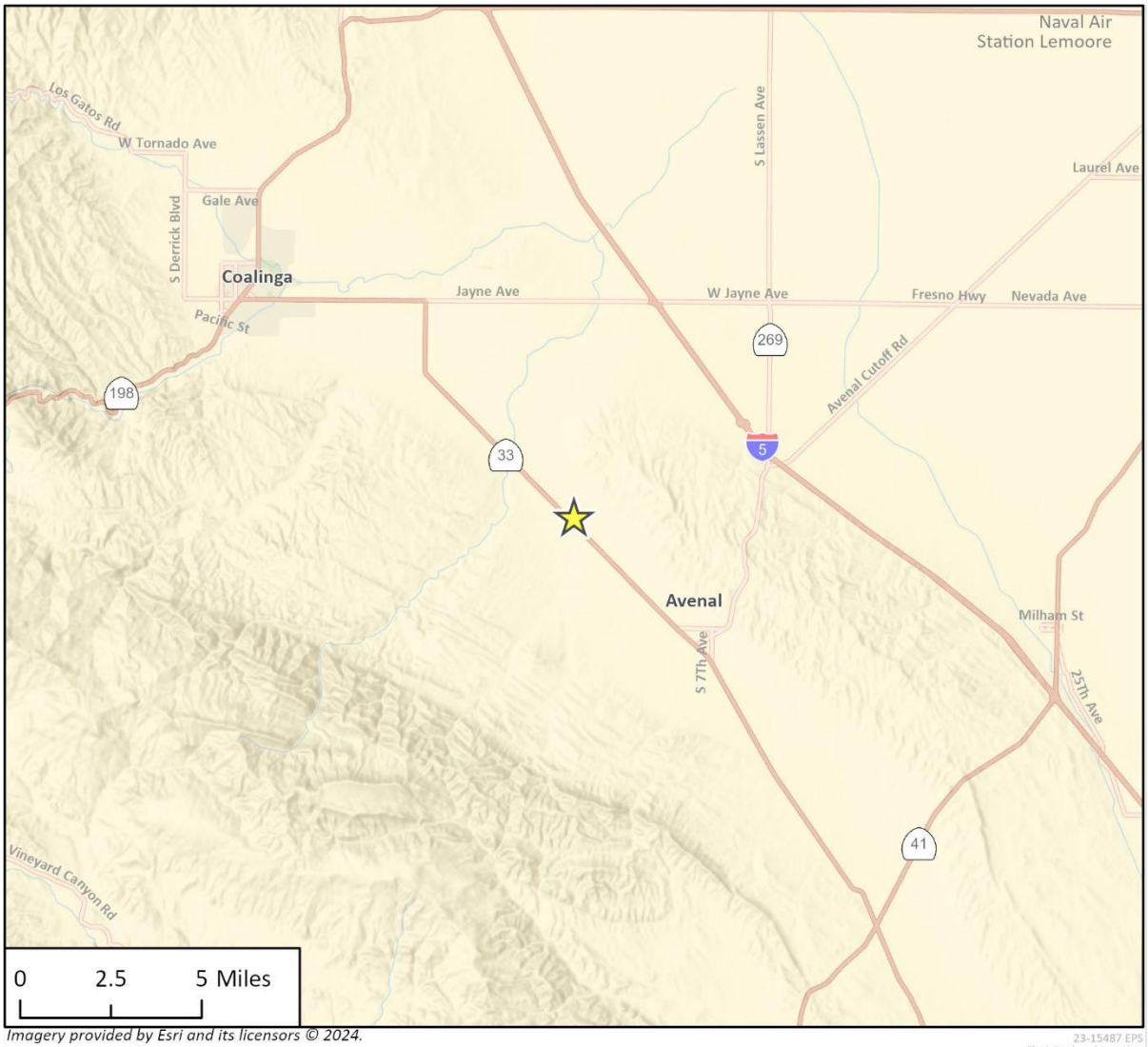
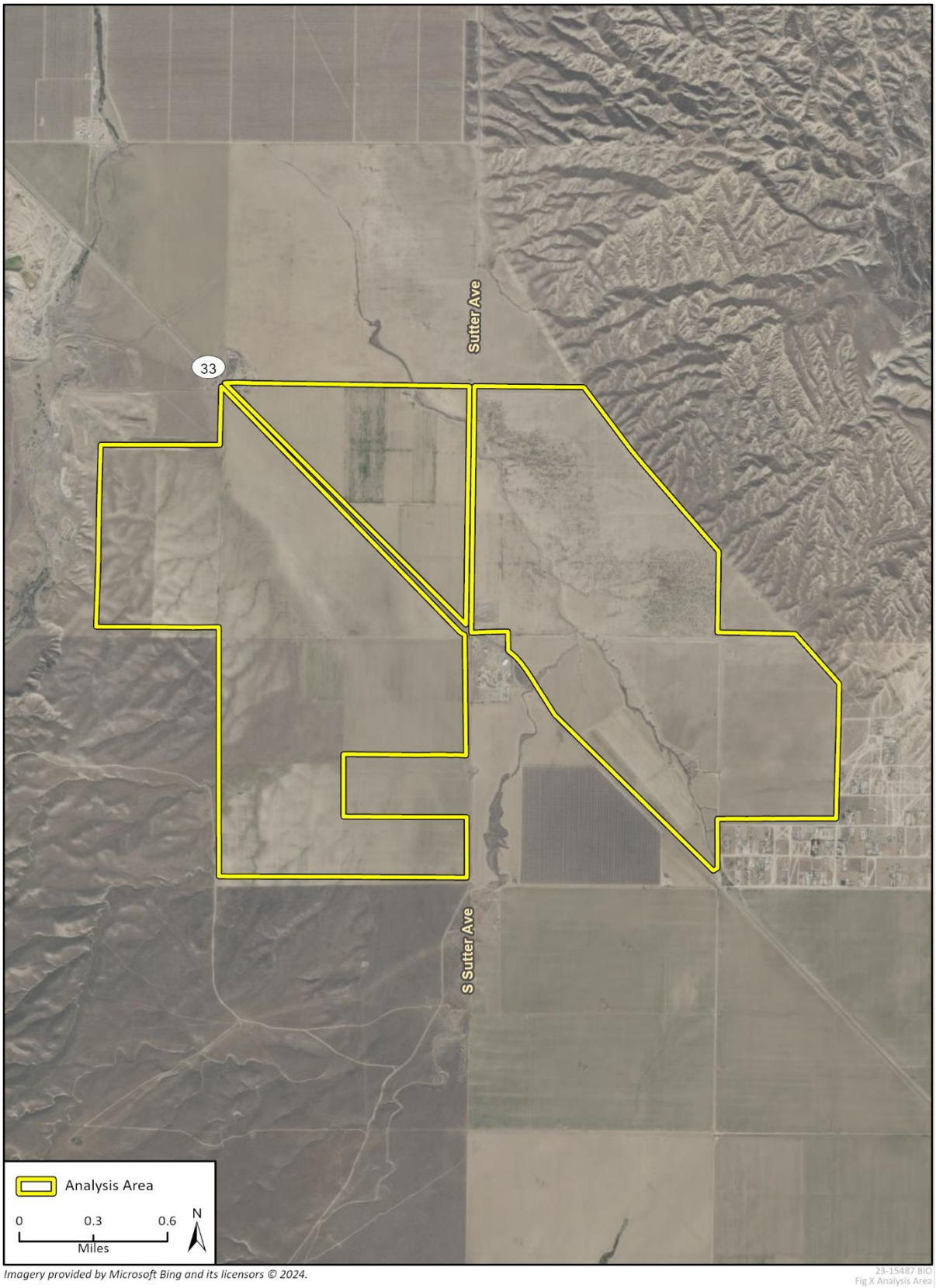


Figure 2 Analysis Area



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23-15487 BIO
Fig X Analysis Area

3 Methodology

The DOC's LESA Model is a point-based approach that is generally used for rating the relative value of agricultural land resources. A LESA Model is created by defining and measuring two separate sets of factors: Land Evaluation (LE) and Site Assessment (SA).

LE includes two factors that measure the inherent soil-based qualities of land as they relate to agricultural suitability (DOC 1997):

1. **Land Capability Classification Rating:** The Land Capability Classification (LCC) Rating indicates the suitability of soils for most kinds of crops. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management (USDA-NRCS 2000). Soils are rated from Class I to Class VIII, with soils having the fewest limitations receiving the highest ratings.
2. **Storie Index Rating**: The Storie Index provides a numeric rating of the relative degree of suitability or value of a given soil for intensive agriculture use. The rating is based upon soil characteristics only.

SA includes four factors which are intended to measure social, economic, and geographic attributes that also contribute to the overall value of agricultural land (DOC 1997):

1. **Project Size Rating:** The project Size Rating is based on the acreage of three soil classifications on a project site. The project Size Rating recognizes the role that farm size and soil quality plays in the viability of an agricultural operation.
2. **Water Resource Availability Rating:** The Water Resources Availability Rating is based on the available water supplies for a project site, taking into consideration whether physical or economic restrictions in supply are likely to take place in drought and non-drought years.
3. **Surrounding Agricultural Land Rating:** The Surrounding Agricultural Land Rating measures the proportion of agricultural land surrounding a project site.
4. **Surrounding Protected Resource Land Rating:** The Surrounding Protected Resource Land Rating takes into account the amount of Protected Resource Land surrounding a project site. Protected Resource Land are defined as lands with long term use restrictions that are compatible with or supportive of agricultural land. This includes Williamson Act contracted lands; publicly owned lands maintained as park, forest, or watershed resources; and lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.

Each of the six total LESA factors are separately rated on a 100-point scale. After individual scores are calculated, the factors are weighted relative to each other. The specific breakdown of factor weighting is as follows (DOC 1997):

1. **Land Capability Classification Rating:** 25 percent of total LESA score
2. **Storie Index Rating:** 25 percent of total LESA score
3. **Project Size Rating:** 15 percent of total LESA score
4. **Water Resource Availability Rating:** 15 percent of total LESA score
5. **Surrounding Agricultural Land Rating:** 15 percent of total LESA score
6. **Surrounding Protected Resource Land Rating:** 5 percent of total LESA score

A single LESA score is generated for a project after all of the individual LE and SA factors have been scored and weighted. The final project scoring is based on a 100-point scale with 50 percent of the total LESA dervied from the LE factors, and 50 percent dervied from the SA factors.

The LESA Model is designed to make a determination of the potential significance of a project's conversion of agricultural lands as part of the CEQA review process (DOC 1997). Scoring thresholds are based upon both the total LESA score as well as the scores calculated for LE and SA individually. Table 1 presents the LESA significance thresholds.

Table 1 Land Evaluation Site Assessment Model Significance Thresholds

Total LESA Score	Scoring Decision
0 to 39 points	Not considered significant
40 to 59 points	Considered significant only if LE and SA sub-scores are greater than or equal to 20 points
60 to 79 points	Considered significant unless either LE or SA sub-scores is less than 20 points
80 to 100 points	Considered significant

LE = Land Evaluation; SA = Site Assessment

Source: DOC 1997

Additional details of the methodology for the LESA modeling conducted for the project is discussed in Section 4, *Land Evaluation and Site Assessment Results*. All tables provided in Section 4 align with tables provided within the LESA Instruction Manual published by the DOC for the purposes of creating a LESA model (DOC 1997). As described in Section 2.1, for the purposes of this LESA Model, the analysis area is the 2,446-acres leased to Cornucopia Hybrid LLC. Modeling assumes crop production would cease across the entirety of the 2,446-acres analysis area as a result of the proposed project.

4 Land Evaluation and Site Assessment Results

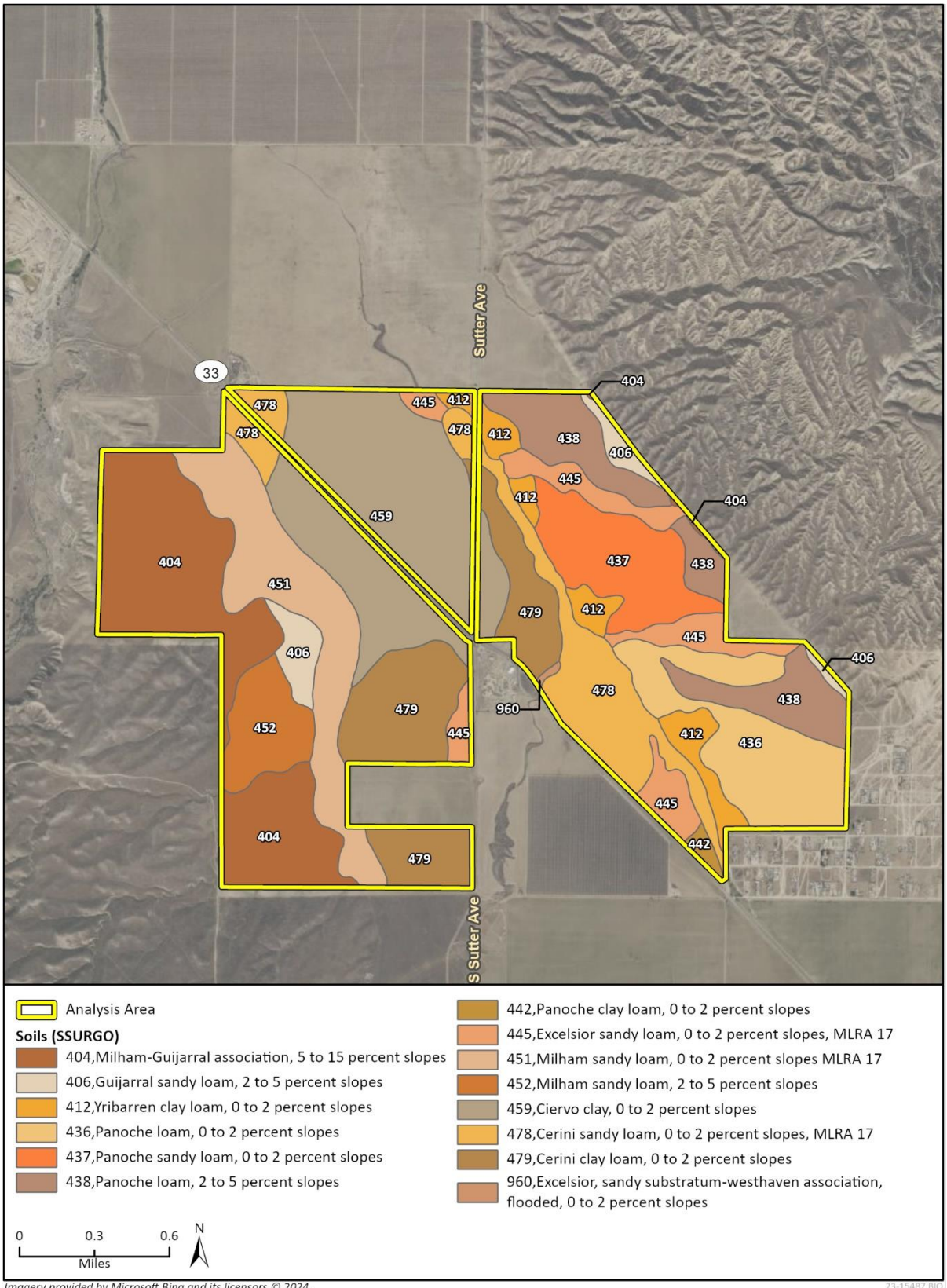
4.1 Land Evaluation

In order to rate the LCC and Storie Index factors, the relative proportion of soils on a site are identified. For this analysis, soils on the analysis area were identified using the United States Department of Agriculture-Natural Resources Conservation Service's (USDA-NRCS) Web Soil Survey and the *Soil Survey of Fresno County, California, Western Part* (USDA-NRCS 2024; USDA-NRCS 2000). As shown in Figure 3, there are 14 different soil types within the analysis area (USDA-NRCS 2024). Soils present on the analysis area are as follows:

- Cerini clay loam, 0 to 2 percent slopes
- Cerini sandy loam, 0 to 2 percent slopes, MLRA 17
- Ciervo clay, 0 to 2 percent slopes
- Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17
- Excelsior sandy substratum-westhaven association, flooded, 0 to 2 percent slopes
- Guijarral sandy loam, 2 to 5 percent slopes
- Milham-Guijarral association, 5 to 15 percent slopes
- Milham sandy loam, 0 to 2 percent slopes, MLRA 17
- Milham sandy loam, 2 to 5 percent slopes
- Panoche clay loam 0 to 2 percent slopes
- Panoche loam, 0 to 2 percent slopes
- Panoche loam, 2 to 5 percent slopes
- Panoche sandy loam, 0 to 2 percent slopes
- Yribarren clay loam, 0 to 2 percent slopes

The primary soils on the analysis area include Ciervo clay (430.4 acres), Milham-Guijarral association (387.9 acres), and Cerini clay loam (264.1 acres) (USDA-NRCS 2024). Total acreages included in the analysis area are in Table 4 at the end of this section.

Figure 3 Analysis Area Soils



Land Capability Classification Rating

LCCs for specific soils are identified as part of soil surveys, conducted by the USDA-NRCS (DOC 1997). Soils are categorized at three levels: capability class, subclass, and unit (USDA-NRCS 2000). The LESA model utilizes capability class and subclass to determine the LCC Rating Value (DOC 1997). Capability classes are designated by the numbers I through VIII. The numbers indicate progressively greater limitations and narrower choices for crop cultivation, with Class I soils having the fewest limitations and Class VIII soils having the greatest limitations. Capability subclasses are soil groups within a capability class, and indicate specific risks associated the soil. These subclasses are designated by adding a small letter *e* (erosion), *w* (water that interferes with plant growth), *s* (shallow, droughty or stony), or *c* (cold or dry), to the end of the capability class number (USDA-NRCS 2000). The LCC Point Ratings that are assigned to each capability class and subclass for the LESA model are listed in Table 2.

Table 2 LESA Land Capability Classification Ratings

Land Capability Classification	Point Rating
I	100
IIe	90
IIs,w	80
IIIe	70
IIIs, w	60
IVe	50
IVs, w	40
V	30
VI	20
VII	10
VIII	0

Source: DOC 1997

The LCC Classification and LCC Rating Value for the soils on the analysis area are shown in Table 4 at the end of this section. The LCC Score for each soil type on the analysis area is then derived by multiplying the LCC Rating Value by the percentage the analysis area comprised of the soil type. The same soil can be assigned different LCC Classifications, dependent upon how many acres of a particular soil are irrigated and nonirrigated. The LCC Score for the on-site soils is calculated in Table 4 at the end of this section.

Storie Index Rating

The Storie Index Rating Class and Rating Value for specific soils are identified as part of soil surveys, conducted by the USDA-NRCS (DOC 1997). The Storie Index Rating is based on surface and subsurface chemical and physical soil properties and surface landscape features of the soil. Four general factors are used to determine the Storie Index Rating of a particular soil: (A) permeability, available water capacity, and depth of the soil; (B) the texture of the surface soil; (C) the dominant slope of the soil body; and (X) other conditions more readily subject to management or modification by the land user. Soils are assigned to a Storie Index Rating Class from Grade 1 to Grade 6, based upon the Storie Index Rating Value. Grade 1 soils are representative of soils that are well suited for

agriculture, while Grade 6 soils are not suited to agriculture (University of California 1978). The Storie Index Rating Values for each Storie Index Rating Class are shown in Table 3 below.

Table 3 Storie Index Ratings

Storie Index Rating Class	Storie Index Rating Value
Grade 1	80 to 100
Grade 2	60 to 79
Grade 3	40 to 59
Grade 4	20 to 39
Grade 5	10 to 19
Grade 6	Less than 10

Source: University of California 1978

The Storie Index Score for each soil type on the analysis area is derived by multiplying the Storie Index Rating Value by the percentage the analysis area comprised of the soil type. The Storie Index Rating Value for each soil was obtained from the University of California, Davis SoilWeb application, accessed February 16, 2024 (University of California, Davis 2024). The Storie Index Score Rating Value for the on-site soils is calculated in Table 4 at the end of this section.

Land Evaluation Results

Based on information provided by current landowners of the analysis area, the entirety of the analysis area is utilized for agricultural production of wheat and farmers employ dryland farming techniques. Because the analysis area is not regularly irrigated, the LCC Classifications for each on-site soil represent a soil's non-irrigated LCC Classification as determined by the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS 2000).

The results for the Land Evaluation analysis of the LESA Model are presented in Table 4. As shown in Table 4, the project receives an LCC Score of 10 and a Storie Index Rating of 83.0.

Table 4 Soils Land Capability Classification and Storie Index Scores

Map Number	Soil Type	Acreage	Percentage of Analysis Area	LCC Classification	LCC Rating Value	LCC Score	Storie Index Rating Class	Storie Index Rating Value	Storie Index Score
404	Milham-Guijarral association, 5 to 15 percent slopes (non-irrigated)	387.9	15.9%	VIIe	10	1.59	Grade 1	81.1	12.9
406	Guijarral sandy loam, 2 to 5 percent slopes (non-irrigated)	56.9	2.3%	VIIe	10	0.23	Grade 1	85.4	2.0
412	Yribarren clay loam, 0 to 2 percent slopes (non-irrigated)	86.3	3.5%	VIIs	10	0.35	Grade 1	89.8	3.1
436	Panoche loam, 0 to 2 percent slopes (non-irrigated)	201.5	8.2%	VIIc	10	0.82	Grade 1	94.6	7.8
437	Panoche sandy loam, 0 to 2 percent slopes (non-irrigated)	149.3	6.1%	VIIc	10	0.61	Grade 1	89.8	5.5
438	Panoche loam, 2 to 5 percent slopes (non-irrigated)	191.0	7.8%	VIIe	10	0.78	Grade 1	89.8	7.0
442	Panoche clay loam 0 to 2 percent slopes (non-irrigated)	9.3	0.4%	VIIc	10	0.04	Grade 1	89.8	3.6
445	Excelsior sandy loam, 0 to 2 percent slopes, MLRA 17 (non-irrigated)	137.3	5.6%	VIIc	10	0.56	Grade 1	89.8	5.0
451	Milham sandy loam, 0 to 2 percent slopes, MLRA 17 (non-irrigated)	232.2	9.5%	VIIc	10	0.95	Grade 2	79.6	7.6
452	Milham sandy loam, 2 to 5 percent slopes (non-irrigated)	85.6	3.5%	VIIe	10	0.35	Grade 1	85.4	3.0
459	Ciervo clay, 0 to 2 percent slopes (non-irrigated)	430.4	17.6%	VIIs	10	1.76	Grade 3	44.8	7.9
478	Cerini sandy loam, 0 to 2 percent slopes, MLRA 17 (non-irrigated)	212.6	8.7%	VIIc	10	0.87	Grade 1	88.4	7.7
479	Cerini clay loam, 0 to 2 percent slopes (non-irrigated)	264.1	10.8%	VIIc	10	1.08	Grade 1	88.4	9.5
960	Excelsior sandy substratum-westhaven association, flooded, 0 to 2 percent slopes (non-irrigated)	2.3	0.1%	VIIw	10	0.01	Grade 3	40.2	0.4

Map Number	Soil Type	Acreage	Percentage of Analysis Area	LCC Classification	LCC Rating Value	LCC Score	Storie Index Rating Class	Storie Index Rating Value	Storie Index Score
Total		**2,446.7**	**100%[1]**	**--**	**--**	**10.00**	**--**	**--**	**83.0**

[1] Total may not add to 100 percent due to rounding

The analysis area's soils LCC Score was derived from the Custom Soil Resource Report for Fresno County, Western Part (USDA-NRCS 2024). The LCC Score is derived by multiplying the percentage of the analysis area by the LCC Rating Value for each soil type. The Storie Index Rating Value for each soil was obtained from the University of California, Davis SoilWeb application, accessed February 16, 2024. The Storie Index Score is derived by multiplying the percentage of the analysis area by the Storie Index Rating Value for each soil type. The Storie Index does not take into account irrigated vs non-irrigated land, so the Storie Index Score is representative of the entirety of a particular soil.

Source: University of California, Davis 2024; USDA-NRCS 2024; USDA-NRCS 2000

4.2 Site Assessment

Project Size Rating

The project Size Rating recognizes the role that farm size plays in the viability of commercial agricultural operations. In general, larger farming operations can provide greater flexibility in farm management and marketing decisions. Larger operations tend to have greater impacts upon the local economy through direct employment, as well as impacts upon supporting industries and food processing industries (DOC 1997).

In terms of agricultural productivity, the size of the farming operation can be considered, not only from its total acreage, but the acreage of different quality lands that comprise the operation. Lands with higher quality soils lend themselves to greater management and cropping flexibility and have the potential to provide greater economic return per acre unit.

The Project Size Rating is based on Project Size Scores that are assigned to each LCC soil class on the analysis area (DOC 1997). Total acreages of soils with specific LCC soil classes are calculated and used to determine Project Size Scores shown in Table 5. The highest Project Size Score between the three LCC soil groupings, as shown in Table 5, is used as the Project Size Rating for the analysis area. Relatively fewer acres of high-quality soils to low-quality soils are required to achieve a maximum Project Size Rating of 100. Alternatively, larger acreage of lesser quality soils could also achieve a maximum Project Size Rating of 100. Table 5 provides the Project Size Scoring used for the LESA model (DOC 1997).

The analysis area includes 2,446 acres of Class IV or Lower Soils which are assigned a Project Size Score of 100. As shown in Table 6, the analysis area receives a Project Size Rating of 100.

Table 5 Project Size Scoring

LCC Class I-II Soils		LCC Class III Soils		LCC Class IV or Lower Soils	
Acres	Score	Acres	Score	Acres	Score
80 or above	100	160 or above	100	320 or above	100
60-79	90	120-159	90	240-319	80
40-59	80	80-119	80	160-239	60
20-39	50	60-79	70	100-159	40
10-39	30	40-59	60	40-99	20
Fewer than 10	0	20-39	30	Fewer than 40	0
--	--	10-19	10	--	--
--	--	Fewer than 10	0	--	--

Source: DOC 1997

Table 6 Project Size Rating

	LCC Class I-II	LCC Class III	LCC Class IV-VIII
Total Acres	0	0	2,446.7
Project Size Score	0	0	100
Project Size Rating (Highest Project Size Score)		**100**	

Source: DOC 1997

Water Resources Availability Rating

The Water Resources Availability Rating is based upon the various water sources available for a site and considers irrigation feasibility and whether physical or economic restrictions in supply are likely to take place in years that are characterized as being periods of drought and non-drought. Physical and economic restrictions are defined by the DOC as follows:

- **Physical Restriction:** A physical restriction is an occasional or regular interruption or reduction in a water supply, or a shortened irrigation season, that forces a change in agricultural practices, such as planting a crop that uses less water, or leaving land fallow. This could be from cutbacks in supply by irrigation and water districts, or by ground or surface water becoming depleted or unusable. Poor water quality can also result in a physical restriction, for example by requiring the planting of salt-tolerant plans, or by effectively reducing the amount of available water.
- **Economic Restriction:** An economic restriction is a rise in the cost of water to a level that forces a reduction in consumption. This could be from surcharge increases from water suppliers as they pass along the cost of finding new water supplies, the extra cost of pumping more ground water to make up for losses in surface water supplies, or the extra energy costs of pumping the same among of groundwater from deeper within an aquifer.

Table 7 presents the Water Resources Availability Scoring used for the LESA Model (DOC 1997).

Table 7 Water Resource Availability Scoring

	Non-Drought Years Restrictions			Drought Years Restrictions			
Option	Irrigated Production Feasible?	Physical Restrictions?	Economic Restrictions?	Irrigated Production Feasible?	Physical Restrictions?	Economic Restrictions?	Water Resource Score
1	Yes	No	No	Yes	No	No	100
2	Yes	No	No	Yes	No	Yes	95
3	Yes	No	Yes	Yes	No	Yes	90
4	Yes	No	No	Yes	Yes	No	85
5	Yes	No	No	Yes	Yes	Yes	80
6	Yes	Yes	No	Yes	Yes	No	75
7	Yes	Yes	Yes	Yes	Yes	Yes	65
8	Yes	No	No	No	--	--	50
9	Yes	No	Yes	No	--	--	45
10	Yes	Yes	No	No	--	--	35
11	Yes	Yes	Yes	No	--	--	30
12	Irrigated production not feasible, but rainfall adequate for dryland production in both drought and non-drought years						25
13	Irrigated production not feasible, but rainfall adequate for dryland production in non-drought years (but not in drought years)						20
14	Neither irrigated nor dryland production feasible						0

Source: DOC 1997

Water use surveys were sent to parcel owners of the eight APNs which the analysis area is located. Input from the parcel owners was cross-referenced with DOC definitions of physical restrictions and economic restrictions to determine appropriate Water Resources Availability scores. Consistent with DOC guidance, scoring is determined based upon the proportions of land, comparative to the total project site size, that receive water from specific sources (i.e., irrigation, groundwater, etc.). The parcel owners for the entirety of the analysis area have indicated irrigated agricultural production cannot occur in both non-drought and drought years due to a lack of water availabilty. The entirety of the analysis area is utilized for agricultural production of wheat and farmers employ dryland farming techniques across the entirety of the analysis area. The landowners of the analysis area have indicated dryland production is feasible only in non-drought years, dependant on the amount of rainfall in the analysis area. Accordingly, Option 13 of the Water Resources Availability Scoring best represents the entirety of the analysis area. As shown in Table 8, a Water Resources Availability score of 20 is assigned for the entirety of the analysis area, consistent with the methodology described above.

Table 8 Water Resource Availability Rating

Option	Water Source	Proportion of Analysis Area	Water Availability Score
Option 13	Rainfall	1.00	20
Total		**1.00**	**--**

The Weighted Availability Score is calculated by multiplying the Proportion of Analysis Area value by the Water Availability Score for the respective Option.

Source: DOC 1997

Surrounding Agricultural and Protected Resource Land Ratings

The evaluation of surrounding agricultural and protected resource lands includes assigning a rating to surrounding and protected resource lands within the zone of influence (ZOI) of the analysis area. The ratings provide a measurement of the level of agricultural use for lands within the ZOI of the analysis area. The ZOI is calculated by determining the smallest rectangle that will completely contain the project and generating a 0.25-mile buffer from that rectangle. The ZOI accounts for the entire area of all parcels identified within the 0.25-mile buffer, excluding parcels that comprise the analysis area. Parcels that are intersected by the 0.25-mile buffer are evaluated in their entirety and based upon the percentage of agricultural lands in the ZOI, the analysis area is assigned a Surrounding Agricultural Land Rating.

The LESA Model rates the potential significance of the conversion of an agricultural parcel that has a large proportion of surrounding land in agricultural production more highly than one that has a relatively small percentage of surrounding land in agricultural production (DOC 1997).

The Surrounding Protected Resource Land Rating is essentially an extension of the Surrounding Agricultural Land Rating and is scored in a similar manner. Protected resource lands are those lands with long-term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following:

- Williamson Act contracted land;
- Publicly owned lands maintained as park, forest, or watershed resources; and
- Land with agricultural, wildlife habitat, open space, or other natural easements that restrict the conversion of such land to urban or industrial uses.

The ratings for surrounding agricultural and protected resource lands are based on the scoring chart developed by the DOC. Table 9 presents the scoring used for both the Surrounding Agricultural Use and the Surrounding Protected Resource Land Scoring (DOC 1997).

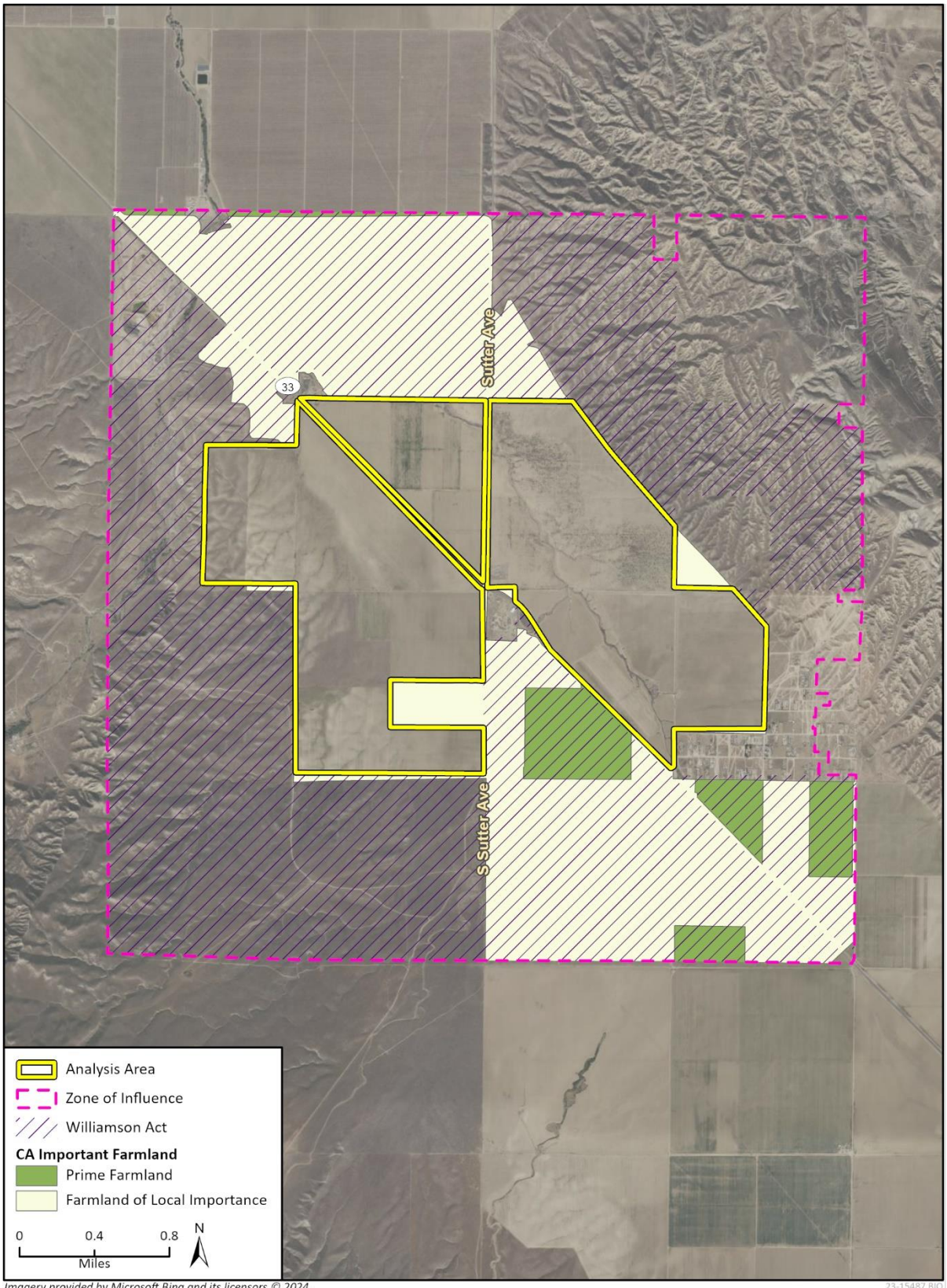
Table 9 Surrounding and Protected Agricultural Use Scoring

Percent of Project's Zone of Influence in Agricultural Use and Protected Resource Land	Surrounding Agricultural and Protected Resource Land Score
90-100	100
80-89	90
75-79	80
70-74	70
65-69	60
60-64	50
55-59	40
50-54	30
45-49	20
40-44	10
40 or less	0

Source: DOC 1997

To determine the extent of surrounding agricultural and protected resource lands in the analysis area's ZOI, the DOC's Important Farmland Finder was utilized to gain a preliminary view of which parcels contain land classified as Farmland (DOC 2024). The County Fresno's Zoning viewer tool was also reviewed for land use data (County of Fresno 2024a). Aerial imagery from Google Earth was reviewed to confirm the accuracy of DOC determinations and County land use data. The ZOI for the analysis area spans 213 individual parcels with an area of approximately 7,124 acres. The ZOI is presented in Figure 4.

Figure 4 Zone of Influence



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Additional data provided by CA Department of Conservation, 2024; DLRP, 2024.

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Fig X Analysis Area - Zone of Influence

Based on the California Important Farmland Finder, the ZOI contains a mixture of Farmland of Local Importance and Prime Farmland across approximately 2,870 acres within the ZOI (DOC 2024). Current Williamson Act contract status, obtained from the Fresno County Assessor-Recorder-Clerk website, confirmed that 13 parcels within the ZOI are currently under a Williamson Act contract, comprising of approximatley 5,893 acres (County of Fresno 2024b) These parcels are listed below:

- 085-110-07S (315.7 acres)
- 085-110-10S (616.12 acres)
- 085-110-16S (160.02 acres)
- 085-110-17S (237.45 acres)
- 085-110-21S (312.9 acres)
- 085-110-26S (621.72 acres)
- 085-120-20 (69.51 acres)
- 085-120-21 (395.59 acres)
- 090-030-01S (636.17 acres)
- 090-030-07 (643.41 acres)
- 090-030-08S (642.82 acres)
- 090-030-18S (642.45 acres)
- 090-040-12S (600.05 acres)

Table 10 summarizes the acreage and perentage of the ZOI in agricultural land use and protected resource lands, and provides the source for each based on the DOC scoring (Table 9). As shown in Table 10 the ZOI recieves a 10 score for Agricultural Land Use Rating and a 90 score for the Protected Resource Land Rating.

Table 10 Surrounding Agricultural Land and Protected Resource Land Site Assessment Ratings

	Total Acreage within Zone of Influence	Percentage Acreage Within Zone of Influence	Corresponding Score
Agricultural Land	2,870	40.3%	10
Protected Resource Land	5,893	82.7%	90

Source: DOC 1997; DOC 2024; County of Fresno 2024b

5 Final LESA Score Results

As described in Section 3, *Methodology*, the Final LESA Score is calculated by multiplying the individual score for each of the six factors by their respective weighting factor, and then summing the weighted factor ratings to determine a Final LESA Score. The Final LESA Score is then compared against the LESA Model significance thresholds assigned by the DOC to determine if the project would result in a potentially significant impact.

As shown in Table 11, the weighted LE sub-score for the analysis area is 23.30, while the weighted SA sub-score for the analysis area is 24.00. The final LESA Score for the analysis area is 47.30.

As previously shown in Table 1, a final LESA Score of 40 to 59 points is considered significant if the LE and SA sub-scores are greater than or equal to 20 points. The LE and SA sub-scores for the proposed project are both greater than 20 points. Therefore, the project would have a potentially significant impact on agricultural resources based on the LESA. However, the project is exploring continuing agricultural uses of the land through sheep grazing. Although different than wheat production, the use of sheep for vegetation maintenance would allow an agricultural use (grazing) to remain on-site throughout operation of the proposed project.

Table 11 Final Land Evaluation Site Assessment Score Sheet Summary

	Factor Score (0-100 points)	Factor Weighting (Total = 1.00)	Weighted Factor Rating[1]
Land Evaluation			
LCC Rating	10	0.25	2.50
Storie Index Rating	83.0	0.25	20.80
Land Evaluation Sub-score		***0.50***	***23.30***
Site Assessment			
Project Size Rating	100	0.15	15.00
Water Resource Availability Rating	20	0.15	3.00
Surrounding Agricultural Land Rating	10	0.15	1.50
Surrounding Protected Resource Lands Rating	90	0.05	4.5
Site Assessment Sub-score		***0.50***	***24.00***
		Total	**47.30**

[1] Weighted factor rating is determined by multiplying the factor score by the factor weighting.

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Appendix E

Air Quality, Greenhouse Gas, and Fuel Usage

E.1 Air Quality and Greenhouse Gas Technical Report and Updates

Cornucopia Hybrid Project

Air Quality and Greenhouse Gas Emissions Technical Report

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RINCON CONSULTANTS, INC. SINCE 1994

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Appendix A Analysis Assumptions and Calculations
Appendix B California Emissions Estimator Model (CalEEMod) Results

1 Introduction

This study analyzes the air quality and greenhouse gas (GHG) emissions impacts of the proposed Cornucopia Hybrid Project (proposed project) in unincorporated Fresno County, California. The purpose of this study is to analyze the proposed project's air quality and GHG impacts related to both temporary construction activity and long-term operation of the proposed project. Table 1 provides a summary of potential project impacts.

Table 1 Summary of Impacts

Impact Threshold	Proposed Project's Level of Significance	Mitigation
Air Quality		
Conflict with or obstruct implementation of the applicable air quality plan?	Less than significant impact with mitigation incorporated	Mitigation Measure AQ-1
Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?	Less than significant impact with mitigation incorporated	Mitigation Measure AQ-1
Expose sensitive receptors to substantial pollutant concentrations?	Less than significant impact with mitigation incorporated	Mitigation Measure AQ-2
Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than significant impact	None
Greenhouse Gas Emissions		
Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant impact	None
Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	No impact	None

2 Project Description

2.1 Project Location

The project site is located in an unincorporated portion of Fresno County, California, situated between the unincorporated communities of Coalinga and Avenal. Interstate 5 (I-5) is located approximately 4 miles east of the project site. The leased land for the project includes 2,955 acres of land within portions of eight parcels associated with Assessor's Parcel Numbers (APN) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S. The project site boundary encompasses 2,446 acres within the leased land. Project components would be contained within a fenced area totaling 1,938.22 acres within the 2,446-acre project site boundary. The project site is bifurcated north to south by Sutter Avenue and northwest to southeast by State Route (SR) 33 (South Lost Hills Road). Figure 1 shows the regional location of the project. Figure 2 shows the project site location and boundary, as well as a depiction of the fenced area within the project site boundary.

The project site consists of fallow agricultural land. The site is mostly surrounded by vacant agricultural land to the north, west, and south with residential uses to the southeast. There is a small residential area which lies just north of the northernmost portion of the project site along SR 33 and a commercial barn that borders the project site to the east of SR 33 at the junction of SR 33 with Sutter Avenue.

2.2 Project Description

The proposed involves the construction and operation of a utility- scale 300-megawatt (MW) solar project, including a battery energy storage system (ESS), a substation, a Pacific Gas & Electric (PG&E) Switching Station and two prefabricated structures which would be used for maintenance and operation service and control services. The project components would have an approximate footprint of 1,938 acres within the fenced area, as shown on Figure 2. The energy storage facility would consist of batteries with the potential to store approximately 300 megawatts of alternating current (MWac) energy. Figure 2 shows a preliminary site plan for the project.

The proposed project could use any commercially available battery technology or similar technology; however, lithium ion, iron flow, and sodium sulfur are the three options being considered at this time. Regardless of the battery type, battery cells form the core of the energy storage system. Multiple self-contained storage system enclosures would house the batteries with buried electrical conduits. The ESS would be located on approximately 12 acres of the project site. The EES enclosure would also house required heating, ventilation, and air conditioning (HVAC) and fire protection systems.

The substation would use high voltage transformers to step up the voltage received from the collector system to 230 kV. The substation would tie into PG&E's high voltage 230 kV Switching Station via a new transmission line located directly adjacent to the Switching Station. The footprint of the on-site project substation would be approximately 1 acre and the footprint of the Switching Station would be approximately 6 acres.

The energy would be transported to and from the project substation to/from the existing PG&E Gates Substation through a proposed approximately 200-foot long gen-tie line.

Figure 1 Regional Location

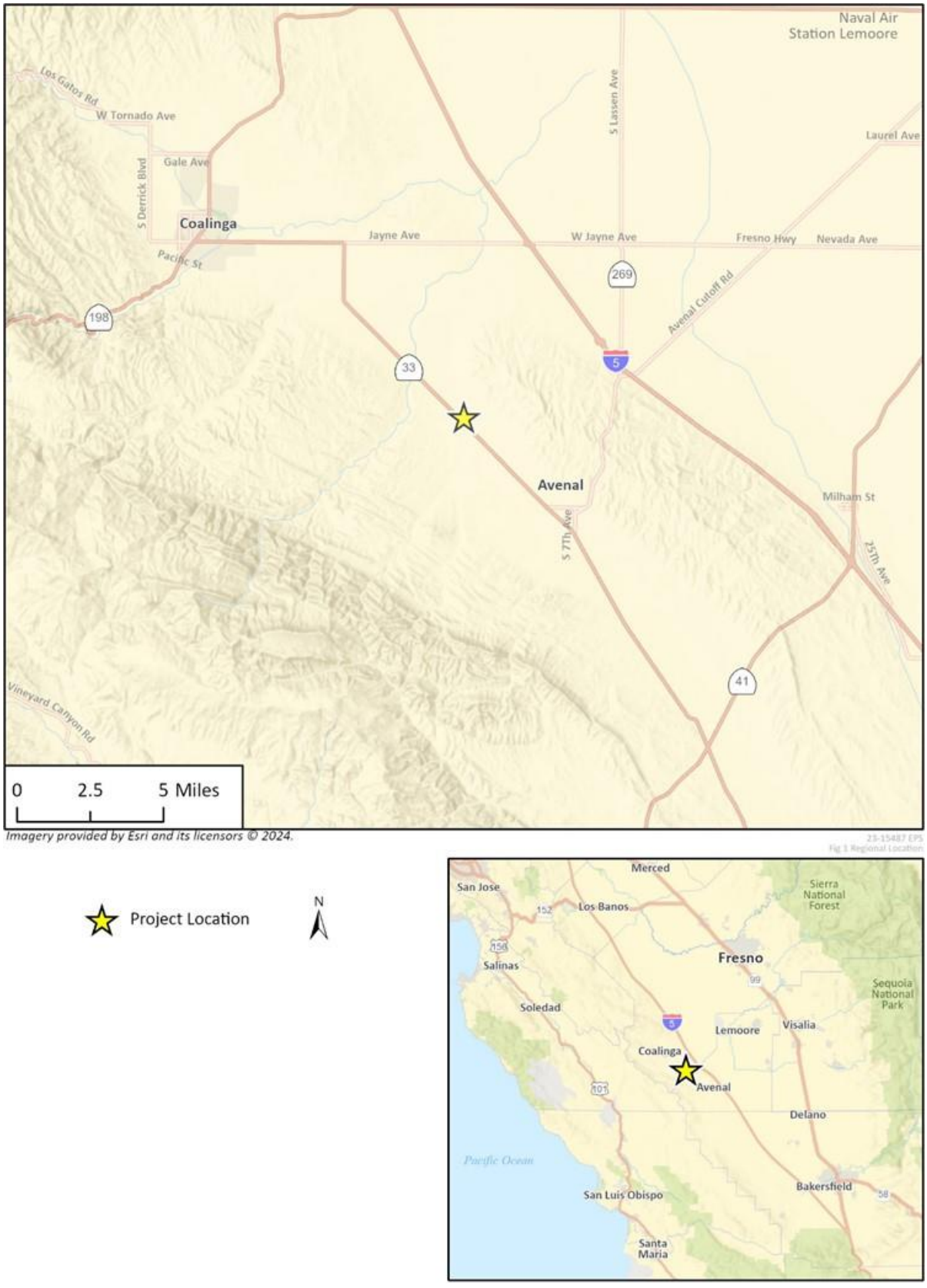
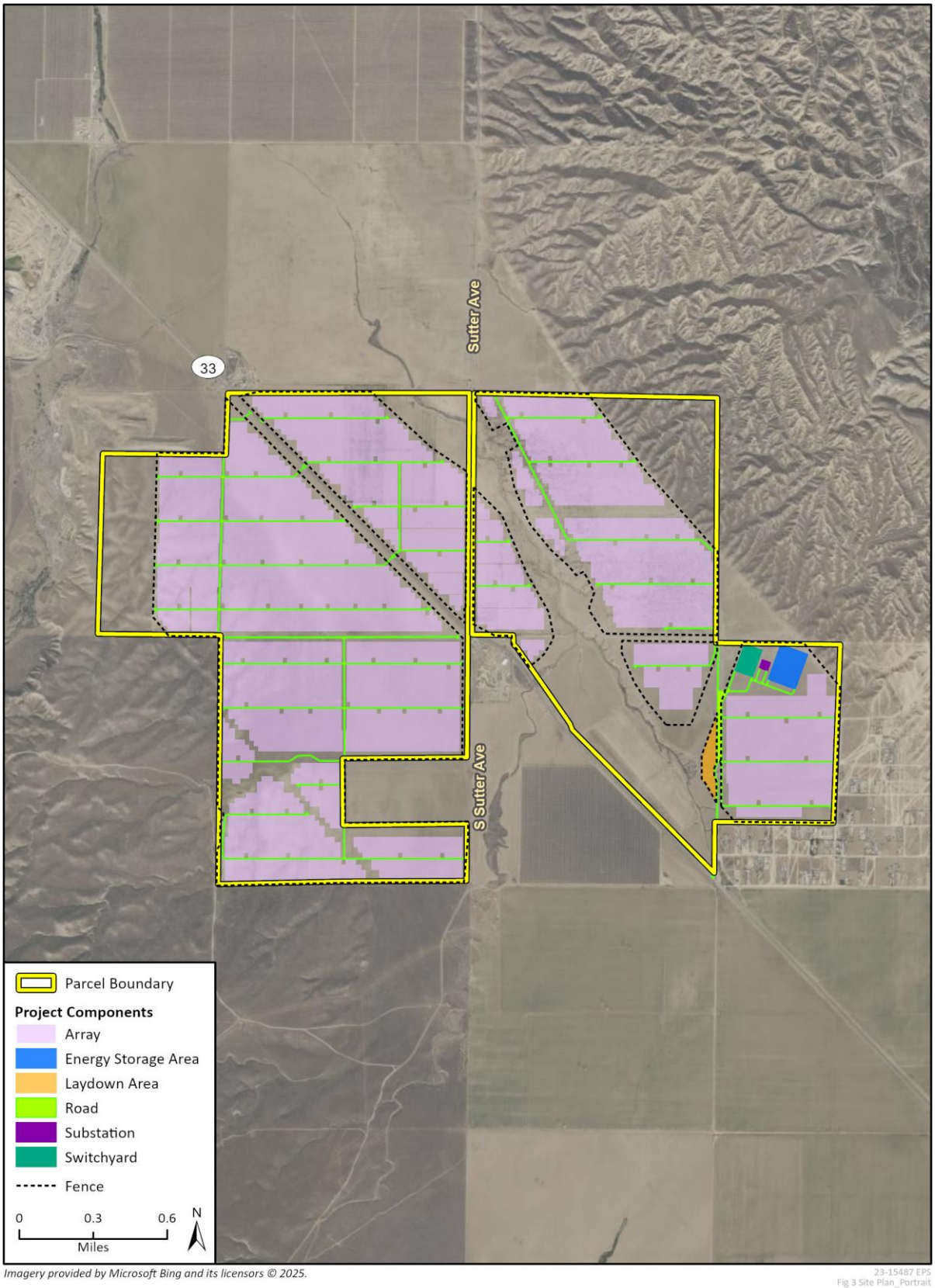


Figure 2 Project Site Plan



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23-15487 EPS
Fig 3 Site Plan_Portrait

3 Setting

3.1 Environmental Setting

3.1.1 Local Climate and Meteorology

The project site is located in the San Joaquin Valley Air Basin (SJVAB) and is within the jurisdictional boundaries of the San Joaquin Valley Air Pollution Control District (SJVAPCD), which has jurisdiction over San Joaquin County. The SJVAB is approximately 250 miles long and 35 miles in width (on average) and is bordered by the Coast Range Mountains on the west, the Sierra Nevada mountains on the east, and the Tehachapi Mountains to the south. On the valley floor, the SJVAB is open only to the north, which heavily influences prevailing winds (SJVAPCD 2015).

Although marine air generally flows into the SJVAB from the San Francisco Bay Area through the Carquinez Strait (a gap in the Coast Range Mountains) and low mountain passes such as Altamont Pass and Pacheco Pass (low mountain passes in the Diablo Range), the mountain ranges restrict air movement through the SJVAB. Additionally, most of the surrounding mountains are above the normal height of summer inversion layers (1,500 to 3,000 feet). These topographic features result in weak airflow and poor dispersion of pollutants and, as a result, the SJVAB is highly susceptible to pollutant accumulation.

3.1.2 Air Pollutants of Concern

Criteria Air Pollutants

The U.S. Environmental Protection Agency (USEPA) has identified criteria air pollutants that are a threat to public health and welfare. These pollutants are called "criteria" air pollutants because standards have been established for each of them to meet specific public health and welfare standards. Criteria pollutants that are a concern in the SJVAB are described below.

Ozone

Ozone is a highly oxidative unstable gas produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_X) and reactive organic compounds (ROC)/reactive organic gases (ROG)/volatile organic compounds (VOC).[1] ROG/ROC is composed of non-methane hydrocarbons (with specific exclusions), and NO_X is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and nitrogen dioxide (NO_2). NO_X is formed during the combustion of fuels, while ROC is formed during the combustion and evaporation of organic solvents. As a highly reactive molecule, ozone readily combines with many different atmosphere components. Consequently, high ozone levels tend to exist only while high ROC and NO_X levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant. In addition, because ozone requires sunlight to form, it mainly occurs in concentrations considered serious between April and October. Groups most sensitive to ozone include children, the elderly, people with respiratory

[1] The California Air Resources Board defines VOC and ROG/ROC similarly as, "any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate," (40 Code of Federal Regulations 51.100) with the exception that VOC are compounds that participate in atmospheric photochemical reactions. For the purposes of this analysis, ROG/ROC and VOC are considered comparable in terms of mass emissions, and the term ROC is used in this document.

disorders, and people who exercise strenuously outdoors (USEPA 2023a). Depending on the level of exposure, ozone can cause coughing and a sore or scratchy throat; make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath; inflame and damage the airways; make the lungs more susceptible to infection; and aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is a by-product of fuel combustion. The primary sources are motor vehicles and industrial boilers, and furnaces. The principal form of NO_X produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2, commonly called NO_x. NO_2 is a reactive, oxidizing gas and an acute irritant capable of damaging cell linings in the respiratory tract. Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases leading to respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma and children and the elderly are generally at greater risk for the health effects of NO_2 (USEPA 2023a). NO_2 absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of ozone/smog and acid rain.

Sulfur Dioxide

Sulfur dioxide (SO_2) is included in a group of highly reactive gasses known as “oxides of sulfur.” The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore and burning fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO_2 (USEPA 2023a).

Carbon Monoxide

Carbon monoxide (CO) is a localized pollutant found in high concentrations only near its source. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic's incomplete combustion of petroleum fuels. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of CO include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces during the winter. When CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability to get oxygenated blood to their hearts in situations where they need more oxygen than usual. As a result, they are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain, also known as angina (USEPA 2023a).

Particulate Matter

Particulates less than 10 microns in diameter (PM_{10}) and less than 2.5 microns in diameter ($PM_{2.5}$) are comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Both PM_{10} and $PM_{2.5}$ are emitted into the atmosphere as by-products of fuel combustion and wind erosion of soil and unpaved roads. The atmosphere, through chemical reactions, can form particulate matter. The

characteristics, sources, and potential health effects of PM_{10} and $PM_{2.5}$ can be very different. PM_{10} is generally associated with dust mobilized by wind and vehicles. In contrast, $PM_{2.5}$ is generally associated with combustion processes and formation in the atmosphere as a secondary pollutant through chemical reactions. PM_{10} can cause increased respiratory disease, lung damage, cancer, premature death, reduced visibility, and surface soiling. For $PM_{2.5}$, short-term exposures (up to 24-hours duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases (California Air Resources Board [CARB] 2024a).

Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. The major sources of Pb emissions historically have been mobile and industrial. However, due to the USEPA's regulatory efforts to remove lead from gasoline, atmospheric Pb concentrations have declined substantially over the past several decades. The most dramatic reductions in Pb emissions occurred before 1990 due to the removal of Pb from gasoline sold for most highway vehicles. Pb emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least partly due to national emissions standards for hazardous air pollutants (USEPA 2013). As a result of phasing out leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest Pb level in the air is generally found near Pb smelters. Other stationary sources include waste incinerators, utilities, and Pb-acid battery manufacturers. Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and cardiovascular system depending on exposure. Pb exposure also affects the oxygen-carrying capacity of the blood. The Pb effects most likely encountered in current populations are neurological in children. Infants and young children are susceptible to Pb exposures, contributing to behavioral problems, learning deficits, and lowered intelligence quotient (USEPA 2023a).

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TAC) are a diverse group of airborne substances that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about 1/70th the diameter of a human hair) and thus is a subset of $PM_{2.5}$. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2024b). TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health. People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include asthma, respiratory symptoms, and decreased lung function (CARB 2024b).

Dust-related Concerns

Valley Fever

Valley Fever or coccidioidomycosis is caused locally by the microscopic fungus *Coccidioides immitis (C. immitis)*. The *Coccidioides* fungus resides in the soil in southwestern United States, northern Mexico, and parts of Central and South America. During drought years, the number of organisms competing with *C. immitis* decreases, and *the C. immitis* remains alive but dormant. When rain finally occurs, the fungal spores germinate and multiply more than usual because of fewer other competing organisms. Later, the soil dries out in the summer and fall, and the fungi can become airborne and potentially infectious (Kirkland and Fierey 1996).

Infection occurs when the spores of the fungus become airborne and are inhaled. The fungal spores become airborne when contaminated soil is disturbed by human activities, such as construction and agricultural activities, and natural phenomena, such as windstorms, dust storms, and earthquakes. About 60 percent of infected persons have no symptoms. The remainder develop flu-like symptoms that can last for a month and tiredness that can sometimes last for longer than a few weeks. Common symptoms include fatigue, cough, chest pain, fever, rashes on upper body or legs, headaches, muscle aches, night sweats, and unexplained weight loss (California Department of Public Health 2021). A small percentage of infected persons (<1 percent) can develop disseminated disease that spreads outside the lungs to the brain, bone, and skin. Without proper treatment, Valley Fever can lead to severe pneumonia, meningitis, and even death. Symptoms may appear between one to four weeks after exposure (Los Angeles County Health Department 2013). Both humans and animals can become infected with Valley Fever, but the infection is not contagious and cannot spread from one person or animal to another (California Department of Public Health 2021).

Diagnosis of Valley Fever is conducted through a sample of blood, other body fluid, or biopsy of affected tissue. Valley Fever is treatable with anti-fungal medicines. Once recovered from the disease, the individual is protected against further infection. Persons at highest risk from exposure are those with compromised immune systems, such as those with human immunodeficiency virus (HIV) and those with chronic pulmonary disease. Farmers, construction workers, and others who engage in activities that disturb the soil are at highest risk for Valley Fever. Infants, pregnant women, diabetics, people of African, Asian, Latino, or Filipino descent, and the elderly may be at increased risk for disseminated disease. Historically, people at risk for infection are individuals not already immune to the disease and whose jobs involve extensive contact with soil dust, such as construction or agricultural workers and archeologists (Los Angeles County Health Department 2013). Most cases of Valley Fever (over 65 percent) are diagnosed in people living in the Central Valley and Central Coast regions (California department of Public Health 2021).

There is no vaccine to prevent Valley Fever. However, the California Department of Public Health recommends the following practical tips to reduce exposure (2021):

- Stay inside and keep windows and doors closed when it is windy outside and the air is dusty, especially during dust storms.
- Consider avoiding outdoor activities that involve close contact to dirt or dust, including yard work, gardening, and digging, especially if you are in one of the groups at higher risk for severe or disseminated Valley fever.
- Cover open dirt areas around your home with grass, plants, or other ground cover to help reduce dusty, open areas.
- While driving in these areas, keep car windows closed and use recirculating air, if available.

- Try to avoid dusty areas, like construction or excavation sites.
- If you cannot avoid these areas, or if you must be outdoors in dusty air, consider wearing an N95 respirator (a type of face mask) to help protect against breathing in dust that can cause Valley fever.

However, if in situations where digging dirt or stirring up dust will happen, then the following tips are recommended:

- Stay upwind of the area where dirt is being disturbed.
- Wet down soil before digging or disturbing dirt to reduce dust.
- Consider wearing an N95 respirator (mask).
- After returning indoors, change out of clothes if covered with dirt.
- Be careful not to shake out clothing and breathe in the dust before washing. If someone else is washing your clothes, warn the person before they handle the clothes.

In 2023, approximately 581 cases of Valley Fever were reported in Fresno County. This is an increase of 134 cases compared to 2022 (447 cases) (California Department of Public Health 2024).

3.1.3 Sensitive Receptors

Some receptors are considered more sensitive than others to air pollutants. The reasons for greater than average sensitivity include preexisting health problems, proximity to emissions sources, or duration of exposure to air pollutants. Title 20, CCR, Section 1704, Appendix B defines a sensitive receptor as infants and children, the elderly, and the chronically ill, and any other member of the general population who is more susceptible to the effects of the exposure than the population at large. Schools, hospitals, and convalescent homes are considered relatively sensitive to poor air quality because children, elderly people, and the infirmed are more susceptible to respiratory distress and other air quality-related health problems than the general public. Residential areas are considered sensitive to poor air quality because people usually stay home for extended periods, with greater associated exposure to ambient air quality. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system. Ambient air quality standards were established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. Standards are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases.

The nearest sensitive receptors to the project site are the residences adjacent to the southeastern corner of the project property line located approximately 250 feet from construction activity, and a single-family residence located on SR 33 located approximately 750 feet from construction activity.

3.1.4 Greenhouse Gases

Gases that trap heat in the atmosphere are known as GHGs. GHGs allow sunlight to enter the atmosphere but trap a portion of the outward-bound infrared radiation that warms the air. The process is similar to the effect greenhouses have in raising the internal temperature of the structure. Both natural processes and human activities emit GHGs. The accumulation of GHGs in the atmosphere regulates the Earth's temperature, but emissions from human activities (such as fossil fuel-based electricity production and the use of motor vehicles) have elevated the concentration of GHGs in the

atmosphere. Scientists agree that this accumulation of GHGs has contributed to an increase in the temperature of the Earth's atmosphere and to global climate change. Global climate change is a change in the average weather on Earth that can be measured by wind patterns, storms, precipitation, and temperature. Although there is disagreement as to the rate of global climate change and the extent of the impacts attributable to human activities, most scientists agree there is a direct link between increased emissions of GHGs and long-term global temperature increases.

The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFC), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are usually by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6.

The use of SF_6 in electric utility systems and switchgear, including circuit breakers, poses a concern because this pollutant has an extremely high GWP (one pound of SF_6 is the equivalent warming potential of approximately 24,600 pounds of CO_2) (IPCC 2021a).[2] SF_6 is inert and non-toxic, and is encapsulated in circuit breaker assemblies. SF_6 is a GHG with substantial global warming potential because of its chemical nature and long residency time within the atmosphere. However, under normal conditions, it would be completely contained in the equipment and SF_6 would only be released in the unlikely event of a failure, leak, or crack in the circuit breaker housing. New circuit breaker designs have been developed over the past several years to minimize the potential for leakage, compared to that of past designs.

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally 100 years) (USEPA 2021). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change [IPCC] 2021b).[3]

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Each of the past three decades has been warmer than all the previous decades in the instrumental record, and the

[2] A global warming potential of 23,900 was used to convert emissions to CO_2e. This value is based on the global warming potential in the USEPA Mandatory Reporting Program Regulations (40 Code of Federal Regulations Part 98, Subpart A), and deviates from the use of GWPs from the IPCC 6th Assessment Report which was used for the conversion of CH_4 and N_2O.

[3] The IPCC's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2022 Climate Change Scoping Plan published by the CARB uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes the GWPs from the Fourth Assessment Report.

decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature (GMST) from 2015 to 2017 was approximately 1° Celsius (C) higher than the average GMST over the period from 1880 to 1900 (National Oceanic and Atmospheric Administration 2020). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased. Due to past and current activities, anthropogenic GHG emissions have increased global mean surface temperature at a rate of approximately 0.1°C per decade since 1900. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2023).

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally-specific climate change case studies (State of California 2018). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. A summary follows of some of the potential effects that could be experienced in California as a result of climate change.

Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains could tend to temporarily clear the air of particulate pollution, which would effectively reduce the number of large wildfires and thereby ameliorate the pollution associated with them (California Natural Resources Agency 2009).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra

Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (State of California 2018). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 2006 and 2018 is approximately 3.7 millimeters per year, approximately two times the average rate of sea level rise in the twentieth century (IPCC 2023). Global mean sea levels increased by 0.20 meters between 1901 and 2018 (IPCC 2023). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise of 0.28 to 0.55 meter by 2100 (IPCC 2021a). Between the years of 1901 and 2018, the global mean sea level increased by 0.20 meters with human influence as the likely driver of said increase since at least 1971 (IPCC 2021a). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over $50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2020). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions as a result of higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (State of California 2018).

Emissions Inventories

Global Emissions Inventory

Worldwide anthropogenic GHG emissions totaled 47,000 million metric tons (MMT) of CO_2e in 2015, which is a 43 percent increase from 1990 GHG levels (USEPA 2023b). Specifically, 34,522 MMT of CO_2e of CO_2, 8,241 MMT of CO_2e of CH_4, 2,997 MMT of CO_2e of N_2O, and 1,001 MMT of CO_2e of fluorinated gases were emitted in 2015. The largest source of GHG emissions were energy production and fuel use from vehicles and buildings, which accounted for 75 percent of the global GHG emissions. Agriculture uses and industrial processes contributed 12 percent and six percent, respectively. Waste sources contributed three percent and international transportation sources contributed two percent. These sources account for approximately 98 percent because there was a net sink of two percent from land use change (including afforestation/reforestation and emissions removals by other land use activities) (USEPA 2023b).

United States Emissions Inventory

Total U.S. GHG emissions were 6,558 MMT of CO_2e in 2019. Emissions decreased by 1.7 percent from 2018 to 2019. Since 1990, total U.S. emissions have increased by an average annual rate of 0.06 percent for a total increase of 1.8 percent between 1990 and 2019. The decrease from 2018 to 2019 reflects the combined influences of several long-term trends, including population changes, economic growth, energy market shifts, technological changes such as improvements in energy efficiency, and decrease carbon intensity of energy fuel choices. In 2019, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of nationwide GHG emissions; while the commercial and residential end-use sectors accounted for 16 percent and 15 percent of nationwide GHG emissions, respectively, with electricity emissions distributed among the various sectors (USEPA 2023c).

California Emissions Inventory

Based on the CARB California GHG Inventory for 2000-2019, California produced 418.2 MMT of CO_2e in 2019, which is 7.2 MMT of CO_2e lower than 2018 levels. The major source of GHG emissions in California is the transportation sector, which comprises 40 percent of the State's total GHG emissions. The industrial sector is the second largest source, comprising 21 percent of the State's GHG emissions, while electric power accounts for approximately 14 percent (CARB 2021). The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, its relatively mild climate is a factor that reduces California's per capita fuel use and GHG emissions as compared to other states. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels, as emissions fell below 431 MMT of CO_2e (CARB 2021).

3.2 Regulatory Setting

3.2.1 Air Quality

Federal and State Criteria Air Pollutants

Criteria Air Pollutants

The federal Clean Air Act (CAA) and the California Clean Air Act (CCAA) establish ambient air quality standards and establish regulatory authorities designed to attain those standards. As required by the CAA, the USEPA has identified criteria pollutants and has established National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb.

Under the CCAA, California has adopted the California Ambient Air Quality Standards (CAAQS), which are more stringent than the NAAQS for certain pollutants and averaging periods. Table 2 presents the current federal and state standards for regulated pollutants and the SJVAB's attainment status for each standard. California has also established CAAQS for sulfates, hydrogen sulfide, and vinyl chloride.

As required by the federal CAA and the CCAA, air basins or portions thereof have been classified as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether the standards have been achieved. In some cases, an area's status is unable to be determined, in which case the area is designated "unclassified" (USEPA 2022). The air quality in an attainment area meets or is better than the NAAQS or CAAQS. A non-attainment area has air quality that is worse than the NAAQS or CAAQS. States are required to adopt enforceable plans, known as a State Implementation Plan (SIP), to achieve and maintain air quality meeting the NAAQS.

As shown in Table 2, The SJVAPCD is currently classified as nonattainment for the federal and State ozone standards, federal and State $PM_{2.5}$ standards, and State PM_{10} standards. The SJVAPCD is unclassified or classified as attainment for all other pollutant standards (SJVAPCD 2024a).

Table 2 Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	State Standard		National Standard	
		Concentration	SJVAPCD Attainment Status	Concentration	SJVAPCD Attainment Status
Ozone	8-Hour	0.070 ppm	Nonattainment	0.070 ppm	Nonattainment/Extreme
	1-Hour	0.090 ppm	Nonattainment-Severe	–	
Carbon Monoxide (CO)	1-Hour	9.0 ppm	Attainment/Unclassified	9.0 ppm	Attainment/Unclassified
	8-Hour	20 ppm		35 ppm	
Nitrogen Dioxide (NO_2)	1-Hour	0.180 ppm	Attainment	0.100 ppm	Attainment/Unclassified
	Annual	0.030 ppm		0.053 ppm	
Sulfur Dioxide (SO_2)	1-Hour	0.25 ppm	Attainment	0.075 ppm	Attainment/Unclassified
	3-Hour	–		0.5 ppm	
	24-Hour	0.04 ppm		0.14 ppm	
	Annual	–		0.03 ppm	
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Nonattainment	150 µg/m3	Attainment
	Annual	20 µg/m^3		–	
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	–	Nonattainment	35 µg/m3	Nonattainment
	Annual	12 µg/m^3		9 µg/m3	
Lead (Pb)	30-Day	1.5 µg/m^3	Attainment	–	No Designation/Classification
	Quarterly	–		1.5 µg/m3	

ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter

Source: SJVAPCD 2024a

Regional

San Joaquin Valley Air Pollution Control District

The project site is located within the jurisdiction of the SJVAPCD, which regulates air pollutant emissions for all sources throughout the SJVAB other than motor vehicles. The SJVAPCD enforces regulations and administers permits governing stationary sources. The following regional rules and regulations would apply to the proposed project:

- **Regulation VIII (Fugitive PM_{10} Prohibitions)** contains rules developed pursuant to USEPA guidance for "serious" PM_{10} nonattainment areas. Rules included under this regulation limit fugitive PM_{10} emissions from the following sources: construction, demolition, excavation, extraction, and other earth moving activities, bulk materials handling, carryout and track-out, open areas, paved and unpaved roads, unpaved vehicle/equipment traffic areas, and agricultural sources. Table 3 contains applicable control measures to implement during construction activities for the project pursuant to *Rule 8021 Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.*
- **Rule 2201 (New and Modified Stationary Source Review Rule)** applies to all new stationary sources or modified existing stationary sources that are subject to the SJVAPCD permit requirements. The rule requires review of the new or modified stationary source to ensure that the source does not interfere with the attainment or maintenance of ambient air quality standards.
- **Rule 4101 (Visibility)** limits the visible plume from any source to 20 percent opacity.
- **Rule 4102 (Nuisance)** prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such person or the public.
- **Rule 9510 (Indirect Source Review)** requires certain development projects to mitigate exhaust emissions from construction equipment greater than 50 horsepower to 20 percent below statewide average NO_x emissions and 45 percent below statewide average PM_{10} exhaust emissions. This rule also requires applicants to reduce baseline emissions of NO_X and PM_{10} emissions associated with operations by 33.3 percent and 50 percent respectively over a period of 10 years.

Table 3 SJVAPCD Rule 8021 Measures Applicable to the Project

Number	Measure
A.1	Pre-water site sufficient to limit visible dust emissions (VDE) to 20 percent opacity.
A.2	Phase work to reduce the amount of disturbed surface area at any one time.
B.1	Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity; or
B.2	Construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity. If using wind barriers, control measure B1 above shall also be implemented.
B.3	Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20 percent opacity and meet the conditions of a stabilized unpaved road surface.
C.1	Restrict vehicular access to the area.
C.2	Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acre or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.58 of Rule 8011.
5.3.1	An owner/operator shall limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
5.3.2	An owner/operator shall post speed limit signs that meet state and federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.
5.4.1	Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20 percent opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.
5.4.2	Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.
6.3.1	An owner/operator shall submit a Dust Control Plan to the Air Pollution Control Officer (APCO) prior to the start of any construction activity on any site that will include ten acres or more of disturbed surface area for residential developments, or five acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. Construction activities shall not commence until the APCO has approved or conditionally approved the Dust Control Plan. An owner/operator shall provide written notification to the APCO within 10 days prior to the commencement of earthmoving activities via fax or mail. The requirement to submit a dust control plan shall apply to all such activities conducted for residential and non-residential (e.g., commercial, industrial, or institutional) purposes or conducted by any governmental entity.
6.3.3	The Dust Control Plan shall describe all fugitive dust control measures to be implemented before, during, and after any dust generating activity.
6.3.4	A Dust Control Plan shall contain all the [administrative] information described in Section 6.3.6 of this rule. The APCO shall approve, disapprove, or conditionally approve the Dust Control Plan within 30 days of plan submittal. A Dust Control Plan is deemed automatically approved if, after 30 days following receipt by the District, the District does not provide any comments to the owner/operator regarding the Dust Control Plan.

Source: SJVAPCD 2004

Air Quality Management Plans

As required by the federal CAA and the California CAA, air basins or portions thereof have been classified as either "attainment" or "nonattainment" for each criteria air pollutant, based on if the standards have been achieved. Jurisdictions of nonattainment areas also are required to prepare an air quality management plan that includes strategies for achieving attainment. The SJVAPCD has approved management plans demonstrating how the SJVAB will reach attainment with the federal one-hour and eight-hour O_3, PM_{10}, and $PM_{2.5}$.

OZONE ATTAINMENT PLANS

The *Extreme Ozone Attainment Demonstration Plan*, adopted by the SJVAPCD Governing Board October 8, 2004, sets forth measures and emission-reduction strategies designed to attain the federal one-hour O_3 standard by November 15, 2010, as well as an emissions inventory, outreach, and rate of progress demonstration. This plan was approved by the USEPA on March 8, 2010; however, the USEPA's approval was subsequently withdrawn effective November 26, 2012, in response to a decision issued by the U.S. Court of Appeals for the Ninth Circuit (*Sierra Club v. EPA*, 671 F.3d 955) remanding USEPA's approval of these SIP revisions. Concurrent with the USEPA's final rule, CARB withdrew the 2004 Plan. The SJVAPCD developed a new plan for the one-hour ozone standard, the *2013 Plan for the Revoked 1-Hour Ozone Standard*, which it adopted in September 2013.

The *2013 Plan for the Revoked 1-Hour Ozone Standard* was approved by the Governing Board on September 19, 2013 (SJVAPCD 2013). Based on implementation of the ongoing control measures, preliminary modeling indicates that the SJVAB will attain the one-hour standard before the final attainment year of 2022 and without relying on long-term measures under the federal CAA Section 182(e)(5) (SJVAPCD 2013).

On June 19, 2014, the Governing Board adopted the *2014 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone State Implementation Plan* (SJVAPCD 2014) that includes a demonstration that the SJVAPCD rules implement RACT. The plan reviews each of the NO_x reduction rules and concludes that they satisfy requirements for stringency, applicability, and enforceability, and meet or exceed RACT. The plan's analysis of further ROG reductions through modeling and technical analyses demonstrates that added ROG reductions will not advance the SJVAB's ozone attainment. Each ROG rule evaluated in the 2009 RACT SIP has been subsequently approved by the USEPA as meeting RACT within the last two years. The subsequent attainment strategy, therefore, focuses on further NO_X reductions.

SJVAPCD adopted the *2022 Ozone Plan for the San Joaquin Valley* in December 2022. This plan satisfies CAA requirements and ensures expeditious attainment of the 70 parts per billion eight-hour standard (SJVAPCD 2022).

PARTICULATE MATTER ATTAINMENT PLANS

SJVAPCD adopted the *2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard* on September 15, 2016. This plan addresses the USEPA federal annual $PM_{2.5}$ standard of 12 µg/m^3, established in 2012. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment (SJVAPCD 2016).

SJVAPCD adopted the *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards* in November 2018. This plan addresses the USEPA federal 1997 annual $PM_{2.5}$ standard of 15 µg/m^3 and the 24-hour $PM_{2.5}$ standard of 65 µg/m^3; the 2006 24-hour $PM_{2.5}$ standard of 35 µg/m^3; and the 2012 annual $PM_{2.5}$

standard of 12 µg/m^3. The plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable as required under the federal CAA (SJVAPCD 2018).

County of Fresno General Plan

The County of Fresno has established a series of goals, policies, and implementation measures in the Fresno County 2000 General Plan to improve air quality (County of Fresno 2000). Applicable goals and policies related to air quality are as follows:

- **Goal OS-G.4.** The County shall consult with the SJVAPCD during CEQA review for projects that require air quality impact analysis and ensure that the SJVAPCD is on the distribution list for all CEQA documents.
- **Goal OS-G.13.** The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVAPCD's PM_{10} regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.

Existing Ambient Air Quality

The SJVAPCD operates a regional monitoring network that measures the ambient concentrations of criteria pollutants. Existing and probable future general levels of air quality in the SJVAB can normally be inferred from ambient air quality measurements conducted by SJVAPCD at its monitoring stations. The major criteria pollutants of concern in the Central Valley (i.e., O_3, PM_{10}, and $PM_{2.5}$) are monitored at several locations.

Background ambient concentrations of pollutants are determined by pollutant emissions in a given area, as well as wind patterns and meteorological conditions for that area. As a result, background concentrations can vary among different locations within the SJVAB. However, areas located close together and exposed to similar wind conditions can be expected to have similar background pollutant concentrations.

The closest monitoring station to the project site is the Tranquility – 32650 West Adams Avenue station in Tranquility, which is approximately 40 miles north of the project site. This station monitored O_3 and $PM_{2.5}$ for NO_x and PM_{10}, data from the Fresno – Drummond Street station was used. This station is approximately 50 miles northeast of the project site. Table 4 shows a three-year summary of data collected at the Tranquility – 32650 West Adams Avenue and Fresno – Drummond Street monitoring stations and compared to the NAAQS and the CAAQS.

Table 4 Ambient Air Quality at the Nearest Monitoring Station

Pollutant	2020	2021	2022
Ozone (ppm), 8-Hr Average[1]	0.079	0.080	0.066
Number of Days of state exceedances (>0.070 ppm)	3	6	0
Number of days of federal exceedances (>0.070 ppm)	3	5	0
Ozone (ppm), Worst Hour[1]	0.087	0.088	0.074
Number of days of state exceedances (>0.09 ppm)	0	0	0
Number of days of federal exceedances (>0.112 ppm)	0	0	0
Nitrogen Dioxide (ppm), Worst Hour[2]	0.067	0.065	0.058
Number of days of state exceedances (>0.18 ppm)	0	0	0
Number of days of federal exceedances (>0.10 ppm)	0	0	0
Particulate Matter 10 microns, μg/m³, Worst 24 Hours[2]	350.4	151.8	73.4
Number of days of state exceedances (>50 μg/m³)	25	20	133
Number of days above federal standard (>150 μg/m³)	6	0	0
Particulate Matter <2.5 microns, μg/m³, Worst 24 Hours[1]	146.2	65.3	33.1
Number of days above federal standard (>35 μg/m³)	22	7	0

[1] Measurements taken from the Tranquility – 32650 West Adams Avenue station in Tranquility.

[2] Measurements taken from the Fresno – Drummond Street station in Fresno.

Note: State and national ozone statistics may differ for the following reasons: (1) National 8-hour averages are truncated to three decimal places; State 8-hour averages are rounded to three decimal places. (2) State criteria for ensuring that data are sufficiently complete for calculating 8-hour averages are more stringent than the national criteria.

Source: CARB 2024c

As shown in Table 4, the 8-hour O_3 NAAQS and CAAQS were exceeded in 2020 and 2021. The PM_{10} NAAQS and CAAQS were exceeded in 2020, and the CAAQS was also exceeded in all three observation years. The $PM_{2.5}$ NAAQS were exceeded in 2020 and 2021. No other state or federal standards were exceeded at these monitoring stations over this time period.

3.2.2 Greenhouse Gases

Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that the USEPA has the authority to regulate motor vehicle GHG emissions under the federal CAA. The USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that established the GHG permitting thresholds that determine when CAA permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026.

The USEPA finalized the federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026 in February 2022. These standards will leverage current and future technologies to result in the avoidance of more than 3 billion tons of GHGs through 2050.

State Regulations

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

California Advanced Clean Cars Program

Assembly Bill (AB) 1493 (2002), California's Advanced Clean Cars program (referred to as "Pavley"), requires CARB to develop and adopt regulations to achieve "the maximum feasible and cost-effective reduction of GHG emissions from motor vehicles." On June 30, 2009, the USEPA granted the waiver of CAA preemption to California for its GHG emission standards for motor vehicles, beginning with the 2009 model year, which allows California to implement more stringent vehicle emission standards than those promulgated by the USEPA. Pavley I regulates model years from 2009 to 2016 and Pavley II, now referred to as "LEV (Low Emission Vehicle) III GHG," regulates model years from 2017 to 2025. The Advanced Clean Cars program coordinates the goals of the LEV, Zero Emissions Vehicles (ZEV), and Clean Fuels Outlet programs and would provide major reductions in GHG emissions. By 2025, the rules will be fully implemented, and new automobiles will emit 34 percent fewer GHGs and 75 percent fewer smog-forming emissions from their model year 2016 levels (CARB 2011).

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

The "California Global Warming Solutions Act of 2006," (AB 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT of CO_2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

The CARB approved the 2013 Scoping Plan update in May 2014. The update defined the CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals

defined in the original Scoping Plan. It also evaluated how to align the state's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100. The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of 6 MT of CO_2e by 2030 and 2 MT of CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state.

CARB published the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update) in November 2022, as the third update to the initial plan that was adopted in 2008. The 2022 Scoping Plan Update identifies ways to achieve new targets for carbon neutrality by 2045 and to reduce anthropogenic GHG emissions to at least 85 percent below 1990 levels, while also assessing the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan (CARB 2022).

The 2022 Scoping Plan Update reflects existing and recent direction in the Governor's Executive Orders and State Statutes, which identify policies, strategies, and regulations in support of and implementation of the Scoping Plan. Among these include Executive Order B-55-18 and AB 1279 (the California Climate Crisis Act), which identify the carbon neutrality and GHG reduction targets for 2045 incorporated into the Scoping Plan.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPO) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. FresnoCOG was assigned targets of a 6 percent reduction in GHGs from transportation sources by 2020 and a 13 percent reduction in GHGs from transportation sources by 2035 (CARB 2023).

Senate Bill 1383

Adopted in September 2016, SB 1383 (Lara, Chapter 395, Statutes of 2016) requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. SB 1383 requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard (RPS) Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, former Governor Brown issued Executive Order B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Code of Regulations, Title 17, Section 95350 et seq.

In 2010, CARB adopted the *Regulation for Reducing Sulfur Hexafluoride Emissions From Gas Insulated Switchgear* (Section 17 CCR Section 95350 et seq.). The purpose of this regulation is to achieve GHG emission reductions by reducing SF_6 emissions from gas-insulated switchgear. Owners of such switchgear must not exceed maximum allowable annual emissions rates, reduced each year until 2020, after which annual emissions must not exceed 1 percent. Owners must regularly inventory gas-insulated switchgear equipment, measure quantities of SF_6, and maintain records of these for at least three years. Additionally, by June 1 each year, owners also must submit an annual report to CARB's Executive Officer for emissions that occurred during the previous calendar year.

In December 2021, CARB adopted amendments to the Regulation for Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear, to update the phase out of SF_6 in gas-insulated switchgear. The new phase out schedule begins in January 2025 with all switchgear needing to be SF_6 free by January 2033. Under this resolution, CARB has developed a timeline for phasing out SF_6 equipment in California and created incentives to encourage owners to replace SF_6 equipment. The California Office of Administrative Law approved this rulemaking in December 2021 and the Resolution went into effect January 1, 2022.

California Advanced Clean Trucks Program

In March 2021, CARB approved the Advanced Clean Trucks regulation, which requires manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. In addition, the regulation requires company and fleet reporting for large employers and fleet owners with 50 or more trucks. By 2045, all new trucks sold in California must be zero-emission. Implementation of this regulation would reduce consumption of nonrenewable transportation fuels as trucks transition to alternative fuel sources.

California Advanced Clean Fleets Regulation

In April 2023, CARB approved the Advanced Clean Fleets (ACF) regulation. The ACF regulation is part of California's strategy to accelerate the adoption of medium- and heavy-duty zero-emission vehicles (ZEV). It complements the Advanced Clean Trucks ACT regulation and aims to achieve public health, air quality, and climate goals. The ACF regulation applies to fleets performing drayage operations, those owned by State, local, and federal government agencies, and high priority fleets. The ACF regulation includes components such as a manufacturer sales mandate, drayage fleet registrations, requirements for drayage fleets to transition to zero-emission vehicles, and mandates for high priority and government fleets to purchase increasing percentages of ZEVs over time. The regulation provides flexibility and exemptions for cases where zero-emission trucks are not yet available. The ACF regulation is expected to significantly increase the number of ZEVs on California roads, leading to emissions reductions and health benefits. The Advanced Clean Trucks and ACF regulations together are expected to result in about 510,000, 1,350,000 and 1,690,000 ZEVs in California in 2035, 2045, and 2050, respectively.

Executive Order B-48-18 (Zero-Emission Vehicles)

On January 26, 2018, Governor Brown signed Executive Order B-48-18 requiring all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle (EV) charging stations by 2025. It specifies that 10,000 of the EV charging stations should be direct current fast chargers. This order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor’s Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan, along with the 2018 ZEV Action Plan Priorities Update, which includes and extends the 2016 ZEV Action Plan (Governor’s Interagency Working Group on Zero-Emission Vehicles 2016, 2018), to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities.

Executive Order N-79-20 (Zero Emissions Vehicles Sales)

Governor Gavin Newsom signed Executive Order N-79-20 in September 2020, which sets a statewide goal that 100 percent of all new passenger car and truck sales in the state will be zero-emissions by 2035. It also sets a goal that 100 percent of statewide new sales of medium- and heavy-duty vehicles will be zero emissions by 2045, where feasible, and for all new sales of drayage trucks to be zero emissions by 2035. Additionally, the Executive Order targets 100 percent of new off-road vehicle sales in the state to be zero emission by 2035. CARB is responsible for implementing the new vehicle sales regulation.

Senate Bill 1020

SB 1020 signed into law on September 16, 2022, requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035, 95 percent by 2040, and 100 percent by 2045. All State agencies facilities must be served by 100 percent renewable and zero-carbon resources by 2030. SB 1020 also requires the California Public Utilities Commission, CEC, and CARB to issue a joint progress report outlining the reliability of the electrical grid with a focus on summer reliability and challenges and gaps. Additionally, SB 1020 requires the California Public Utilities Commission to define energy affordability and use energy affordability metrics to develop protections, incentives, discounts, or new programs for residential customers facing hardships due to energy or gas bills.

Local Regulations

Fresno Council of Governments 2022 Regional Transportation Plan

Fresno Council of Governments' (FresnoCOG) 2022 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) outlines a regional transportation network that is environmentally sensitive and reduces GHG emissions through the year 2046 (FresnoCOG 2022). New transportation facilities must avoid or fully mitigate all significant impacts on environmentally sensitive areas and natural resources such as minimizing loss of farmland. Increased transportation and facility design is encouraged, along with infill development near existing public transportation, which is intended to reduce VMT and the associated GHG emissions from those mobile sources.

San Joaquin Valley Air Pollution Control District

In August 2008, the SJVAPCD's Governing Board adopted the *Climate Change Action Plan*. The *Climate Change Action Plan* directed the SJVAPCD Air Pollution Control Officer to develop guidance to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHG emissions on global climate change.

In 2009, the SJVAPCD adopted the *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects Under CEQA* and the *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA (SJVAPCD 2009).

Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions from business-as-usual is required to determine that a project would have a less than cumulatively significant impact and be consistent with AB 32 2020 targets. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project-related impacts on global climate change (SJVAPCD 2009). However, as SJVAGenPCD's adopted BPS are designed to help the district meet the 2020 targets and still provide measures that can be used to reduce GHG emissions from projects, compliance with these BPS are not applicable to determining significance for projects developed subsequent to 2020.

Fresno County General Plan

There are no specific policies related to greenhouse gas emissions or climate change in the 2000 General Plan.

4 Methodology and Significance Criteria

This section presents the methodology and significance criteria used for the analysis of construction, operational, and decommissioning emissions for the proposed project. Criteria pollutant and GHG emissions for project construction and operation were calculated using the California Emissions Estimator Model (CalEEMod) version 2022.1.22. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, D, and E (California Air Pollution Control Officers Association 2022). The input data and construction and operation emission estimates for the proposed project are discussed below and provided in Appendix A. CalEEMod output files for the proposed project are included in Appendix B. The estimated emissions were then compared to applicable significance criteria.

4.1 Methodology

4.1.1 Construction and Decommissioning Emissions

Construction emissions of criteria air pollutants and GHGs include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips, as well as GHG emissions from water supplied to the site for dust suppression. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors.

Construction equipment was estimated to operate between two and eight hours per day, with the exception of generator sets, which were assumed to operate 24 hours per day as a conservative assumption. Construction equipment inputs in CalEEMod used default horsepower information and load factor. Construction is estimated to occur Monday through Friday from 6:00 a.m. to 6:00 p.m. Although construction activity could occur daily over a 12-hour period, it is unlikely that diesel-powered equipment would operate for more than 8 hours in a given day of construction. Based on the project-specific Water Supply Assessment prepared by Rincon Consultants, Inc. (June 2024), project construction would require approximately 1,080 acre-feet (351,972,000 gallons) of water for dust suppression over the course of the construction period. Vendor and haul trips were modeled as exclusively heavy heavy-duty truck trips. The project is anticipated to generate a maximum of 1,200 daily vehicle trips (600 round trips) between workers and deliveries of equipment during the peak phase of construction (Photovoltaic Array Installation). Approximately 37,100 cubic yards of soil would be imported to the project site as fill material. Material import would also be required for construction of approximately 22.8 acres of access roads. This analysis assumes that the proposed project would comply with all applicable regulatory standards. In particular, the proposed project would comply with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions), Rule 2201 (New and Modified Stationary Source Review Rule), and Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). Detailed Assumptions are included in Appendix A for construction schedule and equipment usage.

At the end of the useful life of the proposed project (anticipated as 35 years), the proposed project shall be decommissioned. Decommissioning and site restoration would consist of the removal of all above and below ground structures and the restoration of top soil, where applicable. Because decommissioning is a minimum of 35 years from the beginning of operations, the exact nature of the decommissioning activities and the equipment used is unknown. However, based on equipment, hauling, and labor estimates found in the Project's Reclamation Plan, decommissioning emissions were quantified using CalEEMod. CalEEMod does not include emission factors for years beyond 2050; therefore, it was assumed that decommissioning would occur over 12 months in 2050. Due to the increasing efficiency of vehicles, it is anticipated that the actual deconstruction activities would result in less emissions than are projected in this analysis.

4.1.2 Operational Emissions

In CalEEMod, operational sources of criteria pollutant and GHG emissions include area, energy, and mobile sources. The first full year of operation was assumed to be 2030. The ESS facility was modeled as 50,000 square feet of refrigerated warehouses to account for the energy and refrigerant requirements for maintaining a stable temperature for optimum battery effectiveness, although this energy consumption is anticipated to be offset by the power generated at the site.

CalEEMod defaults were conservatively used to estimate emissions from annual architectural coating and consumer products use for the site. The project would not involve the consumption of natural gas. The solar portion of the project would not involve consumption of electricity from the grid during operation. On-site electrical needs from the solar portion of the project would be offset by the proposed project and no connection to the grid for operational use is necessary. As a conservative estimate of electrical emissions, the ESS facility is anticipated to be charged from the grid. The 300 MW system would be charged once per day during off-peak hours. The system is estimated to draw 438,000 MWh per year.[4]

Based on the project-specific Water Supply Assessment prepared by Rincon Consultants, Inc. (June 2024), project operation is estimated to require approximately 30.97 acre-feet (10,091,604 gallons) per year.

During operations and maintenance, one of the sources of GHG emissions would come from sheep deployed onsite for vegetation management. CH_4 is produced as part of normal digestive processes in animals, particularly ruminant animals such as sheep. This digestive process, referred to as enteric fermentation, produces CH_4 as a byproduct, which can be exhaled or eructated by the animal. The amount of CH_4 produced and emitted by an individual animal depends primarily upon the animal's digestive system, and the amount and type of feed it consumes (USEPA 2023b). A 2023 study on prediction of enteric CH_4 published in the Journal of Cleaner Production indicated that an adult sheep emits, on average, approximately 19.7 grams per day of CH_4 (Belanche et al., 2023). Vegetation management during project operation would require deployment of approximately 2,000 sheep to the site. Although grazing seasons would vary based on weather conditions and precipitation, it is assumed that sheep would be deployed seasonally for approximately six months from February through June of each operational year. Therefore, total enteric CH_4 emissions would be approximately 7.2 MT. The GWP of CH_4 is 30, therefore the 7.2 MT per year from enteric fermentation would result in annual emissions of approximately 216 MT CO_2e.

[4] The 300 MW system is anticipated to be charged one time per day. For calculating kWhs, an average of 1,200 MWh is assumed per day. Therefore, 1,200 MWh * 365 days/yr = 438,000 MWhrs/yr * 1,000 = 438,000,000 KWh/year.

Another main source of GHG emissions during operations and maintenance would be refrigerants for battery cooling and fugitive emissions from equipment containing SF_6 gas installed at the proposed collector substation. The project would have six circuit breakers that contain SF_6. However, new circuit breaker designs have been developed over the past several years to minimize the potential for leakage, compared to that of past designs (CARB 2020). In addition, the equipment would comply with CARB's Reducing Sulfur Hexafluoride Emissions from Gas Insulated Switchgear regulations. Based on experience with similar projects, it is conservatively assumed that the proposed project would require approximately six circuit breakers containing SF_6 gas at the substation. It is estimated that the project would maintain a total of 124 pounds (lbs) of SF_6 gas at the substation. Although leakage is unlikely, for the purposes of the project's emissions inventory, it was assumed that the breakers would have a maximum annual leak rate of 0.5% in accordance with the Institute of Electrical and Electronics (IEEE) (IEEE 2018). Assuming SF_6 leakage would not exceed 0.5 percent annually, total maximum annual SF_6 leakage would be up to 0.62 lbs (<0.01 metric ton [MT]). The GWP of SF_6 is 24,600, therefore the 0.62 lbs per year of annual leakage would result in annual emissions of approximately 7 MT CO_2e.

It is anticipated that up to 2 workers would be required for each operation and maintenance visit (assumed to occur daily). Assuming 2.5 one-way trips per day per employee, on average the proposed project would result in an additional 5 trips per day, or 1,835 per year. Approximately 7 days per year an additional 20 workers per day would visit the site for major maintenance and inspections. Therefore, with a maximum of 22 employees on site and assuming 2.5 trips per employee, for 7 days a year the maximum number of worker trips would be 55 daily one-way trips, total of up to 2,175 trips worker trips per year.

4.2 Significance Criteria

4.2.1 Air Quality

The significance criteria used to evaluate the proposed project impacts to air quality are based on the recommendations provided in Appendix G of the *CEQA Guidelines* (14 CCR 15000 et seq.). For the purposes of this air quality analysis, a significant impact would occur if the proposed project would:

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

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to determine whether a project would have a significant impact on air quality. The SJVAPCD recommends the use of quantitative thresholds to determine the significance of temporary construction-related pollutant emissions and long-term operational-related pollutant emissions. These thresholds are shown in Table 5.

Table 5 SJVAPCD Air Quality Significance Thresholds

Pollutant	Operation Thresholds (tpy)	Construction Thresholds (tpy)
NO_X	10	10
ROG[1]	10	10
PM_{10}	15	15
$PM_{2.5}$	15	15
SO_X	27	27
CO	100	100

tpy = tons per year
[1] ROG are formed during combustion and evaporation of organic solvents. ROG are also referred to as VOC.
Source: SJVAPCD 2015a

In addition to the annual SJVAPCD thresholds outlined above, SJVAPCD has published the *Ambient Air Quality Analysis Project Daily Emissions Assessment* guidance, which is summarized in Section 8.4.2, *Ambient Air Quality Screening Tools*, of the SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI)*, adopted in March 2015. The *Ambient Air Quality Screening Tools* guidance provides a screening threshold of 100 pounds per day of any of the following pollutants: NO_X, ROG, PM_{10}, $PM_{2.5}$, SO_X, and CO. The screening threshold was used to evaluate construction activities and operational activities separately. Per SJVAPCD's GAMAQI, when assessing the significance of project-related impacts on local air quality, the impacts *may* be significant if on-site emissions from construction or operational activities exceed the 100 pounds per day screening level after implementation of all enforceable mitigation measures. If the screening threshold is exceeded for any pollutant, an ambient air quality assessment (AAQA) is conducted following District Rule 2201 *AAQA Modeling* for any phase that has an exceedance. An AAQA uses air dispersion modeling to determine if emission increases from a project's construction or operational activities would cause or contribute to a violation of the ambient air quality.

SJVAPCD recommends comparing project's attributes with the following screening criteria as a first step to evaluating whether the project would result in the generation of CO concentrations that would substantially contribute to an exceedance of the *Thresholds of Significance*. The project would result in a less than significant impact to localized CO concentrations if (SJVAPCD 2015):

1. A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
2. A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets at more one or more intersections in the project vicinity.

However, SB 743, which was signed into law in 2013, initiated an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA. As of July 2020, LOS is no longer considered an ideal metric for evaluating transportation impacts. Therefore, for the purposes of this analysis, impacts related to localized CO concentrations are discussed qualitatively.

Greenhouse Gas Emissions

The significance criteria used to evaluate the project impacts related to GHG emissions are based on the recommendations provided in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). For the purposes of the GHG analysis, a significant impact would occur if the proposed project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (*CEQA Guidelines*, Section 15064[h][1]).

For future projects, the significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds, consistency with a regional GHG reduction plan, or consistency with statewide regulations adopted to reduce GHG emissions. A project may be found to have a less-than-significant impact related to GHG emissions if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (14 Cal. Code Regs. Section 15064[h][3]). According to the CEQA Guidelines, projects can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in that plan. The Association of Environmental Professionals considers this approach in its white paper, "Beyond Newhall and 2020," to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions (Association of Environmental Professionals 2016). However, the SJVAPCD's current GHG reduction strategy presented in the 2008 *Climate Change Action Plan* only aligns with the AB 32 2020 emissions target and does not address the SB 32 2030 emissions target. Because the GHG reduction plan does not specifically address the 2030 target and the project would become operational post-2020, tiering from the regional 2008 *Climate Change Action Plan* is not applicable.

Instead, the potential for the proposed project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHG was assessed by examining the project's consistency with the GHG reduction measures detailed in CARB's 2022 Climate Change Scoping Plan. Under the SJVAPCD's CEQA guidance for GHG, a project would not have a significant GHG impact if it is consistent with an applicable plan to reduce GHG emissions, and a CEQA compliant analysis was completed for the GHG reduction plan (SJVAPCD 2009b, SJVAPCD 2015a). Project GHG emissions are quantified for informational purposes.

5 Impact Analysis

5.1 Project-Level Air Quality Impacts

Threshold 1:	Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?

Impact AQ-1 THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE 2020 REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT) DEMONSTRATION FOR THE 2015 8-HOUR OZONE STANDARD AND THE 2013 PLAN FOR THE REVOKED 1-HOUR OZONE STANDARD, 2007 PM_{10} MAINTENANCE PLAN AND REQUEST FOR RE-DESIGNATION, 2012 $PM_{2.5}$ PLAN, AND 2015 PLAN FOR THE 1997 $PM_{2.5}$ STANDARD. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Air Quality Management Plan Consistency

Construction, operation, and decommissioning of the proposed project would result in emissions of criteria pollutants including O_3 precursors (such as ROG and NO_X) and PM. The SJVAPCD has prepared several air quality attainment plans to achieve ozone and particulate matter standards, the most recent of which include the *2020 Reasonably Available Control Technology (RACT) Demonstration for the 2015 8-Hour Ozone Standard* and the *2013 Plan for the Revoked 1-Hour Ozone Standard, 2007 PM_{10} Maintenance Plan and Request for Re-designation, 2012 $PM_{2.5}$ Plan,* and *2015 Plan for the 1997 $PM_{2.5}$ Standard*. The SJVAB is in attainment for CO, SO_2, and Pb, and there are no attainment plans for those pollutants.

Per Section 7.12 of the *GAMAQI*, the SJVAPCD has determined that projects with emissions above the thresholds of significance for criteria pollutants would conflict with/obstruct implementation of the SJVAPCD's air quality plans (SJVAPCD 2015a). As discussed under Impact AQ-2, project construction and decommissioning would not exceed thresholds of significance for O_3 precursors (ROG and NO_X) or $PM_{2.5}$. However, project construction would exceed daily and annual thresholds for PM_{10}. Operational activities would not exceed the SJVAPCD threshold for criteria pollutants. Therefore, the project would conflict with the implementation of existing air quality plans, and impacts would be potentially significant.

Mitigation

Mitigation Measure AQ-1 is discussed under Impact AQ-2.

Significance After Mitigation

As discussed under Impact AQ-2 and shown in Table 9, Implementation of Mitigation Measure AQ-1 would reduce construction-related PM_{10} emissions to a less than significant level. Therefore, the project would not conflict with the applicable air quality plan, and impacts would be less than significant with mitigation incorporated.

Threshold 2	Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?

Impact AQ-2 PROJECT CONSTRUCTION, DECOMMISSIONING, AND OPERATION WOULD POTENTIALLY RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF PM_{10} AND $PM_{2.5}$, CRITERIA POLLUTANTS FOR WHICH THE PROJECT REGION IS IN NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD. MITIGATION MEASURE AQ-1 WOULD REDUCE PM_{10} AND $PM_{2.5}$ EMISSIONS TO BELOW SJVAPCD THRESHOLDS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Construction and Decommissioning Impacts

Criteria Air Pollutant Emissions

Construction and decommissioning of the proposed project would require approximately 39 months of construction activity. Refer to Appendix A for phasing specifics related to the proposed project construction schedule. Construction of the proposed project would generate air pollutant emissions from entrained dust, off-road equipment use, vehicle emissions, and architectural coatings. Off-site emissions would be generated by construction worker daily commute trips and heavy-duty diesel haul and vendor truck trips. Construction emissions would vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions.

Table 6 summarizes the estimated maximum daily emissions and annual tons per year for ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions for construction. Table 7 summarizes the estimated maximum daily emissions and annual tons per year for ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions for decommissioning. As shown in Table 6, the maximum daily and annual emissions from construction would exceed SJVAPCD thresholds for PM_{10} and $PM_{2.5}$. As shown in Table 6 and Table 7, construction and decommissioning would not exceed the SJVAPCD thresholds for any other criteria pollutant.

Table 6 Construction Criteria Pollutant Emissions

	Pollutants					
Year	**ROG**	**NO_X**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily Onsite Emissions						
2026	4	32	43	<1	33	5
2027	6	49	65	<1	1,120	114
2028	5	40	51	<1	1,112	113
2029	5	36	51	<1	1,104	112
Maximum Daily Onsite Emissions (lbs/day)	**6**	**49**	**65**	**<1**	**1,120**	**114**
SJVAPCD Screening Thresholds (lbs/day)	100	100	100	100	100	100
Threshold Exceeded?	**No**	**No**	**No**	**No**	**YES**	**YES**
Annual Emissions						
2026	<1	1	1	<1	<1	<1
2027	1	6	8	<1	26	3
2028	1	5	11	<1	138	14
2029	1	5	10	<1	137	14
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**YES**	**No**

lbs/day = pounds per day; ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide

Source: Table 2.2 "Construction Emissions by Year, Unmitigated" emissions. Highest of summer and winter emissions results are shown for maximum daily emissions. See CalEEMod worksheets in Appendix B.

Table 7 Decommissioning Criteria Pollutant Emissions

	Pollutants					
Year	**ROG**	**NO_X**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily Onsite Emissions (lbs/day)	4	31	61	<1	6	2
SJVAPCD Screening Thresholds (lbs/day)	100	100	100	100	100	100
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions (tons/year)	1	4	8	<1	1	<1
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

lbs/day = pounds per day; ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide

Source: Decommissioning Output Table 2.2 "Construction Emissions by Year, Unmitigated" emissions. Highest of summer and winter emissions results are shown for maximum daily emissions. See CalEEMod worksheets in Appendix B.

Therefore, project construction would potentially result in a cumulatively considerable net increase of PM_{10}, a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. Impacts would be potentially significant.

Operational Impacts

The project would generate criteria pollutants during operations resulting from area, energy, and mobile sources as described in the Section 4.1, Methodology.

Table 8 presents the project's operational emissions by emission source (area, energy, and mobile, and stationary). As shown, the emissions generated during operation of the project would not exceed the SJVAPCD's daily or annual thresholds for any criteria pollutant. Therefore, the project would not contribute substantially to an existing or projected air quality violation. In addition, because criteria pollutant emissions and regional thresholds are cumulative in nature, the project would not result in a cumulatively considerable net increase of criteria pollutants and impacts would be less than significant.

Table 8 Operational Criteria Pollutant Emissions

	Pollutants					
Emission Source	**ROG**	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily Emissions						
Area	14	<1	4	<1	<1	<1
Energy	0	0	0	0	0	0
Mobile	<1	<1	<1	<1	<1	<1
Stationary	0	0	0	0	0	0
Total Maximum Daily Emissions (lbs/day)	**14**	**<1**	**5**	**<1**	**<1**	**<1**
SJVAPCD Screening Thresholds (lbs/day)	100	100	100	100	100	100
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions						
Area	2	<1	<1	<1	<1	<1
Energy	0	0	0	0	0	0
Mobile	<1	<1	<1	<1	<1	<1
Stationary	0	0	0	0	0	0
Annual Project Emissions (tons/year)	**2**	**<1**	**<1**	**<1**	**<1**	**<1**
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

lbs/day = pounds per day; ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide

Source: Table 2.5 "Operations Emissions by Sector, Unmitigated" emissions. Highest of Summer and Winter emissions results are shown for maximum daily emissions. See CalEEMod worksheets in Appendix B.

Mitigation

AQ-1 Construction Worker Paved Road Travel Requirements

In order to reduce fugitive dust emissions from travel on unpaved roads, the project applicant shall incorporate the following measures into the project's Dust Control Plan. These measures shall be implemented in conjunction with the SJVAPCD Rule 8021 Measures.

- Minimize the extent to which construction workers travel on unpaved roads by identifying the most efficient locations for construction laydown areas. Require that construction workers park

personal vehicles at site access points along South Lost Hills Road or Sutter Avenue, both of which are paved roads, to the extent feasible.

- Ensure that water trucks apply dust suppression prior to commencement of construction activities on any given day, and continue water truck service non-stop throughout the construction day.
- Restrict construction worker, vendor, and hauling truck travel to paved, gravel, or aggregate access roads, and prohibit vehicle travel on exposed, unpaved surfaces.

Significance After Mitigation

Table 9 shows construction criteria pollutant emissions with implementation of Mitigation Measure AQ-1. Emissions shown in Table 9 were modeled assuming that vendor and hauling trips would occur on unpaved surfaces onsite, but worker trips would be limited to paved roads. As shown therein, implementation of Mitigation Measure AQ-1 would reduce PM_{10} emissions to below the SJVAPCD's daily and annual significance thresholds. Therefore, the project would not result in a cumulatively considerable net increase of criteria pollutants and impacts would be less than significant with mitigation incorporated.

Table 9 Mitigated Construction Criteria Pollutant Emissions

	Pollutants					
Year	**ROG**	**NO_X**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily Onsite Emissions						
2026	4	32	43	<1	6	2
2027	10	74	92	<1	42	8
2028	8	64	79	<1	34	7
2029	8	59	78	<1	26	6
Maximum Daily Onsite Emissions (lbs/day)	**10**	**74**	**92**	**<1**	**42**	**8**
SJVAPCD Screening Thresholds (lbs/day)	100	100	100	100	100	100
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions						
2026	<1	1	1	<1	<1	<1
2027	1	6	9	<1	3	1
2028	2	8	14	<1	4	1
2029	2	8	14	<1	3	1
SJVAPCD Annual Thresholds (tons/year)	10	10	100	27	15	15
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

lbs/day = pounds per day; ROG = reactive organic gases; NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = particulate matter with a diameter no more than 10 microns; $PM_{2.5}$ = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide

Source: Table 2.2 "Construction Emissions by Year, Unmitigated" emissions. Highest of summer and winter emissions results are shown for maximum daily emissions. See CalEEMod worksheets in Appendix B.

Threshold 3:	Would the proposed project expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 CONSTRUCTION, DECOMMISSIONING AND OPERATION OF THE PROPOSED PROJECT WOULD NOT RESULT IN EMISSIONS OF TACS SUFFICIENT TO EXCEED APPLICABLE HEALTH RISK CRITERIA. THE PROPOSED PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS OR PROJECT EMPLOYEES TO CO HOTSPOTS. MITIGATION MEASURE AQ-2 WOULD ENSURE THAT PERSONNEL AND PUBLIC EXPOSURE TO VALLEY FEVER WOULD BE MINIMIZED. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Toxic Air Containments

Construction and Decommissioning Health Risk

The greatest potential for TAC emissions during construction and decommissioning would be DPM emissions associated with heavy-duty equipment during construction and decommissioning activities. Although construction equipment would be operated approximately 250 feet from the nearest sensitive receptors (residences southeast of the project site) during PV array installation, construction activities would typically occur at distances greater than 1,000 feet. Based on OEHHA guidance, construction activities occurring within 1,000 feet of receptors lasting greater than two months would potentially result in a significant impact. Project components within the southeastern portion of the Project site, including the ESS facility, substation, and switchyard, would be accessed via an access point on Sutter Avenue, and would not require vehicle access within 1,000 feet of nearby receptors. Based on the timing and intensity of project construction, it is estimated that construction equipment would only operate within 1,000 feet of sensitive receptors for less than one month during the PV installation phase.

Furthermore, the proposed project would be consistent with the applicable SJVAPVD requirements and control strategies intended to reduce emissions from construction equipment and activities. The proposed project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these regulations along with the distance from receptors would minimize emissions of TACs during construction. Therefore, TAC emissions for construction activities would be less than significant.

As shown in Table 10, onsite emissions of criteria pollutants during construction activities would not exceed 100 pounds per day. Therefore, consistent with SJVAPCD guidelines, the preparation of an AAQA would not be required for any of these pollutants, and impacts would be less than significant.

Operational Health Risk

Sources of operational TACs typically include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. The proposed project is not one of these uses. Operational activities throughout the project site would use some diesel-fueled off-road equipment that has the potential to emit DPM; however, use of this equipment would be minimal and infrequent. Consistent with the construction activities, the proposed project would be consistent with the applicable SJVAPCD requirements and control strategies intended to reduce emissions from construction type equipment and activities. The proposed project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these

would minimize emissions of TACs during construction. The project is located within 1,000 feet from the nearest sensitive receptors, however diesel-fueled equipment would only occur occasionally during maintenance activities and would typically operate at distances greater than 1,000 feet due to the nature of the project site. Therefore, project operation would not be anticipated to result in substantial health risks for these receptors. Therefore, TAC emissions for operational activities would be less than significant.

CO Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. The entire SCCAB is in conformance with state and federal CO standards, and most air quality monitoring stations no longer report CO levels. The SJVAPCD does not monitor CO emissions at its air monitoring stations in Fresno County nor is representative data available. A detailed CO analysis was conducted during the preparation of South Coast Air Quality Management District's 2003 AQMP. The locations selected for microscale modeling in the 2003 AQMP included high average daily traffic (ADT) intersections in the South Coast Air Basin, i.e., those which would be expected to experience the highest CO concentrations. The highest CO concentration observed occurred at the intersection of Wilshire Boulevard and Veteran Avenue on the west side of Los Angeles near the I-405 Freeway, which has an ADT of approximately 100,000 vehicles per day. The concentration of CO at this intersection was 4.6 ppm, which is well below the state and federal standards (South Coast Air Quality Management District 2003). According to Caltrans (Caltrans 2021), the total existing traffic volume on the nearest intersection with available data, State Route 33 at the intersection of Merced Avenue, is approximately 11,750 average daily trips. The proposed project would generate up to a maximum of 1,200 daily one-way (600 round trip) vehicle trips for this roadway during construction; therefore, the proposed project could result in a total of 12,950 daily trips (11,750 existing trips plus 1,200 maximum trips during construction) at the observed intersection. Based on the low background level of carbon monoxide in the SJVAB (indicated by the lack of monitoring at state or local levels), the low and the ever-improving emissions standards for new sources in accordance with state and federal regulations, and the fact that project operation would result in a maximum of 55 trips per day during operational and maintenance activities, the project would not create new carbon monoxide hotspots. Therefore, the project would not expose sensitive receptors to substantial carbon monoxide concentrations, and localized air quality impacts related to carbon monoxide hot spots would be less than significant.

Valley Fever

Construction activities that include ground disturbance can result in fugitive dust, which can cause fungus *Coccidioides* spores to become airborne if they are present in the soil. These spores can cause Valley Fever. Workers who disturb soil where fungal spores are found, whether by digging, operating earthmoving equipment, driving vehicles, or by working in dusty, wind-blown areas, are more likely to breathe in spores and become infected. It is not a contagious disease and secondary infections are rare. Construction activities associated with the proposed project would include ground-disturbing activities that could result in an increased potential for exposure of nearby residents and on-site workers to airborne spores, if they are present. Compliance with dust control measured required by SJVAPCD Rule 8021 (as detailed in Table 3) would minimize personnel and public exposure to Valley Fever and reduce the potential risk of nearby resident and on-site worker exposure to Valley Fever. However, without additional controls, impacts would be potentially significant. Mitigation Measure AQ-1 is provided to ensure that personnel and public exposure to Valley Fever is minimized to the greatest extent possible. Therefore, impacts would be less than significant with implementation of Mitigation Measure AQ-1.

Mitigation

AQ-2 Minimize Personnel and Public Exposure to Valley Fever

Include the following in the Fugitive Dust Control Plan to be prepared for the project:

- Equipment, vehicles, and other items shall be cleaned thoroughly of dust before they are moved off site to other work locations.
- Wherever possible, grading, and trenching work shall be phased so that earth-moving equipment works well ahead or down-wind of workers on the ground.
- The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- If a water truck runs out of water before dust is dampened sufficiently, ground workers exposed to dust are to leave the area until a full truck resumes water spraying.
- All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Arrestance (HEPA) filtered air system.
- N95 dust masks shall be provided to onsite workers for the duration of the construction period.
- Workers shall receive training to recognize the symptoms of Valley Fever and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Fresno County Planning and Community Development Department within 24 hours of the training session.
- A Valley Fever informational handout shall be provided to all on-site construction personnel. The handout shall provide, at a minimum, information regarding the symptoms, health effects, preventative measures, and treatment.

Significance After Mitigation

Mitigation Measure AQ-2 would ensure that personnel and public exposure to Valley Fever is minimized to the greatest extent possible. Therefore, impacts would be less than significant with implementation of Mitigation Measure AQ-2.

Threshold 4:	Would the proposed project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact AQ-4 THE PROPOSED PROJECT WOULD NOT GENERATE ODORS ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE DURING CONSTRUCTION, DECOMMISSIONING OR OPERATION. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Per section 8.6 of the GAMAQI, any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Nuisance odors may be assessed qualitatively taking into consideration of project design elements and proximity to off-site receptors that potentially would be exposed objectionable odors. The proposed project would involve the construction, operation and maintenance, and decommissioning of a solar energy facility and associated infrastructure that do not produce objectionable odors. During construction activities, only short-term, temporary odors from vehicle exhaust and construction equipment engines would occur. Construction-related odors would disperse and dissipate and would not cause substantial odors at the closest sensitive receptors (adjacent residences). In addition, construction-related odors would be short-term and would cease upon completion of construction. Operation of the proposed project

would also emit construction-related odors based on the equipment used to facilitate the activities. Impacts would be less than significant.

Mitigation

No mitigation measures required.

5.2 Cumulative Air Quality Impacts

The geographic scope for the cumulative air quality impact analysis is the SJVAB. Because the SJVAB is designated as non-attainment for the ozone, PM_{10}, and $PM_{2.5}$ CAAQS, there is an existing adverse cumulative effect in the SJVAB relative to these pollutants.

According to the SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts* (2015), air pollution, by its very nature, has a cumulative impact. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development within the SJVAB. When assessing whether there is a new significant cumulative effect, the CEQA Lead Agency should consider whether the incremental effects of the project are "cumulatively considerable", meaning that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. Pursuant to *CEQA Guidelines* Section 15064(h)(3), a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including but not limited to, an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located.

The project would be consistent with SJVAPCD's air quality management plans for ozone, PM_{10}, and $PM_{2.5}$, for which the SJVAB is in non-attainment. The project would not violate an air quality standard or contribute to an existing air quality violation that would conflict with the SJVAPCD's air quality management plans. Therefore, in accordance with SJVAPCD guidance as outlined above, the project would not have a cumulatively considerable contribution to cumulative air quality impacts.

5.3 Project-Level Greenhouse Gas Impacts

Threshold 1:	Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
Threshold 2:	Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact GHG-1 CONSTRUCTION, OPERATION, AND DECOMMISSIONING OF THE PROPOSED PROJECT WOULD DIRECTLY AND INDIRECTLY GENERATE GHG EMISSIONS. CONSTRUCTION, OPERATION, AND DECOMMISSIONING OF THE PROJECTS WOULD BE CONSISTENT WITH APPLICABLE PLANS, POLICIES, AND REGULATIONS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Emissions Quantifications

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to

cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable.

The following analysis quantifies GHG emissions associated with project construction, operation, and decommissioning.

Construction and Decommissioning Emissions

Project-related construction and decommissioning emissions are confined to a relatively short period in relation to the overall life of the proposed project. Construction-related and decommissioning-related GHG emissions were quantified for informational purposes. Table 10 shows that project construction would result in a total of approximately 7,016 MT CO_2e for the 39-month construction period. Decommissioning would result in a total of approximately 1,678 MT CO_2e. However, this assumption is conservative as it is likely additional carbon neutral technologies for construction equipment used in decommissioning will be implemented within the project lifespan. Emissions were then amortized over the lifetime of the project (i.e., 35 years). As shown in Table 10, amortized construction emissions would be 200 MT CO_2e per year. Amortized decommissioning emissions would be 48 MT CO_2e per year.

Table 10 Estimated Construction GHG Emissions

Source	Project Emissions (MT CO_2e)
Total Construction[1]	**7,016**
Total Decommissioning	**1,678**
Amortized (35 years) Construction	200
Amortized (35 years) Decommissioning	48

[1]In order to quantify emissions from water supplied to the site for dust suppression, construction water consumption was input in CalEEMod as an operational use, then added to the total reported construction emissions.

MT = metric tons

CO_2e = carbon dioxide equivalents

Source: Appendix B. See also Section 4.1, Methodology, for a description of modeling assumptions.

Operational and Combined Emissions

The proposed project would generate GHG emissions during operation from minimal area source, energy consumption, and mobile emissions.[5] Operation-related GHG emissions were quantified for informational purposes and are shown in Table 11. As shown in Table 11, the proposed project would generate approximately 639 MT of CO_2e per year from operation of the solar facility, gen-tie, substation, and ESS.

Although GHGs generated during construction and decommissioning are short-term emissions that would cease after construction and decommissioning are complete, construction-related GHG emissions have been amortized over the project's estimated 35-year project lifetime in order to include these emissions as part of the project's annualized lifetime total emissions. With the inclusion of amortized construction and decommissioning emissions, the project would result in approximately 887 MT of CO_2e per year. Total combined operational and amortized construction emissions are shown in Table 11.

[5] Area sources for this project refer to consumer products (such as aerosol cleaners), and architectural coating (maintenance re-coating activities for battery storage).

Although the proposed project would emit 887 MT CO_2e per year, the proposed project would offset GHG emissions by generating renewable energy and storing it for use during peak hours of demand. Compared to GHG emissions generated due to fossil-fuel combustion to generate and distribute the same level of electricity only, the proposed project has the potential to displace 90,272 MT CO_2e per year; conservatively. The net generation of annual GHG emissions would be approximately -89,385 MT CO_2e, as shown in Table 11.[6] As such, the project would be consistent with state GHG reduction plans such as SB 32. Further, the proposed project could result in an overall lifetime reduction of approximately 3,159,511 MT CO_2e and would therefore be regionally beneficial.[7]

Table 11 Combined Annual GHG Emissions

Source	Project Emissions MT CO_2e
Mobile	60
Area	1
Energy	117
Water	17
Refrigerant	221
SF_6	7
Enteric CH_4 (Sheep Grazing)	216
Total Operational	**639**
Construction	200
Decommissioning	48
Project Total	**887**
Offsets	(90,272)
Net Total	**(89,385)**

Note: Parenthetical notation represents negative numbers.

SF_6 = Sulphur hexafluoride; MT = Metric Tons; CO_2e = carbon dioxide equivalent

Source: Appendix A and B. See also Section 4.1, Methodology, for a description of modeling assumptions.

The proposed project would address the limitations of the electric grid and the increasing demand for renewable energy by providing solar electricity and storage capability for use onsite. It is anticipated that the reduction in GHG emissions from producing the renewable electricity needed for site activities would more than offset the annual GHG emissions from non-renewable sources. It is unknown how much growth in future demand would require the continuation of the use of the existing fossil fuel generation system even with the operation of energy storage systems. However, the project would eliminate the need to create new non-renewable energy generation sources to accommodate future energy demand equaling the project's energy needs. Furthermore, during hours of peak-demand (i.e., evening hours), the energy storage component of the project would supply electricity to the grid, further alleviating demand from non-renewable sources. Therefore, the project is anticipated to result in a net benefit and overall reduction with respect to GHG emissions as shown in Table 11. Project impacts would be less than significant.

[6] (90,272 MT CO_2e) + 887 MT CO_2e = (89,385 MT CO_2e)

[7] 90,272 MT CO_2e * 35 years = 3,159,511 MT CO_2e over the lifetime of the project

Plan Consistency

2022 Scoping Plan

The principal State GHG reduction plans and policies are AB 32, the California Global Warming Solutions Act of 2006, and the subsequent legislation, SB 32 and AB 1279. The goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. In 2022, the State passed AB 1279, which declares the State would achieve net-zero GHG emissions by 2045 and would reduce GHG emissions by 85 percent below 1990 levels by 2045. The latest iteration of the Scoping Plan is the 2022 Scoping Plan, which focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the state's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities. The 2022 Scoping Plan's strategies that apply to the proposed project include the following:

- Reducing fossil fuel use, energy demand and vehicle miles traveled (VMT);
- Building decarbonization; and
- Maximizing recycling and diversion from landfills

The proposed project would be consistent with these goals by reducing fossil fuel use by generating renewable energy as well as through the implementation of the ESS facility that would store electrical energy for additional onsite energy needs. In addition, the proposed project would not incorporate natural gas or propane, and all of the project's electrical needs would be offset by the project's operations. Therefore, the proposed project would not conflict with the 2022 Scoping Plan and GHG impacts would be less than significant.

Mitigation

No mitigation measures required.

5.4 Cumulative Greenhouse Gas Impacts

The geographic scope for related projects considered in the cumulative impact analysis for GHG emissions is global because impacts of climate change are experienced on a global scale regardless of the location of GHG emission sources. GHG emissions and climate change are, by definition, cumulative impacts. Thus, the issue of climate change involves an analysis of whether a project's contribution towards an impact is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]). As discussed under Impact GHG-1, project impacts related to GHG emissions would be less than significant since the proposed project would be consistent with the state plans for reducing GHG emissions. Therefore, the project's contribution to cumulative GHG impacts would be less than significant.

6 Conclusion

6.1 Air Quality

As discussed in Section 4.1, *Project-Level Air Quality Impacts*, construction of the proposed project would exceed the significance thresholds established by SJVAPCD for PM_{10}. Construction and decommissioning would not exceed significance thresholds for any other criteria pollutant for which the SJCAB is in nonattainment including O_3 precursors (ROG and NO_X) or $PM_{2.5}$. Implementation of Mitigation Measure AQ-1 would reduce PM_{10} emissions to a less than significant level. As previously discussed, construction would be subject to the SJVAPCD's Rule 9510 (Indirect Source Review) and Rule 8021 (Dust Control Measures), which would further reduce emissions of criteria pollutants. In addition, the project construction, operation, and decommissioning would not result in health risk impacts that would exceed the SJVAPCD screening thresholds. The analyses further documented that project operation would not result in adverse long-term regional impacts. Lastly, the proposed project would not result in excessive exposure to CO hotspots, and exposure to Valley Fever would be minimized with Mitigation Measure AQ-2, which is recommended to reduce health impacts to the surrounding communities and on-site workers. Valley Fever spores are naturally occurring in the soil and fungal spores can become airborne during ground disturbances, such as construction work. Reduction of dust disturbance or stabilization of dust will reduce the number of fungal spores becoming airborne and thus reduce the incidences of individuals becoming infected.

6.2 Greenhouse Gas Emissions

As discussed in Section 4.3, *Project-level Greenhouse Gas Impact Analysis*, the project would not generate GHG emissions that would exceed local and regional significance thresholds and is consistent with applicable GHG reduction plans. Further, due to being a renewable solar energy project, the project would reduce the local, regional, and statewide cumulative GHG emissions and offset a portion of the incremental cumulative GHG impacts of other projects. The project would support the increase of renewable energy generation within the State and conserve fossil fuels which would be regionally beneficial for progressing towards regional and State GHG reduction targets.

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Appendix A

Analysis Assumptions and Calculations

Cornucopia Hybrid Solar Project
General Assumptions

CalEEMod Inputs that are not modeling defaults:

Project Location	County	Fresno
	City	Uninc.
Address	36.040°/-120.2138°	
Climate Zone	Default	
Air District	SJVAPCD	
Urbanization	Rural	
Operational Year (Buildout)	2029	
Construction Start	Jan-26	
Utility Company	PG&E	

Project Land Use

	Land Use Subtype	Size	Unit	BSF	Total Size		Acres
Solar PV Facility	Other Non-Asphalt	1938.22	AC				1938.22
BESS*	Refrigerated Warehouse*	12	AC	50,000**			
Substation	General Light Industry	0.78	AC	1,770			
Gen-tie line**	Other Non-Asphalt	140	linear feet		2,800	sf	
Switchyard	General Light Industry	1.43	AC				
Access Road**	Other Non-Asphalt	22.8	AC		993,168	sf	

*Refrigerated warehouse used as proxy for BESS. Building square footage based on similar sized BESS project (400 MW).

Cornucopia Hybrid Solar Project
Construction Assumptions

Construction Activities: 31-Months

Project Schedule: ***Source: Client Provided Data needs*** 6:00 AM to 6:00 PM

Project Component	Construction Phase	Start Date	End Date	Days/Week	Duration (Months
Solar PV Facility	Site Preparation/Grading	*1/1/2026*	*1/31/2026*	5	1
	PV System Installation	*2/1/2026*	*1/31/2027*	5	12
	Substation/Gen-Tie/Switchyard	*2/1/2027*	*8/30/2027*	5	6
BESS	Site Preparation/Grading	*9/1/2027*	*9/30/2027*	5	1
	ESS System Installation	*10/1/2027*	*8/30/2028*	5	11
Access Road	Access Road	*1/1/2026*	*8/30/2027*	5	19

Cut and Fill	Grading	37,100 CY	Miles	Total (CY)	
	Access Roads	Assumes 1,000 CY per mile.	10.75	10,750	
	Source	EPA gravel road manual: https://www.epa.gov/sites/default/files/2015-10/documents/2003_07_24_nps_gravelro			

Offroad Equipment

Note See Construction Equipment Tab

Trips and VMT From Data Requests

CalEEMod defaults, except for "PV Array" phase. Assumes maximum of 1200 one-way worker trips during PV Array (Grading) Phase

Water for Dust Suppression 1,080 AF

351,972,000 Gallons

Source Cornucopia Hybrid Project Water Supply Assessment prepared by Rincon Consultants (June 2024)

Cornucopia Hybrid Solar Project
Operational Emissions

Operational Schedule: Assumes daily O&M and one major maintenance per year.

O&M	365	*days per year*	2	workers per day	730	workers per year
Major Maintenance/inspection	*7*	*days per year*	20	workers per day	140	workers per year
Total	*365*	*days per year*	*22*	workers per day	*870*	workers per year

Vehicle Trips: estimated each with own crew truck. MDV assumed for all trips

Phase	# Workers	Vehicles/employee	# Vehicles	# 1-way trip	VMT/trip	Daily VMT	Trips/year	
O&M	2	1	2	5	20	100	7300	146000
Major Maintenance/inspection	20	1	20	50	20	1000	140	2800
Total				55		1100	**7440**	**148800**

*Assumes 2.5 trips per employee per day.

Area Sources

Not Applicable

Hearths:

ads ***Consumer Products:*** Default

Architectural Coating: Default

Landscape Equipment: Default

Energy Use Source:

Electricity Default Electrical

Natural Gas & Propane There is no natural gas or propane for the project

Cornucopia Hybrid Solar Project
Operational Emissions

Water/Wastewater	30.97	acre-feet per year
Water:	10,091,604	gallons per year
	Source	Cornucopia Hybrid Project Water Supply Assessment prepared by Rincon Consultants (June 2024)
Wastewater:	Default	
Solid Waste	0	tons/year
SF6		
	6	circuit breakers
	124	lbs/project
	20.67	lbs/circuit breaker

Phase Name	Type	Equipment Type	No. per Day (Imerys)	No. per Day (Cornucopia)	Fuel Type	Engine Tier	Hours Per Day	Horsepow	Load Factor	Notes:	Based on Imerys Solar project assumptions (9,500 acres PV).
Grading	Grading	Graders	2	1	Diesel	Average	8	148	0.41		Conservatively scaled down by 50%.
Grading	Grading	Excavators	1	1	Diesel	Average	8	36	0.38		Decimals rounded up to the nearest whole number.
Grading	Grading	Tractors/Loaders/Backhoes	3	2	Diesel	Average	8	84	0.37		
Grading	Grading	Scrapers	0	0	Diesel	Average	8	423	0.48		
Grading	Grading	Rubber Tired Dozers	1	1	Diesel	Average	8	367	0.4		
Grading	Grading	Bore/Drill Rigs	3	2	Diesel	Average	8	83	0.5		
Grading	Grading	Air Compressors	2	1	Diesel	Average	8	37	0.48		
Grading	Grading	Crawler Tractors	2	1	Diesel	Average	8	87	0.43		
Grading	Grading	Dumpers/Tenders	2	1	Diesel	Average	8	16	0.38		
Grading	Grading	Generator Sets	1	1	Diesel	Average	8	14	0.74		
Grading	Grading	Trenchers	1	1	Diesel	Average	8	40	0.5		
Grading	Grading	Other Construction Equipment	1	1	Diesel	Average	8	49	0.42		
			Total	10							

Phase Name		Equipment Type	No. per Day (Imerys)	No. per Day (Cornucopia)	Fuel Type	Engine Tier	Hours Per Day	Horsepow	Load Factor	Notes:	Forty pieces total. Adapted from Imerys Solar project assumptions (9,500 acres PV).
Solar Array Installation	Grading	Forklifts	8	8	Diesel	Average	8	82	0.2		
Solar Array Installation	Grading	Generator Sets	1	1	Diesel	Average	8	14	0.74		
Solar Array Installation	Grading	Cranes	1	1	Diesel	Average	7		0.29		
Solar Array Installation	Grading	Welders	0	0	Diesel	Average	8		0.45		
Solar Array Installation	Grading	Tractors/Loaders/Backhoes	2	2	Diesel	Average	7		0.37		
Solar Array Installation	Grading	Bore/Drill Rigs	3	3	Diesel	Average	8	1,618	0.5		
Solar Array Installation	Grading	Cement and Mortar Mixers	1	1	Diesel	Average	8	10	0.56		
Solar Array Installation	Grading	Air Compressors	2	2	Diesel	Average	8	37	0.48		
Solar Array Installation	Grading	Dumpers/Tenders	4	4	Diesel	Average	8	16	0.38		
Solar Array Installation	Grading	Off-Highway Tractors	4	4	Diesel	Average	8	38	0.44		
Solar Array Installation	Grading	Rough Terrain Forklifts	2	2	Diesel	Average	8	96	0.4		
Solar Array Installation	Grading	Trenchers	1	1	Diesel	Average	8	40	0.5		
Solar Array Installation	Grading	Other Construction Equipment	3	3	Diesel	Average	8	49	0.42		
			Total	32							

Phase Name		Equipment Type	No. per Day (Dos Palm	No. per Day (Cornucopia)	Fuel Type	Engine Tier	Hours Per Day	Horsepow	Load Factor	Notes:	Six pieces total. Adapted from Dos Palmas BESS project assumptions.
Substation/Gen Tie	BC I	Forklifts	2	1	Diesel	Average	6	82	0.2		
Substation/Gen Tie	BC I	Generator Sets	4	1	Diesel	Average	24	14	0.74		
Substation/Gen Tie	BC I	Cranes	2	0	Diesel	Average	6	367	0.29		
Substation/Gen Tie	BC I	Welders	0	0	Diesel	Average	8	46	0.45		
Substation/Gen Tie	BC I	Tractors/Loaders/Backhoes	5	1	Diesel	Average	6	84	0.37		
Substation/Gen Tie	BC I	Plate Compactors	2	0	Diesel	Average	6	8	0.43		
Substation/Gen Tie	BC I	Air Compressors	4	1	Diesel	Average	8	37	0.48		
Substation/Gen Tie	BC I	Excavators	2	1	Diesel	Average	6	36	0.38		
Substation/Gen Tie	BC I	Graders	1	1	Diesel	Average	8	148	0.41		
Substation/Gen Tie	BC I	Rollers	2	0	Diesel	Average	6	36	0.38		
		Total		6							

Phase Name		Equipment Type	No. per Day (Dos Palm	No. per Day (Cornucopia)	Fuel Type	Engine Tier	Hours Per Day	Horsepow	Load Factor	Notes:	Three pieces total for switchyard. Adapted from Dos Palmas BESS project assumptions.
Switchyard	BC III	Forklifts	2	1	Diesel	Average	6	82	0.2		
Switchyard	BC III	Generator Sets	4	0	Diesel	Average	24	14	0.74		
Switchyard	BC III	Cranes	2	0	Diesel	Average	6	367	0.29		
Switchyard	BC III	Welders	0	0	Diesel	Average	8	46	0.45		
Switchyard	BC III	Tractors/Loaders/Backhoes	5	1	Diesel	Average	6	84	0.37		
Switchyard	BC III	Plate Compactors	2	0	Diesel	Average	6	8	0.43		
Switchyard	BC III	Air Compressors	4	1	Diesel	Average	8	37	0.48		
Switchyard	BC III	Excavators	2	0	Diesel	Average	6	36	0.38		
Switchyard	BC III	Graders	1	0	Diesel	Average	8	148	0.41		
Switchyard	BC III	Rollers	2	0	Diesel	Average	6	36	0.38		
		Total		3							

Phase Name		Equipment Type	No. per Day (Dos Palm	No. per Day (Cornucopia)	Fuel Type	Engine Tier	Hours Per Day	Horsepow	Load Factor	Notes:	Six pieces total. Adapted from Dos Palmas
BESS	BC II	Forklifts	2	1	Diesel	Average	4	82	0.2		
BESS	BC II	Generator Sets	4	1	Diesel	Average	24	14	0.74		
BESS	BC II	Cranes	2	1	Diesel	Average	6	367	0.29		
BESS	BC II	Welders	0	0	Diesel	Average	8	46	0.45		
BESS	BC II	Tractors/Loaders/Backhoes	6	1	Diesel	Average	6	84	0.37		
BESS	BC II	Plate Compactors	2	0	Diesel	Average	4	8	0.43		
BESS	BC II	Air Compressors	4	1	Diesel	Average	6	37	0.48		
BESS	BC II	Excavators	2	0	Diesel	Average	2	36	0.38		
BESS	BC II	Rollers	2	1	Diesel	Average	2	36	0.38		
			Total	6							

Phase Name		Equipment Type	No. per Day	No. per Day (Cornucopia)	Fuel Type	Engine Tier	Hours Per Day	Horsepow	Load Factor	Notes:	CalEEMod Defaults for Grading phase type. Gravel road.
Access Roads	Grading	Excavators	N/A	2	Diesel	Average	8	36	0.38		
Access Roads	Grading	Graders	N/A	1	Diesel	Average	8	148	0.41		
Access Roads	Grading	Rubber Tired Dozers	N/A	1	Diesel	Average	8	367	0.4		
Access Roads	Grading	Scrapers	N/A	2	Diesel	Average	8	423	0.48		
Access Roads	Grading	Tractors/Loaders/Backhoes	N/A	2	Diesel	Average	8	84	0.37		
			Total	8							

Original Construction Schedule

Project Component	Construction Phase	Start Date	End Date	Days/Week	Duration (Months)	Modeled As	Notes
Solar PV Facility	Site Preparation/Grading	*1/1/2026*	*1/31/2026*	5	1	Grading	Based on Imerys
	PV System Installation	*2/1/2026*	*1/31/2027*	5	12	Building Construction	Based on Imerys
	Substation/Gen-Tie/Switchyard	*2/1/2027*	*8/30/2027*	5	7	Building Construction	Based on Dos Palmas
				Solar PV Total	**20**		
BESS	Site Preparation/Grading	*9/1/2027*	*9/30/2027*	5	1	Grading	Based on Dos Palmas
	ESS System Installation	*10/1/2027*	*8/30/2028*	5	11	Building Construction	Based on Dos Palmas
				BESS Total	**12**		
Access Road	Access Road	*1/1/2026*	*8/30/2027*	5	20	Grading	CalEEMod Default equipment. Phase assumed to overlap with PV facility construction
				Access Road Total	**20**		

REVISED Construction Schedule

Project Component	Construction Phase	Start Date	End Date	Days/Week	Duration (Months)	Modeled As	Equipment Notes
Solar PV Facility	Site Preparation/Grading	*10/1/2026*	*10/31/2026*	5	1	Grading	Based on Imerys
	PV System Installation	*11/1/2026*	***12/31/2029***	5	38	Building Construction	Based on Imerys
	Substation/Gen-Tie	*1/1/2027*	***12/31/2027***	5	12	Building Construction	Based on Dos Palmas
	Switchyard	*1/1/2027*	***3/31/2028***	5	15	Building Construction	
				Solar PV Total	**18**		
BESS	ESS System Installation	*11/1/2027*	***12/31/2029***	5	26	Building Construction	1,618
				BESS Total	**26**		
Access Road	Access Road	*11/1/2027*	***12/31/2029***	5	26	Grading	CalEEMod Default equipment.
				Access Road Total	**26**		

Original Construction Schedule

Overall Construction Schedule (start and completion date for entire project)	**First quarter of 2026**	**Third quarter of 2028**
Solar PV Facility	**First quarter of 2026**	**Third Quarter of 2027**
BESS	**Third quarter of 2027**	**Third quarter of 2028**
Project Substation	**First Quarter of 2026**	**Third Quarter of 2027**
Gen-tie Line	**First quarter of 2026**	**Third Quarter of 2027**
Utility Switchyard	**First quarter of 2026**	**Third Quarter of 2027**
Access Road	**First quarter of 2026**	**Third Quarter of 2027**

REVISED Construction Schedule

Overall Construction Schedule (start and completion date for entire project) Total of 55 pieces	**Fourth quarter 2026**	**Fourth quarter of 2029**
Solar PV Facility (Forty Pieces)	**Fourth quarter 2026**	**Fourth quarter of 2029**
BESS (Six Pieces)	**Third quarter of 2027**	**First quarter of 2029**
Project Substation (Three Pieces)	**First quarter of 2027**	**Fourth quarter of 2027**
Gen-tie Line (Three Pieces)	**First quarter of 2027**	**Fourth quarter of 2027**
Utility Switchyard (Three pieces)	**First quarter of 2027**	**First quarter of 2028**
Access Road (Included in Solar PV)	**Fourth quarter of 2026**	**Fourth quarter of 2029**

Cornucopia Hybrid Solar Project
Sheep Grazing Methane Emissions Quantifications

Sheep Grazing Enteric Fermentation Methane Emissions Quantification

2000	Quantity of Sheep
19.7	*Mean Methane Production per sheep (g/day) (1)*
39400	*Total Methane Production (g/day)*
0.039	*Total Methane Production(MT/day)*
182.5	*Days of Grazing per Year (2)*
7.1905	*Total Methane Production (MT/year)*
30	*GWP*
216	*Max MT CO_2 e/year*

1 Belanche, et.al. *Prediction of Enteric Methane Emissions by Sheep using an Intercontinental Database.* January 2023. Journal of Cleaner Production, vol. 184. https://www.sciencedirect.com/science/article/pii/S0959652622050971#bib13

2 Assumes active grazing from February to July (6 months)

Cornucopia Hybrid Solar Project
SF_6 Emissions Quantifications

SF_6 Emissions Quantification

6	HV circuit breakers (500 kV equipment)1
21	*SF_6 max lbs/per circuit breaker* [1]
0.50%	*SF_6 leakage percentage per year* [2]
124	*max lbs/project*
0.62	*SF_6 max lbs leakage per year*
0.000454	*lbs/MT*
0.000281	*SF_6 max MT leakage per year*
24,600	*GWP*
7	*Max MT CO_2 e/year*

1 Based on Dos Palmas BESS

2 IEEE (Institute of Electrical and Electronics Engineers). 2018. PC37.122 – Standard for High Voltage GasInsulated Substations Rated Above 52 kV. March 8, 2018. https://standards.ieee.org/project/C37_122.html

Decommissioning Assumptions

Construction Activities: 12-Months

Project Schedule: ***Source: Reclamation Plan***

Project Component	Construction Phase	Start Date*	End Date*	Days/Week	Duration (Months)
Demo, Decommissioning, and Site Restoration	Building Construction	*1/1/2050*	*12/31/2050*	5	12

Notes: With project completion anticipated in 2029, assumed decommissioning year would be 2064. However, CalEEMod does not include emission factors beyond 2050. Therefore, Construction is assumed to occur in 2050. Emission factors would be lower in future years, so this represnts a conservative scenario.

See Reclamation Plan Appendices; p. 21/24

Demolition - Material Hauling

Material	Total (Tons) Weight
Solar Panel Racking Vert	451
Solar Panel Racking Horiz	33,983
Solar Inverters	1,191
Solar Panel Above Ground Wire	179
Solar Panel Below Ground Wire	179
Battery Units	362
Battery Inverters	1,138
Perimeter Fencing	134
Gravel roads	21,368
Total	**58,983**

Source: Reclamation Plan Appendix B: Cost Estimate

Offroad Equipment

6	Forklift
1	Crane
4	Loader
2	Backhoe
3	Excavator
1	Dozer
6	Trencher Chain
13	Vibratory Hydraulic Extractor

Source: Reclamation Plan Appendix B: Cost Estimate

Trips and VMT

176	Workers
352	One-Way Trips

Source: Reclamation Plan Appendix B: Cost Estimate

Displaced Energy Production during 35-year Project life

Annual Energy Production		Annual Average Solar Radiation Hours/Day/Year
Grid Size (MW)	300	
Total hrs/year		
% Operational time [1]		
Operational hours/year		
KWh produced per year	438,000,000	
Assumed Heat Rate (Btu/KWh)	10,000	
Annual Fuel Equivalent (MMBtu)[2]	4,380,000	

Notes:

The BESS is 300MW of storage and it stores for 4 hours, making the system capable of 1,200 MWh per day. 365 x 1,200MWh x 1,000kWh/MWh = 438,000,000kWh/year for the maximum potential

Provided by Client

CA Power Mix[3]		Annual Fuel Displacement (MMBtu)
Coal[4]	2.15%	94,170
Large Hydro	9.24%	404,712
Natural Gas[4]	36.38%	1,593,444
Nuclear	9.18%	402,084
Oil	0.00%	0
Other (petroleum coke/waste heat)	0.11%	4,818
Renewables	35.83%	1,569,354
Unspecified sources of Power	7.11%	311,418
Total	**100.0%**	**4,380,000**

Annual Pollutant Displacement[4]

Natural Gas Turbine Emissions

Pollutant	AP-42 Emission Factor (lb/MMBtu)[5]	Controlled Emission Factor (lb/MMBtu)	Controlled Emissions (lb)	Controlled Emissions (ton)	AP-42 Emission Factor Source Notes[5]
NO_2	0.099	0.099	157,751	78.88	Table 3.1-1, lean premix; Assume SCR Control Efficiency
CO	0.015	0.015	23,902	11.95	Table 3.1-1, lean premix; Assume Ox. Cat. Control Efficiency
PM_{10}	0.0047	0.0047	7,489	3.74	Table 3.1-2a, PM (condensible)
$PM_{2.5}$	0.0019	0.0019	3,028	1.51	Table 3.1-2a, PM (filterable)
SO_2	0.0034	0.0034	5,418	2.71	Table 3.1-2a
CO_2	110	110	175,278,840	87,639.42	Table 3.1-2a

Coal Combustion Emissions

Pollutant	AP-42 Emission Factor (lb/ton)[6]	Controlled Emission Factor (lb/ton)	Emissions (lb)[7]	Emissions (ton)	AP-42 Emission Factor Source Notes[6]
NOx	12	12	47085	23.54	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
CO	0.5	0.5	1962	0.98	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
PM_{10}[8]	0.46	0.084	330	0.16	Table 1.1-4, PC-fired dry bottom wall-fired, scrubber control
$PM_{2.5}$[8]	0.12	0.06	235	0.12	Table 1.1-4, PC-fired dry bottom wall-fired, scrubber control
SO_2[9]	2.85	0.57	2237	1.12	Table 1.1-3 pulverized coal, wall fired, bituminous coal NSPS
CO_2	6040	6040	23699450	11,849.73	Table 1.1-20
Total NMHC	0.06	0.06	235	0.12	Table 1.1-19; assumed all hydrocarbons are reactive
CH_4	0.04	0.04	157	0.08	Table 1.1-19
N_2O	0.03	0.03	118	0.06	Table 1.1-19

Total Displaced Emissions Associated With Direct Combustion

Pollutant	tons/year[8]	tons/lifetime (35 years)
ROG (NMHC)	0	4
NO_X	102	3,585
CO	13	453
PM_{10}	4	137
$PM_{2.5}$	2	57
SO_X	4	134
CO_2E (Metric Ton)	90,272	3,159,511

Notes:

1. Operational time is based on annual average solar radiation hours per day per year (5.38) for the project area. Source: solardirect.com (https://www.solardirect.com/archives/pv/systems/gts/gts-sizing-sun-hours.html)
2. The Project is assumed to displace existing power generation equivalent to the current power mix each year of operation.
3. CA Power Mix assumptions are based on data from the 2022 Total System Electric Generatin Table. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2022-total-system-electric-generation
4. Combustion of natural gas and coal for power are of the greatest concern related to the generation of criteria pollutants and GHG emissions, therefore only fuel displacement of natural gas and coal due to electricty production from the Solar Scarlet facility are considered in this assessment.
5. EPA Air Pollution Emission Factors AP-42 Section 3.1, Stationary Gas Turbines
6. EPA Air Pollution Emission Factors AP-42 Section 1.1, Bituminous and Subbituminous Coal Combustion
7. Coal characteristics used for conversion: Assumed coal heat content = 24 MMBtu/ton
8. Total particulate matter (CPM-TOT) is expressed in terms of coal ash content therefore emission factor is determined by multiplying % ash content of coal (assumed to be 20% herein) by value listed in Table 1.1-4. Organic fraction of particulate matter is 20% of total CPM-TOT (Table 1.1-5) and listed as controlled emission factor.
9. SO_x emission factor calculated by multiplying the weight percent of sulfur (assumed to be 7.5%) by the value listed in Table 1.1-3
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Appendix B

California Emissions Estimator Model (CalEEMod) Results

Cornucopia Hybrid v9 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cornucopia Hybrid v9
Construction Start Date	1/1/2026
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	16.8
Location	36.04973174671923, -120.19815765059295
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2506
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Other Non-Asphalt Surfaces	1,938	Acre	0.00	0.00	0.00	0.00	—	PV Array, gen-tie line, and access roads.
General Light Industry	1.77	1000sqft	0.00	1,770	0.00	—	—	Substation and switchyard
Refrigerated Warehouse-No Rail	50.0	1000sqft	0.00	50,000	0.00	—	—	BESS

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.24	8.15	41.5	86.7	0.09	1.48	1,103	1,104	1.36	111	112	—	16,082	16,082	0.55	0.46	21.4	16,253
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.6	9.19	51.7	95.7	0.11	1.74	1,118	1,120	1.60	112	114	—	17,712	17,712	0.71	0.54	0.63	17,891
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.37	5.56	30.8	58.3	0.07	1.09	755	756	1.00	75.8	76.6	—	11,239	11,239	0.41	0.33	6.64	11,354
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.16	1.02	5.63	10.6	0.01	0.20	138	138	0.18	13.8	14.0	—	1,861	1,861	0.07	0.05	1.10	1,880

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	5.47	4.56	41.5	57.5	0.09	1.48	20.5	22.0	1.36	2.07	3.43	—	9,715	9,715	0.38	0.17	1.33	9,777
2028	9.24	8.15	39.1	86.7	0.09	1.24	1,103	1,104	1.14	111	112	—	16,082	16,082	0.55	0.46	21.4	16,253
2029	8.86	7.79	37.9	84.2	0.09	1.15	1,103	1,104	1.06	111	112	—	15,937	15,937	0.52	0.45	19.1	16,104
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	4.19	3.50	32.4	44.0	0.07	1.25	31.4	32.5	1.15	3.86	4.84	—	7,470	7,470	0.30	0.12	0.02	7,513
2027	10.6	9.19	51.7	95.7	0.11	1.74	1,118	1,120	1.60	112	114	—	17,712	17,712	0.71	0.54	0.63	17,891
2028	9.08	7.92	42.2	83.6	0.10	1.30	1,111	1,112	1.20	111	113	—	15,951	15,951	0.62	0.51	0.56	16,118
2029	8.43	7.34	38.5	77.9	0.09	1.15	1,103	1,104	1.06	111	112	—	15,189	15,189	0.60	0.48	0.50	15,346
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.70	0.59	5.32	7.04	0.01	0.21	2.40	2.62	0.20	0.29	0.48	—	1,183	1,183	0.05	0.02	0.06	1,189
2027	4.52	3.84	30.8	45.7	0.07	1.09	139	140	1.00	14.0	15.0	—	7,922	7,922	0.31	0.17	1.59	7,980
2028	6.37	5.56	28.6	58.3	0.06	0.90	755	756	0.83	75.8	76.6	—	11,239	11,239	0.41	0.33	6.64	11,354
2029	6.04	5.26	27.3	55.9	0.06	0.82	752	753	0.76	75.5	76.2	—	11,000	11,000	0.39	0.32	5.90	11,112
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.11	0.97	1.28	< 0.005	0.04	0.44	0.48	0.04	0.05	0.09	—	196	196	0.01	< 0.005	0.01	197
2027	0.83	0.70	5.63	8.34	0.01	0.20	25.4	25.6	0.18	2.55	2.73	—	1,312	1,312	0.05	0.03	0.26	1,321
2028	1.16	1.02	5.23	10.6	0.01	0.16	138	138	0.15	13.8	14.0	—	1,861	1,861	0.07	0.05	1.10	1,880
2029	1.10	0.96	4.98	10.2	0.01	0.15	137	137	0.14	13.8	13.9	—	1,821	1,821	0.06	0.05	0.98	1,840

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.65	1.61	0.09	3.43	< 0.005	0.01	0.28	0.29	< 0.005	0.07	0.08	45.9	1,590	1,636	4.83	0.08	1,334	3,114
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.24	1.24	0.09	0.82	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	45.9	1,547	1,593	4.83	0.08	1,333	3,071
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.44	1.42	0.09	2.00	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	45.9	1,562	1,607	4.83	0.08	1,333	3,085
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.26	0.26	0.02	0.37	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	7.59	259	266	0.80	0.01	221	511

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.08	0.07	0.07	1.18	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	—	385	385	0.01	0.01	0.94	388
Area	1.57	1.54	0.02	2.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.26	9.26	< 0.005	< 0.005	—	9.29
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	698	698	0.11	0.01	—	705
Water	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Waste	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	1.65	1.61	0.09	3.43	< 0.005	0.01	0.28	0.29	< 0.005	0.07	0.08	45.9	1,590	1,636	4.83	0.08	1,334	3,114

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.09	0.82	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	—	351	351	0.01	0.01	0.02	354
Area	1.17	1.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	698	698	0.11	0.01	—	705
Water	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Waste	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	1.24	1.24	0.09	0.82	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	45.9	1,547	1,593	4.83	0.08	1,333	3,071
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.08	0.89	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	—	361	361	0.01	0.01	0.41	364
Area	1.37	1.36	0.01	1.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.57	4.57	< 0.005	< 0.005	—	4.58
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	698	698	0.11	0.01	—	705
Water	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Waste	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	1.44	1.42	0.09	2.00	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	45.9	1,562	1,607	4.83	0.08	1,333	3,085
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.16	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	59.7	59.7	< 0.005	< 0.005	0.07	60.2
Area	0.25	0.25	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.76	0.76	< 0.005	< 0.005	—	0.76
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	116	116	0.02	< 0.005	—	117
Water	—	—	—	—	—	—	—	—	—	—	—	3.20	82.5	85.7	0.34	0.01	—	97.0
Waste	—	—	—	—	—	—	—	—	—	—	—	4.39	0.00	4.39	0.44	0.00	—	15.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	221	221
Total	0.26	0.26	0.02	0.37	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	7.59	259	266	0.80	0.01	221	511

3. Construction Emissions Details

3.1. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.19	2.67	24.0	28.6	0.04	1.06	—	1.06	0.98	—	0.98	—	4,658	4,658	0.19	0.04	—	4,674
Dust From Material Movement	—	—	—	—	—	—	1.98	1.98	—	0.91	0.91	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.45	1.72	< 0.005	0.06	—	0.06	0.06	—	0.06	—	281	281	0.01	< 0.005	—	282
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.03	0.26	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	46.5	46.5	< 0.005	< 0.005	—	46.6
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.08	0.90	0.00	0.00	29.5	29.5	0.00	2.96	2.96	—	171	171	0.01	0.01	0.02	174
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	1.69	1.69	0.00	0.17	0.17	—	10.7	10.7	< 0.005	< 0.005	0.02	10.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.31	0.31	0.00	0.03	0.03	—	1.77	1.77	< 0.005	< 0.005	< 0.005	1.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. PV Array (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.17	3.50	31.9	43.9	0.07	1.24	—	1.24	1.14	—	1.14	—	7,085	7,085	0.29	0.06	—	7,109
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	0.42	3.81	5.24	0.01	0.15	—	0.15	0.14	—	0.14	—	846	846	0.03	0.01	—	849
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.70	0.96	< 0.005	0.03	—	0.03	0.02	—	0.02	—	140	140	0.01	< 0.005	—	141

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.49	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	385	385	0.01	0.06	0.02	403
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	45.9	45.9	< 0.005	0.01	0.05	48.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	7.60	7.60	< 0.005	< 0.005	0.01	7.97

3.5. PV Array (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.96	3.31	30.5	43.8	0.07	1.08	—	1.08	1.00	—	1.00	—	7,082	7,082	0.29	0.06	—	7,107
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.96	3.31	30.5	43.8	0.07	1.08	—	1.08	1.00	—	1.00	—	7,082	7,082	0.29	0.06	—	7,107
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.83	2.37	21.8	31.3	0.05	0.77	—	0.77	0.71	—	0.71	—	5,059	5,059	0.21	0.04	—	5,076
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.43	3.98	5.71	0.01	0.14	—	0.14	0.13	—	0.13	—	838	838	0.03	0.01	—	840
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.44	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	376	376	0.01	0.06	0.83	394
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.47	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	376	376	0.01	0.06	0.02	394
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.33	0.08	< 0.005	0.01	3.52	3.52	0.01	0.36	0.37	—	268	268	< 0.005	0.04	0.26	281
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.64	0.64	< 0.005	0.07	0.07	—	44.4	44.4	< 0.005	0.01	0.04	46.6

3.7. PV Array (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.84	3.22	29.6	43.9	0.07	0.99	—	0.99	0.91	—	0.91	—	7,081	7,081	0.29	0.06	—	7,105
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.84	3.22	29.6	43.9	0.07	0.99	—	0.99	0.91	—	0.91	—	7,081	7,081	0.29	0.06	—	7,105
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.75	2.31	21.2	31.4	0.05	0.71	—	0.71	0.65	—	0.65	—	5,072	5,072	0.21	0.04	—	5,089

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	0.42	3.87	5.73	0.01	0.13	—	0.13	0.12	—	0.12	—	840	840	0.03	0.01	—	843
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.43	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	366	366	0.01	0.06	0.76	384
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.46	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	366	366	0.01	0.06	0.02	384
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.01	< 0.005	0.32	0.08	< 0.005	0.01	3.53	3.53	0.01	0.36	0.37	—	262	262	< 0.005	0.04	0.24	275
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.64	0.64	< 0.005	0.07	0.07	—	43.4	43.4	< 0.005	0.01	0.04	45.5

3.9. PV Array (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.75	3.14	28.9	43.8	0.07	0.91	—	0.91	0.84	—	0.84	—	7,080	7,080	0.29	0.06	—	7,104
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.75	3.14	28.9	43.8	0.07	0.91	—	0.91	0.84	—	0.84	—	7,080	7,080	0.29	0.06	—	7,104
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.68	2.24	20.7	31.3	0.05	0.65	—	0.65	0.60	—	0.60	—	5,057	5,057	0.21	0.04	—	5,074
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.77	5.71	0.01	0.12	—	0.12	0.11	—	0.11	—	837	837	0.03	0.01	—	840
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.42	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	356	356	0.01	0.06	0.69	374
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.45	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	357	357	0.01	0.06	0.02	374
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.31	0.08	< 0.005	0.01	3.52	3.52	0.01	0.36	0.37	—	255	255	< 0.005	0.04	0.21	267
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.64	0.64	< 0.005	0.07	0.07	—	42.2	42.2	< 0.005	0.01	0.04	44.2

3.11. Access Roads (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.20	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	159	159	< 0.005	0.02	0.01	166
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	19.0	19.0	< 0.005	< 0.005	0.02	19.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	3.14	3.14	< 0.005	< 0.005	< 0.005	3.29

3.13. Access Roads (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.18	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	155	155	< 0.005	0.02	0.32	163
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	155	155	< 0.005	0.02	0.01	162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	1.49	1.49	< 0.005	0.15	0.16	—	111	111	< 0.005	0.02	0.10	116
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.27	0.27	< 0.005	0.03	0.03	—	18.4	18.4	< 0.005	< 0.005	0.02	19.3

3.15. Access Roads (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.18	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	151	151	< 0.005	0.02	0.29	158
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	151	151	< 0.005	0.02	0.01	158
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.13	0.03	< 0.005	< 0.005	1.49	1.49	< 0.005	0.15	0.16	—	108	108	< 0.005	0.02	0.09	113
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.27	0.27	< 0.005	0.03	0.03	—	17.8	17.8	< 0.005	< 0.005	0.02	18.7

3.17. BC I (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.14	0.95	7.73	9.68	0.02	0.31	—	0.31	0.29	—	0.29	—	1,496	1,496	0.06	0.01	—	1,502

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.14	0.95	7.73	9.68	0.02	0.31	—	0.31	0.29	—	0.29	—	1,496	1,496	0.06	0.01	—	1,502
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.68	5.53	6.92	0.01	0.22	—	0.22	0.21	—	0.21	—	1,070	1,070	0.04	0.01	—	1,074
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.01	1.26	< 0.005	0.04	—	0.04	0.04	—	0.04	—	177	177	0.01	< 0.005	—	178
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.24	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	125	125	< 0.005	0.02	0.25	131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	126	126	< 0.005	0.02	0.01	132
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.18	0.08	< 0.005	< 0.005	5.23	5.24	< 0.005	0.52	0.53	—	89.7	89.7	< 0.005	0.01	0.08	94.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.96	0.96	< 0.005	0.10	0.10	—	14.8	14.8	< 0.005	< 0.005	0.01	15.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. BC II (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.82	6.92	7.18	0.02	0.26	—	0.26	0.24	—	0.24	—	1,517	1,517	0.06	0.01	—	1,522
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.12	0.10	0.83	0.86	< 0.005	0.03	—	0.03	0.03	—	0.03	—	181	181	0.01	< 0.005	—	182
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.0	30.0	< 0.005	< 0.005	—	30.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.11	3.80	2.76	30.8	0.00	0.00	1,088	1,088	0.00	109	109	—	6,194	6,194	0.26	0.31	0.58	6,294
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	126	126	< 0.005	0.02	0.01	132
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.50	0.48	0.30	3.73	0.00	0.00	124	124	0.00	12.4	12.4	—	766	766	0.03	0.04	1.15	779
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	15.0	15.0	< 0.005	< 0.005	0.01	15.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.05	0.68	0.00	0.00	22.6	22.6	0.00	2.27	2.27	—	127	127	< 0.005	0.01	0.19	129
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.60
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. BC II (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.96	0.80	6.64	7.17	0.02	0.24	—	0.24	0.22	—	0.22	—	1,517	1,517	0.06	0.01	—	1,523
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.96	0.80	6.64	7.17	0.02	0.24	—	0.24	0.22	—	0.22	—	1,517	1,517	0.06	0.01	—	1,523
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.57	4.75	5.13	0.01	0.17	—	0.17	0.16	—	0.16	—	1,087	1,087	0.04	0.01	—	1,091
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.10	0.87	0.94	< 0.005	0.03	—	0.03	0.03	—	0.03	—	180	180	0.01	< 0.005	—	181
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.40	4.12	1.96	35.4	0.00	0.00	1,088	1,088	0.00	109	109	—	6,841	6,841	0.19	0.28	20.1	6,950
Vendor	0.01	0.01	0.23	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	122	122	< 0.005	0.02	0.23	128
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.93	3.62	2.50	28.5	0.00	0.00	1,088	1,088	0.00	109	109	—	6,076	6,076	0.24	0.31	0.52	6,175
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	122	122	< 0.005	0.02	0.01	128
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.85	2.63	1.59	20.8	0.00	0.00	744	744	0.00	74.6	74.6	—	4,507	4,507	0.15	0.20	6.22	4,577
Vendor	0.01	0.01	0.17	0.08	< 0.005	< 0.005	5.24	5.24	< 0.005	0.53	0.53	—	87.6	87.6	< 0.005	0.01	0.07	91.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.48	0.29	3.80	0.00	0.00	136	136	0.00	13.6	13.6	—	746	746	0.03	0.03	1.03	758
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.96	0.96	< 0.005	0.10	0.10	—	14.5	14.5	< 0.005	< 0.005	0.01	15.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. BC II (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.94	0.78	6.42	7.13	0.02	0.23	—	0.23	0.21	—	0.21	—	1,517	1,517	0.06	0.01	—	1,522
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.94	0.78	6.42	7.13	0.02	0.23	—	0.23	0.21	—	0.21	—	1,517	1,517	0.06	0.01	—	1,522
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	4.59	5.10	0.01	0.16	—	0.16	0.15	—	0.15	—	1,084	1,084	0.04	0.01	—	1,087
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.84	0.93	< 0.005	0.03	—	0.03	0.03	—	0.03	—	179	179	0.01	< 0.005	—	180
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.14	3.85	1.73	33.0	0.00	0.00	1,088	1,088	0.00	109	109	—	6,714	6,714	0.16	0.28	17.9	6,820
Vendor	0.01	0.01	0.23	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	119	119	< 0.005	0.02	0.21	125
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.71	3.40	2.27	26.7	0.00	0.00	1,088	1,088	0.00	109	109	—	5,965	5,965	0.24	0.31	0.47	6,064
Vendor	0.01	0.01	0.24	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	119	119	< 0.005	0.02	0.01	125
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.67	2.45	1.42	19.3	0.00	0.00	742	742	0.00	74.4	74.4	—	4,412	4,412	0.13	0.20	5.53	4,481
Vendor	0.01	0.01	0.17	0.08	< 0.005	< 0.005	5.23	5.23	< 0.005	0.52	0.53	—	85.1	85.1	< 0.005	0.01	0.06	89.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.49	0.45	0.26	3.52	0.00	0.00	135	135	0.00	13.6	13.6	—	731	731	0.02	0.03	0.92	742
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.95	0.95	< 0.005	0.10	0.10	—	14.1	14.1	< 0.005	< 0.005	0.01	14.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.25. BC III (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.27	2.32	3.71	0.01	0.07	—	0.07	0.06	—	0.06	—	510	510	0.02	< 0.005	—	512
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.33	0.27	2.32	3.71	0.01	0.07	—	0.07	0.06	—	0.06	—	510	510	0.02	< 0.005	—	512
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.23	0.20	1.66	2.65	< 0.005	0.05	—	0.05	0.04	—	0.04	—	364	364	0.01	< 0.005	—	366
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Roa d Equipm ent	0.04	0.04	0.30	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	60.3	60.3	< 0.005	< 0.005	—	60.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.24	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	125	125	< 0.005	0.02	0.25	131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	126	126	< 0.005	0.02	0.01	132
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.18	0.08	< 0.005	< 0.005	5.23	5.23	< 0.005	0.52	0.53	—	89.6	89.6	< 0.005	0.01	0.08	93.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.95	0.95	< 0.005	0.10	0.10	—	14.8	14.8	< 0.005	< 0.005	0.01	15.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.27. BC III (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.24	3.70	0.01	0.06	—	0.06	0.05	—	0.05	—	510	510	0.02	< 0.005	—	512
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.40	0.66	< 0.005	0.01	—	0.01	0.01	—	0.01	—	90.8	90.8	< 0.005	< 0.005	—	91.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.01	0.01	0.07	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.0	15.0	< 0.005	< 0.005	—	15.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	122	122	< 0.005	0.02	0.01	128
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	1.30	1.30	< 0.005	0.13	0.13	—	21.8	21.8	< 0.005	< 0.005	0.02	22.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.24	0.24	< 0.005	0.02	0.02	—	3.60	3.60	< 0.005	< 0.005	< 0.005	3.78
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.7	11.7	< 0.005	< 0.005	—	11.9
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	686	686	0.11	0.01	—	693
Total	—	—	—	—	—	—	—	—	—	—	—	—	698	698	0.11	0.01	—	705
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.7	11.7	< 0.005	< 0.005	—	11.9
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	686	686	0.11	0.01	—	693
Total	—	—	—	—	—	—	—	—	—	—	—	—	698	698	0.11	0.01	—	705
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	1.94	1.94	< 0.005	< 0.005	—	1.96
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	114	114	0.02	< 0.005	—	115
Total	—	—	—	—	—	—	—	—	—	—	—	—	116	116	0.02	< 0.005	—	117

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	1.11	1.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.40	0.37	0.02	2.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.26	9.26	< 0.005	< 0.005	—	9.29
Total	1.57	1.54	0.02	2.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.26	9.26	< 0.005	< 0.005	—	9.29
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.11	1.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.17	1.17	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.20	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	0.03	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.76	0.76	< 0.005	< 0.005	—	0.76
Total	0.25	0.25	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.76	0.76	< 0.005	< 0.005	—	0.76

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	476	476	0.08	0.01	—	481
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	19.3	22.2	41.6	1.99	0.05	—	105
Total	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	476	476	0.08	0.01	—	481
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	19.3	22.2	41.6	1.99	0.05	—	105
Total	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	78.8	78.8	0.01	< 0.005	—	79.6
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	3.20	3.68	6.88	0.33	0.01	—	17.4
Total	—	—	—	—	—	—	—	—	—	—	—	3.20	82.5	85.7	0.34	0.01	—	97.0

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.18	0.00	1.18	0.12	0.00	—	4.14
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	25.3	0.00	25.3	2.53	0.00	—	88.6
Total	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.18	0.00	1.18	0.12	0.00	—	4.14
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	25.3	0.00	25.3	2.53	0.00	—	88.6
Total	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.69
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	4.19	0.00	4.19	0.42	0.00	—	14.7
Total	—	—	—	—	—	—	—	—	—	—	—	4.39	0.00	4.39	0.44	0.00	—	15.4

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.46	0.46
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.46	0.46
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	221	221
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	221	221

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Grading	Grading	10/1/2026	10/31/2026	5.00	22.0	Grading
PV Array	Grading	11/1/2026	12/31/2029	5.00	826	PV Array
Access Roads	Grading	11/1/2027	12/31/2029	5.00	566	Access Road
BC I	Building Construction	1/1/2027	12/31/2027	5.00	261	Substation/Gen-Tie
BC II	Building Construction	11/1/2027	12/31/2029	5.00	566	BESS
BC III	Building Construction	1/1/2027	3/31/2028	5.00	326	Switchyard

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Bore/Drill Rigs	Diesel	Average	2.00	8.00	83.0	0.50
Grading	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Grading	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Grading	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
PV Array	Forklifts	Diesel	Average	8.00	8.00	82.0	0.20
PV Array	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
PV Array	Cranes	Diesel	Average	1.00	7.00	367	0.29

PV Array	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
PV Array	Bore/Drill Rigs	Diesel	Average	3.00	8.00	83.0	0.50
PV Array	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
PV Array	Air Compressors	Diesel	Average	2.00	8.00	37.0	0.48
PV Array	Dumpers/Tenders	Diesel	Average	4.00	8.00	16.0	0.38
PV Array	Off-Highway Tractors	Diesel	Average	4.00	8.00	38.0	0.44
PV Array	Rough Terrain Forklifts	Diesel	Average	2.00	8.00	96.0	0.40
PV Array	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
PV Array	Other Construction Equipment	Diesel	Average	3.00	8.00	82.0	0.42
BC I	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
BC I	Generator Sets	Diesel	Average	1.00	24.0	14.0	0.74
BC I	Cranes	Diesel	Average	0.00	6.00	367	0.29
BC I	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
BC I	Plate Compactors	Diesel	Average	0.00	6.00	8.00	0.43
BC I	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
BC I	Excavators	Diesel	Average	1.00	6.00	36.0	0.38
BC I	Graders	Diesel	Average	1.00	8.00	148	0.41
BC I	Rollers	Diesel	Average	0.00	6.00	36.0	0.38
BC II	Forklifts	Diesel	Average	1.00	4.00	82.0	0.20
BC II	Generator Sets	Diesel	Average	1.00	24.0	14.0	0.74
BC II	Cranes	Diesel	Average	1.00	6.00	367	0.29
BC II	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
BC II	Plate Compactors	Diesel	Average	0.00	4.00	8.00	0.43
BC II	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
BC II	Excavators	Diesel	Average	0.00	2.00	36.0	0.38

BC II	Rollers	Diesel	Average	1.00	2.00	36.0	0.38
BC III	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
BC III	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
BC III	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—
Grading	Worker	32.5	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	4.00	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
PV Array	—	—	—	—
PV Array	Worker	0.00	7.70	LDA,LDT1,LDT2
PV Array	Vendor	—	4.00	HHDT,MHDT
PV Array	Hauling	5.62	20.0	HHDT
PV Array	Onsite truck	—	—	HHDT
BC I	—	—	—	—
BC I	Worker	0.00	7.70	LDA,LDT1,LDT2
BC I	Vendor	8.49	4.00	HHDT
BC I	Hauling	0.00	20.0	HHDT
BC I	Onsite truck	—	—	HHDT
BC II	—	—	—	—
BC II	Worker	1,200	7.70	LDA,LDT1,LDT2
BC II	Vendor	8.49	4.00	HHDT
BC II	Hauling	0.00	20.0	HHDT

BC II	Onsite truck	—	—	HHDT
Access Roads	—	—	—	—
Access Roads	Worker	0.00	7.70	LDA,LDT1,LDT2
Access Roads	Vendor	—	4.00	HHDT,MHDT
Access Roads	Hauling	2.37	20.0	HHDT
Access Roads	Onsite truck	—	—	HHDT
BC III	—	—	—	—
BC III	Worker	0.00	7.70	LDA,LDT1,LDT2
BC III	Vendor	8.49	4.00	HHDT
BC III	Hauling	0.00	20.0	HHDT
BC III	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Apply dust suppressants to unpaved roads	84%	84%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	—	—	33.0	0.00	—

PV Array	37,100	—	0.00	0.00	—
Access Roads	10,750	—	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	0.00	0%
General Light Industry	0.00	0%
Refrigerated Warehouse-No Rail	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005
2029	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	20.4	20.4	20.4	7,440	408	408	408	148,800

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	77,655	25,885	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
General Light Industry	21,000	204	0.0330	0.0040	0.00
Refrigerated Warehouse-No Rail	1,228,007	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	351,972,000
General Light Industry	0.00	0.00
Refrigerated Warehouse-No Rail	10,091,604	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
General Light Industry	2.19	—
Refrigerated Warehouse-No Rail	47.0	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0
Refrigerated Warehouse-No Rail	Cold storage	R-404A	3,922	7.50	7.50	7.50	25.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.2	annual days of extreme heat
Extreme Precipitation	1.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	18.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	57.1

AQ-PM	24.5
AQ-DPM	1.88
Drinking Water	68.2
Lead Risk Housing	25.2
Pesticides	84.5
Toxic Releases	26.5
Traffic	7.25
Effect Indicators	—
CleanUp Sites	90.3
Groundwater	92.6
Haz Waste Facilities/Generators	94.7
Impaired Water Bodies	43.8
Solid Waste	59.2
Sensitive Population	—
Asthma	68.5
Cardio-vascular	87.0
Low Birth Weights	28.4
Socioeconomic Factor Indicators	—
Education	94.0
Housing	2.99
Linguistic	64.1
Poverty	79.3
Unemployment	88.7

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—

Above Poverty	20.72372642
Employed	8.135506224
Median HI	41.6527653
Education	—
Bachelor's or higher	16.52765302
High school enrollment	100
Preschool enrollment	74.27178237
Transportation	—
Auto Access	89.83703323
Active commuting	36.50712178
Social	—
2-parent households	46.93956114
Voting	2.86154241
Neighborhood	—
Alcohol availability	97.0101373
Park access	6.852303349
Retail density	0.141152316
Supermarket access	2.399589375
Tree canopy	8.084178109
Housing	—
Homeownership	38.58591043
Housing habitability	79.30193764
Low-inc homeowner severe housing cost burden	96.59951238
Low-inc renter severe housing cost burden	96.17605543
Uncrowded housing	24.18837418
Health Outcomes	—
Insured adults	14.70550494
Arthritis	0.0

Asthma ER Admissions	41.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	3.7
Cognitively Disabled	5.8
Physically Disabled	5.2
Heart Attack ER Admissions	1.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	71.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.5
SLR Inundation Area	0.0
Children	45.9
Elderly	42.0
English Speaking	11.9
Foreign-born	69.9

Outdoor Workers	1.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.6
Traffic Density	7.6
Traffic Access	0.0
Other Indices	—
Hardship	75.8
Other Decision Support	—
2016 Voting	27.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	75.0
Healthy Places Index Score for Project Location (b)	24.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Solar PV Facility, Gen-tie line, and access roads modeled as non-asphalt surfaces. Substation and switchyard modeled as General Light Industry. BESS modeled as refrigerated warehouse.
Construction: Construction Phases	see CalEEMod assumptions and calculations sheet.
Construction: Off-Road Equipment	Based on prior experience with similar projects with similar scale. See CalEEMod assumptions worksheet for detail.
Operations: Energy Use	Does not account for onsite electricity generation. No natural gas consumption.
Operations: Fleet Mix	Assumes MDV for O&M and major maintenance trips. See assumptions spreadsheet.
Construction: Trips and VMT	per client provided data-max 600 worker trips (1200 one-way). Vendor and haul trips modeled exclusively as HHDT.
Construction: Dust From Material Movement	Site already level; no grading required
Operations: Water and Waste Water	Outdoor water use for non-asphalt surfaces used as proxy to estimate construction water consumption for dust suppression. Value based on Project WSA (Rincon Consultants 2024) and converted from acre-feet. Indoor water use for warehouse used as proxy for overall operational water consumption.
Construction: On-Road Fugitive Dust	Percentage of travel on paved roads assumes one mile of internal gravel road travel and is based on CalEEMod default trip lengths for each trip type. Mean vehicle speed would not exceed 15 mph per project applicant.
Operations: Road Dust	Assumes same rate of paved road travel as Construction worker trips.

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cornucopia Hybrid v11
Construction Start Date	1/1/2026
Operational Year	2028
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	16.8
Location	36.04973174671923, -120.19815765059295
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2506
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Other Non-Asphalt Surfaces	1,938	Acre	1,938	0.00	0.00	0.00	—	PV Array, gen-tie line, and access roads.
General Light Industry	1.77	1000sqft	0.00	1,770	0.00	—	—	Substation and switchyard
Refrigerated Warehouse-No Rail	50.0	1000sqft	0.00	50,000	0.00	—	—	BESS

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	12.7	11.0	63.4	114	0.15	2.23	23.9	26.2	2.05	4.01	6.06	—	22,680	22,680	0.81	0.51	21.4	22,874
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.1	12.1	77.2	123	0.17	2.78	39.3	42.1	2.56	5.54	8.11	—	24,310	24,310	0.98	0.59	0.63	24,511
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.82	7.63	46.1	77.7	0.11	1.61	17.9	19.5	1.48	2.94	4.42	—	15,965	15,965	0.61	0.37	6.64	16,096
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.61	1.39	8.41	14.2	0.02	0.29	3.27	3.56	0.27	0.54	0.81	—	2,643	2,643	0.10	0.06	1.10	2,665

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	5.47	4.56	41.5	57.5	0.09	1.48	20.5	22.0	1.36	2.07	3.43	—	9,715	9,715	0.38	0.17	1.33	9,777
2028	12.7	11.0	63.4	114	0.15	2.23	23.9	26.2	2.05	4.01	6.06	—	22,680	22,680	0.81	0.51	21.4	22,874
2029	12.2	10.6	60.6	111	0.15	2.07	23.9	26.0	1.91	4.01	5.91	—	22,533	22,533	0.79	0.50	19.1	22,722
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	4.19	3.50	32.4	44.0	0.07	1.25	5.16	6.41	1.15	0.95	1.92	—	7,470	7,470	0.30	0.12	0.02	7,513
2027	14.1	12.1	77.2	123	0.17	2.78	39.3	42.1	2.56	5.54	8.11	—	24,310	24,310	0.98	0.59	0.63	24,511
2028	12.5	10.8	66.5	111	0.16	2.29	31.6	33.9	2.11	4.78	6.88	—	22,549	22,549	0.89	0.56	0.56	22,738
2029	11.8	10.1	61.2	105	0.15	2.07	23.9	26.0	1.91	4.01	5.91	—	21,785	21,785	0.87	0.53	0.50	21,965
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.70	0.59	5.32	7.04	0.01	0.21	0.72	0.93	0.20	0.12	0.31	—	1,183	1,183	0.05	0.02	0.06	1,189
2027	4.94	4.19	33.9	49.0	0.08	1.21	16.2	17.4	1.12	1.82	2.93	—	8,709	8,709	0.34	0.17	1.59	8,771
2028	8.82	7.63	46.1	77.7	0.11	1.61	17.9	19.5	1.48	2.94	4.42	—	15,965	15,965	0.61	0.37	6.64	16,096
2029	8.41	7.26	43.5	75.1	0.11	1.48	16.6	18.0	1.36	2.80	4.16	—	15,712	15,712	0.58	0.36	5.90	15,840
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.13	0.11	0.97	1.28	< 0.005	0.04	0.13	0.17	0.04	0.02	0.06	—	196	196	0.01	< 0.005	0.01	197
2027	0.90	0.77	6.18	8.94	0.01	0.22	2.95	3.17	0.20	0.33	0.54	—	1,442	1,442	0.06	0.03	0.26	1,452
2028	1.61	1.39	8.41	14.2	0.02	0.29	3.27	3.56	0.27	0.54	0.81	—	2,643	2,643	0.10	0.06	1.10	2,665
2029	1.54	1.32	7.94	13.7	0.02	0.27	3.02	3.29	0.25	0.51	0.76	—	2,601	2,601	0.10	0.06	0.98	2,622

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.7	14.7	0.09	3.43	< 0.005	0.01	0.28	0.29	< 0.005	0.07	0.08	45.9	1,590	1,636	4.83	0.08	1,334	3,114
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.3	14.3	0.09	0.82	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	45.9	1,547	1,593	4.83	0.08	1,333	3,071
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.5	14.5	0.09	2.00	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	45.9	1,562	1,607	4.83	0.08	1,333	3,085
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.65	2.65	0.02	0.37	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	7.59	259	266	0.80	0.01	221	511

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.08	0.07	0.07	1.18	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	—	385	385	0.01	0.01	0.94	388
Area	14.6	14.6	0.02	2.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.26	9.26	< 0.005	< 0.005	—	9.29
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	698	698	0.11	0.01	—	705
Water	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Waste	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	14.7	14.7	0.09	3.43	< 0.005	0.01	0.28	0.29	< 0.005	0.07	0.08	45.9	1,590	1,636	4.83	0.08	1,334	3,114

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.09	0.82	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	—	351	351	0.01	0.01	0.02	354
Area	14.2	14.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	698	698	0.11	0.01	—	705
Water	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Waste	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	14.3	14.3	0.09	0.82	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	45.9	1,547	1,593	4.83	0.08	1,333	3,071
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.07	0.06	0.08	0.89	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	—	361	361	0.01	0.01	0.41	364
Area	14.4	14.4	0.01	1.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.57	4.57	< 0.005	< 0.005	—	4.58
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	698	698	0.11	0.01	—	705
Water	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Waste	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	14.5	14.5	0.09	2.00	< 0.005	< 0.005	0.28	0.28	< 0.005	0.07	0.07	45.9	1,562	1,607	4.83	0.08	1,333	3,085
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.16	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	59.7	59.7	< 0.005	< 0.005	0.07	60.2
Area	2.64	2.63	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.76	0.76	< 0.005	< 0.005	—	0.76
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	116	116	0.02	< 0.005	—	117
Water	—	—	—	—	—	—	—	—	—	—	—	3.20	82.5	85.7	0.34	0.01	—	97.0
Waste	—	—	—	—	—	—	—	—	—	—	—	4.39	0.00	4.39	0.44	0.00	—	15.4
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	221	221
Total	2.65	2.65	0.02	0.37	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	7.59	259	266	0.80	0.01	221	511

3. Construction Emissions Details

3.1. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.19	2.67	24.0	28.6	0.04	1.06	—	1.06	0.98	—	0.98	—	4,658	4,658	0.19	0.04	—	4,674
Dust From Material Movement	—	—	—	—	—	—	1.98	1.98	—	0.91	0.91	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.45	1.72	< 0.005	0.06	—	0.06	0.06	—	0.06	—	281	281	0.01	< 0.005	—	282
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.03	0.26	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	46.5	46.5	< 0.005	< 0.005	—	46.6
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.08	0.90	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	171	171	0.01	0.01	0.02	174
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.02	10.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.77	1.77	< 0.005	< 0.005	< 0.005	1.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. PV Array (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.17	3.50	31.9	43.9	0.07	1.24	—	1.24	1.14	—	1.14	—	7,085	7,085	0.29	0.06	—	7,109
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	0.42	3.81	5.24	0.01	0.15	—	0.15	0.14	—	0.14	—	846	846	0.03	0.01	—	849
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.70	0.96	< 0.005	0.03	—	0.03	0.02	—	0.02	—	140	140	0.01	< 0.005	—	141

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.49	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	385	385	0.01	0.06	0.02	403
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.59	0.59	< 0.005	0.06	0.06	—	45.9	45.9	< 0.005	0.01	0.05	48.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	7.60	7.60	< 0.005	< 0.005	0.01	7.97

3.5. PV Array (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.96	3.31	30.5	43.8	0.07	1.08	—	1.08	1.00	—	1.00	—	7,082	7,082	0.29	0.06	—	7,107
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.96	3.31	30.5	43.8	0.07	1.08	—	1.08	1.00	—	1.00	—	7,082	7,082	0.29	0.06	—	7,107
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.83	2.37	21.8	31.3	0.05	0.77	—	0.77	0.71	—	0.71	—	5,059	5,059	0.21	0.04	—	5,076
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.43	3.98	5.71	0.01	0.14	—	0.14	0.13	—	0.13	—	838	838	0.03	0.01	—	840
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.44	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	376	376	0.01	0.06	0.83	394
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.47	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	376	376	0.01	0.06	0.02	394
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.33	0.08	< 0.005	0.01	3.52	3.52	0.01	0.36	0.37	—	268	268	< 0.005	0.04	0.26	281
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.64	0.64	< 0.005	0.07	0.07	—	44.4	44.4	< 0.005	0.01	0.04	46.6

3.7. PV Array (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.84	3.22	29.6	43.9	0.07	0.99	—	0.99	0.91	—	0.91	—	7,081	7,081	0.29	0.06	—	7,105
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.84	3.22	29.6	43.9	0.07	0.99	—	0.99	0.91	—	0.91	—	7,081	7,081	0.29	0.06	—	7,105
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.75	2.31	21.2	31.4	0.05	0.71	—	0.71	0.65	—	0.65	—	5,072	5,072	0.21	0.04	—	5,089

Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	0.42	3.87	5.73	0.01	0.13	—	0.13	0.12	—	0.12	—	840	840	0.03	0.01	—	843
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.43	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	366	366	0.01	0.06	0.76	384
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.46	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	366	366	0.01	0.06	0.02	384
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.01	< 0.005	0.32	0.08	< 0.005	0.01	3.53	3.53	0.01	0.36	0.37	—	262	262	< 0.005	0.04	0.24	275
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.64	0.64	< 0.005	0.07	0.07	—	43.4	43.4	< 0.005	0.01	0.04	45.5

3.9. PV Array (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.75	3.14	28.9	43.8	0.07	0.91	—	0.91	0.84	—	0.84	—	7,080	7,080	0.29	0.06	—	7,104
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.75	3.14	28.9	43.8	0.07	0.91	—	0.91	0.84	—	0.84	—	7,080	7,080	0.29	0.06	—	7,104
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.68	2.24	20.7	31.3	0.05	0.65	—	0.65	0.60	—	0.60	—	5,057	5,057	0.21	0.04	—	5,074
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.41	3.77	5.71	0.01	0.12	—	0.12	0.11	—	0.11	—	837	837	0.03	0.01	—	840
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.42	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	356	356	0.01	0.06	0.69	374
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.45	0.11	< 0.005	0.01	5.16	5.17	0.01	0.53	0.54	—	357	357	0.01	0.06	0.02	374
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.31	0.08	< 0.005	0.01	3.52	3.52	0.01	0.36	0.37	—	255	255	< 0.005	0.04	0.21	267
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.64	0.64	< 0.005	0.07	0.07	—	42.2	42.2	< 0.005	0.01	0.04	44.2

3.11. Access Roads (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.51	2.95	25.6	27.3	0.06	1.04	—	1.04	0.96	—	0.96	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.35	3.05	3.26	0.01	0.12	—	0.12	0.11	—	0.11	—	788	788	0.03	0.01	—	790
Dust From Material Movement	—	—	—	—	—	—	0.29	0.29	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.56	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	130	130	0.01	< 0.005	—	131
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.20	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	159	159	< 0.005	0.02	0.01	166
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.25	0.25	< 0.005	0.03	0.03	—	19.0	19.0	< 0.005	< 0.005	0.02	19.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	3.14	3.14	< 0.005	< 0.005	< 0.005	3.29

3.13. Access Roads (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.43	2.88	24.3	27.2	0.06	0.99	—	0.99	0.91	—	0.91	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.43	2.88	24.3	27.2	0.06	0.99	—	0.99	0.91	—	0.91	—	6,598	6,598	0.27	0.05	—	6,621

Dust From Material Movement	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.45	2.06	17.4	19.5	0.04	0.71	—	0.71	0.65	—	0.65	—	4,726	4,726	0.19	0.04	—	4,742
Dust From Material Movement	—	—	—	—	—	—	1.71	1.71	—	0.68	0.68	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.38	3.18	3.55	0.01	0.13	—	0.13	0.12	—	0.12	—	782	782	0.03	0.01	—	785
Dust From Material Movement	—	—	—	—	—	—	0.31	0.31	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.18	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	155	155	< 0.005	0.02	0.32	163

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	155	155	< 0.005	0.02	0.01	162
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	1.49	1.49	< 0.005	0.15	0.16	—	111	111	< 0.005	0.02	0.10	116
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.27	0.27	< 0.005	0.03	0.03	—	18.4	18.4	< 0.005	< 0.005	0.02	19.3

3.15. Access Roads (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.32	2.79	22.7	26.9	0.06	0.92	—	0.92	0.84	—	0.84	—	6,596	6,596	0.27	0.05	—	6,619
Dust From Material Movement	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.32	2.79	22.7	26.9	0.06	0.92	—	0.92	0.84	—	0.84	—	6,596	6,596	0.27	0.05	—	6,619
Dust From Material Movement	—	—	—	—	—	—	2.39	2.39	—	0.95	0.95	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.37	1.99	16.2	19.2	0.04	0.65	—	0.65	0.60	—	0.60	—	4,712	4,712	0.19	0.04	—	4,728
Dust From Material Movement	—	—	—	—	—	—	1.71	1.71	—	0.68	0.68	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	2.96	3.50	0.01	0.12	—	0.12	0.11	—	0.11	—	780	780	0.03	0.01	—	783
Dust From Material Movement	—	—	—	—	—	—	0.31	0.31	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.18	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	151	151	< 0.005	0.02	0.29	158
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.19	0.05	< 0.005	< 0.005	2.18	2.19	< 0.005	0.22	0.23	—	151	151	< 0.005	0.02	0.01	158
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.13	0.03	< 0.005	< 0.005	1.49	1.49	< 0.005	0.15	0.16	—	108	108	< 0.005	0.02	0.09	113
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.27	0.27	< 0.005	0.03	0.03	—	17.8	17.8	< 0.005	< 0.005	0.02	18.7

3.17. BC I (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	1.14	0.95	7.73	9.68	0.02	0.31	—	0.31	0.29	—	0.29	—	1,496	1,496	0.06	0.01	—	1,502
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.14	0.95	7.73	9.68	0.02	0.31	—	0.31	0.29	—	0.29	—	1,496	1,496	0.06	0.01	—	1,502
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.82	0.68	5.53	6.92	0.01	0.22	—	0.22	0.21	—	0.21	—	1,070	1,070	0.04	0.01	—	1,074
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.01	1.26	< 0.005	0.04	—	0.04	0.04	—	0.04	—	177	177	0.01	< 0.005	—	178
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.24	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	125	125	< 0.005	0.02	0.25	131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	126	126	< 0.005	0.02	0.01	132
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.18	0.08	< 0.005	< 0.005	5.23	5.24	< 0.005	0.52	0.53	—	89.7	89.7	< 0.005	0.01	0.08	94.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.96	0.96	< 0.005	0.10	0.10	—	14.8	14.8	< 0.005	< 0.005	0.01	15.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. BC II (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.98	0.82	6.92	7.18	0.02	0.26	—	0.26	0.24	—	0.24	—	1,517	1,517	0.06	0.01	—	1,522
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.83	0.86	< 0.005	0.03	—	0.03	0.03	—	0.03	—	181	181	0.01	< 0.005	—	182
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.0	30.0	< 0.005	< 0.005	—	30.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.11	3.80	2.76	30.8	0.00	0.00	6.53	6.53	0.00	1.53	1.53	—	6,194	6,194	0.26	0.31	0.58	6,294
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	126	126	< 0.005	0.02	0.01	132
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.50	0.48	0.30	3.73	0.00	0.00	0.77	0.77	0.00	0.18	0.18	—	766	766	0.03	0.04	1.15	779
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.87	0.87	< 0.005	0.09	0.09	—	15.0	15.0	< 0.005	< 0.005	0.01	15.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.09	0.05	0.68	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	127	127	< 0.005	0.01	0.19	129
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	2.48	2.48	< 0.005	< 0.005	< 0.005	2.60
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.21. BC II (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.96	0.80	6.64	7.17	0.02	0.24	—	0.24	0.22	—	0.22	—	1,517	1,517	0.06	0.01	—	1,523
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.96	0.80	6.64	7.17	0.02	0.24	—	0.24	0.22	—	0.22	—	1,517	1,517	0.06	0.01	—	1,523
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.69	0.57	4.75	5.13	0.01	0.17	—	0.17	0.16	—	0.16	—	1,087	1,087	0.04	0.01	—	1,091
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.10	0.87	0.94	< 0.005	0.03	—	0.03	0.03	—	0.03	—	180	180	0.01	< 0.005	—	181

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.40	4.12	1.96	35.4	0.00	0.00	6.53	6.53	0.00	1.53	1.53	—	6,841	6,841	0.19	0.28	20.1	6,950
Vendor	0.01	0.01	0.23	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	122	122	< 0.005	0.02	0.23	128
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.93	3.62	2.50	28.5	0.00	0.00	6.53	6.53	0.00	1.53	1.53	—	6,076	6,076	0.24	0.31	0.52	6,175
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	122	122	< 0.005	0.02	0.01	128
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.85	2.63	1.59	20.8	0.00	0.00	4.63	4.63	0.00	1.08	1.08	—	4,507	4,507	0.15	0.20	6.22	4,577
Vendor	0.01	0.01	0.17	0.08	< 0.005	< 0.005	5.24	5.24	< 0.005	0.53	0.53	—	87.6	87.6	< 0.005	0.01	0.07	91.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.48	0.29	3.80	0.00	0.00	0.84	0.84	0.00	0.20	0.20	—	746	746	0.03	0.03	1.03	758
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.96	0.96	< 0.005	0.10	0.10	—	14.5	14.5	< 0.005	< 0.005	0.01	15.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.23. BC II (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.94	0.78	6.42	7.13	0.02	0.23	—	0.23	0.21	—	0.21	—	1,517	1,517	0.06	0.01	—	1,522
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.94	0.78	6.42	7.13	0.02	0.23	—	0.23	0.21	—	0.21	—	1,517	1,517	0.06	0.01	—	1,522
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.67	0.56	4.59	5.10	0.01	0.16	—	0.16	0.15	—	0.15	—	1,084	1,084	0.04	0.01	—	1,087
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.84	0.93	< 0.005	0.03	—	0.03	0.03	—	0.03	—	179	179	0.01	< 0.005	—	180
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	4.14	3.85	1.73	33.0	0.00	0.00	6.53	6.53	0.00	1.53	1.53	—	6,714	6,714	0.16	0.28	17.9	6,820
Vendor	0.01	0.01	0.23	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	119	119	< 0.005	0.02	0.21	125
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.71	3.40	2.27	26.7	0.00	0.00	6.53	6.53	0.00	1.53	1.53	—	5,965	5,965	0.24	0.31	0.47	6,064
Vendor	0.01	0.01	0.24	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	119	119	< 0.005	0.02	0.01	125
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.67	2.45	1.42	19.3	0.00	0.00	4.61	4.61	0.00	1.08	1.08	—	4,412	4,412	0.13	0.20	5.53	4,481
Vendor	0.01	0.01	0.17	0.08	< 0.005	< 0.005	5.23	5.23	< 0.005	0.52	0.53	—	85.1	85.1	< 0.005	0.01	0.06	89.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.49	0.45	0.26	3.52	0.00	0.00	0.84	0.84	0.00	0.20	0.20	—	731	731	0.02	0.03	0.92	742
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.95	0.95	< 0.005	0.10	0.10	—	14.1	14.1	< 0.005	< 0.005	0.01	14.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.25. BC III (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.27	2.32	3.71	0.01	0.07	—	0.07	0.06	—	0.06	—	510	510	0.02	< 0.005	—	512

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.33	0.27	2.32	3.71	0.01	0.07	—	0.07	0.06	—	0.06	—	510	510	0.02	< 0.005	—	512
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.66	2.65	< 0.005	0.05	—	0.05	0.04	—	0.04	—	364	364	0.01	< 0.005	—	366
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.30	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	60.3	60.3	< 0.005	< 0.005	—	60.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.24	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	125	125	< 0.005	0.02	0.25	131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	126	126	< 0.005	0.02	0.01	132
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.18	0.08	< 0.005	< 0.005	5.23	5.23	< 0.005	0.52	0.53	—	89.6	89.6	< 0.005	0.01	0.08	93.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.95	0.95	< 0.005	0.10	0.10	—	14.8	14.8	< 0.005	< 0.005	0.01	15.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.27. BC III (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.24	3.70	0.01	0.06	—	0.06	0.05	—	0.05	—	510	510	0.02	< 0.005	—	512
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.06	0.05	0.40	0.66	< 0.005	0.01	—	0.01	0.01	—	0.01	—	90.8	90.8	< 0.005	< 0.005	—	91.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.0	15.0	< 0.005	< 0.005	—	15.1
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.01	0.25	0.11	< 0.005	< 0.005	7.67	7.67	< 0.005	0.77	0.77	—	122	122	< 0.005	0.02	0.01	128
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	1.30	1.30	< 0.005	0.13	0.13	—	21.8	21.8	< 0.005	< 0.005	0.02	22.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.24	0.24	< 0.005	0.02	0.02	—	3.60	3.60	< 0.005	< 0.005	< 0.005	3.78
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.7	11.7	< 0.005	< 0.005	—	11.9
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	686	686	0.11	0.01	—	693
Total	—	—	—	—	—	—	—	—	—	—	—	—	698	698	0.11	0.01	—	705
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.7	11.7	< 0.005	< 0.005	—	11.9

Refrigerated	—	—	—	—	—	—	—	—	—	—	—	—	686	686	0.11	0.01	—	693
Total	—	—	—	—	—	—	—	—	—	—	—	—	698	698	0.11	0.01	—	705
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	1.94	1.94	< 0.005	< 0.005	—	1.96
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	114	114	0.02	< 0.005	—	115
Total	—	—	—	—	—	—	—	—	—	—	—	—	116	116	0.02	< 0.005	—	117

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	7.75	7.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	6.50	6.50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.40	0.37	0.02	2.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.26	9.26	< 0.005	< 0.005	—	9.29
Total	14.6	14.6	0.02	2.25	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.26	9.26	< 0.005	< 0.005	—	9.29
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	7.75	7.75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	6.50	6.50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	14.2	14.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.41	1.41	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	1.19	1.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape	0.04	0.03	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.76	0.76	< 0.005	< 0.005	—	0.76
Total	2.64	2.63	< 0.005	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.76	0.76	< 0.005	< 0.005	—	0.76

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	476	476	0.08	0.01	—	481
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	19.3	22.2	41.6	1.99	0.05	—	105
Total	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	476	476	0.08	0.01	—	481
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Refrigerated	—	—	—	—	—	—	—	—	—	—	—	19.3	22.2	41.6	1.99	0.05	—	105
Total	—	—	—	—	—	—	—	—	—	—	—	19.3	498	518	2.06	0.06	—	586
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	78.8	78.8	0.01	< 0.005	—	79.6
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	3.20	3.68	6.88	0.33	0.01	—	17.4
Total	—	—	—	—	—	—	—	—	—	—	—	3.20	82.5	85.7	0.34	0.01	—	97.0

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.18	0.00	1.18	0.12	0.00	—	4.14

Refrigerated Warehouse-No	—	—	—	—	—	—	—	—	—	—	—	25.3	0.00	25.3	2.53	0.00	—	88.6
Total	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.18	0.00	1.18	0.12	0.00	—	4.14
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	25.3	0.00	25.3	2.53	0.00	—	88.6
Total	—	—	—	—	—	—	—	—	—	—	—	26.5	0.00	26.5	2.65	0.00	—	92.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.20	0.00	0.20	0.02	0.00	—	0.69
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	4.19	0.00	4.19	0.42	0.00	—	14.7
Total	—	—	—	—	—	—	—	—	—	—	—	4.39	0.00	4.39	0.44	0.00	—	15.4

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.46	0.46
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.46	0.46
Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,333	1,333
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08	0.08

Refrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	221	221
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	221	221

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Grading	Grading	10/1/2026	10/31/2026	5.00	22.0	Grading
PV Array	Grading	11/1/2026	12/31/2029	5.00	826	PV Array
Access Roads	Grading	11/1/2027	12/31/2029	5.00	566	Access Road
BC I	Building Construction	1/1/2027	12/31/2027	5.00	261	Substation/Gen-Tie
BC II	Building Construction	11/1/2027	12/31/2029	5.00	566	BESS
BC III	Building Construction	1/1/2027	3/31/2028	5.00	326	Switchyard

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Bore/Drill Rigs	Diesel	Average	2.00	8.00	83.0	0.50
Grading	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48
Grading	Crawler Tractors	Diesel	Average	1.00	8.00	87.0	0.43
Grading	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Grading	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74

Grading	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
Grading	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
PV Array	Forklifts	Diesel	Average	8.00	8.00	82.0	0.20
PV Array	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
PV Array	Cranes	Diesel	Average	1.00	7.00	367	0.29
PV Array	Tractors/Loaders/Backhoes	Diesel	Average	2.00	7.00	84.0	0.37
PV Array	Bore/Drill Rigs	Diesel	Average	3.00	8.00	83.0	0.50
PV Array	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
PV Array	Air Compressors	Diesel	Average	2.00	8.00	37.0	0.48
PV Array	Dumpers/Tenders	Diesel	Average	4.00	8.00	16.0	0.38
PV Array	Off-Highway Tractors	Diesel	Average	4.00	8.00	38.0	0.44
PV Array	Rough Terrain Forklifts	Diesel	Average	2.00	8.00	96.0	0.40
PV Array	Trenchers	Diesel	Average	1.00	8.00	40.0	0.50
PV Array	Other Construction Equipment	Diesel	Average	3.00	8.00	82.0	0.42
Access Roads	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Access Roads	Graders	Diesel	Average	1.00	8.00	148	0.41
Access Roads	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Access Roads	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Access Roads	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
BC I	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
BC I	Generator Sets	Diesel	Average	1.00	24.0	14.0	0.74
BC I	Cranes	Diesel	Average	0.00	6.00	367	0.29
BC I	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
BC I	Plate Compactors	Diesel	Average	0.00	6.00	8.00	0.43
BC I	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

BC I	Excavators	Diesel	Average	1.00	6.00	36.0	0.38
BC I	Graders	Diesel	Average	1.00	8.00	148	0.41
BC I	Rollers	Diesel	Average	0.00	6.00	36.0	0.38
BC II	Forklifts	Diesel	Average	1.00	4.00	82.0	0.20
BC II	Generator Sets	Diesel	Average	1.00	24.0	14.0	0.74
BC II	Cranes	Diesel	Average	1.00	6.00	367	0.29
BC II	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
BC II	Plate Compactors	Diesel	Average	0.00	4.00	8.00	0.43
BC II	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48
BC II	Excavators	Diesel	Average	0.00	2.00	36.0	0.38
BC II	Rollers	Diesel	Average	1.00	2.00	36.0	0.38
BC III	Forklifts	Diesel	Average	1.00	6.00	82.0	0.20
BC III	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
BC III	Air Compressors	Diesel	Average	1.00	8.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Grading	—	—	—	—
Grading	Worker	32.5	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	4.00	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
PV Array	—	—	—	—
PV Array	Worker	0.00	7.70	LDA,LDT1,LDT2
PV Array	Vendor	—	4.00	HHDT,MHDT

PV Array	Hauling	5.62	20.0	HHDT
PV Array	Onsite truck	—	—	HHDT
BC I	—	—	—	—
BC I	Worker	0.00	7.70	LDA,LDT1,LDT2
BC I	Vendor	8.49	4.00	HHDT
BC I	Hauling	0.00	20.0	HHDT
BC I	Onsite truck	—	—	HHDT
BC II	—	—	—	—
BC II	Worker	1,200	7.70	LDA,LDT1,LDT2
BC II	Vendor	8.49	4.00	HHDT
BC II	Hauling	0.00	20.0	HHDT
BC II	Onsite truck	—	—	HHDT
Access Roads	—	—	—	—
Access Roads	Worker	0.00	7.70	LDA,LDT1,LDT2
Access Roads	Vendor	—	4.00	HHDT,MHDT
Access Roads	Hauling	2.37	20.0	HHDT
Access Roads	Onsite truck	—	—	HHDT
BC III	—	—	—	—
BC III	Worker	0.00	7.70	LDA,LDT1,LDT2
BC III	Vendor	8.49	4.00	HHDT
BC III	Hauling	0.00	20.0	HHDT
BC III	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Apply dust suppressants to unpaved roads	84%	84%

Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Grading	—	—	33.0	0.00	—
PV Array	37,100	—	0.00	0.00	—
Access Roads	10,750	—	0.00	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	1,938	0%
General Light Industry	0.00	0%
Refrigerated Warehouse-No Rail	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O

2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005
2029	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	20.4	20.4	20.4	7,440	408	408	408	148,800

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	77,655	25,885	5,065,157

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00
General Light Industry	21,000	204	0.0330	0.0040	0.00
Refrigerated Warehouse-No Rail	1,228,007	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	351,972,000
General Light Industry	0.00	0.00
Refrigerated Warehouse-No Rail	10,091,604	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
General Light Industry	2.19	—
Refrigerated Warehouse-No Rail	47.0	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0
Refrigerated Warehouse-No Rail	Cold storage	R-404A	3,922	7.50	7.50	7.50	25.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.2	annual days of extreme heat
Extreme Precipitation	1.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	18.4	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	57.1
AQ-PM	24.5
AQ-DPM	1.88
Drinking Water	68.2
Lead Risk Housing	25.2
Pesticides	84.5
Toxic Releases	26.5
Traffic	7.25
Effect Indicators	—
CleanUp Sites	90.3
Groundwater	92.6
Haz Waste Facilities/Generators	94.7
Impaired Water Bodies	43.8
Solid Waste	59.2
Sensitive Population	—
Asthma	68.5
Cardio-vascular	87.0
Low Birth Weights	28.4

Socioeconomic Factor Indicators	—
Education	94.0
Housing	2.99
Linguistic	64.1
Poverty	79.3
Unemployment	88.7

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	20.72372642
Employed	8.135506224
Median HI	41.6527653
Education	—
Bachelor's or higher	16.52765302
High school enrollment	100
Preschool enrollment	74.27178237
Transportation	—
Auto Access	89.83703323
Active commuting	36.50712178
Social	—
2-parent households	46.93956114
Voting	2.86154241
Neighborhood	—
Alcohol availability	97.0101373
Park access	6.852303349
Retail density	0.141152316

Supermarket access	2.399589375
Tree canopy	8.084178109
Housing	—
Homeownership	38.58591043
Housing habitability	79.30193764
Low-inc homeowner severe housing cost burden	96.59951238
Low-inc renter severe housing cost burden	96.17605543
Uncrowded housing	24.18837418
Health Outcomes	—
Insured adults	14.70550494
Arthritis	0.0
Asthma ER Admissions	41.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	3.7
Cognitively Disabled	5.8
Physically Disabled	5.2
Heart Attack ER Admissions	1.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	71.0
Physical Health Not Good	0.0
Stroke	0.0

Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.5
SLR Inundation Area	0.0
Children	45.9
Elderly	42.0
English Speaking	11.9
Foreign-born	69.9
Outdoor Workers	1.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	87.6
Traffic Density	7.6
Traffic Access	0.0
Other Indices	—
Hardship	75.8
Other Decision Support	—
2016 Voting	27.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	75.0
Healthy Places Index Score for Project Location (b)	24.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Solar PV Facility, Gen-tie line, and access roads modeled as non-asphalt surfaces. Substation and switchyard modeled as General Light Industry. BESS modeled as refrigerated warehouse.
Construction: Construction Phases	see CalEEMod assumptions and calculations sheet.
Construction: Off-Road Equipment	Based on prior experience with similar projects with similar scale. See CalEEMod assumptions worksheet for detail.
Operations: Energy Use	Does not account for onsite electricity generation. No natural gas consumption.
Operations: Fleet Mix	Assumes MDV for O&M and major maintenance trips. See assumptions spreadsheet.
Construction: Trips and VMT	per client provided data-max 600 worker trips (1200 one-way). Vendor and haul trips modeled exclusively as HHDT.
Construction: Dust From Material Movement	37100 Cubic Yards of soil import per applicant provided data
Operations: Water and Waste Water	Outdoor water use for non-asphalt surfaces used as proxy to estimate construction water consumption for dust suppression. Value based on Project WSA (Rincon Consultants 2024) and converted from acre-feet. Indoor water use for warehouse used as proxy for overall operational water consumption.
Construction: On-Road Fugitive Dust	Mitigated run: Worker travel assumed to be 100% paved. Percentage of travel on paved roads for haul and vendor assumes one mile of internal gravel road travel and is based on CalEEMod default trip lengths for each trip type. Mean vehicle speed would not exceed 15 mph per project applicant.
Operations: Road Dust	Assumes same rate of paved road travel as Construction worker trips.

Cornucopia Hybrid Decommissioning Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Cornucopia Hybrid Decommissioning
Construction Start Date	1/1/2049
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	16.8
Location	36.04068843056436, -120.18318897510218
County	Fresno
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2530
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas
App Version	2022.1.1.22

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	1,618	Acre	1,618	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.07	3.42	34.3	62.8	0.13	0.47	7.34	7.80	0.44	2.21	2.64	—	14,094	14,094	0.48	0.53	0.44	14,265
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.06	3.41	34.5	62.5	0.13	0.47	7.34	7.80	0.44	2.21	2.64	—	14,050	14,050	0.48	0.53	0.01	14,220
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.90	2.43	24.5	44.5	0.09	0.33	5.22	5.55	0.31	1.57	1.88	—	10,016	10,016	0.34	0.38	0.14	10,138
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.53	0.44	4.47	8.13	0.02	0.06	0.95	1.01	0.06	0.29	0.34	—	1,658	1,658	0.06	0.06	0.02	1,678

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2050	4.07	3.42	34.3	62.8	0.13	0.47	7.34	7.80	0.44	2.21	2.64	—	14,094	14,094	0.48	0.53	0.44	14,265
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2050	4.06	3.41	34.5	62.5	0.13	0.47	7.34	7.80	0.44	2.21	2.64	—	14,050	14,050	0.48	0.53	0.01	14,220
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2050	2.90	2.43	24.5	44.5	0.09	0.33	5.22	5.55	0.31	1.57	1.88	—	10,016	10,016	0.34	0.38	0.14	10,138
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2050	0.53	0.44	4.47	8.13	0.02	0.06	0.95	1.01	0.06	0.29	0.34	—	1,658	1,658	0.06	0.06	0.02	1,678

3. Construction Emissions Details

3.1. Site Preparation (2050) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.84	3.23	30.8	60.5	0.10	0.42	—	0.42	0.39	—	0.39	—	10,855	10,855	0.44	0.09	—	10,893
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	3.24	3.24	—	0.49	0.49	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.84	3.23	30.8	60.5	0.10	0.42	—	0.42	0.39	—	0.39	—	10,855	10,855	0.44	0.09	—	10,893
Dust From Material Movement	—	—	—	—	—	—	2.56	2.56	—	1.31	1.31	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	3.24	3.24	—	0.49	0.49	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.74	2.30	22.0	43.1	0.07	0.30	—	0.30	0.27	—	0.27	—	7,733	7,733	0.31	0.06	—	7,759
Dust From Material Movement	—	—	—	—	—	—	1.82	1.82	—	0.94	0.94	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	2.31	2.31	—	0.35	0.35	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	0.42	4.01	7.87	0.01	0.05	—	0.05	0.05	—	0.05	—	1,280	1,280	0.05	0.01	—	1,285
Dust From Material Movement	—	—	—	—	—	—	0.33	0.33	—	0.17	0.17	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.42	0.42	—	0.06	0.06	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.12	0.06	1.33	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	428	428	0.01	< 0.005	0.04	429
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	0.07	3.36	0.92	0.03	0.05	1.05	1.10	0.05	0.29	0.34	—	2,811	2,811	0.03	0.44	0.40	2,943
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.12	0.07	1.03	0.00	0.00	0.49	0.49	0.00	0.11	0.11	—	380	380	0.01	0.01	< 0.005	382
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.07	3.60	0.94	0.03	0.05	1.05	1.10	0.05	0.29	0.34	—	2,814	2,814	0.03	0.44	0.01	2,946
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.76	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	281	281	< 0.005	< 0.005	0.01	282
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.05	2.50	0.66	0.02	0.04	0.74	0.78	0.04	0.20	0.24	—	2,003	2,003	0.02	0.31	0.12	2,097
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	46.4	46.4	< 0.005	< 0.005	< 0.005	46.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.46	0.12	< 0.005	0.01	0.14	0.14	0.01	0.04	0.04	—	332	332	< 0.005	0.05	0.02	347

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/1/2050	12/31/2050	5.00	260	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Forklifts	Diesel	Average	6.00	8.00	82.0	0.20
Site Preparation	Cranes	Diesel	Average	1.00	8.00	367	0.29
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	6.00	8.00	84.0	0.37
Site Preparation	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Site Preparation	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Site Preparation	Trenchers	Diesel	Average	6.00	8.00	40.0	0.50
Site Preparation	Other Construction Equipment	Diesel	Average	13.0	8.00	82.0	0.42

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	90.0	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	4.00	HHDT,MHDT
Site Preparation	Hauling	56.7	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Site Preparation	—	—	130	58,983	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	1,618	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2050	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.1	annual days of extreme heat
Extreme Precipitation	1.05	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	13.9	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	3	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—

AQ-Ozone	70.7
AQ-PM	48.8
AQ-DPM	26.4
Drinking Water	59.9
Lead Risk Housing	49.8
Pesticides	96.2
Toxic Releases	45.3
Traffic	18.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	51.0
Haz Waste Facilities/Generators	35.6
Impaired Water Bodies	23.9
Solid Waste	75.7
Sensitive Population	—
Asthma	57.8
Cardio-vascular	93.4
Low Birth Weights	7.66
Socioeconomic Factor Indicators	—
Education	99.8
Housing	21.1
Linguistic	97.3
Poverty	99.0
Unemployment	90.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	3.490311818
Employed	22.67419479
Median HI	30.43757218
Education	—
Bachelor's or higher	2.912870525
High school enrollment	100
Preschool enrollment	47.26036186
Transportation	—
Auto Access	15.01347363
Active commuting	6.493006544
Social	—
2-parent households	62.69729244
Voting	2.373925318
Neighborhood	—
Alcohol availability	61.81188246
Park access	30.59155653
Retail density	0.487617092
Supermarket access	26.24149878
Tree canopy	5.530604389
Housing	—
Homeownership	44.65546003
Housing habitability	50.54536122
Low-inc homeowner severe housing cost burden	62.17117926
Low-inc renter severe housing cost burden	96.58668035
Uncrowded housing	12.53689208

Health Outcomes	—
Insured adults	4.234569485
Arthritis	0.0
Asthma ER Admissions	30.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	4.9
Cognitively Disabled	46.5
Physically Disabled	33.4
Heart Attack ER Admissions	7.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	2.7
Elderly	42.6
English Speaking	3.0
Foreign-born	95.4
Outdoor Workers	0.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	71.3
Traffic Density	18.2
Traffic Access	0.0
Other Indices	—
Hardship	91.7
Other Decision Support	—
2016 Voting	17.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	75.0
Healthy Places Index Score for Project Location (b)	9.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Single Decommissioning Phase
Construction: Dust From Material Movement	per reclamation plan. Sum of all material under Hauling table.
Construction: Off-Road Equipment	per reclamation plan. Vibratory Extractors modeled as "Other Construction Equipment"
Construction: Demolition	Per reclamation plan.
Construction: Trips and VMT	per reclamation plan.

E.2 Fuel Use Calculations

Appendix E.2 Fuel Use Calculations

9/13/2024

CO_2 emissions from AQ Calculations:

Conversion	1 MT =	1000 kg

Diesel Sources during Construction	CO_2 Emissions	
Off-road equipment	5153.2	MT
Vendor trucks	67.48	MT
Haul Trucks	38	
TOTAL Diesel Sources =	**5258.68**	**MT**
Convert to kilograms	5.26E+06	kg

Diesel fuel combustion[a] =	10.21	kg CO2/gallon	
Diesel Combustion Rate =	515,051.91	gallons	(over construction period)
Annual Diesel Combustion (39 months) =	158,477.51		
Fresno County Annual consumption =	135,000,000.00		
Percentage of County consumption =	0.12		

Gasoline Sources during Construction	CO_2 Emissions	
Construction workers	1,634.09	MT
TOTAL Gasoline Sources =	1,634.09	MT
Convert to kilograms	1.63E+06	kg

Gasoline fuel combustion[a] =	8.78	kg CO2/gallon	
Gasoline combustion rate =	186,115.03	gallons	(over construction period)
Annual Diesel Combustion (39 months) =	57,266.16		
Fresno County Annual consumption =	347,000,000.00		
Percentage of County consumption =	0.0165		

Gasoline Sources during Operation	CO_2 Emissions	
Employees	59.70	MT
Convert to kilograms	5.97E+04	kg

Gasoline fuel combustion[a] =	8.78	kg CO2/gallon	
Gasoline combustion rate =	6799.54	gallons	(annually during operation)

Diesel Sources during Decommissioning		
	CO_2 Emissions	
Off-road equipment	1285	MT
Haul Trucks	347	MT
TOTAL Diesel Sources =	**1632.00**	**MT**
Convert to kilograms	1.63E+06	kg

Diesel fuel combustion[a] = 10.21 kg CO2/gallon

Diesel Combustion Rate = 159,843.29 gallons (over decommissioning period)

Gasoline Sources during Decommissioning		
	CO_2 Emissions	
Construction workers	46.70	MT
TOTAL Gasoline Sources =	46.70	MT
Convert to kilograms	4.67E+04	kg

Gasoline fuel combustion[a] = 8.78 kg CO2/gallon

Gasoline combustion rate = 5,318.91 gallons (over decommissioning period)

Notes: [a] Emissions factors per The Climate Registry 2021 Default Emission Factors (Table 2.1 - US Default CO2 Emission Factors for Transport Fuels)

CONTRUCTION

Grading 2026

	CO2	MT/yr
Off-road	46.6	
Hauling	0	
Vendor	0	
Worker	1.8	

PV Aray 2026

	CO2	MT/yr
Off-road	141	
Hauling	0	
Vendor	0	
Worker	0	

PV Array 2027

	CO2	MT/yr
Off-road	840	
Hauling	0	
Vendor	0	
Worker	0	

PV Array 2028

	CO2	MT/yr
Off-road	843	
Hauling	0	
Vendor	0	
Worker	0	

PV Array 2029

	CO2	MT/yr
Off-road	840	
Hauling	0	
Vendor	0	
Worker	0	

Access Road 2027

	CO2	MT/yr
Off-road	131	
Hauling	0	
Vendor	0	
Worker	3.29	

OPERATION

Mobile Source Emissions 59.7 MT/yr

Building Energy

Gen Industry 21000

Warehouse 1228007

1249007 kWh/yr

Access Road 2028

	CO2	MT/yr
Off-road	785	
Hauling	19.3	
Vendor	0	
Worker	0	

Access Road 2029

	CO2	MT/yr
Off-road	783	
Hauling	18.7	
Vendor	0	
Worker	0	

BC1 2027

	CO2	MT/yr
Off-road	178	
Hauling	0	
Vendor	15.6	
Worker	0	

BC II 2027

	CO2	MT/yr
Off-road	129	
Hauling	0	
Vendor	2.6	
Worker	129	

BC II 2028

	CO2	MT/yr
Off-road	181	
Hauling	0	
Vendor	15.2	
Worker	758	

BC II 2029

	CO2	MT/project
Off-road	180	
Hauling	0	
Vendor	14.8	
Worker	742	

BC III 2027

	CO2	MT/project
Off-road	60.5	
Hauling	0	
Vendor	15.5	
Worker	0	

BC III 2028

	CO2	MT/project
Off-road	15.1	
Hauling	0	
Vendor	3.78	
Worker	0	

Water (conts.)	540	acre-feet	
	325851	gallons/af	
	175959540	gallons	
	0.0017	kWh/gallon	From CalEEMod Apx G-32
	299131.22	kWh	

Water (ops.)	31	acre-feet	
	325851	gallons/af	
	10101381	gallons	
	0.0017	kWh/gallon	
	17172.348	kWh	
	58233	kWh	other
	75405.348		

Underground Trenching - 2050

	CO2	MT/yr
Off-road	1285	
Hauling	347	
Vendor	0	
Worker	46.7	

Appendix F

Biological Resources Technical Report

Biological Resources Technical Report
Cornucopia Hybrid Project
County of Fresno, California

Assessor's Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S

Project Applicant:
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

Contact: Martin Nascimento, Senior Development Manager

Lead Agency:
Fresno County Department of Public Works and Planning
Development Services Division
2220 Tulare Street, 6th Floor
Fresno, California 93721

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Contact: Angela Wolfe, Senior Project Manager
Michael W. Tuma, PhD, Principal Biologist

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At the request of Cornucopia Hybrid, LLC., (project applicant) FirstCarbon Solutions (FCS) conducted a Biological Resource Technical Report for the proposed Cornucopia Hybrid Project (proposed project). The purpose of this document is to (1) characterize existing and potentially occurring biological resources on the project site and adjacent areas; (2) summarize relevant local, State, and federal regulations; and (3) summarize protocol species surveys performed on the site.

1.1 - Project Location and Setting

The approximately 2,446.46-acre project site is located in an unincorporated area of western Fresno County (County), California. However, only 2,385.11 acres were surveyed and studied.[1] The project site is situated between the City of Coalinga (Fresno County) and the City of Avenal (Kings County) at the base of the eastern slope of the Diablo Range. Interstate 5 (I-5) is located approximately 4 miles east of the project site (Exhibit 1). The project site is bifurcated north to south by State Route (SR) 33 (South Lost Hills Road) and east to west by Sutter Avenue (Exhibit 2). I-5 and SR-33 provide regional access to the project site, while SR-33 and Sutter Avenue provide local access.

The project site is located within portions of eight parcels associated with Assessor's Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S. The project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36, Township 22 South, Range 16 East, Sections 1, 2, and Range 17 East, Section 6 of the *Avenal, California* United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map.

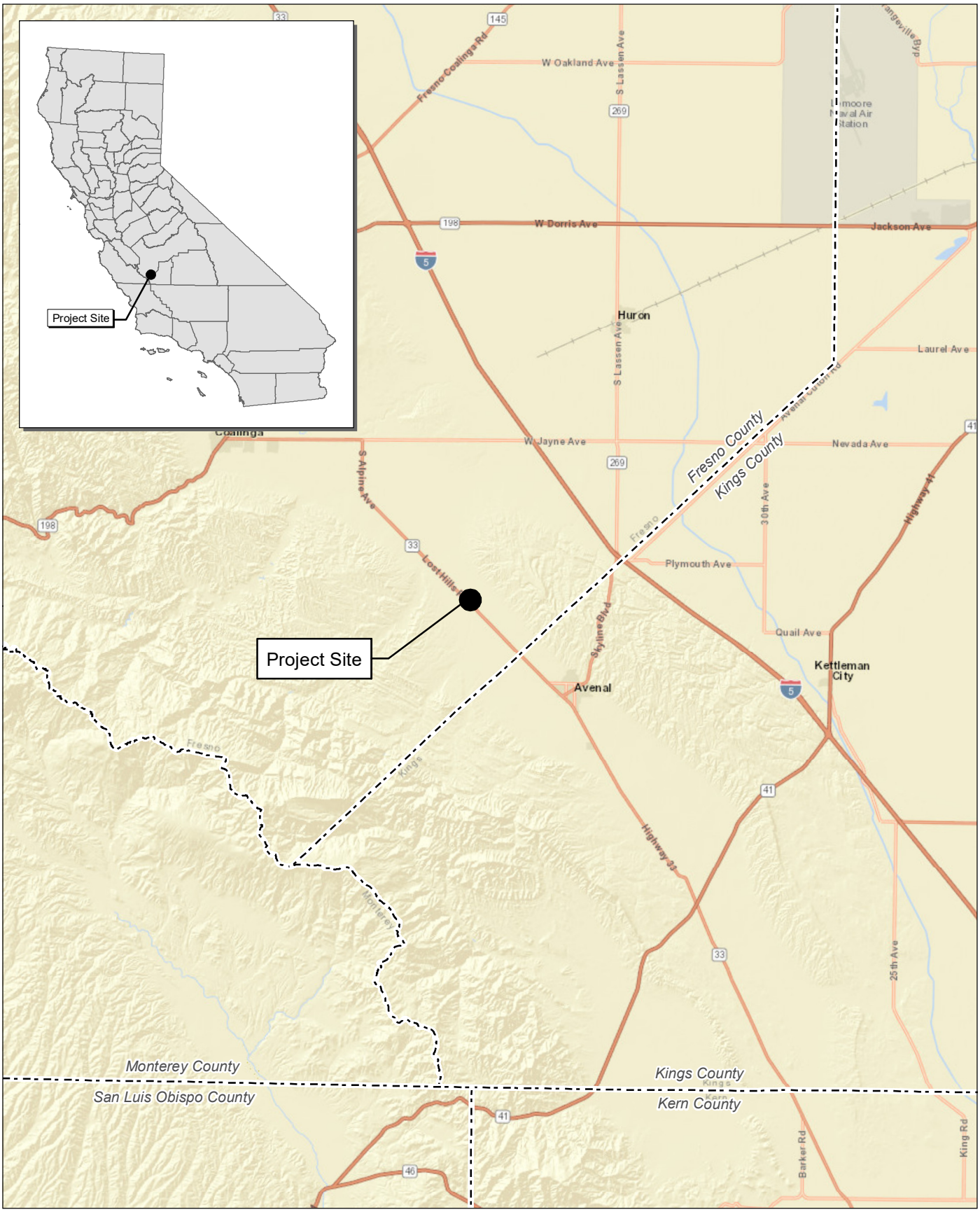
The project site is located in a relatively flat area within the western portion of the San Joaquin Valley. The project site consists of agricultural and vacant, undeveloped land, and is surrounded by vacant land and agricultural land to the north and south, a rural residential area and vacant land to the east, and vacant, undeveloped land to the west. Land uses in the greater vicinity include predominantly undeveloped agricultural lands and some industrial developments. South Lost Hills Road runs through the project site from northwest to southeast, and Sutter Avenue transects the site from north to south.

1.2 - Project Description

The project applicant proposes to construct a new utility-scale, 300 megawatt (MW) solar project consisting of approximately 686,880 solar modules rated at 550 watts (W), a 300 MWac battery storage system and two prefabricated structures, one to be used for maintenance and operation service and the other for control services (Exhibit 3).

[1] Currently, the applicant holds lease agreements on 2,446.46 acres; however, the fenced acreage of the project site is approximately 1,617.89 acres. All equipment would be situated and installed within the boundaries of the fenced area, but this area is subject to change based on the results of environmental surveys. The project site currently contains additional acreage within the northwestern portion of its boundaries that can be utilized if panel areas need to be shifted due to avoidance of identified environmental features. Together, the additional acreage plus the planned acreage totals 2,385.11 acres.

Exhibit 1: Regional Location Map



Source: Census 2000 Data, The California Spatial Information Library (CaSIL). ESRI World Street Map.

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Exhibit 1
Regional Location Map

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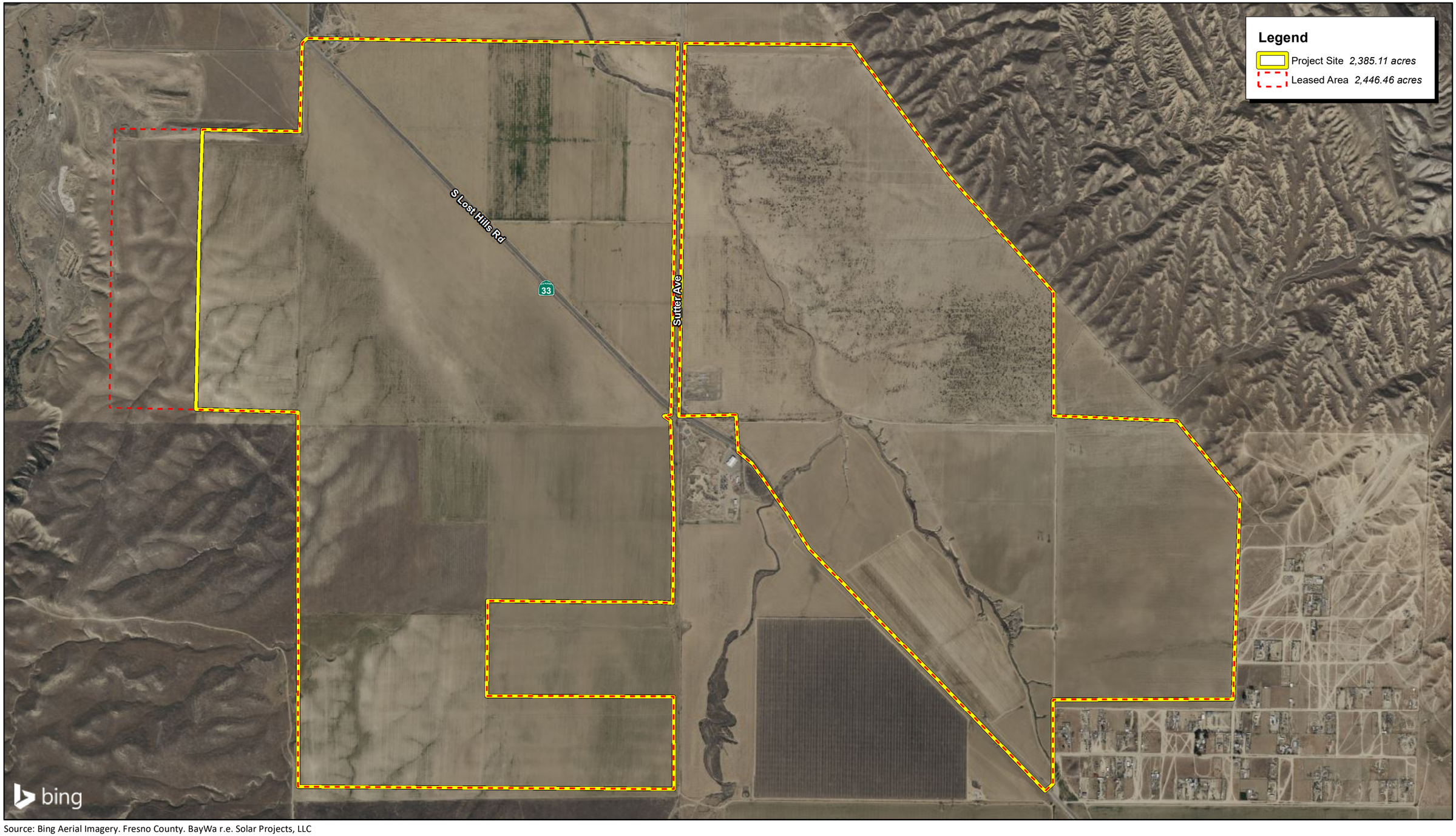

Source: Bing Aerial Imagery. Fresno County. BayWa r.e. Solar Projects, LLC

FIRSTCARBON SOLUTIONS™

1,300 650 0 1,300 Feet

Exhibit 2
Local Vicinity Map

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CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT

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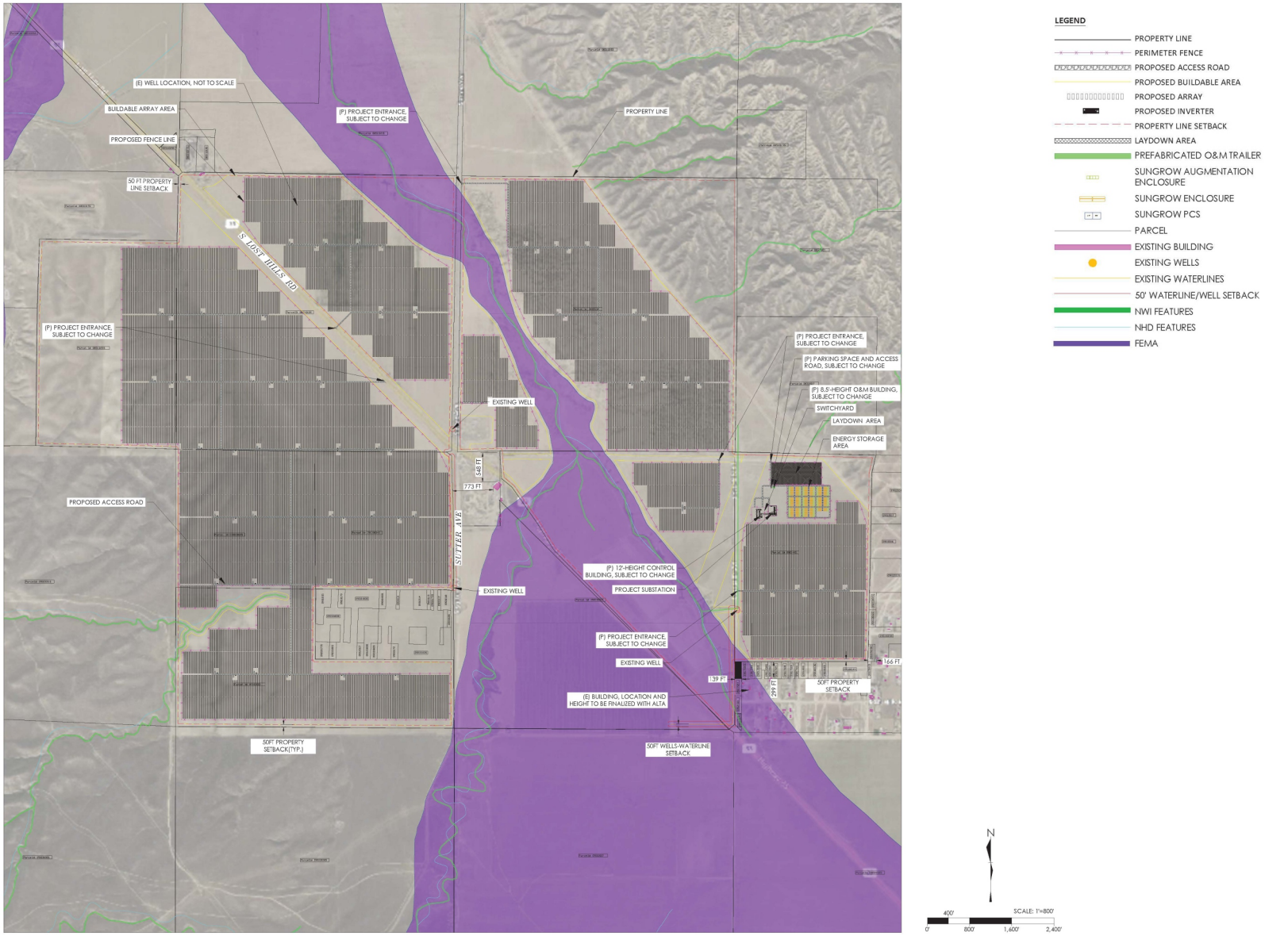

Source: BayWa r.e. Solar Projects, 10/14/23.

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Exhibit 3
Site Plan

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2.1 - Federal

2.1.1 - Endangered Species Act

The United States Fish and Wildlife Service (USFWS) has jurisdiction over species listed as threatened or endangered under the Endangered Species Act. Section 9 of the Endangered Species Act protects listed species from "take," which is broadly defined as actions taken to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." The Endangered Species Act protects threatened and endangered plants and animals and their critical habitat. Candidate species are those proposed for listing; these species are usually treated by resource agencies as if they were actually listed during the environmental review process.

2.1.2 - Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. All migratory birds and their nests are protected from take and other impacts under the MBTA (16 United States Code [USC] § 703, *et seq*.).

2.1.3 - Bald and Golden Eagle Protection Act

The golden eagle (*Aquila chrysaetos*) and bald eagle (*Haliaeetus leucocephalus*) are afforded additional protection under the Eagle Protection Act, amended in 1973 (16 USC § 669, *et seq*.) and the Bald and Golden Eagle Protection Act (16 USC §§ 668–668d).

2.1.4 - Clean Water Act

Section 404

The United States Army Corps of Engineers (USACE) administers Section 404 of the federal Clean Water Act (CWA), which regulates the discharge of dredge and fill material into waters of the United States. The USACE has established a series of nationwide permits that authorize certain activities in waters of the United States if a proposed activity can demonstrate compliance with standard conditions. Normally, USACE requires an individual permit for an activity that will affect an area equal to or greater than 0.5 acre of waters of the United States. A project that results in impacts to less than 0.5 acre of waters of the United States can normally be conducted pursuant to one of the nationwide permits if it is consistent with the standard permit conditions. The USACE also has discretionary authority to require an Environmental Impact Statement for projects that result in impacts to between 0.1 and 0.5 acre. Use of any nationwide permit is contingent on the activities having no impacts on endangered species.

Section 401

As stated in Section 401 of the CWA, "any applicant for a federal permit for activities that involve a discharge to waters of the state, shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act." Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB).

2.2 - State

2.2.1 - CEQA Guidelines

The following CEQA Guidelines Appendix G checklist questions serve as thresholds of significance when evaluating the potential impacts of a proposed project on biological resources. Impacts are considered significant if a project would:

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

2.2.2 - California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA pertains to State-listed endangered and threatened species. CESA requires State agencies to consult with the CDFW when preparing CEQA documents to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code [FGC] § 2080). CESA directs agencies to consult with the CDFW on projects or actions that could affect listed species, directs the CDFW to determine whether jeopardy would occur, and allows the CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows the CDFW to

authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (FGC § 2081).

To comply with the requirements of CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species may be present in the project study area and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may impact a candidate species.

State-listed species are fully protected under the mandates of CESA. "Take" of protected species incidental to otherwise lawful management activities may be authorized under Fish and Game Code Section 206.591. Authorization from the CDFW would be in the form of an Incidental Take Permit.

2.2.3 - California Fish and Game Code

Rare, Threatened, and Endangered Species

Under CESA, the CDFW has the responsibility for maintaining a list of endangered and threatened species (FGC § 2070). Fish and Game Code Sections 2050 through 2098 outline the protection provided to California's rare, endangered, and threatened species. Fish and Game Code Section 2080 prohibits the taking of plants and animals listed under the CESA, and Fish and Game Code Section 2081 established an incidental take permit program for State-listed species. The CDFW maintains a list of "candidate species" which it formally notices as being under review for addition to the list of endangered or threatened species.

Fully Protected Species

Fish and Game Code Sections 3500—5500 outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. The CDFW cannot issue permits or licenses that authorize the take of any fully protected species except under certain circumstances such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock.

Species of Special Concern

In addition to formal listing under the Endangered Species Act and CESA, some species receive additional consideration by the CDFW and local lead agencies during the CEQA process. Species that may be considered for review are those listed as a "Species of Special Concern." The CDFW maintains lists of "Species of Special Concern" that serve as species "watch lists." Species with this status may have limited distributions or limited populations and/or the extent of their habitats has been reduced substantially, such that their populations may be threatened. Thus, their populations are monitored, and they may receive special attention during environmental review. While they do not have statutory protection, they may be considered rare under CEQA and specific protection measures may be warranted. In addition to Species of Special Concern, the CDFW Special Animals

List identifies animals that are tracked by the California Natural Diversity Database (CNDDB) and may be potentially vulnerable but warrant no federal interest and no legal protection.

Other Sensitive Species

Sensitive species that would qualify for listing but are not currently listed are afforded protection under CEQA. CEQA Guidelines Section 15065 (Mandatory Findings of Significance) requires that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines Section 15380 (Rare or Endangered Species) provides for the assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Unlisted plant species on the California Native Plant Society (CNPS) List ranked 1A, 1B, and 2 would typically require evaluation under CEQA.

Native Bird Protection

Sections 3503, 3503.5, and 3513 protect native birds. Under Fish and Game Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any native bird. Under Fish and Game Code Section 3503.5, it is unlawful to take, possess, or destroy any birds in the orders of *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird. Under Fish and Game Code Section 3513, it is unlawful to take or possess any native, migratory bird as designated in the MBTA except as provided by rules and provisions of the MBTA.

Native Plant Protection Act

The Native Plant Protection Act of 1977 (NPPA) (FGC § 1900, *et seq*.) prohibits the taking, possessing, or sale within the State of any plants with a State designation of rare, threatened, or endangered (as defined by the CDFW). An exception to this prohibition in the NPPA allows landowners, under specified circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to come and retrieve (and presumably replant) the plants before they are plowed under or otherwise destroyed. Fish and Game Code Section 1913 exempts from "take" prohibition "the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right-of-way." Project impacts to these species are not considered significant unless the species are known to have a high potential to occur within the area of disturbance associated with construction of the proposed project.

Lake or Streambed Alteration

Fish and Game Code Section 1602 requires any entity to notify the CDFW before beginning any activity that "may substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake" or "deposit debris, waste, or other materials that could pass into any river, stream, or lake." "River, stream, or lake" includes waters that are episodic and perennial and ephemeral streams, desert washes, and watercourses with a subsurface flow. A Lake or Streambed Alteration Agreement will be required if the CDFW determines that project activities may substantially adversely affect fish or wildlife resources through alterations to a covered body of water.

2.2.4 - California Porter-Cologne Water Quality Control Act

The RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, within any region that could affect the water of the State" (Water Code § 13260(a)), pursuant to provisions of the Porter-Cologne Water Quality Act. "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the State" (Water Code § 13050(e)).

2.2.5 - California Native Plant Society Rare Plant Rankings

The CNPS maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Following are the definitions of the CNPS ranks:

- **Rank 1A:** Plants presumed extirpated in California and either rare or extinct elsewhere
- **Rank 1B:** Plants rare, threatened, or endangered in California and elsewhere
- **Rank 2A:** Plants presumed extirpated in California but common elsewhere
- **Rank 2B:** Plants rare, threatened, or endangered in California but more common elsewhere
- **Rank 3:** Plants about which more information is needed
- **Rank 4:** Watch List: Plants of limited distribution

Potential impacts to populations of CNPS ranked plants receive consideration under CEQA review. All plants appearing on the CNPS List ranked 1 or 2 are considered to meet the CEQA Guidelines Section 15380 criteria. Rank 3 and 4 plants do not automatically meet this definition. Rank 4 plants do not clearly meet CEQA standards and thresholds for impact considerations.[2]

2.3 - Regional and Local

2.3.1 - Fresno County Municipal Code

Chapter 13.12, Trees and Shrubs, of the Fresno County Municipal Code contains ordinances regarding the planting and maintenance of trees. Chapter 13.12.020 establishes a master tree list, which includes the variety of trees deemed suitable by the director of public works and planning for planting along the County highways and roads. Chapter 13.12.040 requires permits for trees planting, trimming, or removal and encourages the planting of trees along County highways. Chapter 13.12.050 requires planting in new subdivisions in accordance with the County improvement standards to include trees that provide for energy conservation requirements. Additionally, Chapter 13.12.060 includes requirements for water-efficient landscaping, which encourages the planting of trees.

[2] California Native Plant Society (CNPS). January 21, 2020. Considerations for Including CRPR 4 Plant Taxa in CEQA Biological Resource Impact Analysis. Website: https://www.cnps.org/wp-content/uploads/2020/02/crpr4_technical_memo.pdfAccessed December 12, 2023.

2.3.2 - Fresno County General Plan

The Fresno County General Plan contains goals and policies in the Open Space and Conservation Element concerned with protecting and preserving natural resources and open space areas.[3] These natural resources and open space areas include wetland and riparian areas, fish and wildlife habitat, and vegetation specific goals and policies as they apply to the proposed project.

Goal OS-A To protect and enhance the water quality and quantity in Fresno County's streams, creeks, and groundwater basins.

Policy OS-A.19 **Water Discharge Pollution Mitigation.** The County shall require new development near rivers, creeks, reservoirs, or substantial aquifer recharge areas to mitigate any potential impacts of release of pollutants in storm waters, flowing river, stream, creek, or reservoir waters.

Policy OS-A.20 **Minimization of Sedimentation and Erosion.** The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.

Policy OS-A.21 **Best Management Practices.** The County shall continue to require the use of feasible and practical Best Management Practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.

Goal OS-D To conserve the function and values of wetland communities and related riparian areas throughout Fresno County while allowing compatible uses where appropriate. Protection of these resource functions will positively affect aesthetics, water quality, floodplain management, ecological function, and recreation/tourism.

Policy OS-D.1 **No-Net-Loss Wetlands Policy.** The County shall support the "no-net-loss" wetlands policies of the US Army Corps of Engineers, the US Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

Policy OS-D.2 **Wetland Loss Mitigation.** The County shall require new development to fully mitigate wetland loss for function and value in regulated wetlands to achieve "no-net-loss" through any combination of avoidance, minimization, or compensation. The County shall support mitigation banking programs that provide the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.

[3] County of Fresno. April 2023. Fresno County General Plan EIR – Biological Resources. Website: https://www.co.fresno.ca.us/home/showpublisheddocument/73292/638180979009230000. Accessed December 12, 2023.

Policy OS-D.3 **Adjacent Wetland Protection.** The County shall require development to be designed in such a manner that pollutants and siltation do not significantly degrade the area, value, or function of wetlands. The County shall require new developments to implement the use of Best Management Practices (BMPs) to aid in this effort.

Policy OS-D.4 **Riparian Protection Zones.** The County shall require riparian protection zones around natural watercourses and shall recognize that these areas provide highly valuable wildlife habitat. Riparian protection zones shall include the bed and bank of both low- and high-flow channels and associated riparian vegetation, the band of riparian vegetation outside the high-flow channel, and buffers of 100 feet in width as measured from the top of the bank of unvegetated channels and 50 feet in width as measured from the outer edge of the dripline of riparian vegetation.

Policy OS-D.7 **Wetland and Riparian Plant Management.** The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient storage, and wildlife habitats.

Goal OS-E To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels.

Policy OS-E.1 **Avoid Habitat Loss.** The County shall support efforts to avoid the "net" loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the US Fish and Wildlife Service and the California Department of Fish and Game to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.

Policy OS-E.2 **Construction Buffers.** The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both on-site habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the U.S. Fish and Wildlife Service and/or the California Department of Fish and Wildlife.

Policy OS-E.3 **Wildlife Habitat Protection.** The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the value of the habitat for wildlife is maintained.

Policy OS-E.4 **Wildlife Habitat Management Practices.** The County shall encourage private landowners to adopt sound wildlife habitat management practices, as recommended by the California Department of Fish and Wildlife officials and the U.S. Fish and Wildlife Service.

Policy OS-E.9 **Biological Resource Evaluation.** Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such an evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-E.11 **Water Withdrawal Protection.** The County shall protect significant aquatic habitats against excessive water withdrawals that could endanger special-status fish and wildlife or would interrupt normal migratory patterns.

Policy OS-E.12 **Water Habitat Protection.** The County shall ensure the protection of fish and wildlife habitats from environmentally degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.

Policy OS-E.13 **Habitat Protection.** The County should protect to the maximum extent practicable wetlands, riparian habitat, and meadows since they are recognized as essential habitats for birds and wildlife.

Policy OS-E.17 **Endangered Species Habitat.** The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.

Policy OS-E.18 **Habitat Easements and Regulation.** The County should preserve areas identified as habitats for rare or endangered plant and animal species primarily through the use of open space easements and appropriate zoning that restrict development in these sensitive areas.

Goal OS-F To preserve and protect the valuable vegetation resources of Fresno County.

Policy OS-F.5 **Rare, Threatened, and Endangered Species.** The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a

biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

Policy OS-F.8 **Vegetation for Wildlife.** The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches, and on unused or marginal land for the benefit of wildlife.

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3.1 - Literature and Database Reviews

FCS Biologists conducted a literature review to provide a baseline characterization of biological resources on the project site and in the surrounding area.

3.1.1 - Existing Documentation

As part of the literature review, an FCS Biologist examined existing environmental documentation for the project site and vicinity. This documentation included literature pertaining to the habitat requirements of special-status species with the potential to occur in the project vicinity and federal register listings, protocols, and species data provided by the USFWS and CDFW.

3.1.2 - Topographic Maps and Aerial Photographs

FCS Biologists reviewed current USGS 7.5-minute topographic quadrangle map(s)and aerial photographs as a preliminary analysis of the existing conditions within the project site and immediate vicinity.[4] Information obtained from the topographic maps included elevation, general watershed information, and potential drainage feature locations using Google Earth in conjunction with the United States Environmental Protection Agency (EPA) Watershed Assessment, Tracking, and Environmental Results System (WATERS).[5] Aerial photographs provided a perspective of the current site conditions relative to on-site and off-site land use, plant community locations, and potential locations of wildlife movement corridors.

3.1.3 - Soil Surveys

FCS Biologists also reviewed the United States Department of Agriculture (USDA) Web Soil Survey[6] to establish if soil conditions at the project site are suitable for supporting occurrence of special-status species. This involved reviewing soil mapping units and soil series to evaluate distribution, thickness, arrangement, and other important characteristics that provide habitat for plants and wildlife. In particular, many special-status plant species have limited distributions that are based exclusively on soil types. Additionally, burrowing wildlife require suitable friable soils for excavating burrows. Therefore, FCS Biologists reviewed pertinent USDA soil survey data to determine the existing soil mapping units within the project site and to establish if soil conditions are suitable for supporting special-status species populations.

[4] United States Geological Survey (USGS). 2023. National Geospatial Program. Website: https://www.usgs.gov/core-science-systems/national-geospatial-program/us-topo-maps-america?qt-science_support_page_related_con=4#qt-science_support_page_related_con. Accessed December 12, 2023.

[5] United States Environmental Protection Agency (EPA). 2023. Watershed Assessment, Tracking and Environmental Results System (WATERS). Website: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system. Accessed December 12, 2023.

[6] Natural Resources Conservation Service (NRCS). 2023. Web Soil Survey (WSS). United States Department of Agriculture (USDA). Website: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed December 12, 2023.

3.1.4 - Special-status Species Database Search

FCS Biologists compiled a list of threatened, endangered, and otherwise special-status species previously recorded within the project vicinity based on a search of the USFWS Information for Planning and Consultation (IPaC) database,[7] the CNDDB, and the CNPS Electronic Inventory (CNPSEI) of Rare and Endangered Vascular Plants of California.[8,9] The CNDDB search focused on species records within 5 and 10 miles of the project site. The CNPSEI search focused on records from the *Avenal, California* USGS 7.5-minute Topographic Quadrangle Map and the eight surrounding quadrangles. The CNDDB Biogeographic Information and Observation System (BIOS 6) was used to determine distances between species occurrences and the project site.[10]

The potential for occurrence on the project site was assessed for each of the special-status species identified in the database searches. The assessment of potential for occurrence was based on conditions on the project site, habitat requirements of special-status species, and number of recent (< 20 years old) occurrences in the project vicinity.

3.1.5 - Trees and Native Vegetation

Prior to conducting the reconnaissance-level field survey, FCS Biologists reviewed applicable County ordinances pertaining to tree and native vegetation preservation and protection and ascertained whether measures or permits would be required to remove, replace, or transplant protected trees or native vegetation.

3.1.6 - Jurisdictional Waters and Wetlands

Prior to conducting the reconnaissance-level survey, FCS Biologists reviewed EPA WATERS and aerial photography to identify potential natural drainage features and water bodies.[11]

3.2 - Field Surveys

3.2.1 - Survey Personnel

A general biological survey and vegetation community mapping of the project site was performed by FCS Biologist Kelly Evans and FCS Environmental Analyst Hannah Carney on May 8, 2023, and May 9, 2023, between approximately 9:00 a.m. to 2:00 p.m. and on October 3, 2023, between approximately 9:00 a.m. to 2:00 p.m. Additional focused surveys performed by Colibri Ecological Consulting, LLC are reported under separate cover within Appendix C-E and summarized herein.

[7] United States Fish and Wildlife Service (USFWS). 2023. Information for Planning and Consultation (IPaC). Website: https://ecos.fws.gov/ipac/. Accessed December 12, 2023.
[8] California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed December 12, 2023.
[9] California Native Plant Society (CNPS). 2023. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/. Accessed December 12, 2023.
[10] California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023.
[11] United States Environmental Protection Agency (EPA). 2023. Watershed Assessment, Tracking and Environmental Results System (WATERS). Website: https://www.epa.gov/waterdata/waters-watershed-assessment-tracking-environmental-results-system. Accessed December 12, 2023.

3.2.2 - General Biological Survey

The objective of the general biological survey was to ascertain general site conditions and identify whether existing vegetation communities provide suitable habitat for special-status plant or wildlife species. During this survey, FCS Biologists walked and drove the project site and characterized and mapped vegetation communities, identified and recorded plants and wildlife observed on-site, and recorded evidence of wildlife habitats, including wildlife corridors, nests, dens, or burrows. Special-status or unusual biological resources identified during the literature review were ground-truthed during the field survey for mapping accuracy. Special attention was paid to sensitive habitats and areas potentially supporting special-status floral and faunal species.

Vegetation Communities and Plants

Common plant species observed during the general biological survey were identified by FCS Biologists through visual characteristics and morphology in the field and recorded in a field notebook and on field maps. Uncommon and fewer familiar plants were identified with the use of taxonomical guides, including Jepson eFlora and Calflora.[12,13] Taxonomic nomenclature used in this study follows The Jepson Manual: Vascular Plants of California.[14] Common plant names, when not available from The Jepson Manual, were taken from other regionally specific references. Vegetation community types and boundaries were noted on aerial photos, verified through field observation, and digitized using ESRI ArcGIS software® ArcMap 10.0. By incorporating collected field data and interpreting aerial photography, a map of habitat types, land cover types, and other biological resources within the project site was prepared. Vegetation community and land cover types used to help classify habitat types are based on the Manual of California Vegetation (MCV) and cross-referenced with the CDFW Natural Communities List.[15,16]

Wildlife

FCS Biologists detected wildlife species during the general biological survey by sight, calls, tracks, scat, or other signs were recorded. Notations were made regarding suitable habitat for those special-status species determined to have the potential to occur within the project site.[17] Appropriate field guides were used to assist in species identification during surveys, such as Peterson, Reid, and

[12] Jepson Flora Project (eds.) 2023. Jepson eFlora, https://ucjeps.berkeley.edu/eflora/. Accessed on December 12, 2023.
[13] Calflora. 2020. Calflora: Information on California plants for education, research, and conservation. Website: http://www.calflora.org/. Accessed on December 12, 2023.
[14] Baldwin, B., et al. 2012. The Jepson Manual: Vascular Plants of California. Berkeley: University of California Press. County of San Bernardino (Bernardino). 2007 (amended 2015).
[15] Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento.
[16] California Department of Fish and Wildlife (CDFW). 2022. Natural Communities List, Sacramento: California Department of Fish and Wildlife. July 5, 2022. Website: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities. Accessed December 12, 2023.
[17] California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed December 12, 2023.

Stebbins.[18,19,20] Online resources such as eBird and California Herps were also consulted, as necessary. [21,22]

Wildlife Movement Corridors

Wildlife movement corridors link areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. Urbanization and the resulting fragmentation of open space areas create isolated "islands" of wildlife habitat, forming separated populations. Corridors act as an effective link between populations.

FCS Biologists evaluated the project site for evidence of a wildlife movement corridor during the general biological survey. The scope of the biological resource assessment did not include a formal wildlife movement corridor study utilizing track plates, camera stations, scent stations, or snares. Results are based on the information compiled during the literature review, including aerial photographs, USGS topographic maps, and resource maps for the vicinity; the field survey; and professional experience with the desired topography, habitat, and resource requirements of the special-status species potentially utilizing the project site and vicinity.

[18] Peterson, T.R. 2010. A Field Guide to Birds of Western North America, 4th Edition. Boston: Houghton Mifflin Harcourt.
[19] Reid, F. 2006. A Field Guide to Mammals of North America, Fourth Edition. Boston: Houghton Mifflin Harcourt.
[20] Stebbins, R.C. 2003. A Field Guide to Western Reptiles and Amphibians. Third Edition. Boston: Houghton Mifflin Harcourt.
[21] eBird. 2023. Online bird occurrence database. Website: http://ebird.org/content/ebird/. Accessed December 12, 2023.
[22] California Herps. 2022. A Guide to the Amphibians and Reptiles of California. Website: http://www.californiaherps.com/. Accessed December 12, 2023.

This section summarizes the results of the literature search and general biological reconnaissance survey conducted by FCS Biologists, and summaries of protocol surveys performed by Colibri Ecological Consulting, LLC (Colibri). The results of the sensitive biological resources database reviews and an analysis for the potential for occurrence of these resources on the project site are presented in Section 5. Resumes for FCS Biologists who conducted the work can be found in Appendix A.

4.1 - Literature and Database Reviews

4.1.1 - Environmental Setting

The project site is traversed by Canoas Creek, which runs from the northern portion of the project site to the southeastern portion, where it diverges and continues within drainages that flow south and southeast. The Kettleman Hills, Mantes Canyon, and Zapato Chino Canyon are located east of the project site and the Kreyenhagen Hills are located to the west. The project site ranges in elevation from roughly 689 to 857 feet above sea level[23]. While this area may be generally characterized as leveled fields, open flats, and orchards, it also contains uneven plains with creek over-bank deposits.

Soils

The Natural Resource Conservation Service (NRCS) Web Soil Survey (WSS) mapped 14 soil types within the 2,385.11-acre site (Exhibit 4). These soils are very deep, moderate to well drained soils. The soils that dominate the project site include Cerini, Ciervo clay, Milham, Milham-Guijarral, and Panoche soils. These soil types, and other soils present within the project site and their primary characteristics are summarized in Table 1.

Table 1: Soil Types Present Within the Project Site

Soil Name	Slope	Description	Acres of Project Site (AC)
Milham-Guijarral association	5–15%	The Milham-Guijarral series consists of very deep (more than 80 inches), well drained soils that formed from calcareous sedimentary rock sources. Milham-Guijarral soil is found on fan remnants.	285.54
Guijarral sandy loam	2–5%	The Guijarral series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Guijarral soil is found on fan remnants.	57.44
Yribarren clay loam	0–2%	The Yribarren series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Yribarren soil is found on alluvial fans.	86.48

[23] Google Earth Pro. Version 7.3.6.9345. 2023. Website: https://www.google.com/earth. Accessed December 12, 2023.

Soil Name	Slope	Description	Acres of Project Site (AC)
Panoche loam	0–2%	The Panoche (loam) series consists of very deep, well drained soils that formed from sedimentary rock sources. Panoche soil is found on alluvial fans.	201.85
Panoche sandy loam	0–2%	The Panoche (sandy loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Panoche soil is found on alluvial fans.	149.23
Panoche loam	2–5%	The Panoche (loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Panoche soil is found on alluvial fans.	190.96
Panoche clay loam	0–2%	The Panoche (clay loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Panoche soil is found on alluvial fans.	13.51
Excelsior sandy loam	0–2%	The Excelsior (sandy loam) series consists of very deep, well drained soils that formed from calcareous coarse-loamy sedimentary rock sources. Excelsior soil is found on alluvial fans.	140.75
Milham sandy loam	0–2%	Milham (sandy loam) series consists of very deep, well drained soils that formed from igneous and sedimentary rock sources. Milham soil is found on terraces, fan remnants, plains, and alluvial fans.	233.10
Milham sandy loam	2–5%	Milham (sandy loam) series consists of very deep, well drained soils that formed from igneous and sedimentary rock sources. Milham soil is found on terraces, fan remnants, plains, and alluvial fans.	85.54
Ciervo clay	0–2%	Ciervo (clay) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Ciervo soil is found on fan skirts.	451.91
Cerini sandy loam	0–2%	Cerini (sandy loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Cerini soil is found on alluvial fans.	221.03
Cerini clay loam	0–2%	Cerini (clay loam) series consists of very deep, well drained soils that formed from calcareous sedimentary rock sources. Cerini soil is found on alluvial fans.	265.30
Excelsior, sandy substratum-westhaven association, flooded	0–2%	Excelsior (sandy loam, sandy substratum) series and westhaven (loam) series consist of very deep, well drained soils that formed from calcareous sedimentary rock sources. These soils are found on alluvial fans and flood plains.	2.47

4.2 - Field Surveys

FCS Biologist Kelly Evans and FCS Environmental Analyst Hannah Carney conducted a general biological survey of the project site on May 8, 2023, and May 9, 2023, between 9:00 a.m. to 2:00 p.m. and on October 3, 2023, between 9:00 a.m. to 2:00 p.m. Weather conditions during the May 8 and 9 survey included temperatures ranging between 56°F (degrees Fahrenheit) and 74°F, clear skies, and winds ranging from 8 to 10 miles per hour. Weather conditions during the October 3 survey included temperatures ranging between 56°F and 74°F, clear skies, and winds ranging from 8 to 10 miles per hour.

4.2.1 - Vegetation Communities and Land Use

The project site includes vegetation communities that were influenced by current and past uses, predominantly agricultural development. The vegetation communities and land cover types are described below and depicted on Exhibit 5. Representative photographs of vegetation communities and land cover types observed on the project site can be found in Appendix B.

Fallowed Land/Idle Agriculture

Fallowed land/idle agriculture is the most extensive land cover type present on-site. These lands are agricultural lands that are out of crop rotation and or for which no crops are planted for the current growing season and that are typically maintained by discing. Vegetation on fallowed lands may include annual, weedy species, but more typically these lands are devoid of vegetation following discing efforts. Fallow lands do not typically provide good foraging or breeding habitats for wildlife but allow for dispersal. This community comprises 2,209.60 acres of the project site and 2,481.67 acres of the site and 500-foot buffer.

Historic aerial photography indicates the project site has gone through periods of fallowness as part of its agricultural usage, usually alternating between fallow and cultivated. Previous disturbance events likely included repeated discing and other vegetation control activities associated with agricultural practices.

Very sparse weed vegetation was observed within the fallowed land/idle agriculture during the field survey including black mustard (*Brassica nigra*), London rocket (*Sisymbrium irio*), prickly Russian thistle (*Salsola tragus*), great brome (*Bromus diandrus*), and slender oat (*Avena barbata*).

Dirt Access Roads

Dirt access roads traverse the northwestern, southwestern, and central portions of the project site between areas of fallowed land/idle agriculture and are characterized by bare areas with some ruderal vegetation. Non-native grasses and forbs were observed on the edges of the roads, including London rocket and turkey mullein (*Croton setiger*). This land cover type comprises 5.31 acres of the project site and 11.83 acres of the 500-foot buffer.

Irrigated Crops

Areas within the southern and central portions of the project site consisted of irrigated common wheat (*Triticum aestivum*) crops. Historic aerial photography indicates that this area of the project site is cycled through fallow periods. This land cover type comprises 109.89 acres of the project site and 110.45 acres of the site and 500-foot buffer.

During the field survey conducted by FCS Biologists on October 3, 2023, the Biologists observed that the irrigated cropland had been fallowed sometime within the previous months. No wheat fields or vegetation were present within areas mapped as irrigated cropland during the time of the October survey.

Wild Oats and Annual Brome Grasslands

Wild oats and annual brome grasslands (*Avena* spp.–*Bromus* spp. Herbaceous Semi-Natural Alliance) are present in small areas on the project site but are mostly located within its 500-foot buffer to the east and west of the site. Dominant grass species observed include slender oat and great brome, with small fescue, shining pepper grass, and adobe popcornflower (*Plagiobothrys acanthocarpus*) as co-dominant species. This community comprises 10.81 acres of the project site and 303.06 acres of the site and 500-foot buffer.

Developed Access Roads

Developed access roads land cover areas are characterized by a combination of developed and hardscaped areas, including paved roads, with little or no exposed soil substrates. SR-33 and Sutter Avenue traverse through and adjacent to the project site and are frequently used roadways. Additionally, paved access roads in varying degrees of condition can be found interspersed throughout the central portion of the project area. These roadways have the potential to provide barriers to wildlife movement. This land cover type comprises 20.15 acres of the project site and 32.01 acres of the site and 500-foot buffer.

Developed/Barren

The project site contains a small amount of developed land coverage and the northwestern, southern, and central portions of the 500-foot buffer surrounding the project site contain developed areas with associated barren areas (Exhibit 5). Developments are characterized by a combination of developed and hardscaped areas and manicured vegetation, including street/shade trees, lawns, and shrubs, and barren/exposed soil substrates. Irrigation and fertilization allow for tropical and other non-native and ornamental species to flourish in these developed areas. Trees are often grown in a spaced pattern with an open understory. These conditions provide habitat to a low diversity of wildlife that are tolerant of human-modified environments. The developed/barren land uses adjacent to the project site include a trailer park to the southeast, a car scrap lot within the center of the site, a homestead to the northwest, and an abandoned structure in the far northwestern corner of the site. No landscaping is present in the developed/barren areas, though weedy, ruderal species were evident in these areas along with ornamental vegetation including poplar trees (*Populus* spp.),

eucalyptus (*Eucalyptus globulus*), and oleander bushes (*Nerium oleander*). 2.63 acres of developed land are present in the project site and 76.13 acres are present in the site and 500-foot buffer.

Pistachio Orchard

A 22.57-acre orchard is located within the 500-foot buffer area south of the project site. No portion of the orchard is located within the project site boundaries. The irrigated orchard consists of pistachio (*Pistacia vera*). The trees are arranged in rows and the orchards are actively managed, with sparse herbaceous understory plant cover that consists of sparse ruderal vegetation.

Black Poplar Hedgerow

A hedgerow of ornamental black poplar trees (*Populus nigra*) is located along the southern project site boundary, adjacent to the pistachio orchard. The black poplar trees are arranged in a single 1,500-foot-long hedgerow, dividing fallowed land, within project site boundaries, and the adjacent pistachio orchard south of the project site. The hedgerow comprises 0.51 acre within the 500-foot buffer.

Ephemeral/Intermittent Streams

Canoas Creek, as well as Garza Creek and an unnamed intermittent stream that flow into Canoas Creek, traverse the project site through the northern section of the site to the southeastern section. Several short, ephemeral tributaries to Canoas and Garza Creek are present throughout the project site. Two isolated ephemeral streams are present in the southwestern portion of the site. Canoas Creek and Garza Creek contain flowing water seasonally, whereas the ephemeral tributaries and streams likely contain flowing water only for a short duration after rain events. All streams were dry during Colibri's Jurisdictional Delineation field survey conducted on September 14 through September 15.

Canoas Creek originates on the north slope of Black Mountain, 1.25 miles west of Zwang Peak in the Diablo Range. From there, the creek runs almost directly northeast through Reef Ridge and the Kreyenhagen Hills, where it flows into the northern portion of the Kettleman Plains and terminates 7.1 miles northwest of Avenal and 3,000 feet east of Zapato Chino Creek. These aquatic features are sparsely vegetated, with isolated salt cedars (*Tamarix ramosissima*) and red willows (*Salix laevigata*). Herbaceous vegetation present in the creek includes slender oat, wall barley (*Hordeum murinum*), and great brome. There are 26.72 acres of ephemeral/intermittent streams within the project site and 30.39 acres within the project site and 500-foot buffer.

Ruderal

Ruderal habitat is classified as areas that have been physically disturbed (by previous legal human activity) and are no longer recognizable as a native or naturalized vegetation association but continue to retain a soil substrate. Typically, if any vegetation is present, it is nearly exclusively composed of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance or show signs of past or present animal usage that precludes them from providing viable natural habitat for uses other than dispersal. Examples of ruderal land include areas that have been graded, land that is repeatedly cleared for fuel management purposes and/or

experienced repeated use that prevents natural revegetation (i.e., dirt parking lots, trails that have been present for several decades), recently graded firebreaks, graded construction pads, construction staging areas, off-road vehicle trails, and old home-sites. Ruderal areas are not present within the project boundary and comprises 38.41 acres of the 500-foot buffer. Areas of ruderal habitat present within the project site are primarily located within the central portion of the site west of SR-33. Disturbance within the ruderal habitat has eliminated native vegetation. Vegetation that was present within this habitat type includes Russian thistle (*Salsola tragus L*), annual bursage (*Ambrosia acanthicarpa*), great brome, slender wild oat, prickly lettuce (*Lactuca serriola*), and California broomsage (*Lepidospartum squamatum*).

4.2.2 - Wildlife

The vegetation community and land cover types on the project site provide habitat for wildlife species that are tolerant of agricultural lands. Wildlife activity during the general biological reconnaissance survey was low and few species were observed. The following discussions regarding the wildlife species observed or expected to occur within the project site are organized by taxonomic group. No special-status wildlife species were observed during the survey.

Invertebrates

Several invertebrates were observed during the survey, including ladybugs (*Coccinellidae* sp.), flies (Dipterans), darkling beetle (Tenebrionidae), margined burying beetle (*Nicrophorus marginatus*), cabbage white butterfly (*Pieris rapae*), painted lady butterfly (*Vanessa cardui*), crickets (*Gryllus* sp.), common yellow butterfly (*Colias croceus*), carpenter ant (*Camponotus* sp.), and Johnson's jumping spider (*Phidippus johnsoni*). Other species that are likely to occur at the site year-round or during seasonal pulses include several species of beetles, flies, ants, bees, wasps, moths and butterflies, grasshoppers and crickets, and spiders and tarantulas, among others. These invertebrates may find habitat throughout the project site on bare ground, grasses, shrubs, trees, and on buildings adjacent to the site.

Amphibians and Fish

No amphibian or fish species were observed on-site during the general biological reconnaissance surveys. Although the project site is adjacent to Canoas Creek, the lack of permanent or sufficient water sources precludes the presence of fish and amphibians within the creek and adjacent project site.

Reptiles

No reptiles were observed on the project site. Common species that could occur include western side-blotched lizard (*Uta stansburiana elegans*) and San Joaquin fence lizard (*Sceloporus occidentalis biseriatus*).

Birds

Several avian species were observed during the survey, including common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), western kingbird (*Tyrannus verticalis*), Say's phoebe (*Sayornis saya*), mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), and rock pigeon

(*Columba livia*). Other bird species expected to occur on-site include common species typical of the region and tolerant of anthropogenic activities and features such as northern mockingbird (*Mimus polyglottos*), lesser goldfinch (*Spinus psaltria*), and non-native species such as Eurasian collared-dove (*Streptopelia decaocto*).

Mammals

Three mammal species were observed on-site during the field survey, including California ground squirrel (*Otospermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), and valley pocket gopher (*Thomomys bottae*). Numerous burrows of California ground squirrel were observed throughout the project site.

4.2.3 - Wildlife Movement Corridors

Much of the project site consists of agricultural/fallow lands, but it is mostly surrounded by grasslands, fallowed agricultural land, hills, and developments such as buildings, agriculture, roads, and highways. SR-33 and Sutter Avenue run adjacent to the project site and are frequently used roadways. Additionally, paved access roads in varying degrees of condition can be found interspersed throughout the central portion of the project area. These roads and other developments in the project vicinity likely limit wildlife movement through the project site. The project site is traversed by Canoas Creek, which can serve as a wildlife movement corridor for a variety of species, such as common raven, mourning dove, coyote (*Canis latrans*), and desert cottontail, among others.

4.2.4 - Nesting Birds

The project site contains vegetation that could provide suitable nesting habitat for bird species protected under the MBTA and the Fish and Game Code. These species include burrowing owls and other native avian species. If project-related construction activities would result in the removal of trees within the project site, it is recommended that tree removal take place outside of the nesting season in the event trees are not identified as protected within Chapter 13.12 of the Fresno County Municipal Code.

4.2.5 - Protocol Species Survey Summaries

Colibri conducted protocol surveys for Swainson's hawk (Appendix C) and burrowing owl (Appendix D). The results of these studies are summarized below.

Swainson's Hawk Surveys

Swainson's hawk surveys were performed on the project site and its 0.5-mile buffer between April and July 2023 in accordance with the Swainson's Hawk Technical Advisory Committee's Recommended Timing and Methodology for Swainson's Hawk Surveys in California's Central Valley (2000). Several Swainson's hawks were observed foraging during the April 6, 2023 survey. Suitable nesting trees, including willows (*Salix* sp.), tamarisk (*Tamarix* sp.), eucalyptus (*Eucalyptus* sp.), and cottonwoods (*Populus fremontii*) were observed in the 0.5-mile buffer surrounding the project site. No Swainson's hawk nests were observed within the survey area during the 2023 nesting season.

Burrowing Owl Surveys

Breeding season burrowing owl surveys were performed on the project site and its 0.5-mile buffer between April and June 2023 in accordance with the CDFW (2012) Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium (1997) Burrowing Owl Survey Protocol and Mitigation Guidelines.[24] Over 300 burrows suitable for burrowing owl occupancy were recorded on the project site. Three burrows exhibited sign of previous burrowing owl occupancy, including old whitewash and pellets. No burrowing owls or fresh sign were observed during the 2023 field survey season.

4.2.6 - Jurisdictional Delineation

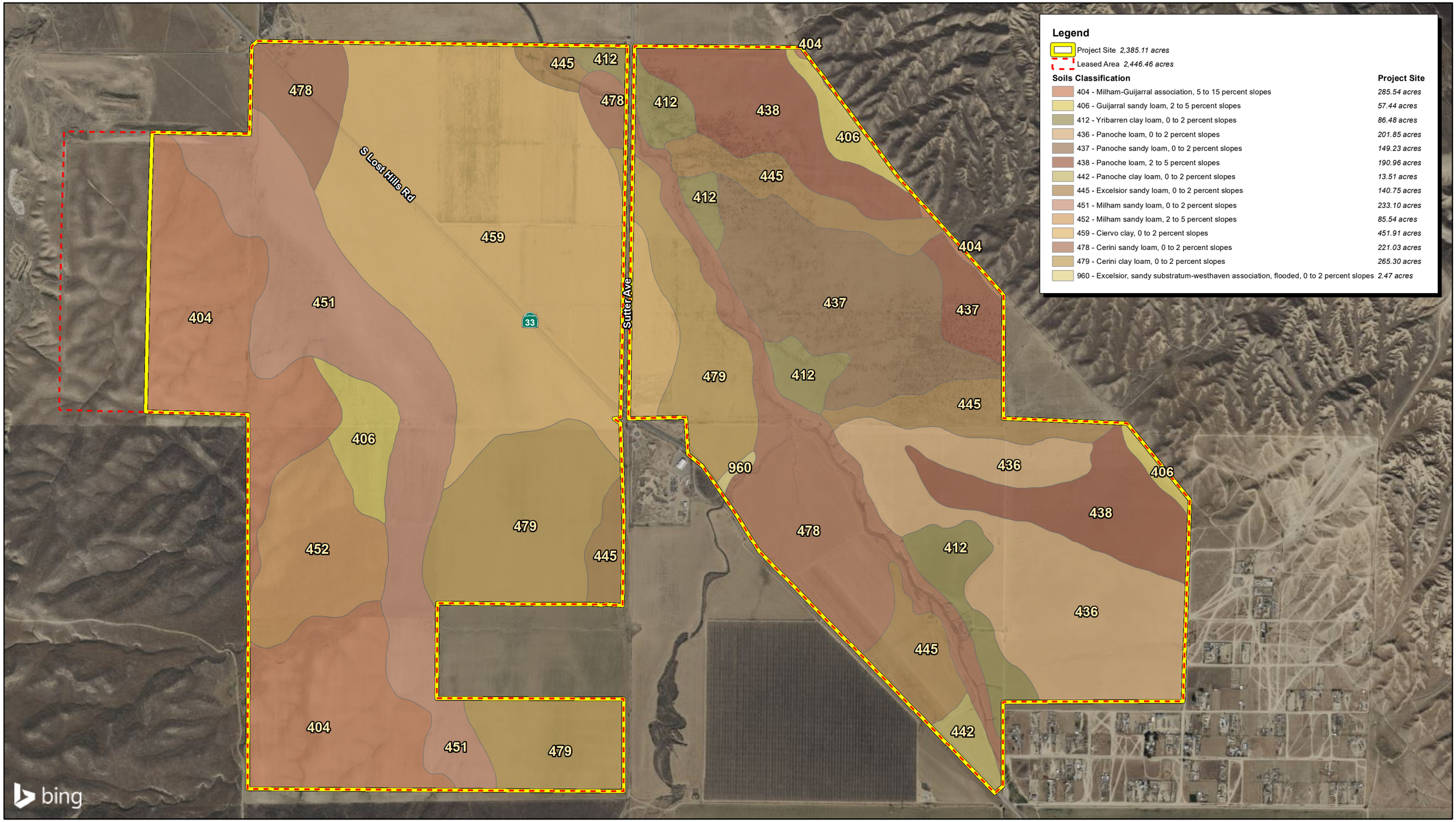
Colibri conducted a jurisdictional delineation of Canoas Creek, Garza Creek, and intermittent and ephemeral streams on and adjacent to the project site (Appendix E). The results of this study are summarized below.

The delineation study was based on a desktop review and field verification conducted on September 14, 2023, and September 15, 2023, in accordance with A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) of the Arid West Region of the Western United States[25]. The delineation of the project site documented 27.05 acres of aquatic resources at top of bank jurisdictional limits and 12.68 acres of aquatic resources at OHWM jurisdictional limits. Several ephemeral drainages reach project site boundaries but do not extend onto the project site. Because of the lack of a defined bed and bank, lack of hydrologic indicators, and lack of hydrophytic vegetation, these ephemeral drainage features do not meet the definition of a stream on the project site and would not be subject to regulation by the USACE, RWQCB, and the CDFW.

All streams delineated on the project site are discontinuous and do not have a downstream connection to a water of the United States. Therefore, they would not be regulated by the USACE under Section 404 of the CWA. Canoas Creek, Garza Creek, their associated tributaries, and erosional channels, and two isolated ephemeral streams all included defined bed and bank, and would therefore be under the jurisdiction of the CDFW. These features also contain surface water, either seasonally (e.g., Canoas Creek) or presumably in direct response to rain event (e.g., the ephemeral streams), and would therefore also be under the jurisdiction of the RWQCB. Surface water was not directly observed in any feature during the jurisdictional delineation, which was performed during the dry season.

[24] California Burrowing Owl Consortium. 1997. Burrowing owl survey protocol and mitigation guidelines. Pages 171-177 in Lincer, J. L. and K. Steenhof (editors) The Burrowing Owl, its biology and management: Proceedings of the First International Symposium. Raptor Research Report Number 9.

[25] Lichvar, R. and McColley, S. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: a delineation manual. Website: https://erdc-library.erdc.dren.mil/jspui/bitstream/11681/5308/1/CRREL-TR-08-12.pdf.



Source: Bing Aerial Imagery. BayWa r.e. Solar Projects, LLC. USDA Web Soil Survey, Fresno Western.

FIRSTCARBON SOLUTIONS™

1,300 650 0 1,300 Feet

Exhibit 4
Soils Map

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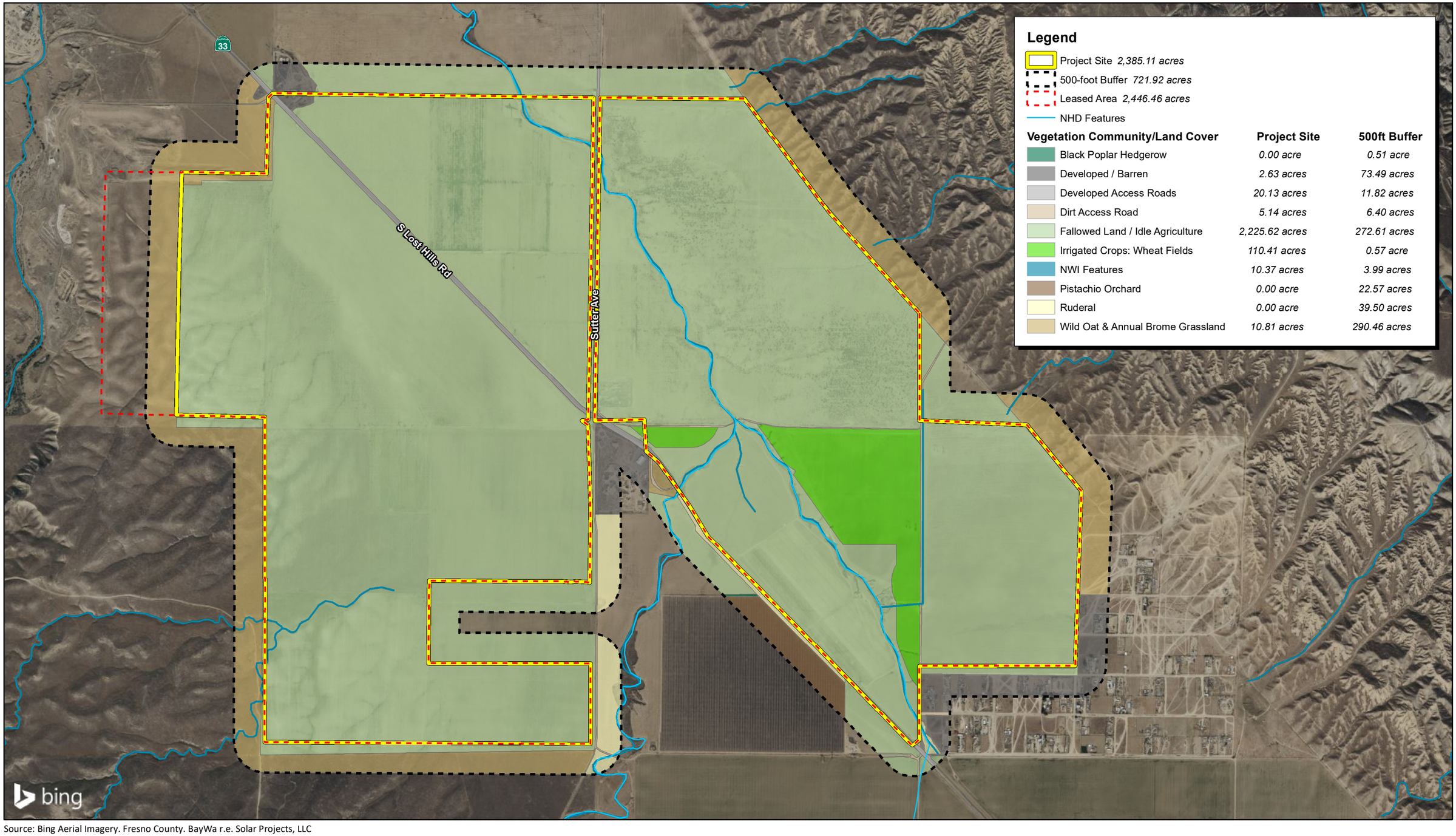
CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT



Source: Bing Aerial Imagery. Fresno County. BayWa r.e. Solar Projects, LLC

FIRSTCARBON SOLUTIONS™

1,500 750 0 1,500 Feet

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Exhibit 5
Land Cover and Vegetation

CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
BIOLOGICAL RESOURCES TECHNICAL REPORT

SECTION 5: SENSITIVE BIOLOGICAL RESOURCES DATABASE REVIEWS

The following section discusses the results of the database reviews for sensitive biological resources and an analysis of the potential for these resources to occur on the project site based on existing biological conditions on and adjacent to the site.

5.1 - Sensitive Natural Communities

Sensitive natural communities are vegetation communities or special wildlife habitats that are rare or occur in limited distributions or provide specific habitat requirements for special-status plant or wildlife species. The CDFW maintains a list of natural vegetation communities found in California and ranks them based on rarity. Communities ranked S1-S3 are considered sensitive natural communities.[26] There are no sensitive natural communities on or directly adjacent to the project site.

5.2 - Special-status Plant Species

Within 10 miles of the project site, 34 special-status plant species have been recorded in the CNDDB,[27,28] on the nine-quadrangle search area of the CNPSEI,[29] and in the IPaC query results (Appendix F, Table 1). Table 1 in Appendix F includes the species' status, required habitat, and a summary analysis of the potential for each species to occur on the project site. The potential for occurrence of a species was based on current biological conditions on the project site and presence of suitable habitats, soil types, and proximity and number of occurrences recorded in the CNDDB.[30,31,32] Long-term use of the area for agricultural production and associated previous surface disturbances evident throughout the project site have lowered the potential for persistence and occurrence of populations of many special-status plant species.

5.2.1 - Potential for Occurrence of Special-status Plants

The project site is predominantly undeveloped but has been previously subjected to significant surface disturbances, including repeated disking or grubbing during agricultural production and weed abatement activities during fallow land cycling. The majority of the project site consists of fallow lands, with the exception of the southeastern portion of the project site, where cultivated wheat fields were in production at the time of the biological survey. The project site is mostly

[26] California Department of Fish and Wildlife (CDFW). 2022. Natural Communities List, Sacramento: California Department of Fish and Wildlife. July 5, 2022. Accessed December 12, 2023.
[27] California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed December 12, 2023.
[28] California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023.
[29] California Native Plant Society (CNPS). 2023. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/. Accessed December 12, 2023.
[30] California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed December 12, 2023.
[31] California Native Plant Society (CNPS). 2023. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/. Accessed December 12, 2023.
[32] California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023.

surrounded by undeveloped grassland, fallowed agricultural land, sparse developments, hillsides, and Canoas Creek. Because of the intensive agricultural development on and adjacent to the project site, all special-status plants that occur in the region were assessed as having no potential for occurrence (Appendix F, Table 1).

5.3 - Special-status Wildlife Species

Thirty-two special-status wildlife species were identified as occurring within 10 miles of the project site as recorded in the CNDDB[33,34] and the USFWS IPaC[35] review (Appendix F, Table 2). Table 2 in Appendix F includes the legal status of each species, their required habitat types and features, and their potential to occur on the project site. The table also includes special-status wildlife species that have been determined to have no or low potential to occur on-site, primarily based on the project site being situated outside of the range of the species, or absence of suitable habitat on the project site, or the lack of recent records in the project vicinity, along with other justification(s) for their exclusion from further discussion. Special-status wildlife species with moderate to high potential to occur on-site are analyzed further below. The potential for wildlife to occur on the project site was based on presence of suitable habitats and proximity and recency of occurrences recorded in the CNDDB.[36,37]

5.3.1 - Potential for Occurrence of Special-status Wildlife

Most species with records in the project vicinity were assessed as having no or low potential to occur because the project site is outside of the known distributional range of the species or because the project site does not support suitable habitat (Appendix F, Table 2). These species are not discussed further. Swainson's hawk, burrowing owl, and San Joaquin kit fox were assessed as having moderate potential to occur on or adjacent to the project site. These species are discussed further below.

Swainson's Hawk

Swainson's hawk is a hawk in the family Accipitridae. This species is a neotropical migrant that breeds in the western United States and Canada and winters in South America as far south as Argentina. The breeding season for Swainson's hawk in the Central Valley typically lasts from March to the end of July.[38] They typically forage in open grasslands and have become increasingly dependent on agriculture, especially alfalfa crops, as native communities are converted to agricultural lands. Swainson's hawk often nest near riparian woodlands. They will also use lone trees

[33] California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed December 12, 2023.
[34] California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023.
[35] United States Fish and Wildlife Service (USFWS). 2023. Information for Planning and Consultation (IPaC). Website: https://ecos.fws.gov/ipac/. Accessed December 12, 2023.
[36] California Department of Fish and Wildlife (CDFW). 2023. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed December 12, 2023.
[37] California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023.
[38] California Department of Fish and Wildlife (CDFW). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee. Sacramento, California. May 31, 2000. Website: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83990&inline. Accessed December 12, 2023.

in agricultural fields or pastures and roadside trees that are adjacent to suitable foraging habitat.[39] The Swainson's hawk is listed as Threatened under CESA. Their nests are additionally protected by the MBTA and California Fish and Game Code pertaining to native nesting avian species. The project site lacks suitable nesting trees, but suitable nesting habitat is located in the project vicinity, including the black poplar hedgerow located south of and within 500 feet of the project site and other trees associated with a residential development and riparian areas within 0.5-mile of the project site. There is one recent and one historical record between 5 and 10 miles from the project site (Exhibit 6).[40] Additionally, this species has been documented within 5 miles of the project site as recently as 2015.[41] Several Swainson's hawks were observed foraging over the project site during a Swainson's hawk survey performed in April, 2023 (Appendix C).

Burrowing Owl

The burrowing owl is an owl in the family *Strigidae*. Burrowing owls occur in open, dry, annual, or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. This species utilizes, modifies, and nests in burrows created by other species, most notably those of the California ground squirrel but also those excavated by coyotes, San Joaquin kit foxes, American badgers, and other burrowing mammals. Burrowing owl populations are threatened by habitat loss, pesticide use, and ground squirrel eradication programs, which limit suitable burrowing habitat. The burrowing owl is designated as a California Species of Special Concern and a federal Bird of Conservation Concern. Their nesting burrows are protected by the MBTA and California Fish and Game Code pertaining to native nesting avian species.

Potentially suitable foraging, breeding, and nesting habitats are present in the wild oats and annual brome grasslands adjacent to the project site. This vegetation community present within a 500-foot buffer of the east and west project site boundaries. Fallow lands on the project site could, under certain conditions, provide suitable habitat for burrowing owl occupancy. Vegetation on fallow lands may include annual, weedy species, providing open habitat that is preferred by burrowing owls. Fallowed lands that are regularly disked are typically devoid of California ground squirrel burrows. In this situation, fallow lands may provide marginal foraging habitat for burrowing owls, but no burrowing opportunities. However, if these areas become inhabited by California ground squirrels, they may become suitable for occupancy by burrowing owls. The closest CNDDB occurrence of this species is approximately 1.8 miles from the project site. There are two recent records within 5 miles of the project site and three recent and six historical records between 5 and 10 miles from the project site (Exhibit 6).[42] Three burrows with burrowing owl sign (whitewash, pellets) were observed on the project site during burrowing owl surveys performed on the project site in 2023 (Appendix D).

[39] California Department of Fish and Wildlife (CDFW). 2024. Swainson's Hawks in California. Website: https://wildlife.ca.gov/Conservation/Birds/Swainson-Hawks. Accessed December 12, 2023.
[40] California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023.
[41] eBird. 2023. Online bird occurrence database. Website: http://ebird.org/content/ebird/. Accessed December 12, 2023.
[42] Ibid.

San Joaquin Kit Fox

The San Joaquin kit fox occurs from the San Joaquin Valley, north to Contra Costa and Alameda Counties. The San Joaquin kit fox inhabits grasslands and open shrub and scrub habitats.[43] Largely due to widespread habitat loss, the San Joaquin kit fox is listed by the USFWS as endangered and by the CDFW as threatened.

Suitable habitat for this species is present within grassland and shrubland habitat adjacent to the project site. Wild oats and annual brome grasslands present within the 500-foot buffer of the east and west project site boundaries comprise suitable habitat for this species. The project site consists mainly of fallow land that, when regularly disked, discourages kit foxes from burrowing in these areas. Thus, there is a low potential for San Joaquin kit fox to occupy burrows or breed on-site. However, CNDDB occurrences have been recorded as close as 0.5 mile of the project site. There are nine historical records within 5 miles of the project site and one recent and 14 historical records between 5 and 10 miles from the project site (Exhibit 6).[44] Therefore, there is a moderate potential for San Joaquin kit fox to forage on the project site.

[43] Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. California's Wildlife. Vol. I-III. California Depart. of Fish and Game, Sacramento, California.

[44] California Department of Fish and Wildlife (CDFW). 2023. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023.

CNDDB version 01/2024. Please Note:
The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area.

Legend

- Project Site

CNDDB Symbology

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)
- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)

Source: Bing Street Imagery. California Natural Diversity Database (CNDDB), January 2024.

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8 4 0 8 Miles

Exhibit 6
CNDDB Special-Status Species Occurrences

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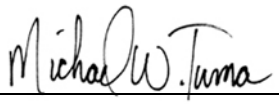
SECTION 6: CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this Biological Resources Technical Report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: March 4, 2024 Signed: 

Michael W. Tuma, PhD, Principal Biologist
FirstCarbon Solutions
7726 N. First Street, #431
Fresno, CA 93720
714.508.4100

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Appendix A:
Personnel Qualifications

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MICHAEL TUMA, PHD, CWB, RPA—SENIOR BIOLOGIST

OVERVIEW

- More than 26 years of experience
- Experience leading teams in large data collection and analysis efforts

Education

- Doctor of Philosophy, Integrative and Evolutionary Biology, University of Southern California, Los Angeles, CA, 2016
- Master of Science, Anthropology, University of Southern Mississippi, Hattiesburg, MS, 1998
- Master of Science, Zoology, Eastern Illinois University, Charleston, IL, 1993
- Bachelor of Science, Zoology, Truman State University, Kirksville, MO, 1991

Permits, Authorizations, and Certifications

- Certified Wildlife Biologist, The Wildlife Society, 2013–present
- Certified Significant Ecological Areas Technical Advisory Committee (SEATAC) Biota Report Preparer, Los Angeles County Department of Regional Planning, 2008–present
- Qualified Biologist, San Bernardino County, 2007–present
- Authorized Biological Consultant, Riverside County, 2006–present
- Authorized Biologist for Agassiz's desert tortoise activities under 10(a)1(A) Recovery Permits (former) and Biological Opinions, US Fish and Wildlife Service (USFWS), August 2005–present
- California Scientific Collecting Permit/California Endangered Species Act (ESA)-Memorandum of Understanding, California Department of Fish and Wildlife (CDFW), August 2005–present

Trainings and Workshops

- ArcGIS Training Courses, Esri Academy, 2016–present
- Desert Tortoise Health Assessments for Translocation Projects, Desert Tortoise Council, 2015
- CEQA Workshop, Association of Environmental Professionals, 2008
- Endangered Species: Regulation, Conservation Planning, and Permits for Development, University of California, Los Angeles Extension, 2008
- Desert Tortoise Health Assessment and Phlebotomy Training, US Geographical Survey (USGS), 2007
- Endangered Species Permitting: Strategies and Successful Negotiations Workshop, The Wildlife Society, 2006
- A/E/C Project Management Bootcamp, PSMJ Resources, Inc., 2006
- Introduction to CEQA: A Step-by-Step Approach Workshop, SCWA, 2005
- Western Pond Turtle Workshop: Ecology and Conservation, The Wildlife Society, 2005
- Surveying, Monitoring, and Handling Techniques Workshop, Desert Tortoise Council, 2004

Professional Affiliation

- Adjunct Professor, University of Southern California, March 2019–present
- Chair, Board of Directors, Desert Tortoise Council, February 2018–February 2020
- Chair, Media Committee, Desert Tortoise Council, June 2017–present
- Chair, Grants Committee, Desert Tortoise Council, January 2016–present
- Board of Directors Member, Desert Tortoise Council, January 2014–present
- Newsletter Editor, Desert Tortoise Council, January 2014–January 2018

FIRSTCARBON SOLUTIONS™

MICHAEL TUMA, PHD, CWB, RPA—SENIOR BIOLOGIST

Michael Tuma, PhD, CWB, RPA, has more than 26 years of experience as a professional scientist in academic settings, agency positions, and as an environment consultant. He assists clients in complying with laws such as the ESA, the National Historic Preservation Act, CEQA, and NEPA. He has experience in a wide variety of technical biological work, including rare plant surveys and botanical inventories, habitat restoration planning and implementation, field data collection, population and habitat modeling, and technical biological reporting. He is a proficient project and client manager with experience in a diversity of market sectors, including land management, renewable energy, transportation, water infrastructure, gas and mineral extraction, and land development. Dr. Tuma has led teams in the implementation of studies and documentation in support of permitting and compliance with numerous environmental laws, including the Federal Endangered Species Act, California Endangered Species Act, NEPA, CEQA, and Migratory Bird Treaty Act, among many others. Dr. Tuma is an experienced leader and has supervised and mentored groups of biologists. He has directed teams on large and long-term projects and mentored junior staff on issues pertaining to project management, technical studies and documentation, and regulatory processes. He has led and mentored large groups of volunteers and international biologists on learning advanced data collection techniques and has experience leading a non-profit organization with more than 350 members. Dr. Tuma is skilled in project management, statistics, geographic information systems (GIS), and computer modeling. He has a passion for educating the public about science, and has been providing tutoring sessions, workshops, and lectures for more than 20 years.

RELATED EXPERIENCE AND CLIENT SUMMARY

Biological, Archaeological, and Paleontological Monitoring and Reporting Services for the Los Angeles Regional Interoperable Communications System, Los Angeles County, CA

FCS provided monitoring and reporting services during the construction of more than 150 land mobile radio (LMR) facilities at sites located primarily in Los Angeles County. The LMR sites contain the infrastructure and equipment necessary to provide voice communications coverage throughout the County for emergency responders. These locations are widely dispersed across the County in both urban (intensively developed) and rural (less developed) settings and include coastal locations, sites in downtown Los Angeles, remote mountain peaks across the County, and the northern high desert. FCS conducted the biological, archaeological, and paleontological pre-construction and construction monitoring and reporting services in accordance with the Construction Management Requirements outlined in the NEPA Environmental Assessment that FCS prepared for the project.

Dr. Tuma served as Biological Monitor for this project in 2020. His responsibilities included implementing mitigation measures and ensuring project compliance in support of the LA-RICS LMR System in Los Angeles County, California. Dr. Tuma monitored project for compliance for up to 33 mitigation measures, including performing clearance surveys for special status species, pre-construction nesting bird surveys, and several measures pertaining to California condor (*Gymnogyps californianus*) conservation, including condor hazing.

Other Relevant FCS Projects

- Port of Los Angeles Industrial Project Bird's Nest Survey, City of Los Angeles, CA
- Alton Parkway Logistics Facility Project IS/MND and Technical Studies, City of Irvine, CA
- Quick N Clean Car Wash Project IS/MND and Technical Studies, City of Adelanto, CA
- Bridge Point Peer Review of EIR and Technical Reports, City of Rancho Cucamonga, CA

- Redlands Residential Project Biological and Cultural Due Diligence, City of Redlands, CA
- Lilac Avenue Warehouse Due Diligence Memoranda, City of Rialto, CA
- Barton Road Logistics Center Project EIR, Technical Studies, and Peer Review, City of Colton, CA
- Griswold Residential Project Constraints Analysis, Unincorporated Los Angeles County, CA

Prior Work Experience

Santa Susana Field Laboratory, Boeing (through contract with MWH Americas, Inc.), Ventura County, CA

Dr. Tuma served as the Project Manager for this project between 2006 and 2008. Under one task he designed and conducted field investigations on the extent and size of Braunton's milk-vetch (*Astragalus brauntonii*) population within an area of a USFWS-proposed designated Critical Habitat. He led field efforts, which included conducting vegetation mapping, delineating the Braunton's milk-vetch population within the proposed area, estimating the population size with the use of randomized transects and quadrats, conducting a complete vascular plant inventory within the study area, and authoring a technical report detailing the results of the investigation, which were used by the client in commenting on the proposed area of designated Critical Habitat. Dr. Tuma performed other tasks under this project, including nesting bird surveys, pre-construction surveys for special status species, and a revegetation/mitigation effort for the California Rare Santa Susana tarplant.

Environmental Generalist Services Task Order Contract, California Department of Transportation District 7, Los Angeles and Ventura Counties, CA

Dr. Tuma served as a Senior Biologist for this two-year on-call environmental services contract with the California Department of Transportation (Caltrans) District 7 between 2014 and 2015. While serving in this capacity, contributed to two task orders in support of the State Route 138 NW project, which consists of protocol desert tortoise, burrowing owl, and rare plant surveys and an analysis of wildlife crossing and movements on State Route (SR) 138 between SR 14 and Interstate 5. Dr. Tuma led in the field surveys, planned field and desktop analyses, directed a group of biologists and GIS specialists, and served as primary author of the deliverables produced for these task orders.

Dune Palms Road Crossing Replacement, Caltrans (through contract with Parsons Brinckerhoff), Riverside County, CA

Dr. Tuma served as the Project Manager for this project in 2014 and 2015. He was responsible for coordinating natural resources studies and agency consultation in support of the preparation of a Caltrans Natural Environment Study (NES). Project tasks included a general biological survey, focused surveys for burrowing owl and rare plants, trapping efforts for Palm Springs round-tailed ground squirrel (*Spermophilus tereticaudus*) and Palm Springs pocket mouse, a jurisdictional waters/habitats determination, agency consultation, preparation of a Biological Assessment in support of Section 7 consultation, documentation of study results, and preparation of the NES.

Desert Quartzite Solar Energy Project EIR/EIS and Biological Studies, First Solar, Inc., Riverside County, CA

Dr. Tuma served as the Project Manager for this project in 2015 and 2016, and was responsible for client management, biological studies, technical report preparation, and CEQA/NEPA documentation for a large-scale development in east Riverside County, California. His specific duties included reviewing studies prepared by prior consultants, conducting updated field surveys (vegetation mapping, rare plant, and desert tortoise surveys) and technical studies, and preparing the EIR/EIS Biological Resources

section and appendices (Invasive Weed Management Plan, Raven Management Plan, Desert Tortoise Translocation Plan, Desert Kit Fox and American Badger Management Plan, Rare Plant Management Plan, and Vegetation Restoration Plan).

Edom Hills Wind Energy Facility, BP Wind Energy North America, Inc., Riverside County, CA

Dr. Tuma served as the Project Manager and Lead Authorized Biologist for this project in 2016 and was responsible for conducting a habitat assessment, eolian dune characterization study, and biological monitoring of project activities in support of minimizing the potential for take of Coachella Valley fringe-toed lizard (*Uma inornata*) and Coachella Valley milk-vetch (*Astragalus lentiginosus var. coachellae*) during the installation of equipment in two project turbines. He coordinated with the BLM project Biologist to gain approval of biologists to monitor the work, and concurrence for the recommended mitigation measures, which included removing wind-blown sands from portions of the access road and placing the sand in adjacent areas where they could continue transport in the eolian ecosystem. He authored a post-construction memorandum that detailed the restoration of the eolian sand and avoidance of sensitive microhabitats where fringe-toed lizards typically hibernate during the project activities.

High Desert Solar Project, Middle River Power (through contract with AECOM), San Bernardino County, CA

Dr. Tuma served as the Lead Authorized Biologist for this project in 2020. He led the implementation of a desert tortoise translocation program in support of the High Desert Solar Project site in Victorville, San Bernardino County, California. The effort consists of performing protocol health assessments, collecting blood samples for disease testing, translocating tortoises from the development area to an off-site location in the Kramer Hills in the Fremont-Kramer Critical Habitat Unit, and monitoring them following translocation. Additional tasks included transplanting western Joshua trees from the project site, and monitoring of Environmentally Sensitive Areas established around active desert kit fox dens and burrowing owl burrows.

Agassiz's Desert Tortoise Population Modeling and Conservation Planning for the Superior-Cronese and Gold Butte-Pakoon Critical Habitat Units, BLM, San Bernardino County, CA, Clark County, NV, and Mohave County, AZ

As the Project Manager, Client Manager, and Principal Investigator of this project, Dr. Tuma conducted research into the population biology of Agassiz's desert tortoises on two study areas that comprise federal lands administered by the BLM between 2008 and 2013. He directed a team of more than 40 biologists, statisticians, and GIS specialists who contributed to the project; successfully developed spatially explicit, individual-based population models used to rank the importance of site-specific threats at each of the study areas; and served as the primary author of the technical report deliverables. This project consisted of collecting field data, compiling GIS data, conducting intensive literature reviews and expert interviews, and developing tortoise occurrence models, population models, and threats models for study areas that included the Superior-Cronese Critical Habitat Unit in San Bernardino County, California, and the Gold Butte-Pakoon Critical Habitat Unit in Clark County, Nevada, and Mohave County, Arizona. The modeling effort allowed Dr. Tuma to simulate the effects of site-specific threats on tortoise populations at each study area and develop land management and species conservation strategies that could be implemented by the BLM Field and State Offices on tortoise populations within each Critical Habitat Unit. He presented the research at the annual meetings of the Desert Tortoise Council, The Wildlife Society, and the World Congress of Herpetology, and published a manuscript in the Journal of Wildlife Management in early 2016.

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KELLY EVANS, MSC—ANALYST II/BIOLOGIST/ISA CERTIFIED ARBORIST

OVERVIEW

- More than 6 years of experience

Education

- Master in Science, Environmental Forestry, Bangor University, Bangor, Gwynedd, UK (ongoing)
- Bachelor of Science, Biology (Ecology, Evolution, and Historical Biology Track), Minor in English, Westmont College, Santa Barbara, CA, 2019

Certification

- International Society of Arboriculture Certified Arborist, Credential ID WE-14754A, 2023

Kelly Evans, MSc, has more than 6 years of experience as a scientific educator and researcher. She specializes in forest data collection, manuscript publication, field research, community outreach, lecturing, environmental activism, and volunteer oversight. She has substantive knowledge of forest restoration and is proficient in the use of various software, including Geographic Information System, R, and other forestry-specific software.

RELATED EXPERIENCE AND CLIENT SUMMARY

Prior Work Experience

Yosemite Sierra Summer Camp, Bass Lake, Madera County, CA

As a Nature Specialist, Ms. Evans provided program support and led Nature Education. Her responsibilities included maintaining and handling Nature Center's species and educating campers on Sierra Nevada flora and fauna. She was responsible for full coordination of Yosemite Sierra Summer Camp's daytrips to Yosemite Valley, including organization of medications, meal planning, transportation, scouting hikes, activity planning, and camper and staff supervision. Ms. Evans also served as a rotating counselor for cabins.

Global Leadership Center, Westmont College, Santa Barbara, CA

As a Student Life Assistant and Assistant to the Global Leadership Center (GLC), Ms. Evans provided clerical and administrative support for GLC's Vice President, Dean of Students, Director of Residence Life, Assistant Director of Residence Life, and Resident Director. Her responsibilities also included processing department payments and reimbursements, conducting research on Student Life, acting as a resource to employees, and troubleshooting and resolving issues brought to the office. In addition, Ms. Evans assisted with professional development and served as Secretary and Administrative Assistant for the Communication Board. She planned and implemented programs for the GLC; conducted research on GLC residence; and hired, trained, and supervised GLC Assistants.

Sparkman Lab of Evolutionary Ecology, Westmont College, Santa Barbara, CA

As a Research Technician, Ms. Evans assisted in data entry and evaluation of ultrasound images and videos, as well as participated in ecological analyses of ultrasonography data and manuscript preparation. She also conducted laboratory ecoimmunological assays of innate immunity on garter snake (*Thamnophis*) plasma and provided as-needed assistance in surveys related to a study of acorn woodpeckers (*Melanerpes formicivorus*) on an urban-wide gradient.

Westmont College, Santa Barbara, CA

As a Research Assistant, Ms. Evans assisted Westmont College's published professor, Ms. Amanda Sparkman, in locating, capturing, and collecting data of southern alligator lizards (*Elgaria multicarinata*) on Santa Cruz Island. Ms. Evans also performed research on the method of photo identification.

Santa Barbara Zoo, City of Santa Barbara, CA

As an Educator, Ms. Evans collaborated with staff in delivering environmental and animal science curriculum. She taught lessons, including environmentalism, ecology, and conservation, using creative and hands-on techniques. Ms. Evans also assisted in running safari overnights, conducting special events and zoo camp programs, conducting zoo tours, managing guests and children, and working overnight shifts outdoors.

Internships

FirstCarbon Solutions, City of Walnut Creek, CA

As an Air Quality Intern, Ms. Evans assists in drafting CEQA noise documentation for a variety of clients and projects. She reviews and develops firm understanding of City and County General Plans and Municipal Codes and noise calculations to create memoranda, reports, Initial Study documents, and sections to include in CEQA submissions. Ms. Evans also conducts research projects to inform future noise and air quality analyses.

Sodexo, City of Santa Barbara, CA

Ms. Evans served as a Sustainability Intern and managed the Westmont gardens. She managed planting, harvesting, composting, and irrigation activities, as well as provided garden intern supervision. She promoted environmental ethics and activism; created a Sustainability Coordinator position; and researched on future sustainability endeavors. In her role as an Intern, Ms. Evans provided food for Westmont's dining commons and community while strengthening community relations and fighting for a shared vision of success.

Santa Barbara Museum of Natural History, City of Santa Barbara, CA

As a Teen Programs Intern, Ms. Evans created a curriculum on endangered species for teen programs. She performed extensive research to teach high school level lectures weekly and recruited expert guest lecturers on local endangered species. She also partnered with various organizations, including the US Fish and Wildlife Service; National Park Service; and local botanists, ecologists, and naturalists. Ms. Evans engaged in diverse fields of study, including environmental literature and ethics, sustainability,

ecology, and evolutionary biology. In addition, Ms. Evans organized field excursions, hikes, and daylong trips to local scientific sites.

Westmont College, Santa Barbara, CA

As an Admissions Intern, Ms. Evans worked directly with the Secretary to the Dean of Admissions and performed various administrative tasks, including data entry, filing, and organization. She also worked alongside Admission Counselors, where she conducted transcript evaluations, handled specialized tours, and performed computer data work. In addition, Ms. Evans conveyed Westmont College's mission and provided answers and helpful information to prospective students and their parents.

Publications

Evans, K., Brummett, L., Combrink, L., Holden, K., Catalina, G., Farrar, S., Rodriguez, C., Sparkman, A., 2021. Embryonic heart rate correlates with maternal temperature and development stage in viviparous snakes. Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology, 253, 110874.

Evans, K., 2022. A comparative study of the effects of Impatiens glandulifera (Himalayan Balsam) removal methods and tree presence on bankside erosion and I. glandulifera reshooting in Anglesey, Wales. J. Soils Sediments. In Progress.

FIRSTCARBON SOLUTIONS™

HANNAH CARNEY, MAGD—ENVIRONMENTAL ANALYST I

OVERVIEW

- More than 7 years of experience

Education

- Master of Agricultural Education, California Polytechnic State University, San Luis Obispo, CA, 2019
- Single Subject Credential Program, Agriculture Education, California Polytechnic State University, San Luis Obispo, CA, 2019
- Bachelor of Science, Dairy Science, Animal Husbandry and Education Concentration, Minor in Agricultural Education, California Polytechnic State University, San Luis Obispo, CA, 2018

Certification

- CPR and First Aid, Certificate ID No. 0WFYD9, Red Cross Youth, 2015–present

Professional Affiliations

- Member, North Coast Agriculture Partners, 2019–present
- Member, California Agricultural Teachers' Association, 2018–present

Hannah Carney, MAGD, has more than 7 years of professional experience in providing environmental, sustainability, and compliance solutions services. She specializes in the agricultural industry, and is experienced in curriculum and career development, as well as Supervised Agricultural Experiences (SAEs). In addition, Ms. Carney is well versed in CEQA and NEPA documentation, including the preparation of EIRs and IS/MNDs. Ms. Carney is also knowledgeable in project management tasks and client coordination.

RELATED EXPERIENCE AND CLIENT SUMMARY

Prior Work Experience

Half Moon Bay High School, Half Moon Bay, CA

As the Agriculture Science Department Head, Ms. Carney taught various subjects, including Sustainable Agriculture Biology, Chemistry and Agriscience, and Advanced Agriculture, to students from grades 9 to 12. Ms. Carney functioned as a Future Farmers of America (FFA) Advisor and a member of the school's academic council and leadership committee. She also served as a Project Manager for the school farm renovation. In addition, Ms. Carney funded the school's program through State grant application.

San Mateo County Office of Education, City of Redwood City, CA

In her role as Agriculture Curriculum Lead/Agriculture Science Specialist, Ms. Carney authored the Middle School Agriculture Science Curriculum module and taught Professional Development to teachers implementing the agriculture module. She also created lessons that are aligned with Project-based Learning and Next Generation Science Standards.

HANNAH CARNEY, MAGD—ENVIRONMENTAL ANALYST I

King City High School, King City, CA

As a Student Teacher, Ms. Carney taught subjects, including Floral Design, Ornamental Horticulture, Agriculture Leadership, Agricultural Chemistry, and Agricultural Mechanics I. She also conducted home and project visits to advise and support students. Her responsibilities in the Agriculture Department included event coordination for FFA, career development, and leadership development; livestock management; ornamental horticulture SAEs; and FFA plant sale management.

Internships

FirstCarbon Solutions, City of Walnut Creek, CA

As an Environmental Analyst Intern, Ms. Carney's responsibilities included CEQA document preparation, project site visits, and evaluation of potential impacts of proposed new land use projects.

Dr. Edward Kennedy Jr. Veterinary Clinic, Town of Tollhouse, CA

As a Veterinarian Intern, Ms. Carney provided general veterinary care by shadowing a doctor in a small veterinary clinic.

California Polytechnic State University, San Luis Obispo, CA

As an FFA South Coast Region Supervisor Intern, Ms. Carney's responsibilities included coordinating regional events, such as State Degree ceremonies, and preparing documents and materials for regional FFA speaking contests.

Other Prior Work Experience

- Assistant Baker, Decorator, and Retail and Advertisement Executive, Nothing Bundt Cakes, City of San Carlos, CA
- Swim Instructor, King's Swim Academy, City of San Carlos, CA
- Veterinary Assistant, Dr. Edward Kennedy Jr. Veterinary Clinic, Town of Tollhouse, CA
- Plant Nursery Associate, Miner's Ace Hardware, City of San Luis Obispo, CA
- Research Assistant, John Hannon Chiropractic Clinic, City of San Luis Obispo, CA
- Assistant Cook, Teton Valley Ranch Camp, Town of Dubois, WY

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Appendix B:
Site Photographs

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Photograph 1: Fallowed land/idle agriculture west of South Lost Hills Road in western portion of the project site (facing south). Wild oat and annual brome grassland along western project site boundary.

Photograph 2: Fallowed land/idle agriculture west of South Lost Hills Road in western portion of the project site (facing west). Wild oat and annual brome grassland along western project site boundary. Fallowed land/idle agriculture extends west past the project site boundary.

Photograph 3: Red-tailed hawk in fallowed land/idle agriculture in the portion of the project site. Adjacent to the wild oat and annual brome grassland along the western project site boundary.

Photograph 4: Fallowed land/idle agriculture and sparce weed vegetation in southwestern portion of the project site (facing south). Adjacent to the developed area at the intersection of South Lost Hills Road and Sutter Avenue.

Photograph 5: Burrow in dirt access road in southwestern portion of the project site. Adjacent to the developed area at the intersection of South Lost Hills Road and Sutter Avenue.

Photograph 6: Inactive common raven nest on utility pole in the southwestern portion of site, adjacent to the Fallowed land/idle agriculture and ruderal areas.

Photograph 7: Ruderal land east of dirt access road through the center of the project site (facing developed area to the northeast). Developed area at the intersection of South Lost Hills Road and Sutter Avenue includes a barn, abandoned cars, and trailers.

Photograph 8: Dry creek wash area and ruderal vegetation in southern portion of the project site (facing west), adjacent to the pistachio orchard.

Photograph 9: Wild oat and annual brome grassland along the northeastern project site boundary.

Photograph 10: Fallowed land/idle agriculture in northeastern portion of the project site (facing south). Wild oat and annual brome grassland adjacent to the eastern project site boundary.

Photograph 11: Fallowed land/idle agriculture in northern portion of project site along South Lost Hills Road (facing west).

Photograph 12: Ephemeral/intermittent stream and non-native vegetation on the northern portion of the project site (facing west). Sutter Avenue bisects creek wash area.

Photograph 13: Ephemeral/intermittent stream and non-native vegetation in the central portion of the project site (facing south, towards the pistachio orchard). Fallowed land/idle agriculture is situated on both sides of ephemeral/intermittent stream.

Photograph 14: Fallowed land/idle agriculture and wild oat and annual brome grassland in the central portion of the project site (facing north).

Photograph 15: Fallowed land/idle agriculture in the southwest portion of the project site (facing north, pistachio orchard to the northeast).

Photograph 16: Abandoned barn structure at the northwestern portion of the project site along South Lost Hills Road (facing southwest).

Appendix C:
Swainson's Hawk Survey Report

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Colibri Ecological Consulting

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2 October 2023

Angela Wolfe
Senior Project Manager
FirstCarbon Solutions, Inc.
250 Commerce, Suite 210
Irvine, CA 92602

Subject: Swainson's hawk surveys for the Cornucopia Solar Project

Dear Angela:

During April—July 2023, we conducted surveys for the state listed as threatened Swainson's hawk (*Buteo swainsoni*) in support of the Cornucopia Solar Project. The project site consisted of 2385.11 acres bisected by State Route 33, about 3.5 miles northwest of Avenal in southwestern Fresno County, California (Figure 1). The purpose of the surveys was to determine whether the proposed project is likely to impact nesting Swainson's hawks and therefore require consultation with the California Department of Fish and Wildlife.

Methods

The surveys were conducted in accordance with the Swainson's Hawk Technical Advisory Committee's *Recommended Timing and Methodology for Swainson's Hawk Surveys in California's Central Valley* (2000). Following the protocol required conducting surveys over six days—three between 5 April and 20 April (Survey Period III) and three between 10 June and 30 July (Survey Period V)—on and within a 0.5-mile radius of the project site (Figure 2).

The surveys were performed by Senior Technical Specialist Howard Clark and Field Scientist Antonio Ruvalcaba.

We conducted the surveys on 6, 12, and 19 April; 12 and 30 June; and 10 July 2023. Surveys were conducted by slowing driving roads in the survey area, stopping at strategic vantage points, scanning the survey area for hawks using 10x42 binoculars and a 20-60x spotting scope, listening for Swainson's hawk vocalizations, and searching trees and other potential nest substrates in the survey area for suitably sized stick nests. We also searched for and documented the nests of potential competitors such as great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (*Buteo lineatus*).

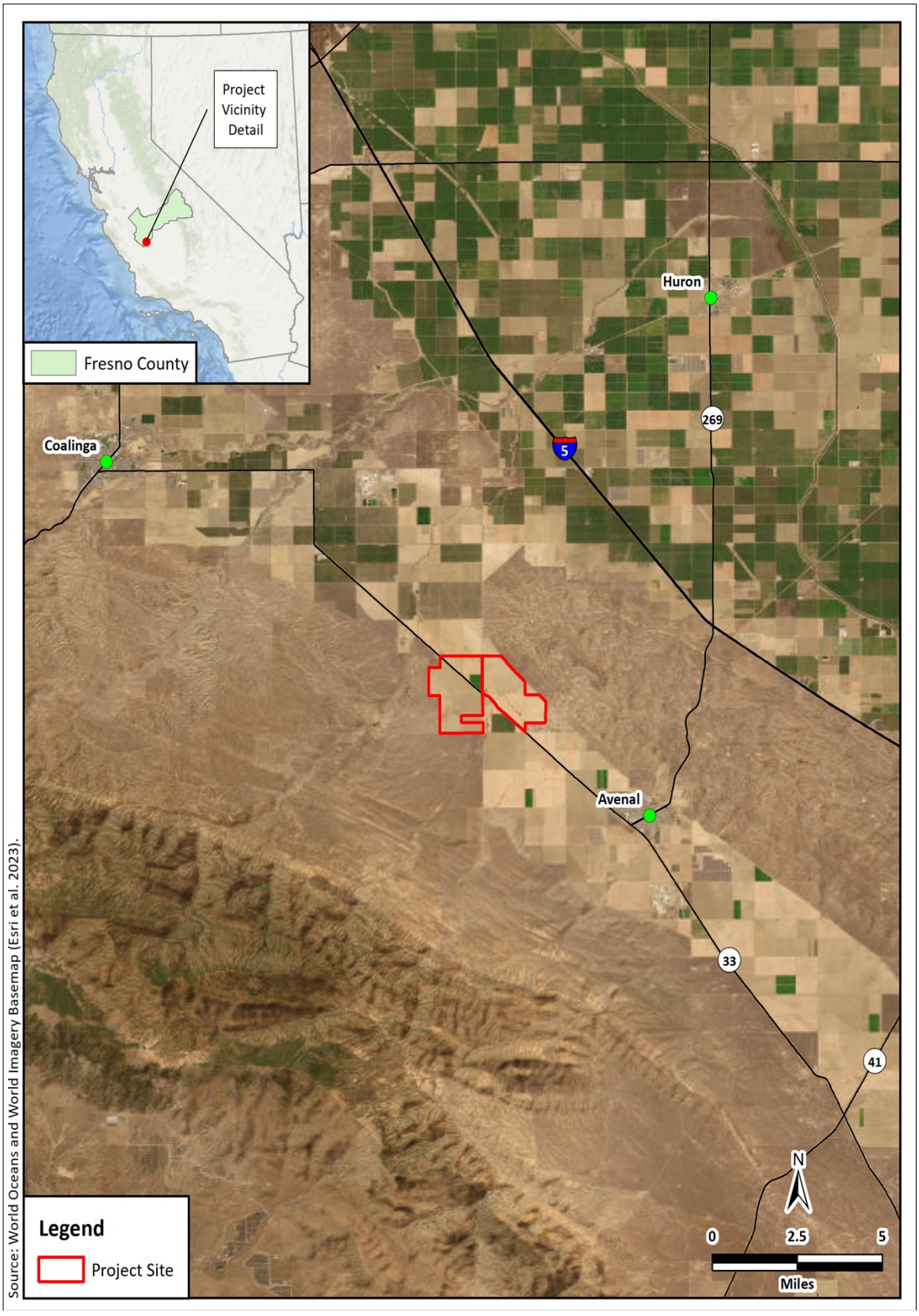


Figure 1. Project site vicinity map.

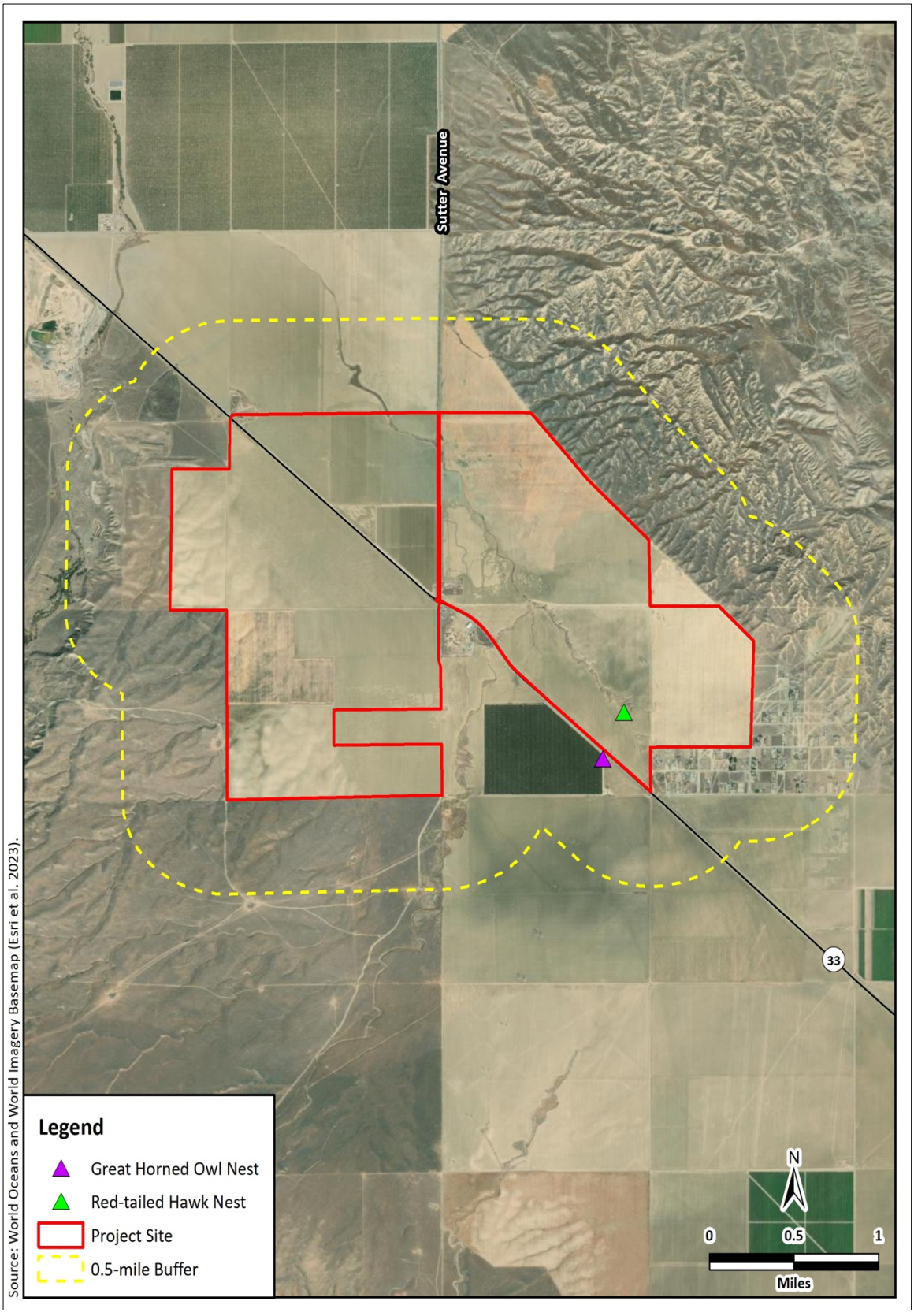


Figure 2. Survey area and results map.

Results

Land cover types on the project site included idle agriculture (Figure 3) and grain and hay crop. The project site was bordered to the north by idle agriculture and annual grassland; to the south by annual grassland, idle agriculture, and orchard; to the east by annual grassland and rural residential development; and to the west by annual grassland (Figure 4).

Figure 3. Photograph of the northwestern portion of the project site, facing east, showing idle agriculture.

Figure 4. Photograph of annual grassland west of the project site, facing north.

Potential nest trees were present in the survey area. Those trees included willows (*Salix* sp.) and tamarisk (*Tamarix* sp.) in the drainages east of State Route 33 (Figure 5), eucalyptus (*Eucalyptus* sp.) in the rural residential area southeast of the project site (Figure 6), and cottonwoods (*Populus* sp.) in a riparian strip west of the project site (Figure 7).

Figure 5. Photograph, facing north, showing willows in a drainage west of State Route 33 that represent potential nest trees for Swainson's hawk.

Figure 6. Photograph, facing west, showing eucalyptus in a rural residential area southeast of the project site that represent potential nest trees for Swainson's hawk.

Figure 7. Photograph, facing west, cottonwoods in a riparian strip west of the project site that represent potential nest trees for Swainson's hawk.

We did not find an active Swainson's hawk nest in the survey area. We observed several Swainson's hawks foraging over the project site during the 6 April 2023 survey. However, those birds evidently were passage migrants as we did not detect the species on subsequent surveys. We did document one great horned owl nest and one red-tailed hawk nest in the survey area, both in electric transmission towers (Figures 2 and 8).

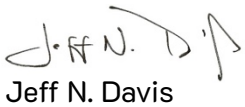
Figure 8. Photograph of a great horned owl nest on an electric transmission tower south of the project site, facing north.

Discussion

The survey area supported land cover types (e.g., idle agriculture and grassland) that provide foraging habitat for Swainson's hawks as well as suitable trees for nesting. However, nesting Swainson's hawks were not documented in the survey area during the 2023 nesting season.

Please call or email me with any questions.

Sincerely,



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Appendix D:
Burrowing Owl Survey Report

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4 October 2023

Angela Wolfe
Senior Project Manager
FirstCarbon Solutions, Inc.
250 Commerce, Suite 210
Irvine, CA 92602

Subject: Burrowing owl surveys for the Cornucopia Solar Project

Dear Angela:

During April—June 2023, we conducted surveys for burrowing owl (*Athene cunicularia*), a California Species of Special Concern, in support of the Cornucopia Solar Project. The project site consisted of 2385.11 acres bisected by State Route 33, about 3.5 miles northwest of Avenal in southwestern Fresno County, California (Figure 1). The purpose of the surveys was to determine whether the proposed project could impact nesting burrowing owls and therefore require avoidance, minimization, or mitigation measures.

Methods

The surveys were conducted in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) and the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1997). Following the protocol required conducting surveys over four days—one between 15 February and 15 April and three between 15 April and 15 July, at least three weeks apart, with one after 15 June—on and within a 150-meter radius of the project site (Figure 2).

The surveys were performed by Senior Technical Specialist Howard Clark and Field Scientist Antonio Ruvalcaba.

We conducted surveys on 3 April, 1 May, 6 June, and 27 June 2023. Surveys were conducted by walking line transects spaced about 20 meters apart in all areas with burrowing owl habitat in the survey area. The surveyors stopped periodically to scan the survey area for burrowing owls using 10x42 binoculars, listened for burrowing owl vocalizations, mapped all suitably sized burrows (i.e., those with entrances > 4 inches in diameter), and documented any burrows with sign of burrowing owl use such as whitewash, pellets, feathers, or prey remains. When driving between habitat areas, surveyors stopped periodically to scan the survey area with 10x42 binoculars.

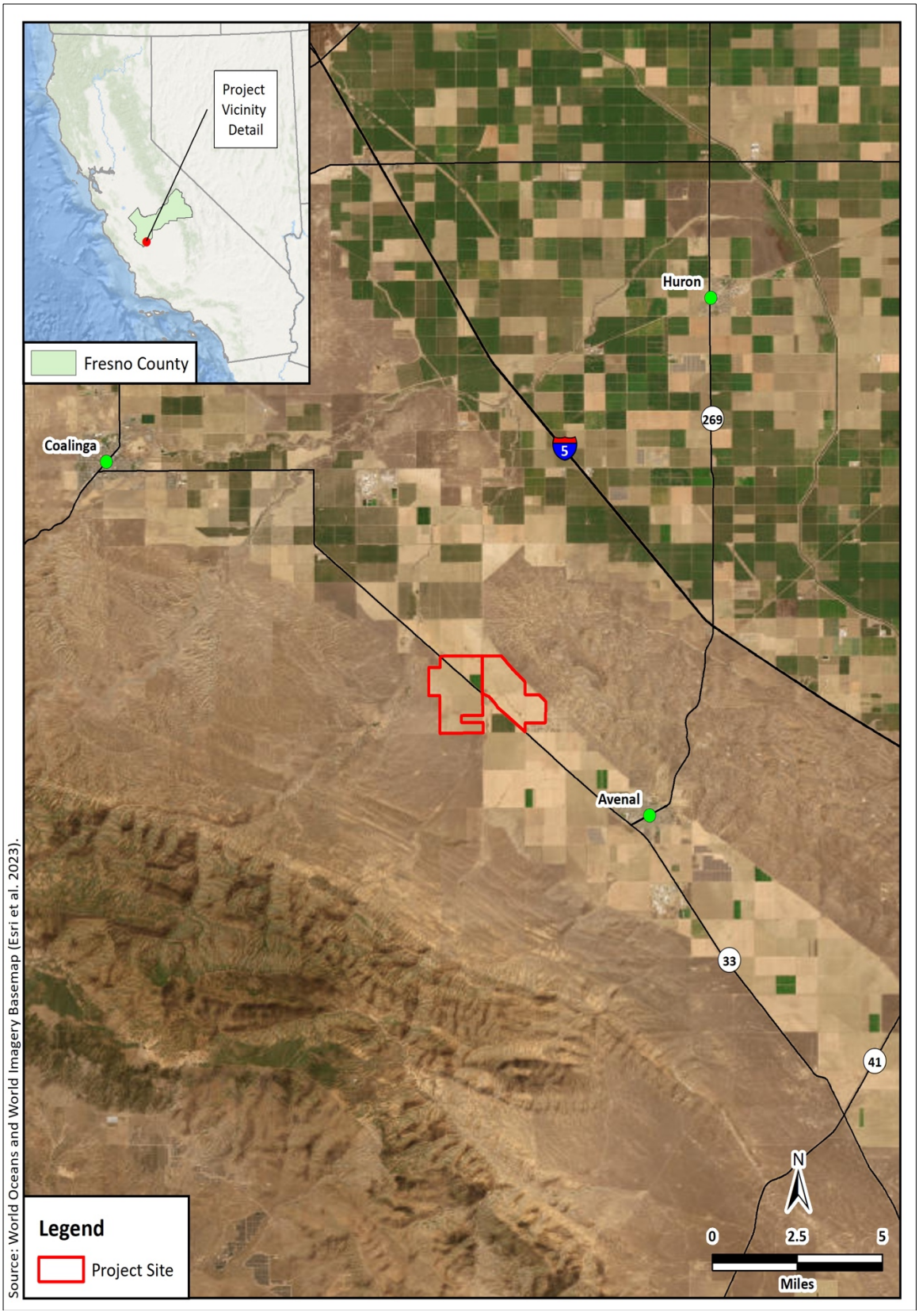


Figure 1. Project site vicinity map.

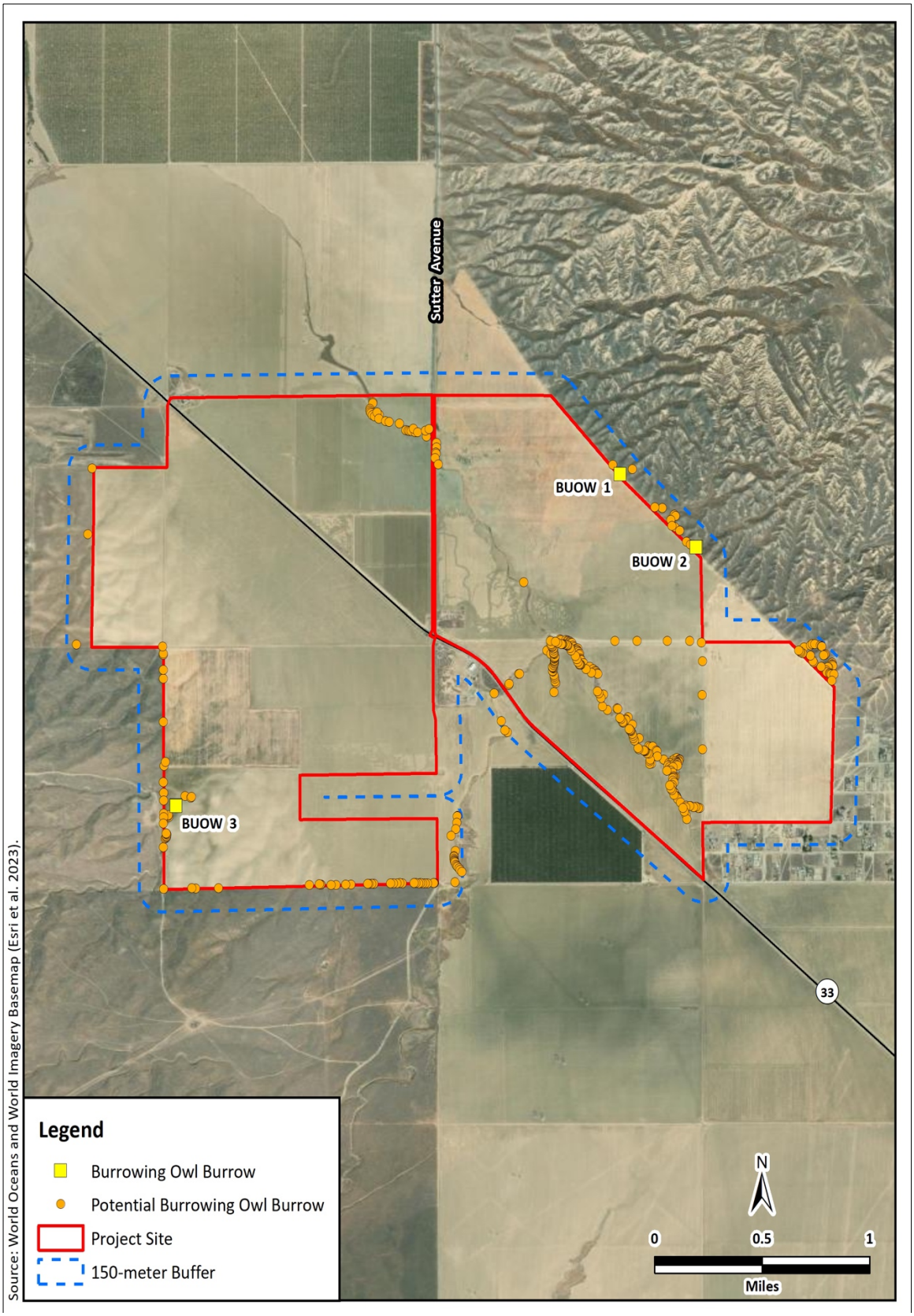


Figure 2. Survey area and results map.

Results

Land cover types on the project site included idle agriculture (Figure 3) and grain and hay crop. The project site was bordered to the north by idle agriculture and annual grassland; to the south by annual grassland, idle agriculture, and orchard; to the east by annual grassland and rural residential development; and to the west by annual grassland (Figure 4).

Figure 3. Photograph of the northwestern portion of the project site, facing east, showing idle agriculture.

Figure 4. Photograph of annual grassland west of the project site, facing north.

We found more than 300 burrows with suitably sized openings for burrowing owl (Figure 5). Those were mainly along the perimeter of the project site and along the edges of the ephemeral drainages on the project site. Among them were three burrows with sign of burrowing owl use (Figures 2 and 6–8). Sign in all cases included old whitewash and pellets. However, we did not observe burrowing owls or fresh sign at these burrows or anywhere else in the survey area during the 2023 survey season.

Figure 5. Photograph of one of more than 300 burrows with suitable dimensions for burrowing owl use (12-inch ruler included for scale).

Figure 6. Photograph of a burrow with sign of burrowing owl use (Figure 2, BUOW 3) in an idle agricultural area in the southwestern portion of the project site, facing northeast.

Figure 7. Photograph of burrowing owl pellets at a burrow (Figure 2, BUOW 3) near the southwestern portion of the project site (dollar bill included for scale).

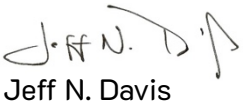
Figure 8. Photograph of a burrow with sign of burrowing owl use (Figure 2, BUOW 2) in grassland east of the project site (binoculars included for scale).

Discussion

The entire project site and much of the survey area buffer supported suitable land cover types (idle agriculture, grain and hay crop, and annual grassland) and numerous and ubiquitous suitably sized burrows for burrowing owl. We found no evidence of burrowing owl use of the survey area during the 2023 survey season. Rather, the three burrows with sign of burrowing owl use suggest burrowing owls use the survey area only during the non-breeding season. The non-breeding season is generally defined as 1 September to 31 January. Therefore, construction is not expected to impact burrowing owls during the breeding season (1 February through 31 August).

Please call or email me with any questions.

Sincerely,



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Appendix E:
Aquatic Resource Delineation Report

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Aquatic Resource Delineation Report

October 2023

CORNUCOPIA SOLAR PROJECT
FRESNO COUNTY, CALIFORNIA

PREPARED FOR:
FirstCarbon Solutions, Inc.
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Irvine, CA 92602

PREPARED BY:
Colibri Ecological Consulting, LLC
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Executive Summary

We performed a preliminary delineation of aquatic resources for the proposed 2385.11-acre Cornucopia Solar Project approximately 4 miles northwest of Avenal in southwestern Fresno County, California. The evaluation involved a desktop review of soils, hydrology, topography, and stream geomorphology and a field verification of hydrology, stream geomorphology, sediment texture, and vegetation at the Project site. We delineated aquatic resources in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008).

We delineated Canoas Creek, Garza Creek, and several unnamed intermittent and ephemeral streams, which are likely under the jurisdiction of the California Department of Fish and Wildlife (CDFW) and the Regional Water Quality Control Board (RWQCB). Jurisdictional boundaries were mapped to the ordinary high water mark (OHWM) requirements of the United States Army Corps of Engineers (USACE) and the Regional Water Quality Control Board (RWQCB) and the "top of bank" requirements of the CDFW.

Top of bank jurisdictional limits of aquatic resources in the survey area comprised 27.05 acres. Ordinary high water mark (OHWM) jurisdictional limits of aquatic resources in the survey area comprised 13.68 acres. Aquatic resources in the survey area included Canoas Creek, Garza Creek, unnamed intermittent and ephemeral tributaries and erosional channels of Canoas Creek and Garza Creek, and two isolated ephemeral streams in the southwest quadrant of the Project site. Canoas Creek and Garza Creek are classified as riverine, intermittent, and streambed (Cowardin et al. 1979, USFWS 2023). Canoas Creek, Garza Creek, and associated tributaries and erosional channels had deep, incised channels with obvious changes in slope and substrate. Ephemeral streams in the southwest corner of the Project site had shallow V-shaped channels, parts of which had been routinely disced. Intermittent stream channels contained hydrologic indicators such as sediment deposits, soil cracks, and channel scour and exhibited distinct changes in vegetation cover and species composition at the OHWM. Canoas Creek and Garza Creek contain flowing water seasonally, whereas the ephemeral tributaries and erosional channels likely contain flowing water only for a short duration after rain events. All streams delineated were discontinuous and did not have a downstream connection to a water of the United States.

Abbreviations

Abbreviation	Definition
CDFW	California Department of Fish and Wildlife
CWA	Clean Water Act
FAC	Facultative; plant that occurs in wetlands 33–66% of the time
FACU	Facultative upland; plant that occurs in wetlands 1–33% of the time
FACW	Facultative wetland; plant that occurs in wetlands 67–99% of the time
NI	No wetland indicator status listed
NRCS	Natural Resources Conservation Service
OBL	Obligate; plant that occurs in wetlands > 99% of the time
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
UPL	Upland; plant that occurs in uplands > 99% of time
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
WIS	Wetland Indicator Status

Chapter 1. Introduction

BayWa r.e. plans to construct a solar facility approximately 4 miles northwest of Avenal in southwestern Fresno County, California (the Project). The Project site comprises 2385.11 acres and currently supports inactive agriculture.

To assist with avoiding or permitting potential impacts of the Project on wetlands and other waters, we conducted a delineation of aquatic resources at the Project site. The purpose of this report is to (1) identify and describe aquatic resources on the Project site, (2) document aquatic resource boundary determinations, and (3) provide other background information to help meet avoidance or permitting requirements.

The applicant for this proposed project is:

Martin Nascimento
Senior Development Manager
BayWa r.e.
(949) 406-8467
martin.nascimento@baywa-re.com

This evaluation involved (1) a desktop review of satellite imagery (Google 2023), United States Geological Survey (USGS) topographic maps, Natural Resources Conservation Service (NRCS) soil survey maps (NRCS 2023a), and other relevant information and (2) a field verification of the Project site on 14 and 15 September 2023.

Chapter 2. Regulatory Setting

United States Army Corps of Engineers Jurisdiction

Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of the United States Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, the territorial seas, all interstate waters, all impoundments of waters otherwise defined as waters of the United States, tributaries of waters otherwise defined as waters of the United States that are relatively permanent, standing, or continuously flowing bodies of water, and relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to waters of the United States (33 CFR part 328.3). Waters of the United States do not include prior converted cropland, waste treatment systems, ditches, artificially irrigated areas, artificial lakes or ponds, artificial reflecting pools or swimming pools, waterfilled depressions, and swales and erosional features. Under the 2006 Supreme Court ruling *Rapanos v. United States*, waters of the United States include non-navigable tributaries of traditional navigable waters that are relatively permanent. The 2023 Supreme Court ruling *Sackett v. Environmental Protection Agency* removes the significant nexus standard for tributaries and adjacent waters of the United States and requires tributaries and adjacent waters to have a continuous surface connection to a water of the United States. Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual and related Regional Supplement (USACE 1987 and 2008). Construction activities, including direct removal, filling, hydrologic disruption, or other means in jurisdictional waters are regulated by the USACE. The placement of dredged or fill material into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act (CWA). The State Water Resources Control Board (SWRCB) is the state agency, together with the Regional Water Quality Control Boards (RWQCB), charged with implementing water quality certification in California.

State Water Resources Control Board / Regional Water Quality Control Board Jurisdiction

Section 401 of the Clean Water Act

As stated in Section 401 of the CWA, "any applicant for a Federal permit for activities that involve a discharge to Waters of the United States, shall provide the Federal permitting agency a

certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal CWA."

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et. sec.) was established in 1969 and entrusts the SWRCB and nine Regional Water Quality Control Boards (collectively Water Boards) with the responsibility to preserve and enhance all beneficial uses of California's diverse waters. The Act grants the Water Boards authority to establish water quality objectives and regulate point- and nonpoint-source pollution discharge to the state's surface and ground waters. Under the auspices of the United States Environmental Protection Agency, the Water Boards are responsible for certifying, under Section 401 of the federal Clean Water Act, that activities affecting waters of the United States comply with California water quality standards. The Porter-Cologne Water Quality Control Act addresses all "waters of the State," which are more broadly defined than waters of the Unites States. Waters of the State include any surface water or groundwater, including saline waters, within the boundaries of the state. They include artificial as well as natural water bodies and federally jurisdictional and federally non-jurisdictional waters. The Water Boards may issue a Waste Discharge Requirement permit for projects that will affect only federally non-jurisdictional waters of the State.Additionally, pursuant to the definition of waters of the State in the Porter-Cologne Act, the state maintains jurisdiction of isolated waters. In other words, the RWQCB regulates all activity, including dredging and filling, in waters of the State that are not regulated by the USACE, including vernal pools and other waters showing lack of connectivity to a Traditional Navigable Water.

California Department of Fish and Wildlife Jurisdiction

Under the California Fish and Game Code Sections 1600–1603, the CDFW regulates any person, state or local government agency, or public utility that proposes to "substantially divert[s] or obstruct[s] the natural flow or substantially change[s] the bed, channel, or bank of any river, stream, or lake designated by the department, or use[s] any material from the streambeds". This jurisdiction includes ephemeral, intermittent, and perennial streams, dry washes, and lakes characterized by a defined bed and bank and observed relationship to fish or wildlife resources. This jurisdiction extends to adjacent habitats that function as part of the riparian system, regardless of the riparian area's federal status. When riparian vegetation is present, CDFW jurisdiction reaches to the outer limits of the riparian vegetation dripline. Further, CDFW asserts jurisdiction over vernal pools only when California State threatened and/or endangered species are present.

Chapter 3. Location

The 2385.11-acre Project site is approximately 4 miles northwest of Avenal in Fresno County, California (Figures 1 and 2). It is bisected by State Route 33 and Sutter Avenue. From Avenal, it can be accessed by driving northwest on State Route 33 for 5.0 miles and parking at the Sutter Avenue intersection. North of State Route 33, the Project site is both east and west of Sutter Avenue. The Project site is in Sections 25, 26, 34, 35, and 36, Township 21 South, Range 16 East; Section 31, Township 21 South, Range 17 East; Sections 1, 2, and 3, Township 22 South, Range 16 East; and Section 6, Township 22 South, Range 17 East of the Avenal 7.5-minute topographic quadrangle. The Project site is at latitude 36.05090° N, longitude -120.20017° W (Datum WGS84).

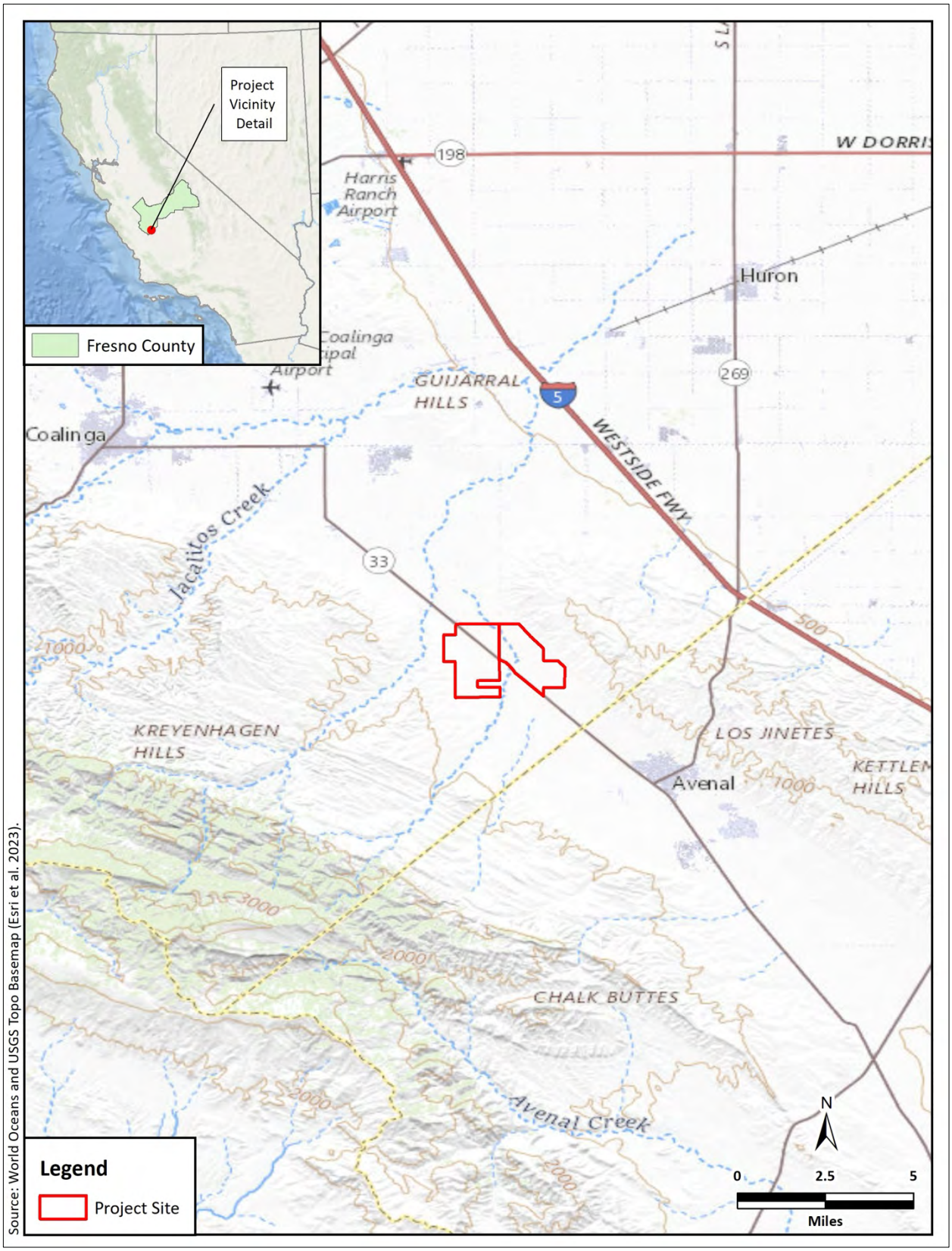

Figure 1. Project site vicinity map.

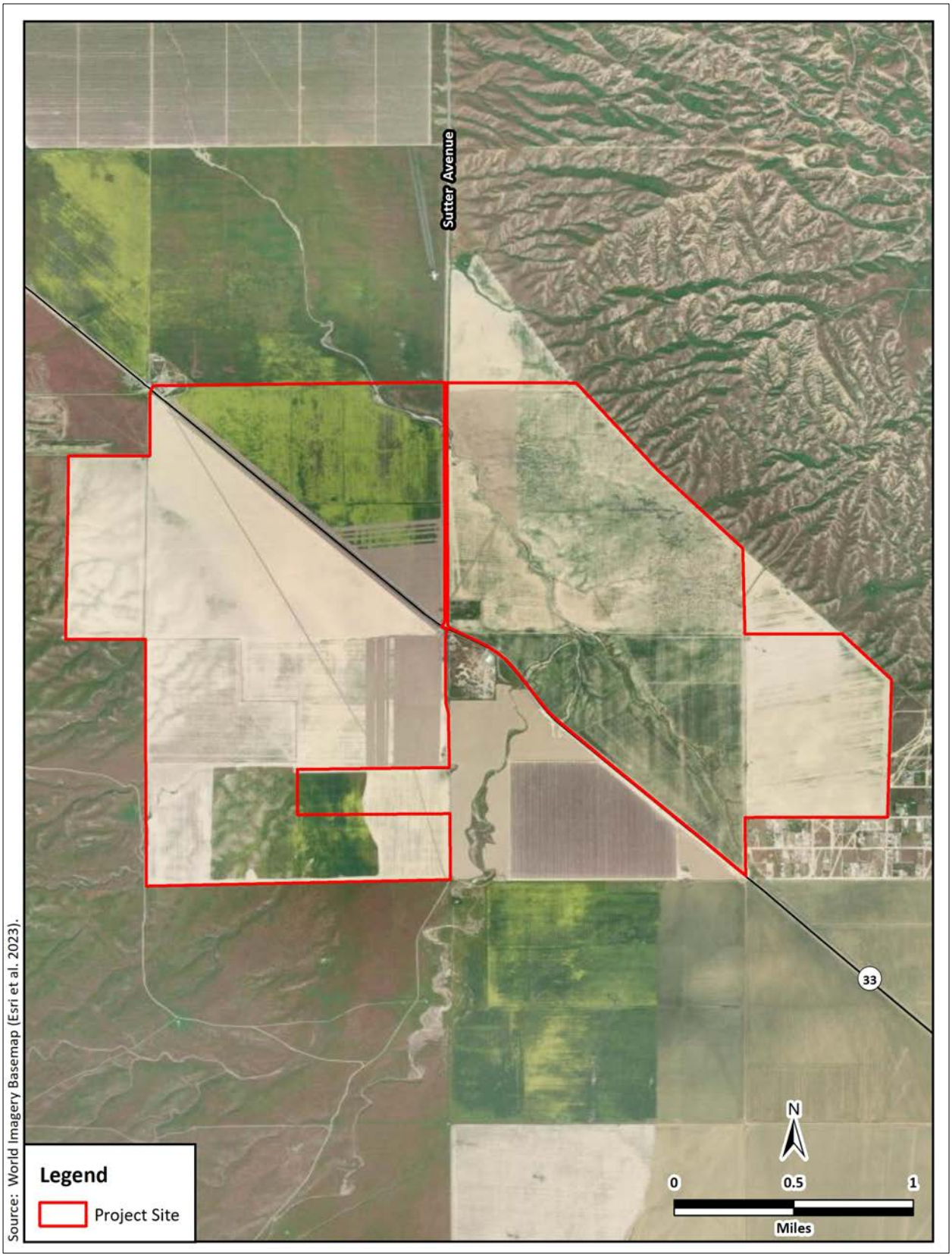

Figure 2. Project site map.

Chapter 4. Methods

We identified the lateral limits of non-wetland waters in the survey area using hydrology, stream geomorphology, sediment texture, and vegetation response to the dominant stream discharge in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008). We also mapped the "top of bank" as the jurisdictional limits of the CDFW. Those boundaries were delineated in the field using an iPad (©2019 Apple, Inc.) with Bluetooth-enabled external Global Positioning System (GPS) device with sub-meter accuracy (EOS Arrow 100®).

Prior to conducting the field verification, we reviewed the following sources of information:

- Avenal 7.5-minute USGS topographic quadrangle map.
- Satellite imagery from Google Earth (Google 2023).
- Soil survey maps and unit descriptions (NRCS 2023a).
- Hydric soil information (NRCS 2023b).
- United States Fish and Wildlife Service National Wetlands Inventory (USFWS 2023).
- The National Wetland Plant List (USACE 2020).

The field verification was performed on 14 and 15 September 2023 by Colibri Senior Scientist Ryan Slezak and Staff Scientists Amy Hernandez and Ryan Donnelly and involved a review of hydrology, stream geomorphology, sediment texture, and vegetation throughout the survey area. The *Updated Datasheet for the identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western Unites States* (Curtis and Lichvar 2010) was used to record data along a representative cross section spanning all hydrogeomorphic floodplain units.

Plants observed in the survey area were identified to species using The Jepson Manual (Baldwin et al. 2012) and Calflora (Calflora 2023). The National Wetland Plant List (USACE 2020) was used to determine the status of observed plants as wetland indicator species. Photographs were taken to document the vegetation, slope, and other characteristics of the hydrogeomorphic floodplain units throughout the survey area, and photo points were established for future documentation of the Project.

Chapter 5. Existing Conditions

5.1 Landscape Setting

California's Mediterranean climate is distinguished by cool, wet winters under prevailing westerly winds and hot, dry summers. Typically, 75% of the yearly precipitation accumulates December–March. California Department of Water Resources data indicate precipitation was very high for the 2022–2023 water year in the San Joaquin Valley (California Department of Water Resources 2023). At the time of survey, precipitation was 149% of average (15.06 inches) for the 2022–2023 water year at the National Weather Service Station in Hanford (Station KHJO), 36 miles northeast of the Project site (National Weather Service 2023). In addition, a tropical storm dropped 0.48 inches of rain at the National Weather Service Station in Hanford 23 days prior to the field verification.

The Project site is in the Kettleman Plain, situated between the Kettleman Hills to the east and the Kreyenhagen Hills to the west. Topography on the Project site is relatively flat, generally sloping towards Canoas Creek and Garza Creek, which bisect the Project site. Gentle, rolling hills are present along the east, west, and southwest edges of the Project site where the surrounding hills meet the Kettleman Plain. Elevation at the Project site is 689–857 feet above mean sea level (Google 2023).

The Project site encompassed 2385.11 acres of inactive agricultural land. Most of the Project site had been recently disced, and satellite imagery indicates the Project site is disced annually (Google 2023). Previously harvested wheat (*Triticum aestivum*) fields were present in the southwest quadrant of the Project site. Areas of undisced vegetation were present along streams on the Project site. Undisced vegetation consisted of nonnative grasses and ruderal forbs (Appendix C and D). Land use on the Project site includes dryland grain farming and livestock grazing. Evidence of trash dumping was present in the northern portion of the Project site along Canoas Creek. The Project site was surrounded by inactive agriculture to the north and south and annual grassland to the east and west (Figure 2). A small, rural residential community bordered the Project site to the southeast.

The predominant soils in the Project site were Ciervo clay (18.8%), Panoche loam (16.5%), Milham sandy loam (12.8%), Milham-Guijarral association (12.4%), and Cerini clay loam (12.0%) (NRCS 2023a, Appendix A). Ciervo clay soils are moderately well-drained and occur in alluvial fan skirts and footslopes. Panoche loam soils are well-drained soils with a moderately low capacity to transmit water. Panoche loam soils occur on alluvial fans and terraces. Milham sandy loam soils are well-drained soils with a moderately high capacity to transmit water. Milham sandy loam soils occur on terraces, plains, and alluvial fans. The Milham-Guijarral soil association, which consists of 55% Milham sandy loam and 30% Guijarral sandy loam, occurs on alluvial fans and mountain slopes and has similar physical characteristics to Milham sandy loam. Cerini clay loam

soils are well-drained soils with a moderately high capacity to transmit water. Cerini clay loam soils occur on alluvial fans, footslopes, and terraces (NRCS 2023a).

Other soils present on the Project site include Cerini sandy loam (8.9%), Panoche loam (8.5%), Panoche sandy loam (6.1%), Excelsior sandy loam (6.0%), Yribarren clay loam (3.7%), Guijarral sandy loam (2.3%), and Panoche clay loam (0.5%) (NRCS 2023a, Appendix A). None of the soils on the Project site are listed as hydric soils in the National List of Hydric Soils (NRCS 2023b).

5.2 Aquatic Resources

Aquatic resources in the survey area included Canoas Creek, Garza Creek, unnamed intermittent and ephemeral tributaries and erosional channels of Canoas Creek and Garza Creek, and two isolated ephemeral streams in the southwest quadrant of the Project site. Canoas Creek, Garza Creek, and the unnamed intermittent tributaries are classified as riverine, intermittent, streambed; the ephemeral streams and erosional channels are classified as riverine, ephemeral (Cowardin et al. 1979, USFWS 2023, Table 1, Appendix A).

Table 1. Aquatic resources in the survey area.

Aquatic Resource Name	Cowardin Type	Acreage (OHWM)	Acreage (TOB)	Location
Canoas Creek	Riverine, intermittent, streambed	6.08	10.69	36.056279, -120.195956
Garza Creek	Riverine, intermittent, streambed	4.85	10.18	36.045152, -120.186808
Unnamed Intermittent Stream	Riverine, intermittent, streambed	0.69	1.20	36.048758, -120.192199
Unnamed Ephemeral Stream	Riverine, ephemeral	2.06	4.98	36.03999, -120.218041

Canoas Creek, Garza Creek, and the unnamed intermittent tributary to Canoas Creek have deep, incised channels with a distinct change in slope at the edge of the low-flow channel and active floodplain (Figure 2, Appendix C – Photos 1–4, 11, and 12). Low flow channels exhibited hydrologic indicators such as sediment deposits, soil cracks, and channel scour. Sediment texture, vegetation cover, and species composition differed above and below the OHWM. Below the OHWM, vegetation consisted of a comparatively diverse community of ruderal forbs dominated by common sunflower (*Helianthus annuus*, FACU) and patchily distributed salt cedar (*Tamarix ramosissima*, NI). Vegetation cover below the OHWM was 30–45%. Sediment texture below the OHWM consisted of medium sand underlain by clay. Vegetation above the OHWM was dominated by nonnative grasses such as ripgut brome (*Bromus diandrus*, NI) and compact brome (*Bromus madritensis*, UPL) with a patchy distribution of flatspine bur ragweed (*Ambrosia acanthicarpa*, NI). Vegetation cover above the OHWM was 75–95%. Sediment texture above the OHWM consisted of loam and clay.

Several short, erosional channels of Canoas and Garza Creek were present throughout the Project site (Figure 2, Appendix C – Photos 6–10). These erosional channels were likely formed by streambank erosion from sheet flow across the surrounding terrain. Like the intermittent streams on the Project site, the erosional channels also had deep, incised channels with a distinct change in slope at the edge of the low-flow channel. However, vegetation cover and species composition were consistent above and below the OHWM. Vegetation was dominated by nonnative grasses such as ripgut brome and compact brome.

Two isolated ephemeral streams were present in the southwest quadrant of the Project site (Figure 2, Appendix C – Photos 13–15). These ephemeral streams flow onto the Project site from the Kreyenhagen Hills to the west. Topography is steeper in this part of the Project site. These ephemeral streams have shallow V-shaped channels, parts of which have been routinely disced. An obvious break in slope was present at the edge of the low-flow channel and active floodplain. The OHWM was determined by a change in vegetation cover. Vegetation cover was 40% below the OHWM and 70% above the OHWM. Vegetation above and below the OHWM was dominated by nonnative grasses such as ripgut brome and compact brome.

Canoas Creek and Garza Creek contain flowing water seasonally, whereas the erosional channels and ephemeral streams likely contain flowing water only for a short duration after rain events. All streams and erosional channels were dry during the 14–15 September 2023 survey. Canoas Creek and Garza Creek originate in the Diablo Range and flow northeast onto the Kettleman Plain and the Project site. Garza Creek flows into Canoas Creek on the Project site and continues for another 2.6 miles before terminating at an orchard.

Chapter 6. Conclusions

The delineation of the Project site documented 27.05 acres of aquatic resources at TOB jurisdictional limits and 13.68 acres of aquatic resources at OHWM jurisdictional limits (Table 1).

Several ephemeral drainages reach to the Project site boundary but do not extend onto the Project site (Figure 2, Appendix C - Photos 16–19). This discontinuity is due to the topography and anthropogenic alteration of the Project site. Topography on the Project site is gentler than the surrounding hills to the east and west. In many areas, the Project site is situated at the interface of the surrounding hills and the Kettleman Plain. Historically, water from surrounding ephemeral streams would spread out across the flat surface of the Kettleman Plain in an undefined channel or sheet flow. Additionally, periodic discing of the Project site has altered the landscape such that a defined bed and bank are not present. The periodic discing may have slightly raised the elevation of the Project site or altered the hydrology of the ephemeral drainage such that the drainage does not extend onto the Project site. Due to the lack of a defined bed and bank, lack of hydrologic indicators, and lack of hydrophytic vegetation, these ephemeral drainage features do not meet the definition of a stream on the Project site and would not be subject to regulation by the USACE, RWQCB, or the CDFW.

All streams delineated on the Project site are discontinuous and do not have a downstream connection to a water of the United States. Consequently, they would not be regulated by the USACE under Section 404 of the CWA. Canoas Creek, Garza Creek, associated tributaries and erosional channels of Canoas Creek and Garza Creek, and the two isolated ephemeral streams in the southwest quadrant of the Project site contain surface water and have a defined bed and bank. Therefore, they are likely regulated by the RWQCB and the CDFW (Table 2).

Table 2. Potential jurisdictional areas in the survey area. All values are in acres.

Potential Jurisdictional Areas in the Survey Area	USACE	RWQCB	CDFW
Canoas Creek	0	10.69	10.69
Garza Creek	0	10.18	10.18
Unnamed Intermittent Stream	0	1.20	1.20
Unnamed Ephemeral Stream	0	4.98	4.98
Total	**0**	**27.05**	**27.05**

Chapter 7. Literature Cited

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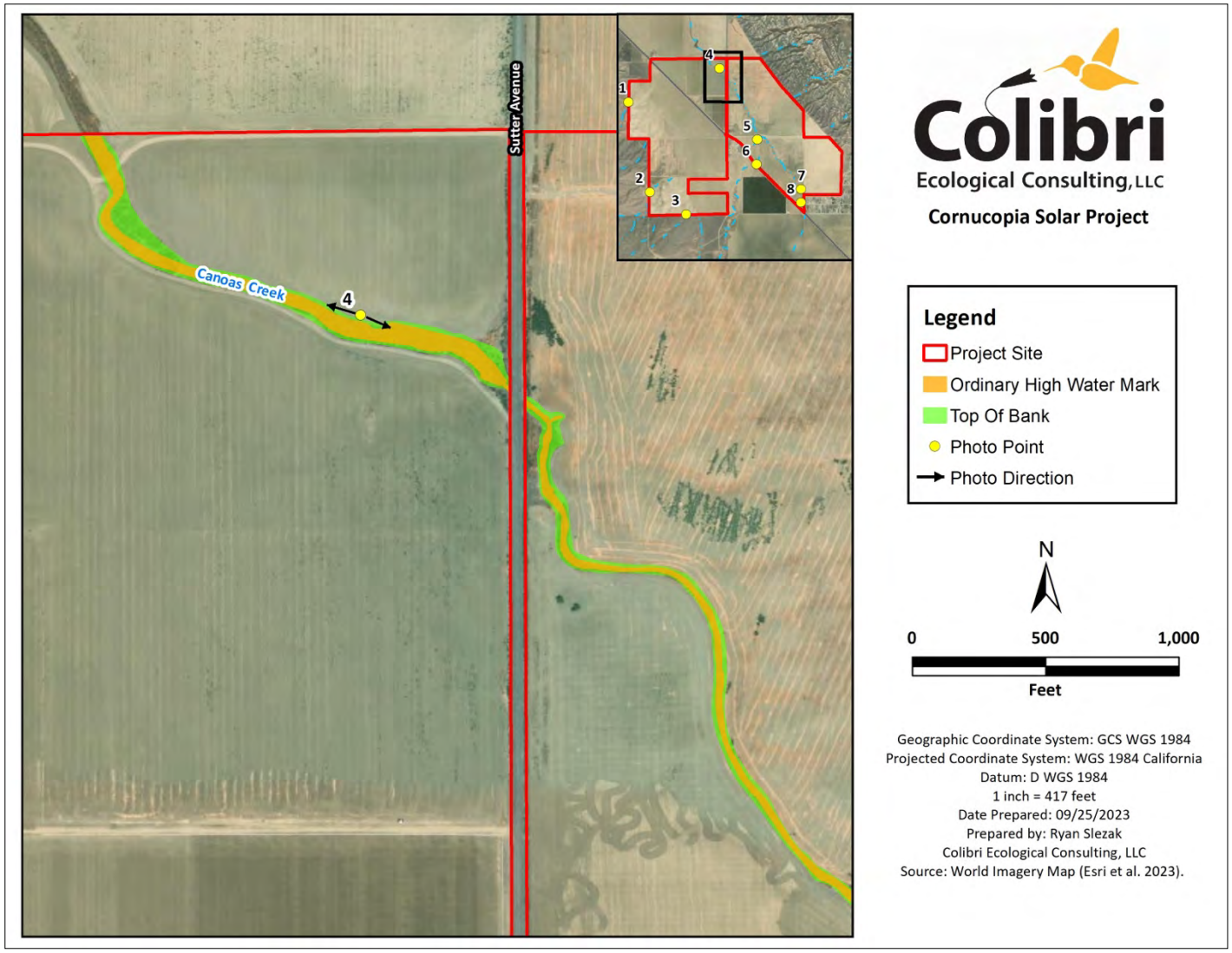
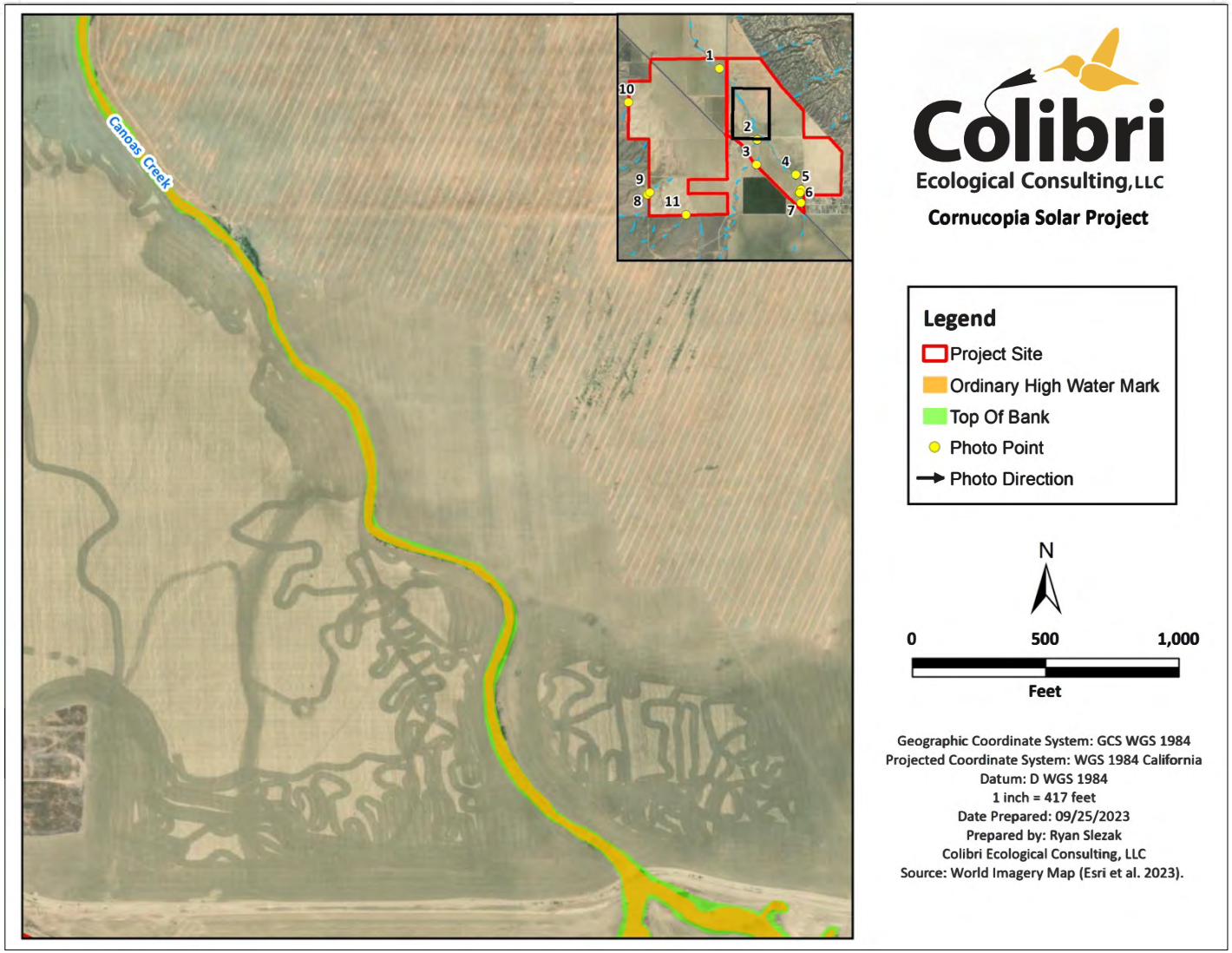
Appendix A. Aquatic resource delineation map.




Canoas Creek
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Colibri
Ecological Consulting, LLC
Cornucopia Solar Project
Legend
Project Site
Ordinary High Water Mark
Top Of Bank
Photo Point
Photo Direction
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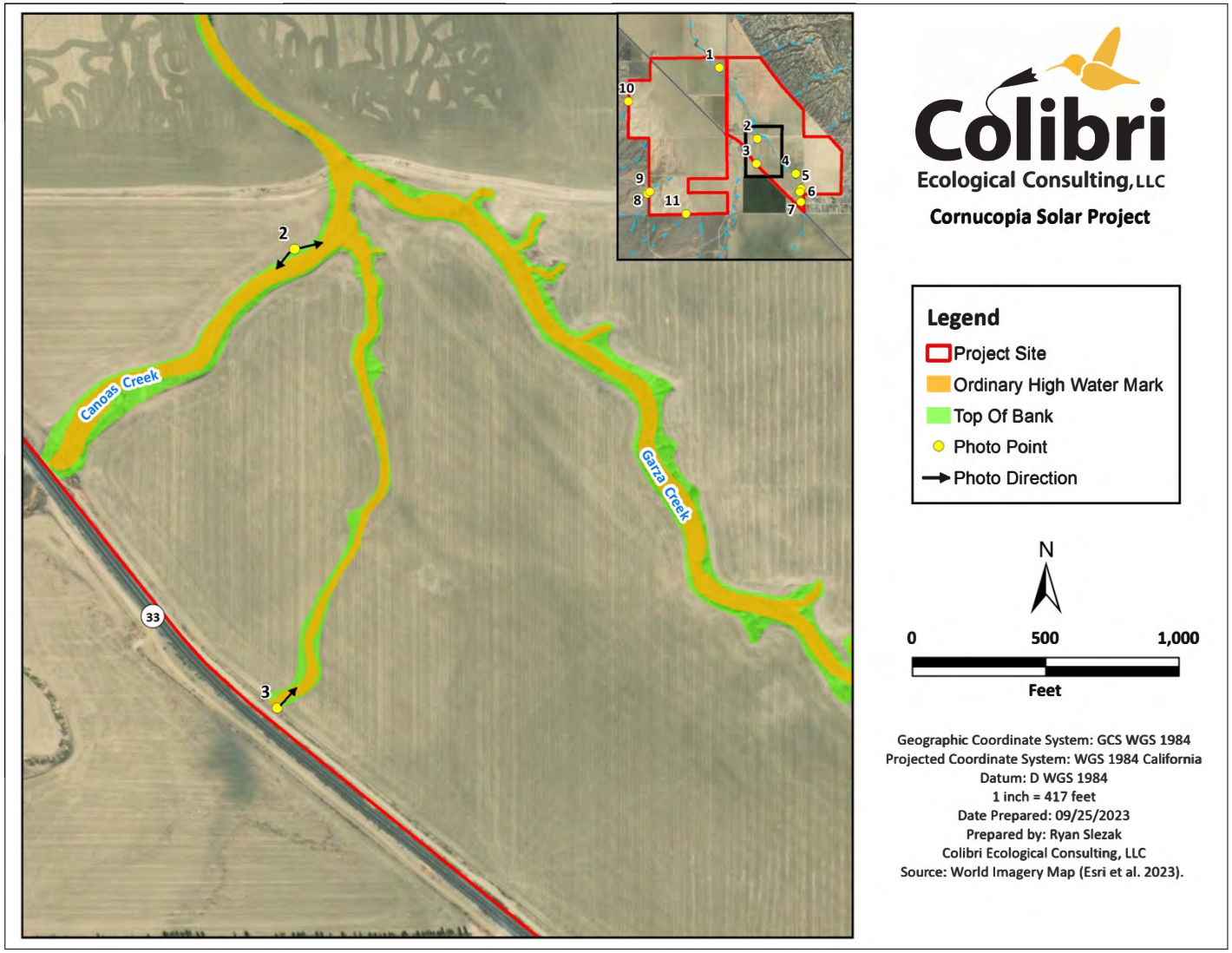
1,000
Feet
Geographic Coordinate System: GCS WGS 1984
Projected Coordinate System: WGS 1984 California
Datum: D WGS 1984
1 inch = 417 feet
Date Prepared: 09/25/2023
Prepared by: Ryan Slezak
Colibri Ecological Consulting, LLC
Source: World Imagery Map (Esri et al. 2023).


Colibri
Ecological Consulting, LLC
Cornucopia Solar Project
Legend
Project Site
Ordinary High Water Mark
Top Of Bank
Photo Point
Photo Direction
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Canoas Creek
Garza Creek
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Geographic Coordinate System: GCS WGS 1984
Projected Coordinate System: WGS 1984 California
Datum: D WGS 1984
1 inch = 417 feet
Date Prepared: 09/25/2023
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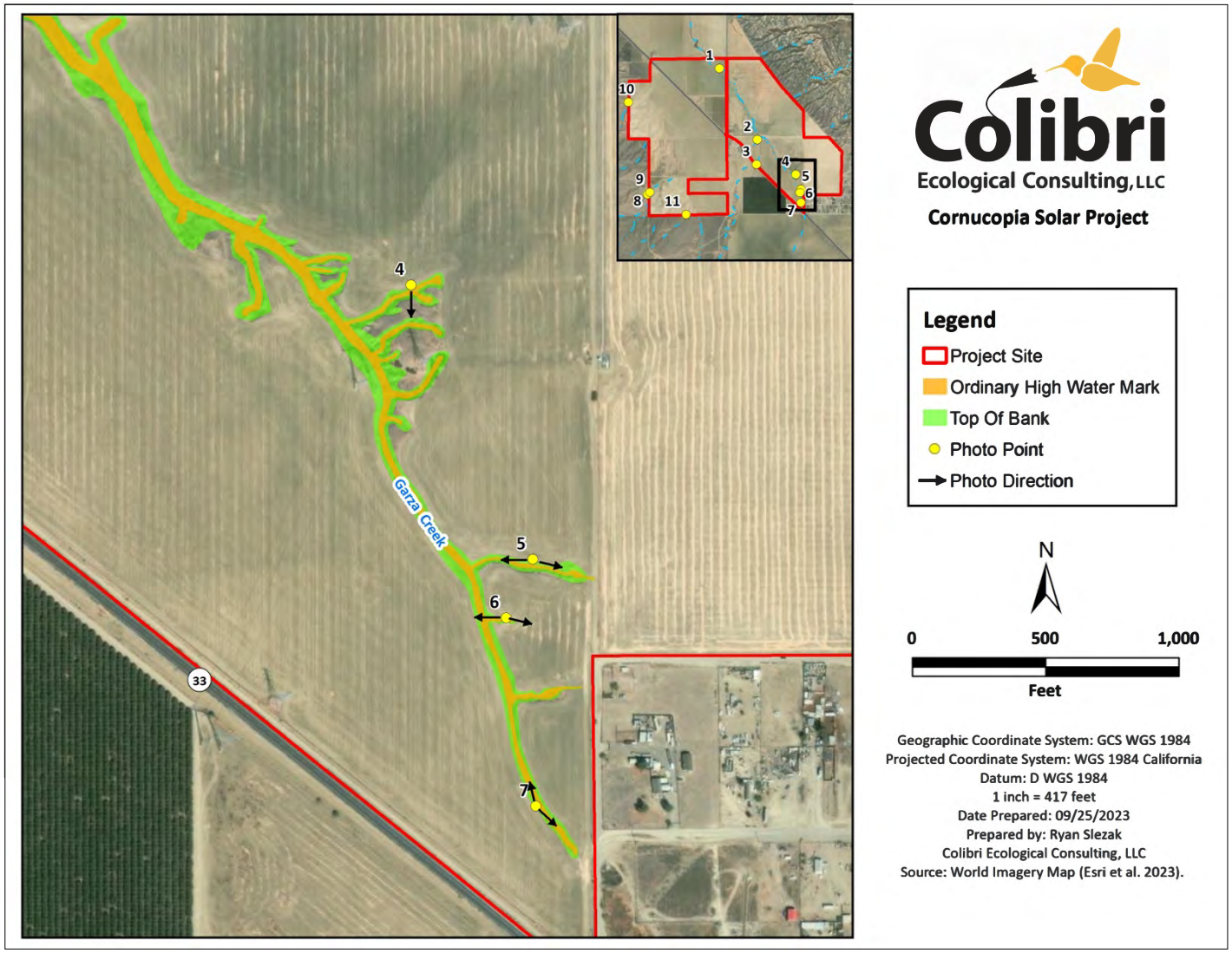
Colibri
Ecological Consulting, LLC
Cornucopia Solar Project
Legend
Project Site
Ordinary High Water Mark
Top Of Bank
Photo Point
Photo Direction
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Geographic Coordinate System: GCS WGS 1984
Projected Coordinate System: WGS 1984 California
Datum: D WGS 1984
1 inch = 417 feet
Date Prepared: 09/25/2023
Prepared by: Ryan Slezak
Colibri Ecological Consulting, LLC
Source: World Imagery Map (Esri et al. 2023).
Garza Creek
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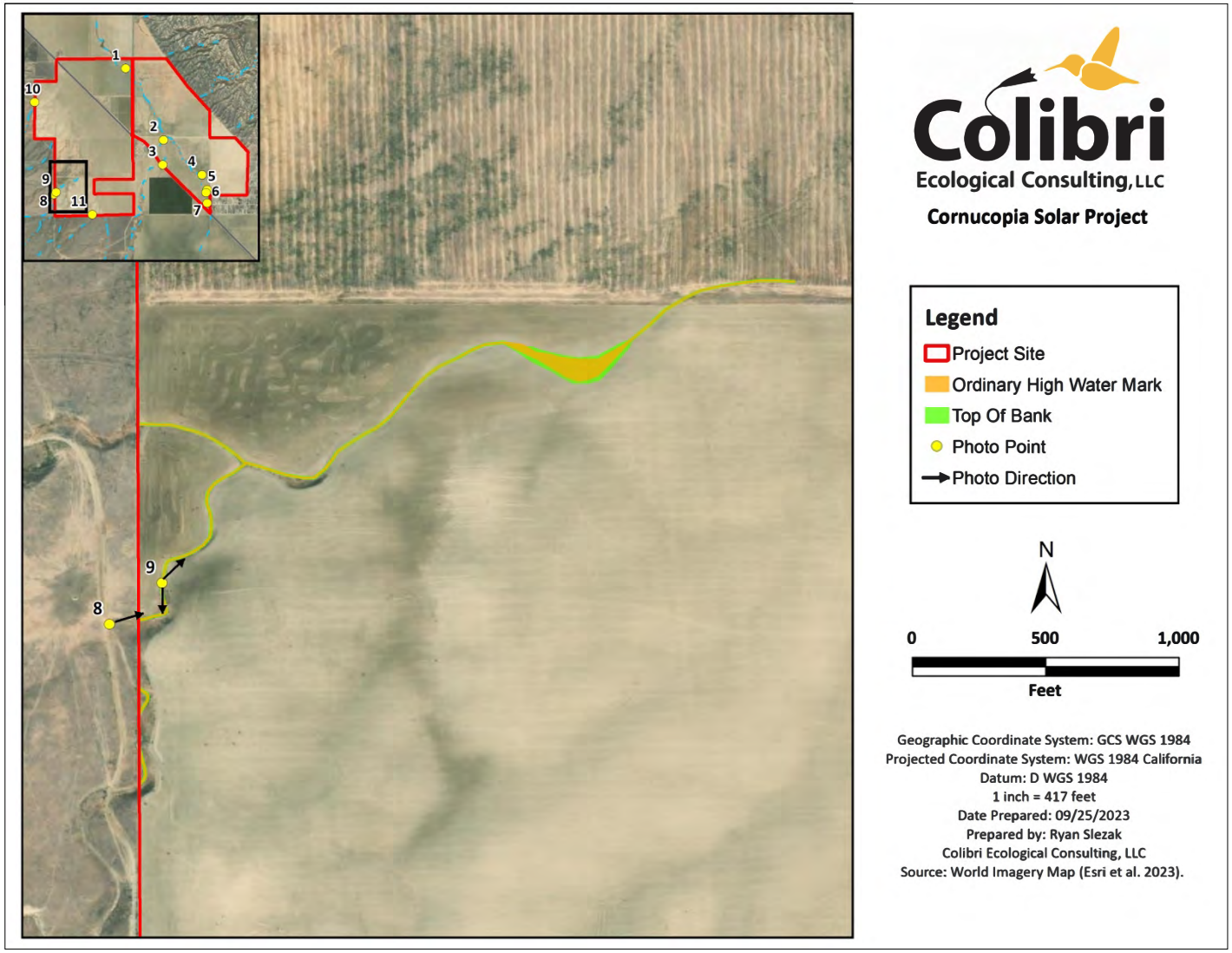
Colibri
Ecological Consulting, LLC
Cornucopia Solar Project
Legend
Project Site
Ordinary High Water Mark
Top Of Bank
Photo Point
Photo Direction
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Projected Coordinate System: WGS 1984 California
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1 inch = 417 feet
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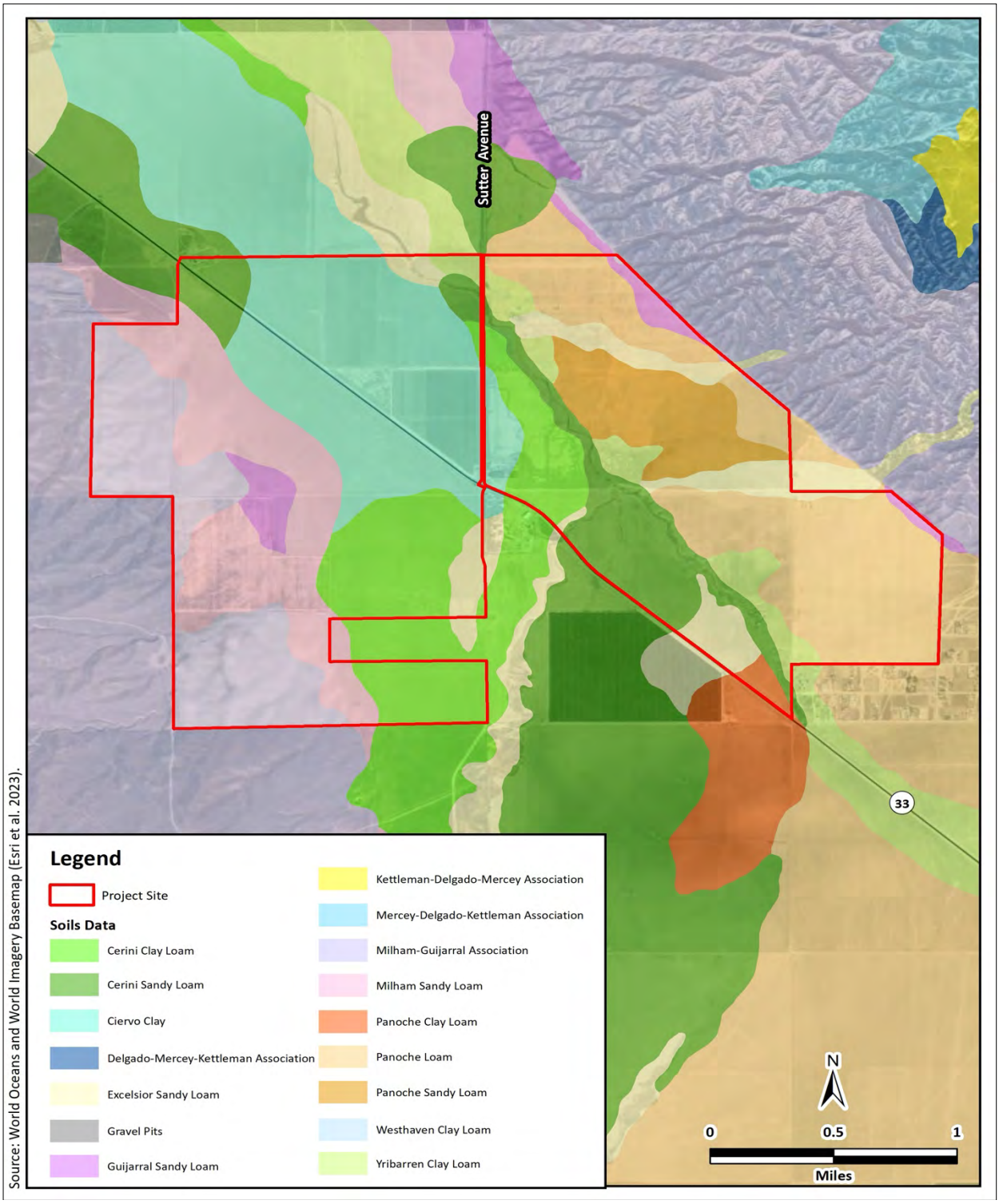
Prepared by: Ryan Slezak
Colibri Ecological Consulting, LLC
Source: World Imagery Map (Esri et al. 2023).

Appendix B. Soil survey map.



Appendix C. Photographs.

Photo 1. Looking west-northwest (downstream) from Photo Point 1 at Canoas Creek.

Photo 2. Looking east-southeast (upstream) from Photo Point 1 at Canoas Creek.

Photo 3. Looking east-northeast (downstream) from Photo Point 2 at Canoas Creek.

Photo 4. Looking southwest (upstream) from Photo Point 2 at Canoas Creek.

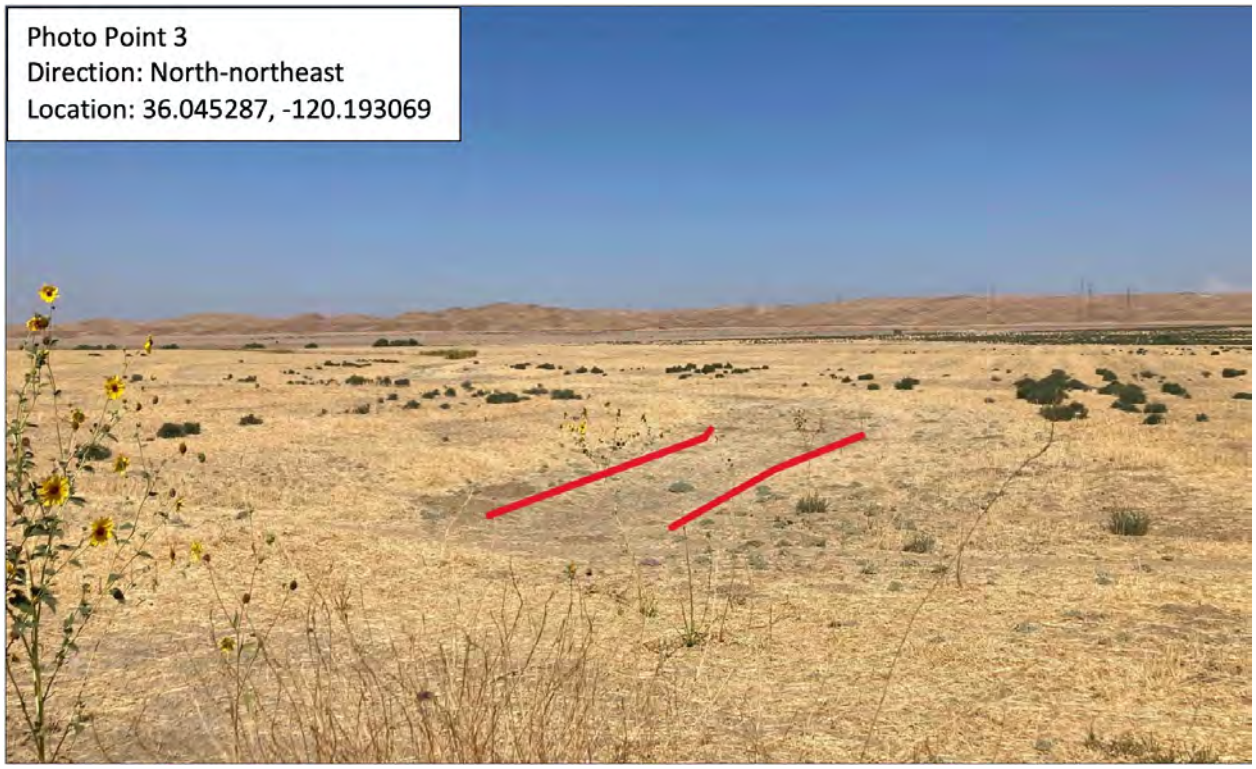


Photo 5. Looking north-northeast (downstream) from Photo Point 3 at an unnamed tributary to Canoas Creek. Red lines represent the OHWM.

Photo 6. Looking south from Photo Point 4 at an erosional channel of Garza Creek.

Photo 7. Looking west (downstream) from Photo Point 5 at an erosional channel of Garza Creek.

Photo 8. Looking east-southeast (upstream) from Photo Point 5 at an erosional channel of Garza Creek.

Photo 9. Looking east-southeast (upstream) from Photo Point 6 at an erosional channel of Garza Creek.

Photo 10. Looking west (downstream) from Photo Point 6 at an erosional channel of Garza Creek.

Photo 11. Looking north-northwest (downstream) from Photo Point 7 at Garza Creek.

Photo 12. Looking southeast (upstream) from Photo Point 8 at Garza Creek.

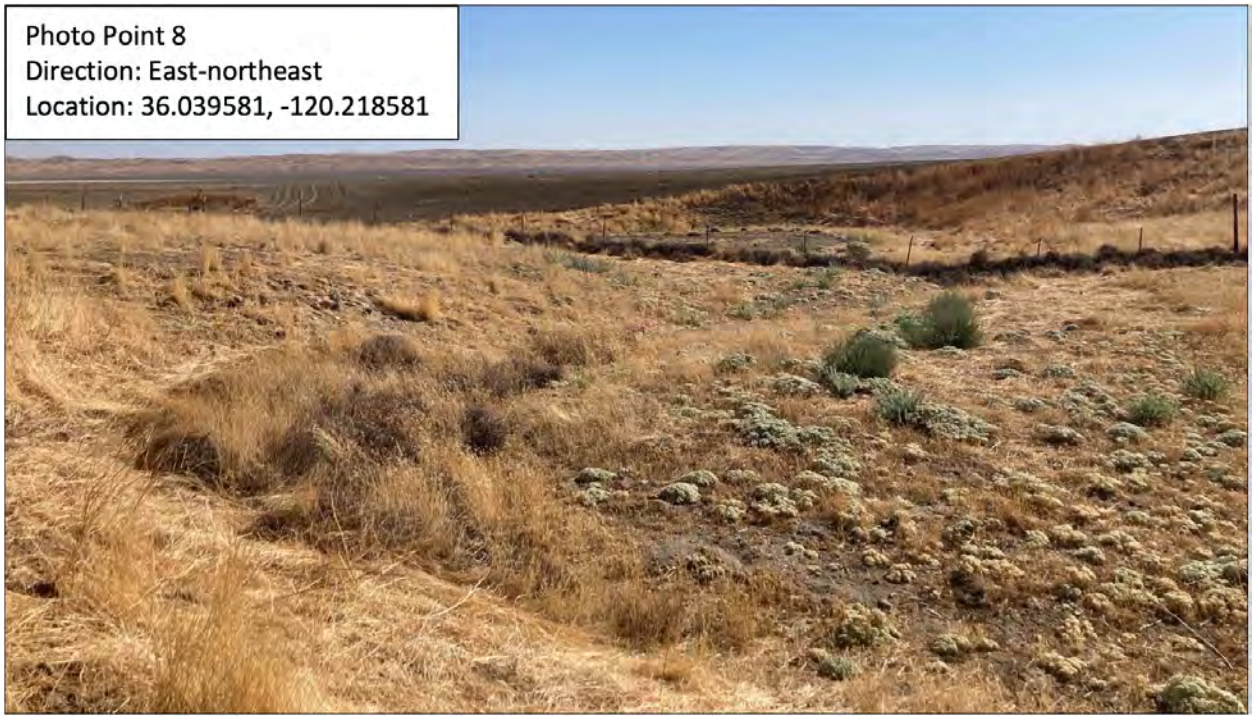


Photo 13. Looking east-northeast (downstream) from Photo Point 8 on the west boundary of the Project site. An unnamed ephemeral drainage extends onto the Project site from the adjacent hills.

Photo 14. Looking northeast (downstream) from Photo Point 9 at an ephemeral drainage in the southwest quadrant of the Project site. Sections of this drainage were recently disced.

Photo 15. Looking south (upstream) from Photo Point 9 at an ephemeral drainage in the southwest quadrant of the Project site. Sections of this drainage were recently disced.

Photo 16. Looking north-northeast from Photo Point 10 on the west boundary of the Project site. Inside the Project site, the drainage feature lacks a defined bed and bank, hydrologic indicators, and hydrophytic vegetation and does not meet the regulatory definition of a stream.

Photo 17. Looking south-southwest from Photo Point 10 on the west boundary of the Project site. The drainage feature contains a poorly defined bed and bank outside of the Project site. Inside the Project site, the drainage feature lacks a defined bed and bank, hydrologic indicators, and hydrophytic vegetation and does not meet the regulatory definition of a stream.

Photo 18. Looking north-northeast from Photo Point 11 on the south boundary of the Project site. Inside the Project site, the drainage feature lacks a defined bed and bank, hydrologic indicators, and hydrophytic vegetation and does not meet the regulatory definition of a stream.

Photo 19. Looking south from Photo Point 11 on the south boundary of the Project site. The drainage feature contains a poorly defined bed and bank outside of the Project site. Inside the Project site, the drainage feature lacks a defined bed and bank, hydrologic indicators, and hydrophytic vegetation and does not meet the regulatory definition of a stream.

Appendix D. Plant list.

Plant species observed in the survey area and their wetland indicator status.

Genus	Species	Common Name	WIS*
Amaranthus	*blitoides*	Prostrate pigweed	FACU
Ambrosia	*acanthicarpa*	Flatspine bur ragweed	NI
Amsinckia	*tessellata*	Bristly fiddleneck	NI
Baccharis	*salicifolia*	Mule fat	FAC
Bromus	*diandrus*	Ripgut brome	NI
Bromus	*hordeaceus*	Soft brome	FACU
Bromus	*madritensis*	Compact brome	UPL
Bromus	*rubens*	Red brome	NI
Castilleja	sp.	Paintbrushes	NI
Centromadia	*pungens*	Common spikeweed	FAC
Chenopodium	sp.	Goosefoots	NI
Croton	*setiger*	Turkey-mullein	NI
Datura	*wrightii*	Sacred datura	UPL
Erodium	*botrys*	Mediterranean stork's-bill	FACU
Euphorbia	*ocellata* ssp. *ocellata*	Contura Creek sandmat	NI
Helianthus	*annuus*	Common sunflower	FACU
Heliotropium	*curassavicum*	Salt heliotrope	FACU
Hirschfeldia	*incana*	Shortpod mustard	NI
Lactuca	*serriola*	Prickly lettuce	FACU
Laennecia	*coulteri*	Coulter's horseweed	FAC
Lepidospartum	*squamatum*	California broomsage	FACU
Lupinus	*nanus*	Sky lupine	NI
Medicago	*polymorpha*	Bur clover	FACU
Phalaris	*minor*	Lesser canary grass	NI
Polygonum	*aviculare*	Prostrate knotweed	FAC
Polypogon	*monspeliensis*	Annual rabbitsfoot grass	FACW

Genus	Species	Common Name	WIS*
Rumex	*crispus*	Curly dock	FAC
Salsola	*tragus*	Prickly Russian thistle	FACU
Sisymbrium	*irio*	London rocket	NI
Sisymbrium	*orientale*	Eastern rocket	NI
Stephanomeria	*pauciflora*	Brownplume wirelettuce	NI
Taeniatherum	*caput-medusae*	Medusahead	NI
Tamarix	*ramosissima*	Salt cedar	NI
Tribulus	*terrestris*	Puncture vine	NI
Trichostema	*lanceolatum*	Vinegarweed	FACU
Triticum	*aestivum*	Bread wheat	NI

*WIS = Wetland Indicator Status (Environmental Laboratory 1987): OBL= occurs in aquatic resources > 99% of time; FACW= occurs in aquatic resources 67–99% of time; FAC= occurs in aquatic resources 34–66% of time; FACU= occurs in aquatic resources 1–33% of time; NI= No wetland indicator listed, UPL= occurs in uplands > 99% of time.

Appendix E. OHWM data sheets.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Cornucopia Solar
Project Number:
Stream: Canoas Creek
Investigator(s): R. Slezak, A. Hernandez, R. Donnelly
Date: 9/14/23
Time: 12:30 pm
Town: Avenal
State: CA
Photo begin file#:
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Photo Point 1

Projection: **Datum:** WGS84

Coordinates: 36.06335, -120.20180

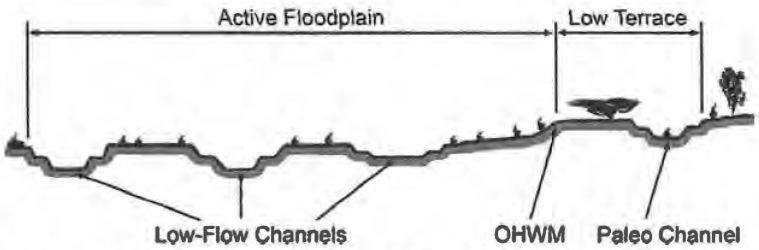
Potential anthropogenic influences on the channel system:
Grazing, agricultural runoff, sedimentation from disced ag. surrounding stream, trash/debris.

Brief site description: Intermittent drainage dominated by H. annuus below OHWM, grasses above OHWM. Vegetation disced above TOB on both banks. Trash & debris in stream channel

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: 5/2023, 4/2021
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

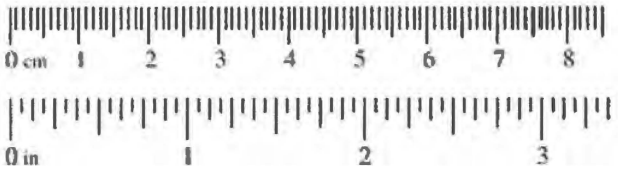


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

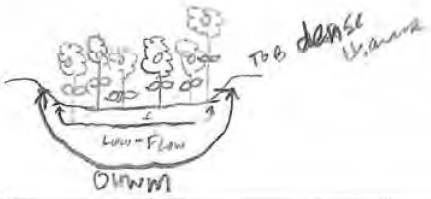
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
0.079	2.00	Granule	Gravel
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: Cornucopia **Cross section ID:** Canvas Cr-lower **Date:** 9/14/23 **Time:** 1245

Cross section drawing:



OHWM

GPS point: 36.06344, -120.20178

Indicators:

- [X] Change in average sediment texture
- [X] Change in vegetation species
- [X] Change in vegetation cover
- [X] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: Dense annual sunflower below OHWM, grasses above. Width = 55' Obvious break in slope, soil cracks & sediment deposits + driftwood present below OHWM.

Floodplain unit: [X] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: 36.06335, -120.20180

Characteristics of the floodplain unit:

Average sediment texture: medium sand

Total veg cover: 45 % Tree: ____ % Shrub: ____ % Herb: 45 %

Community successional stage:

- [ ] NA
- [X] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [X] Mudcracks
- [ ] Ripples
- [X] Drift and/or debris
- [X] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [X] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

0.1-0.5" thick cracked clay pieces with biotic crust on top of medium sand

Scoured channels and sediment deposition

Helianthus annuus

W: 50'

Project ID: Cornucopia **Cross section ID:** Carbon Cr. - Lower **Date:** 9/14/23 **Time:** 1245

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 36.06345, -120.20179

Characteristics of the floodplain unit:

Average sediment texture: loamy/clay & med sand

Total veg cover: 95 % Tree: ____ % Shrub: ____ % Herb: 95 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☒ Soil development
- ☒ Surface relief
- ☐ Other: ____
- ☐ Other: ____
- ☐ Other: ____

Comments:

BW = 60'

trash dumping

dense non-native grasses and Helianthus annua

thistle dense above OHWM

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: ____

Characteristics of the floodplain unit:

Average sediment texture: ____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: ____
- ☐ Other: ____
- ☐ Other: ____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Cornerstone Solar
Project Number:
Stream: Canoas Creek
Investigator(s): R. Slezak, A. Hernandez, R. Donnelly

Date: 09/14/2023 **Time:** 11:00am
Town: Avenal **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: Photo Point 2

Projection: **Datum:** WGS84
Coordinates: 36.04988, -120.19278

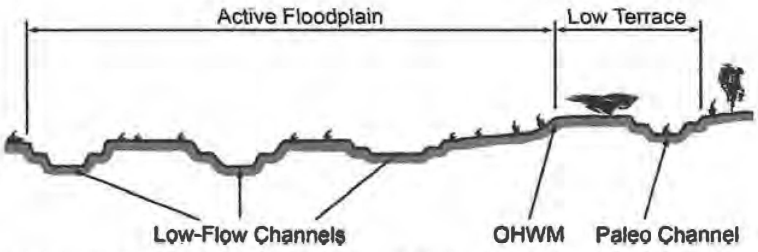
Potential anthropogenic influences on the channel system:
Grazing, agricultural runoff, sedimentation from discing.

Brief site description:
Above confluence w/ Canoas Creek. Disced vegetation above TOB on both banks. intermittent drainage; headwaters at west coast range mtns upstream from fork

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: 5/2023, 4/2021
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

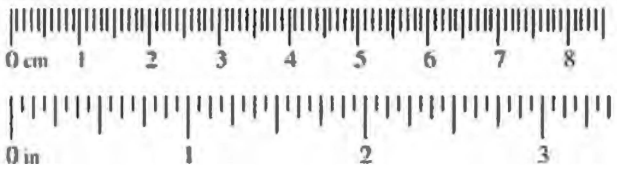


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** Canoas Cr.-Upper **Date:** 9/14/23 **Time:** 11:00 am

Cross section drawing:

OHWM

GPS point: 36.04993, -120.19281

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Helianthus annus throughout and at edge
Low-flow channel sparse vegetation, mostly bare ground
edges of OHWM more densly vegetated,
W: 40'

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: 36.04990, -120.19275

Characteristics of the floodplain unit:

Average sediment texture: med sand
Total veg cover: 30 % Tree: ____ % Shrub: ____ % Herb: 30 %
Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks – pieces
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [x] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

0.25-0.5" large cracked clay pieces with biotic crust above medium sand throughout low-flow channel
mostly sand to distinct clay at edge of channel : color difference - deposited sand
W: 32' Sand deposits present in low-flow channel.

Project ID: **Cross section ID:** Canoas Creek-Upstream **Date:** 09/14/2023 **Time:** 11:00 a

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 36.04995, 120.19283

Characteristics of the floodplain unit:

Average sediment texture: clay

Total veg cover: 75 % Tree: ____ % Shrub: ____ % Herb: 75 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Vegetation cover + species composition
- ☐ Other: ____
- ☐ Other: ____

Comments:

W: 60'

dominant non-native grasses - Bromus sp

loamy/clay at bank of OHWM

clay at bed of OHWM above Low-flow

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: ____

Characteristics of the floodplain unit:

Average sediment texture: ____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: ____
- ☐ Other: ____
- ☐ Other: ____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Coraucopia Solar
Project Number:
Stream: Erosional channel of Garza Creek
Investigator(s): R. Slezak, A. Hernandez, R. Donnelly

Date: 01/14/2023 **Time:** 0945
Town: Aveal **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details:
Photo Point 5

Projection: **Datum:** WGS84
Coordinates: 36.04052, -120.18264

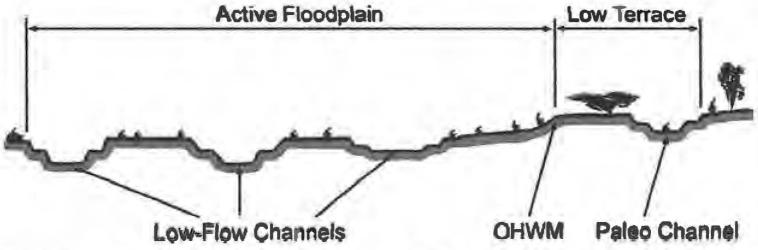
Potential anthropogenic influences on the channel system:
agricultural runoff, grazing

Brief site description:
Ephemeral drainage; no hydrophytic vegetation
Dry tributary to Garza Creek, drains agricultural field + access road to the east.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: 5/2023, 4/2021
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

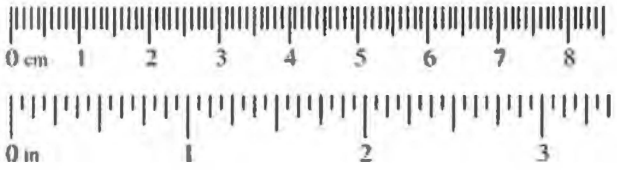


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

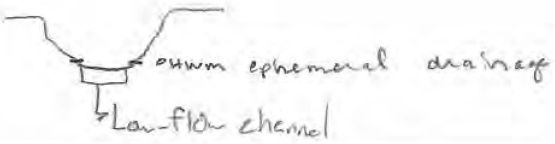
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
1/2 0.0098	0.25	Medium sand	Sand
1/4 0.005	0.125	Fine sand	Sand
1/8 0.0025	0.0625	Very fine sand	Sand
1/16 0.0012	0.031	Coarse silt	Silt
1/32 0.00061	0.0156	Medium silt	Silt
1/64 0.00031	0.0078	Fine silt	Silt
1/128 0.00015	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: **Cross section ID:** Eph. to Garza Cr. **Date:** 09/14/2023 **Time:** 9:30 am

Cross section drawing:



OHWM

GPS point: 36.04054, -120.18264

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [x] Other: Soil cracks below OHWM
- [ ] Other: _____

Comments:

Obvious break in slope @ OHWM, vegetation homogenous throughout area. Soil cracks below OHWM. Clay soil below OHWM, soil sandy above.

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: 36.04052, -120.18264

Characteristics of the floodplain unit:

Average sediment texture: Clay

Total veg cover: 50 % Tree: ____ % Shrub: ____ % Herb: 50 %

Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [x] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

W: 12' Avena sp. dominant species

Eph. to

Project ID: **Cross section ID:** Corral Cr. **Date:** 9/14/23 **Time:** 0945

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 36.04054, -120.18263

Characteristics of the floodplain unit:

Average sediment texture: sand/clay

Total veg cover: 90 % Tree: ____% Shrub: ____% Herb: 90 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

dom spec: Avena sp (barbata), Break in slope @ Low-Flow channel-TOB

w: 30' TOB Vegetation homogeneous throughout area

12' OHWM

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Cornucopia Solar
Project Number:
Stream: Garza Creek
Investigator(s): R. Clezak, R. Donnelly, A. Hernandez

Date: 09/14/2023 **Time:** 0800
Town: Avenal **State:** CA
Photo begin file#: **Photo end file#:**

Y [X] / N [ ] Do normal circumstances exist on the site?

Y [ ] / N [X] Is the site significantly disturbed?

Location Details: Photo Point 7.

Projection: **Datum:** WGS84
Coordinates: 36.03806, -120.18262

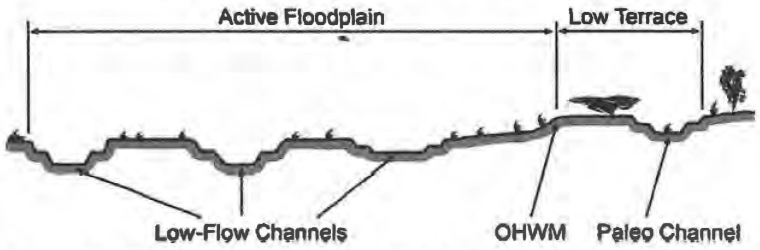
Potential anthropogenic influences on the channel system:
agricultural run-off, sedimentation from discing, grazing

Brief site description: Garza Creek surrounded by disced agricultural field, ruderal vegetation above and below OHWM. Creek dry at time of survey.

Checklist of resources (if available):

- [X] Aerial photography
  Dates: 5/2023, 4/2021
- [X] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [X] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [X] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
- [ ] History of recent effective discharges
- [ ] Results of flood frequency analysis
- [ ] Most recent shift-adjusted rating
- [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

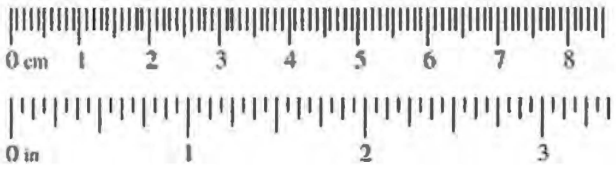


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [X] GPS
   - [ ] Other:

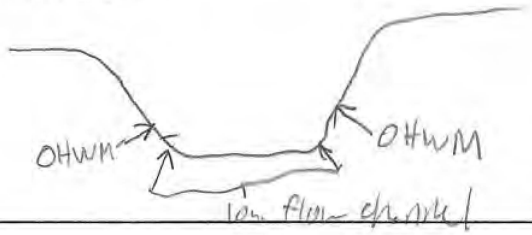
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	Gravel
0.157	4	Pebble	Gravel
		Granule	Gravel
0.079	2.00		
0.039	1.00	Very coarse sand	Sand
0.020	0.50	Coarse sand	Sand
0.0098 (1/2)	0.25	Medium sand	Sand
0.005 (1/4)	0.125	Fine sand	Sand
0.0025 (1/8)	0.0625	Very fine sand	Sand
0.0012 (1/16)	0.031	Coarse silt	Silt
0.00061 (1/32)	0.0156	Medium silt	Silt
0.00031 (1/64)	0.0078	Fine silt	Silt
0.00015 (1/128)	0.0039	Very fine silt	Silt
		Clay	Mud



Project ID: Cornucopia **Cross section ID:** Garza Cr. **Date:** 6/14/2023 **Time:** 8:30 am

Cross section drawing:



OHWM

GPS point: 36.03806, -120.18259

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments: Native grasses above OHWM, Helianthus annuus, Rumex crispus below slight break in slope @ OHWM

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 36.03807, -120.18258

Characteristics of the floodplain unit:

Average sediment texture: Clay

Total veg cover: 40 % Tree: ____ % Shrub: ____ % Herb: 40 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☒ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

w: 7' dominated by sunflower, Helianthus annuus

matted vegetation in bottom of low-flow channel; soil cracks below matted vegetation; greater diversity among vegetation break in slope

Project ID: Cornucopia **Cross section ID:** Garza CS **Date:** 9/14/23 **Time:** 0830

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 36.03806, -120.18261

Characteristics of the floodplain unit:

Average sediment texture: Fine Sand/Clay

Total veg cover: 85 % Tree: ____ % Shrub: ____ % Herb: 85 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☒ Soil development
- ☒ Surface relief
- ☐ Other: ____
- ☐ Other: ____
- ☐ Other: ____

Comments:

Clay loam soil; dominant vegetation: Brassica, non-native grass

Woody debris >1" diameter present on both sides of channel

W: 20' (TOB)

12' (thalweg)

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: N/A

Characteristics of the floodplain unit:

Average sediment texture: ____

Total veg cover: ____ % Tree: ____ % Shrub: ____ % Herb: ____ %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: ____
- ☐ Other: ____
- ☐ Other: ____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Cornucopia Solar
Project Number:
Stream: Unnamed
Investigator(s): R. Swaak, A. Hernandez, R. Donnelly

Date: 09/15/2023 **Time:** 9:00am
Town: Aveno **State:** CA
Photo begin file#: **Photo end file#:**

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: Photo Point 9

Projection: **Datum:** WGS84
Coordinates: 36.04001, -120.21803

Potential anthropogenic influences on the channel system:

discing up to TOB; periodic discing of entire channel downstream

Brief site description:

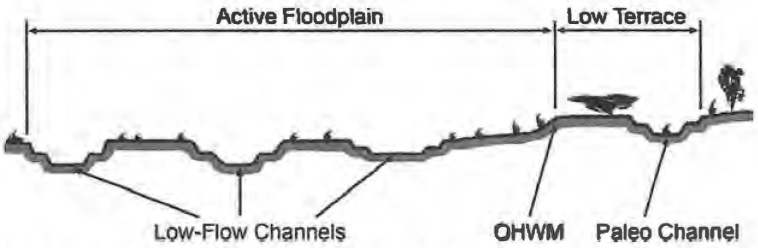
ephemeral drainage; stream eroded hillside at sharp bends up and down stream.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: 5/2023, 4/2021
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
- ☐ History of recent effective discharges
- ☐ Results of flood frequency analysis
- ☐ Most recent shift-adjusted rating
- ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

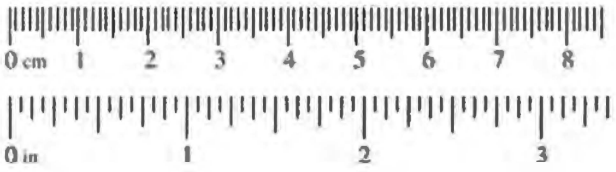


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☒ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☐ GPS
   - ☐ Other:

Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00		
0.039	1.00	Very coarse sand	
		Coarse sand	
0.020	0.50		
1/2 0.0098	0.25	Medium sand	Sand
		Fine sand	
1/4 0.005	0.125		
		Very fine sand	
1/8 0.0025	0.0625		
		Coarse silt	
1/16 0.0012	0.031		
		Medium silt	Silt
1/32 0.00061	0.0156		
		Fine silt	
1/64 0.00031	0.0078		
		Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: Catnucopia **Cross section ID:** Eph-SW site **Date:** 9/15/23 **Time:** 0900

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: 36.04001, -120.21804

Characteristics of the floodplain unit:

Average sediment texture: gravel/sand/loam

Total veg cover: 70 % Tree: ____% Shrub: ____% Herb: 70 %

Community successional stage:

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☐ Benches
- ☒ Soil development
- ☒ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

W: 7'

greater loam concentration than Low-flow; less sand/gravel

cobble, pebble, granule

Obvious break in slope at low-flow channel = TOB

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____% Tree: ____% Shrub: ____% Herb: ____%

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

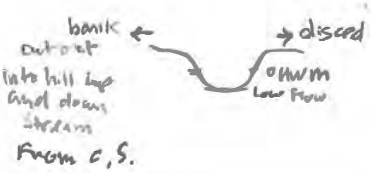
Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☐ Benches
- ☐ Soil development
- ☐ Surface relief
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

Comments:

Project ID: Cornucopia **Cross section ID:** Eph-SW site **Date:** 9/15/23 **Time:** 0900

Cross section drawing:



OHWM

GPS point: 36.04001, -120.21804

Indicators:

- [x] Change in average sediment texture
- [ ] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments: boulder, cobble, pebble, granule, in bed and throughout bank
greater ratio of loamy sand soil above ohwm
W: 3'
Veg. notably sparse below OHWM compared to above OHWM

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: 36.04000, -120.21803

Characteristics of the floodplain unit:
Average sediment texture: gravel/sand/loam
Total veg cover: 40 % Tree: ____% Shrub: ____% Herb: 40 %
Community successional stage:

- [ ] NA
- [x] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [x] Presence of bed and bank
- [ ] Benches
- [x] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments: boulder, cobble, pebble, granule present; less sandy loam than active floodplain
W: 1.5'
Obvious break in slope defining low-flow channel.

Appendix F. Aquatic resource Excel sheet.

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
Canoas Creek	California	R4SB	RIVERINE	Area	6.08	ACRE	ISOLATE	36.056279	-120.195956	
Garza Creek	California	R4SB	RIVERINE	Area	4.85	ACRE	ISOLATE	36.045152	-120.186808	
Unnamed Intermittent Stream	California	R4SB	RIVERINE	Area	0.69	ACRE	ISOLATE	36.048758	-120.192199	
Unnamed Ephemeral Stream	California	R6	RIVERINE	Area	2.06	ACRE	ISOLATE	36.03999	-120.218041	

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Appendix F:
Special-status Species Tables

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Table 1: Special-status Plant Species Evaluated

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Monocots						
Allium howellii var. *howellii* Howell's onion	—	—	4.3	Perennial bulbiferous herb found in clay (sometimes) and serpentinite (sometimes) soils in valley and foothill grassland. Elevation: 50–2200 m Bloom period: March–April	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No
Fritillaria agrestis stinkbells	—	—	4.2	Perennial bulbiferous herb found in clay and serpentinite (sometimes) soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 10–1555 m Bloom period: March–June	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No
Dicots						
Acanthomintha obovata ssp. *obovata* San Benito thorn-mint	—	—	4.2	Annual herb found in alkaline, clay and serpentinite soils in chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 395–1500 m Bloom period: April–July	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No
Amsinckia furcata forked fiddleneck	—swain	—	4.2	Annual herb found in cismontane woodland and valley and foothill grassland. Elevation: 50–1000 m Bloom period: February–May	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No
Antirrhinum ovatum oval-leaved snapdragon	—	—	4.2	Annual herb found in alkaline (often) and clay (sometimes) soils in chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 200–1000 m Bloom period: May–November	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Atriplex coronata var. *coronata* crownscale	—	—	4.2	Annual herb found in alkaline and clay (often) soils in chenopod scrub, valley and foothill grassland, and vernal pools. Elevation: 1–590 m Bloom period: March–October	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species due to lack of vernal pools. Furthermore, intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No
Atriplex depressa brittlescale	—	—	1B.2	Annual herb found in alkaline and clay soils in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools. Elevation: 1–320 m Bloom period: April–October	**None:** The project site does not contain suitable habitat(s) that would support occurrence of this species due to lack of vernal pools, seeps, or playas. Furthermore, intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There is one record of this species within five miles of the project site.	No
Benitoa occidentalis western lessingia	—	—	4.3	Annual herb found in clay (sometimes) and serpentinite (sometimes) soils in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Elevation: 450–1070 m Bloom period: May–November	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No
Calystegia collina ssp. *venusta* South Coast Range morning-glory	—	—	4.3	Perennial rhizomatous herb found in serpentinite (sometimes) soils in chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 270–1490 m Bloom period: April–June	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Caulanthus californicus California jewelflower	FE	CE	1B.1	Annual herb found in sandy soils in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 61–1000 m Bloom period: February–May	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There are two recent records within five miles of the project site and six historical records within 10 miles of the project site.	No
Caulanthus lemmonii Lemmon's jewelflower	—	—	1B.2	Annual herb found in pinyon and juniper woodland and valley and foothill grassland. Elevation: 80–1580 m Bloom period: February–May	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There is one historical record and one recent records of this species within 10 miles.	No
Chorizanthe ventricosa potbellied spineflower	—	—	4.3	Annual herb found in serpentinite soils in cismontane woodland and valley and foothill grassland. Elevation: 65–1235 m Bloom period: May–September	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable soils that would support occurrence of this species.	No
Clarkia breweri Brewer's clarkia	—	—	4.2	Annual herb found in serpentinite (often) soils in chaparral, cismontane woodland, and coastal scrub. Elevation: 215–1115 m Bloom period: April–June	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable soils that would support occurrence of this species.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
Deinandra halliana Hall's tarplant	—	—	1B.1	Annual herb found in alkaline (sometimes) and clay soils in chenopod scrub, cismontane woodland, and valley and foothill grassland. Elevation: 260–950 m Bloom period: April–May	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There are no recorded occurrences of this species within 10 miles of the project site.	No
Delphinium gypsophilum ssp. *parviflorum* small-flowered gypsum-loving larkspur	—	—	3.2	Perennial herb found in clay, rocky, and serpentinite (sometimes) soils in cismontane woodland and valley and foothill grassland. Elevation: 190–350 m Bloom period: April–June	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable soils that would support occurrence of this species.	No
Delphinium recurvatum recurved larkspur	—	—	1B.2	Perennial herb found in alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland. Elevation: 3–790 m Bloom period: March–June	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There is one historical record within 10 miles of the project site.	No
Eremalche parryi ssp. *kernensis* Kern mallow	FE	—	1B.2	Annual herb found in clay (sometimes) and sandy (sometimes) soils and dry openings in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 70–1290 m Bloom period: January–May	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There is one historical record of this species within 10 miles of the project site.	No
Eriastrum hooveri Hoover's eriastrum	FD	—	4.2	Annual herb found in gravelly (sometimes) soils in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 50–915 m	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
				Bloom period: March–July	species on the project site. There are two historical records of this species between five and 10 miles from the project site.	
Eriogonum eastwoodianum Eastwood's buckwheat	—	—	1B.3	Annual herb found in clay, sandy, shale, and talus soils in cismontane woodland and valley and foothill grassland. Elevation: 200–1000 m Bloom period: May–September	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There are no recorded occurrences of this species within 10 miles of the project site.	No
Eriogonum gossypinum cottony buckwheat	—	—	4.2	Annual herb found in clay soils in chenopod scrub and valley and foothill grassland. Elevation: 100–550 m Bloom period: March–September	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No
Eriogonum nudum var. *indictum* protruding buckwheat	—	—	4.2	Perennial herb found in clay and serpentinite soils in chaparral, chenopod scrub, and cismontane woodland. Elevation: 150–1463 m Bloom period: May–October	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable soils that would support occurrence of this species.	No
Eriogonum temblorense Temblor buckwheat	—	—	1B.2	Annual herb found in valley and foothill grassland (clay, sandstone). Elevation: 300–1000 m Bloom period: May–September	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable substrates that would support occurrence of this species. There is one	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
					recent record between five and 10 miles from the project site.	
Eschscholzia hypecoides San Benito poppy	—	—	4.3	Annual herb found in clay and serpentinite soils in chaparral, cismontane woodland, and valley and foothill grassland. Elevation: 200–1500 m Bloom period: March–June	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable soils that would support occurrence of this species.	No
Galium andrewsii ssp. *gatense* phlox-leaf serpentine bedstraw	—	—	4.2	Perennial herb found in rocky and serpentinite soils in chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 150–1450 m Bloom period: April–July	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable habitats that would support occurrence of this species.	No
Hesperevax caulescens hogwallow starfish	—	—	4.2	Annual herb found in alkaline (sometimes) soils in valley and foothill grassland (mesic clay) and vernal pools (shallow). Elevation: 0–505 m Bloom period: March–June	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable habitats that would support occurrence of this species.	No
Lagophylla diabolensis Diablo Range hare-leaf	—	—	1B.2	Annual herb found in clay soils in cismontane woodland and valley and foothill grassland. Elevation: 365–885 m Bloom period: April–September	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site is outside of the known elevation range of the species. There is	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
					one historical record between five and 10 miles from the project site.	
Lasthenia chrysantha alkali-sink goldfields	—	—	1B.1	Annual herb found in alkaline soils in vernal pools. Elevation: 0–200 m Bloom period: February–April	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project. There is one historical record between five and 10 miles from the project site.	No
Layia heterotricha pale-yellow layia	—	—	1B.1	Annual herb found in alkaline (sometimes) and clay (sometimes) soils in cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill grassland. Elevation: 300–1705 m Bloom period: March–June	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There is one recent and one historical record between five and 10 miles from the project site.	No
Madia radiata showy golden madia	—	—	1B.1	Annual herb found in cismontane woodland and valley and foothill grassland. Elevation: 25–1215 m Bloom period: March–May	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There are two recent and two historical records between five and 10 miles from the project site.	No
Malacothamnus aboriginum Indian Valley bush-mallow	—	—	1B.2	Perennial deciduous shrub found in burned areas (often) and granitic and rocky soils in chaparral and cismontane woodland. Elevation: 150–1700 m Bloom period: April–October	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site and the project site does not contain suitable habitats that would support occurrence of this species. There are two historical	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			
					records between five and 10 miles from the project site.	
Monolopia congdonii San Joaquin woollythreads	—	—	1B.2	Annual herb found in chenopod scrub and valley and foothill grassland (sandy). Elevation: 60–800 m Bloom period: February–May	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There are 14 recent records within five miles of the project site.	No
Navarretia nigelliformis ssp. *radians* shining navarretia	—	—	1B.2	Annual herb found in clay (sometimes) soils in cismontane woodland, valley and foothill grassland, and vernal pools. Elevation: 65–1000 m Bloom period: April–July	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There are no recent records of this species within 10 miles of the project site.	No
Senecio aphanactis chaparral ragwort	—	—	2B.2	Annual herb found in alkaline (sometimes) soils in chaparral, cismontane woodland, and coastal scrub. Elevation: 15–800 m Bloom period: January–April	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site. There are two recent records between five and 10 miles from the project site in mountainous areas.	No
Trichostema ovatum San Joaquin bluecurls	—	—	4.2	Annual herb found in chenopod scrub and valley and foothill grassland. Elevation: 65–320 m Bloom period: July–October	**None:** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for persistence of this species on the project site.	No

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]	Included in Impact Analysis
	USFWS[1]	CDFW[2]	CNPS[3]			

Code Designations

[1] Federal Status: 2024 USFWS Listing

- **ESU** = Evolutionary Significant Unit is a distinctive population.
- **FE** = Listed as endangered under the Endangered Species Act.
- **FT** = Listed as threatened under the Endangered Species Act.
- **FC** = Candidate for listing (threatened or endangered) under the Endangered Species Act.
- **FD** = Delisted in accordance with the Endangered Species Act.
- **FPD** = Federally Proposed to be Delisted.
- **MBTA** = protected by the Migratory Bird Treaty Act
- **—** = Not federally listed

[2] State Status: 2024 CDFW Listing

- **SE** = Listed as endangered under the California Endangered Species Act (CESA).
- **ST** = Listed as threatened under CESA.
- **SC** = Listed as Candidate under CESA.
- **SSC** = Species of Special Concern as identified by the CDFW.
- **FP** = Listed as fully protected under the Fish and Game Code.
- **CFG** = FGC =protected by Fish and Game Code 3503.5
- **CR** = Rare in California.
- **—** = Not State-listed

[3] CNPS: 2024 CNPS Listing

- **Rank 1A:** Plants presumed extirpated in California and either rare or extinct elsewhere
- **Rank 1B:** Plants rare, threatened, or endangered in California and elsewhere
- **Rank 2A:** Plants presumed extirpated in California but common elsewhere
- **Rank 2B:** Plants rare, threatened, or endangered in California but more common elsewhere
- **Rank 3:** Plants about which more information is needed
- **Rank 4:** Watch List: Plants of limited distribution

Bloom period: Months in parentheses are uncommon.

Notes:

[4] **Habitat Description**: Habitat description adapted from the California Natural Diversity Database (CNDDB) and California Native Plant Society (CNPS) online inventory or other specified source.

[5] **Potential to Occur and Rationale**: Location of recorded species occurrences determined by geospatial information from BIOS 6 or other specified source.

Sources:

California Department of Fish and Wildlife (CDFW). 2024. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed December 12, 2023.

California Native Plant Society (CNPS). 2024. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/. Accessed December 12, 2023.

California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023.

Table 2: Special-status Wildlife Species Evaluated

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Invertebrates					
Bombus crotchii Crotch's bumble bee	—	SC	This species occurs primarily in California, including coastal habitats, western Mojave Desert, San Joaquin Valley, and adjacent foothills through most of southwestern California. It inhabits arid grasslands and shrublands, and its food sources including milkweeds, pincushions, lupines, clovers, phacelias, sages, clarkias, poppies, and buckwheats.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one historical record within five miles of the project site and two historical records between five and 10 miles from the project site.	No
Coelus gracilis San Joaquin dune beetle	—	—	Occurs in interior dunes containing sandy substrates. Inhabits fossil dunes along the western edge of San Joaquin Valley	**None**. Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There are two historical records within five miles of the project site and one historical record between five and 10 miles from the project site.	No
Danaus plexippus monarch butterfly	—	—	Occurs in temperate climates, such as eastern and western North America and undergoes long-distance migration. Lays eggs on obligate milkweed host plant (primarily Asclepias spp.). Inhabits a variety of open habitats including fields, meadows, weedy areas, marshes, and roadsides. Adults feed on variety of flowers including dogbane, lilac, red clover, lantana, thistles, goldenrods, blazing stars, ironweed, and tickseed sunflower.	**Low.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. No milkweed is present on project site therefore species would not breed on-site but may occur as a transient.	No

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Lytta hoppingi Hopping's blister beetle	—	—	Inhabits the foothills at the southern end of the Central Valley.	**None.** The project site does not contain suitable habitat that would support occurrence of this species. There is one record between five and 10 miles from the project site.	No
Lytta morrisoni Morrison's blister beetle	—	—	Inhabits valley and foothill grasslands of the southern Central Valley of California.	**None.** The project site does not contain suitable habitat that would support occurrence of this species. There is one historical record between five and 10 miles from the project site.	No
Crustaceans					
Branchinecta lynchi vernal pool fairy shrimp	FT	—	Small vernal pools with cool water (10ºC), moderate alkalinity and conductivity, and less than 1 m deep.	**None.** The project site does not contain suitable habitat that would support occurrence of this species.	No
Amphibians					
Ambystoma californiense California Tiger Salamander	FT	ST WL	Need underground refuges, especially ground squirrel burrows, and vernal pools, ponds or other standing water bodies for breeding.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There are no recorded occurrences of this species within 10 miles of the project site.	No
Rana boylii pop. 4 foothill yellow-legged frog - central coast DPS	—	SE	Occurs in partly shaded shallow streams and riffles with a rocky substrate in a variety of habitats, including riparian forest, riparian scrub, riparian woodland, and south coast flowing waters.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one historical record of this species between five and 10 miles from the project site.	No
Spea hammondii western spadefoot	—	SSC	Occurs in open areas with sandy or gravelly soils in mixed woodlands, grasslands, coastal sage and Riversidean alluvial fan sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Breeds in ephemeral	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There are three recent and one historical record of this species	No

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
			rain pools that do not contain bullfrogs, fish, or crayfish.	between five and 10 miles from the project site.	
Reptiles					
Anniella alexanderae Temblor legless lizard	—	CE SSC	Occurs in sandy soil at the southeast base of the Temblor Ranges, southwestern San Joaquin Valley, Kern County. Often found underneath leaf litter, rocks, and logs.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one recent record within five miles of the project site and one recent record between five and 10 miles from the project site.	No
Anniella spp. California legless lizard	—	SSC	Occurs in moist, loose soil in a variety of coastal and interior habitats, including sandy washes and alluvial fans. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks. Leaf litter under trees and bushes in sunny areas and dunes stabilized with bush lupine and mock heather often indicate suitable habitat. Often can be found under surface objects such as rocks, boards, driftwood, and logs.	**None.** Potentially suitable habitat may be present within Canoas Creek, but intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one historical record within five miles of the project site and one recent record between five and 10 miles from the project site.	No
Arizona elegans occidentalis California glossy snake	—	SSC	Inhabits arid scrub, rocky washes in grasslands and chaparral. Appears to prefer microhabitats of open areas and areas with soil loose enough for easy burrowing.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one historical record within five miles of the project site and one recent and two historical records of this species between five and 10 miles from the project site.	No
Emys marmorata western pond turtle	—	SSC	Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms,	**None.** The project site does not contain habitats that would support occurrence of this	No

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
			in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater.	species. There is one recent record between five and 10 miles from the project site.	
Gambelia sila blunt-nosed leopard lizard	FE	SE FP	Occurs in sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts.	**None**. Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one recent and twenty historical records of this species within 10 miles of the project site.	No
Masticophis flagellum ruddocki San Joaquin coachwhip	—	SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one historical record of this species within five miles of the project site and one recent and one historical record between five and 10 miles from the project site.	No
Birds					
Agelaius tricolor tricolored blackbird	BCC; MBTA	ST; SSC; FGC	Nests in wetlands with cattails, bulrushes, and willows, also in agricultural fields, especially triticale fields. Foraging habitats include cultivated fields, feedlots associated with dairy farms, and wetlands.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site and the project site does not contain suitable nesting habitat to support this species. There are two recent records of this species between five and 10 miles from the project site.	No
Asio otus long-eared owl	MBTA	SSC; FGC	Occurs and nests in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrublands.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site and the project site does not contain suitable nesting habitat to	No

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
				support this species. There is one recent record of this species between five and 10 miles from the project site.	
Athene cunicularia burrowing owl	BCC; MBTA	SSC; FGC	Found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. A subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel (*Otospermophilus beecheyi*).	**Moderate.** Suitable habitat for this species exists in the wild oats and annual brome grasslands adjacent to the project site and fallowed areas on the project site could potentially support occurrence of the species if California ground squirrels burrow there. There are two recent records of this species within five miles of the project site and three recent and six historical records between five and 10 miles from the project site.	Yes
Buteo swainsoni Swainson's hawk	BCC; MBTA	ST; FGC	Antelope Valley Swainson's hawks are known to have historically nested in Joshua tree woodlands and foraged in grasslands and native desert scrub communities. Currently, they nest in Joshua tree woodlands, ornamental roadside trees, and windrow or perimeter trees in active and historical agricultural areas. Foraging habitat includes dry land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, new orchards, and cereal grain crops. Swainson's hawks may also forage in grasslands, Joshua tree woodlands, and other desert scrub habitats that support a suitable prey base. Gophers dominate the prey base of agriculturally based pairs while Swainson's hawks nesting in natural desert habitats consume a wider variety of prey species.	**Moderate.** Suitable foraging habitat exists in the wild oats and annual brome grasslands adjacent to the project site and in fallow lands on the project site. Suitable nesting habitat is located in the black poplar hedgerow within 500 feet of the project site. This species has been documented within 5 miles of the project site as recently as 2015 (eBird 2021). There is one recent and one historical record between five and 10 miles from the project site.	Yes
Falco mexicanus Prairie falcon	BCC; MBTA	WL; FGC	Uncommon permanent resident associated primarily with perennial grasslands, savannas, rangeland, some agricultural fields, and desert scrublands. Typically nests in a scrape on a	**Low.** Potentially suitable foraging habitat exists in the wild oats and annual brome grasslands adjacent to the project site and in fallow lands on the project site. However, there is no	No

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
			sheltered ledge of a cliff overlooking a large, open area. Sometimes nests on old raven or eagle stick nest on cliff, bluff, or rock outcrop.	suitable nesting habitat on-site or in the project vicinity. There are three historical records of this species within five miles of the project site and one historical record between five and 10 miles from the project site.	
Gymnogyps californianus California condor	FE; MBTA	SE; FP; FGC	Nests in mountainous cliff caves. Foraging habitat includes open grasslands and oak savanna foothills that support populations of large mammals such as deer and cattle.	**None.** The project site does not contain suitable nesting or foraging habitat that would support occurrence of this species. There are no records of this species within 10 miles of the project site.	No
Lanius ludovicianus loggerhead shrike	BCC; MBTA	SSC; FGC	Broken woodlands, savanna, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Low.** Potentially suitable foraging habitat exists in the wild oats and annual brome grasslands adjacent to the project site and marginally suitable habitat exists in fallow lands on the project site. However, there is no suitable nesting habitat on-site or within 500 feet of the project site. There is one historical record between five and 10 miles from the project site.	No
Toxostoma lecontei Le Conte's thrasher	BCC; MBTA	SSC; FGC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	**None.** Intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site and the Canoas Creek channel is too disturbed to provide suitable habitat to support occurrence of this species. There is one historical record between five and 10 miles from the project site.	No
Mammals					
Ammospermophilus nelsoni Nelson's (=San Joaquin) antelope squirrel	—	ST	Occurs in Western San Joaquin Valley in elevations of 200-1200 ft. on dry, sparsely vegetated loam soils. Digs burrows or uses k-rat burrows. Needs widely scattered shrubs, forbs	**None.** Potentially suitable habitat exists in the wild oats and annual brome grasslands adjacent to the project site, but intensive agricultural use of the project site in recent and historical times has likely eliminated the	No

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
			and grasses in broken terrain with gullies and washes.	possibility for occurrence of this species on the project site. There are four historical records of this species within five miles of the project site and eight historical records between five and 10 miles from the project site.	
Antrozous pallidus pallid bat	—	SSC	Occurs in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Species is very sensitive to disturbance of roosting sites.	**Low.** The project site contains marginally suitable foraging habitat for this species, but there is no potential roosting habitat on-site. There is one historical record between five and 10 miles from the project site.	No
Dipodomys ingens giant kangaroo rat	FE	SE	Occurs in annual grasslands on the western side of the San Joaquin Valley, marginal habitat in alkali scrub. Needs level terrain and sandy loam soils for burrowing.	**None.** Potentially suitable habitat exists in the wild oats and annual brome grasslands adjacent to the project site, but intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There are no recorded occurrences of this species within 10 miles of the project site.	No
Dipodomys nitratoides brevinasus short-nosed kangaroo rat	—	SSC	Occurs in Western side of San Joaquin Valley in grassland and desert shrub associations, especially *Atriplex*. Occurs in highly alkaline soils around Soda Lake. Needs friable soils. Favors flat to gently sloping terrain.	**None.** Potentially suitable habitat exists in the wild oats and annual brome grasslands adjacent to the project site, but intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There are five historical records of this species between five and 10 miles from the project site.	No
Eumops perotis californicus western mastiff bat	—	SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral. Roosts in	**Low.** The project site contains marginally suitable foraging habitat for this species and an abandoned building located within 500 feet of the project site may provide roosting habitat.	No

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
			crevices in cliff faces, high buildings, trees, and tunnels.	There is one historical record between five and 10 miles from the project site.	
Onychomys torridus tularensis Tulare grasshopper mouse	—	SSC	Occurs in hot, arid valleys and scrub deserts in the southern San Joaquin Valley.	**None.** Potentially suitable habitat exists in the wild oats and annual brome grasslands adjacent to the project site, but intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one historical record of this species within five miles of the project site.	No
Perognathus inornatus San Joaquin pocket mouse	—	—	Grassland, oak savanna and arid scrubland in the southern Sacramento Valley, Salinas Valley, San Joaquin Valley and adjacent foothills, south to the Mojave Desert. Associated with fine-textured, sandy, friable soils.	**None.** Potentially suitable habitat exists in the wild oats and annual brome grasslands adjacent to the project site, but intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There are four historical records within five miles of the project site and two historical records between five and 10 miles from the project site.	No
Taxidea taxus American badger	—	SSC	Occurs in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Requires sufficient food sources (rodents), friable soils, and open, uncultivated ground. Digs large burrows.	**None.** Potentially suitable habitat exists in the wild oats and annual brome grasslands adjacent to the project site, but intensive agricultural use of the project site in recent and historical times has likely eliminated the possibility for occurrence of this species on the project site. There is one historical record of this species within five miles of the project site and one recent and three historical records between five and 10 miles from the project site.	No

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]	Included in Impact Analysis
	USFWS[1]	CDFW[2]			
Vulpes macrotis mutica San Joaquin kit fox	FE	ST	Annual grasslands or grassy open stages with scattered shrubby vegetation.	**Moderate.** Potentially suitable habitat exists in the wild oats and annual brome grasslands adjacent to the project site, and the species could potentially forage in fallow lands on the project site. A San Joaquin kit fox carcass was observed adjacent to the project site. There are nine historical records within five miles of the project site and one recent and 14 historical records between 5 and 10 miles from the project site.	Yes

Code Designations

[1] Federal Status: 2024 USFWS Listing		[2] State Status: 2024 CDFW Listing	
ESU	= Evolutionary Significant Unit is a distinctive population.	**SE**	= Listed as endangered under the California Endangered Species Act (CESA).
FE	= Listed as endangered under the Endangered Species Act.	**ST**	= Listed as threatened under CESA.
FT	= Listed as threatened under the Endangered Species Act.	**SSC**	= Species of Special Concern as identified by the CDFW.
FC	= Candidate for listing (threatened or endangered) under the Endangered Species Act.	**FP**	= Listed as fully protected under the Fish and Game Code.
FD	= Delisted in accordance with the Endangered Species Act.	**FGC**	= protected by Fish and Game Code 3503-3513
FPD	= Federally Proposed to be Delisted.	**CE**	= Candidate endangered under CESA.
MBTA	= protected by the Migratory Bird Treaty Act	**WL**	= CDFW Watch List
—	= Not federally listed	—	= Not State-listed

Notes:
[3] **Habitat Description**: Habitat description adapted from CNDDB or other specified source.
[4] **Potential to Occur and Rationale**: Location of recorded species occurrences determined by geospatial information from BIOS 6 or other specified source.
Sources:
California Department of Fish and Wildlife (CDFW). 2024. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed December 12, 2023.
California Department of Fish and Wildlife (CDFW). 2024. Biogeographic Information and Observation System (BIOS 6). Website: https://map.dfg.ca.gov/bios/. Accessed December 12, 2023

TABLE BIO-1
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR ON THE CORNUCOPIA PROJECT SITE

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence Within the Project Area
Invertebrates			
Crotch bumble bee *Bombus crotchii*	-/SC	Species is found from Coastal California east to the Sierra-Cascade crest and south into Mexico in grassland and scrub areas where it nests in underground burrows.	**Moderate.** Recorded 10 miles north in Jacalitos Creek in 1971 and North Jacalitos Creek in 1996 (CDFW 2024). Suitable grassland and scrub can be found at the Project site.
Amphibians			
foothill yellow-legged frog - central coast DPS *Rana boylii pop. 4*	FP/SSC	San Francisco Peninsula and Diablo Range south of San Francisco Bay Estuary, and south through the Santa Cruz and Gabilan Mountains east of the Salinas River in the southern inner Coast Ranges.	**Absent.** Aquatic habitat near Project site is not suitable for this species, because it prefers perennial waters, which are not present at this site. Nearest record dates from 1941 and is considered likely extirpated (CDFW 2024).
western spadefoot *Spea hammondii*	FP/SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwoods or woodlands. Vernal pools are essential for breeding and egg-laying.	**Low.** Recorded near Jacalitos Creek approximately 10 miles north in 2004 (CDFW 2024). Habitat near the Project site is likely too isolated and dry to support this species.
Reptiles			
southwestern pond turtle *Actinemys pallida*	FP/SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.	**Low.** Riparian habitat is present in the vicinity of the Project site, but perennial waters suitable for this species are lacking. One instance was recorded 9 miles southwest in 2017 (CDFW 2024).
Temblor legless lizard *Anniella alexanderae*	-/SSC	Species is found in sandy soil at the southeast base of the Temblor Ranges, southwestern San Joaquin Valley, and Kern County. May prefer sparsely vegetated areas with moist, loose soil like other *Anniella* species.	**Moderate.** This species was recorded in northeast of the Project site in 2023 (CDFW 2024). Site soil is sandy and could occur near the Project.
California legless lizard *Anniella spp.*	-/SSC	Species is found from Contra Costa County south to San Diego, within a variety of open habitats with moist, loose soil.	**Moderate.** This record is for an unidentified *Anniella* species. One instance was recorded 5 miles from the Project in 1977 (CDFW 2024).
Northern California legless lizard *Anniella pulchra*	-/SSC	Species is found in sandy or loose loamy soils under sparse vegetation with adequate soil moisture.	**Low.** Project washes may contain suitable moist, loose soils. But there are no records within 10 miles.
California glossy snake *Arizona elegans occidentalis*	-/SSC	Species is patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California.	**Moderate.** Recorded within 5 miles of Project site (CDFW 2024). Generalist that prefers sandy soils, which occur on and around the Project site.

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence Within the Project Area
blunt-nosed leopard lizard *Gambelia sila*	FE/FP	Resident of sparsely vegetated alkali and desert scrub habitats, in areas of low topographic relief. Seeks cover in mammal burrows, under shrubs or structures such as fence posts;	**Moderate.** Several records within 1-2 miles of the Project site to the northwest, north and east (CDFW 2024). The habitat is suitable in sparsely vegetated scrub habitats in and around the Project site.
San Joaquin coachwhip *Masticophis flagellum ruddocki*	-/SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley.	**Moderate.** Project site is dry habitat with little tree cover, which would be suitable habitat for this species. Multiple records near the Project site, including one 5 miles away from 1985 (CDFW 2024).
Birds			
tricolored blackbird *Agelaius tricolor*	-/ST,SSC	Species is mostly colonial and most numerous in Central Valley and vicinity, Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Absent.** Vegetation near the Project site is too sparse and dry to support this species. Two records between 5 and 10 miles from the site (CDFW 2024).
long-eared owl *Asio otus*	-/SSC	Species is found in riparian bottomlands grown to tall willows and cottonwoods as well as belts of live oak paralleling stream courses.	**Absent.** Riparian habitat near the Project site is too sparse to support this species. No instances recorded within 5 miles.
burrowing owl *Athene cunicularia*	-/SC,SSC	Species is found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation.	**High.** Suitable habitat for this species exists in the wild oats and annual brome grasslands of the Project site and potential California ground squirrel burrows in the fields, 3 with owl sign (FirstCarbon Solutions 2024). Two recent records within five miles of the Project site (CDFW 2024).
Swainson's hawk *Buteo swainsoni*	-/SSC	Species breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees.	**Moderate (nesting).** Two nests recorded within 10 miles of the Project (CDFW 2024). Suitable foraging habitat exists in the wild oats and annual brome grassland of the Project site and in fallow ag lands. Suitable nesting habitat is located in the black poplar hedgerow within 500 feet of the project site. This species has been documented within 5 miles of the Project site in 2015 (eBird 2024).
merlin *Falco columbarius*	-/SSC	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches. Nests in clumps of trees in abandoned nests of crows or hawks.	**Low.** The Project site could potentially support foraging habitat for this species, but nesting habitat is lacking. Not recorded within 10 miles.
prairie falcon *Falco mexicanus*	-/WL	Inhabits dry, open terrain, either level or hilly. Nests on cliff ledges or rock overhangs.	**Low.** The Project site could potentially support foraging habitat for this species, but nesting habitat is lacking. This species was recorded 5 miles south in 1977 (CDFW 2024).

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence Within the Project Area
loggerhead shrike *Lanius ludovicianus*	-/SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Low.** Shrub density at the Project site is low, though ag fields could provide foraging habitat. One record between 5 and 10 miles from the site (CDFW 2024).
Le Conte's thrasher *Toxostoma lecontei*	-/SSC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or cactus in desert wash habitat, usually 2-8 feet above ground.	**Low.** Wash habitat is present at site but in a narrow corridor with agricultural disturbance on all sides. No instances recorded within 5 miles.
Mammals			
Nelson's (San Joaquin) antelope squirrel *Ammospermophilus nelsoni*	-/ST	Species is found in the Western San Joaquin Valley from 200-1200 ft elevation on dry, sparsely vegetated loam soils. Digs burrows or uses kangaroo rat burrows. Need widely scattered shrubs, forbs and grasses in broken terrain with gullies and washes.	**Moderate.** Land cover in washes and undisked periphery of agricultural lands is suitable for this species, though fragmented. Numerous instances of this species are recorded within 10 miles (CDFW 2024).
short-nosed kangaroo rat *Dipodomys nitratoides brevinasus*	-/SSC	Western side of San Joaquin Valley in grassland and desert shrub associations, especially Atriplex. Occurs in highly alkaline soils around Soda Lake. Needs friable soils. Favors flat to gently sloping terrain.	**Moderate.** Land cover in washes and undisked periphery of agricultural lands is suitable for this species, though fragmented. Several instances of this species recorded within 10 miles (CDFW 2024).
giant kangaroo rat *Dipodomys ingens*	FE/SE	Western side of San Joaquin Valley in annual grasslands or alkali scrub. Needs level terrain and sandy loam soils for burrowing.	**Low.** Potentially suitable habitat exists in grassland on periphery of the Project site, but this area is fragmented and there are no recorded occurrences of this species within 10 miles.
western mastiff bat *Eumops perotis californicus*	-/SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc. Roosts in crevices in cliff faces, high buildings, trees and tunnels.	**Low.** Suitable foraging habitat is present for this species, but tree or cliff roosting habitat is lacking.
Tulare grasshopper mouse *Onychomys torridus tularensis*	-/SSC	Hot, arid valleys and scrub deserts in the southern San Joaquin Valley. Dines almost exclusively on arthopods.	**Low.** Land cover in washes and undisked periphery of agricultural lands would be suitable for this species. Nearby records are all historical occurrences (CDFW 2024).
American badger *Taxidea taxus*	-/SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils for burrowing, and open, uncultivated ground. Preys on burrowing rodents.	**Low.** Potential suitable habitat in grassland and washes on Project site, but fragmented by agricultural lands. One recent record within 10 miles and several historical records (CDFW 2024).
San Joaquin kit fox *Vulpes macrotis mutica*	FE/SSC	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	**Moderate.** Numerous records east and west of the Project site and suitable burrows may be present. Grassland in washes could provide transit corridors for this species.

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence Within the Project Area
Plants			
brittlescale *Atriplex depressa*	-/-/1B.2	Species found in chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools. Usually in alkali scalds or alk. clay in meadows or annual grasslnd; rarely associated with riparian, marshes, or vernal pools. 1-325 m. Elevation: 1- 325 meters. Blooms April-October	**Low.** Suitable chenopod scrub or meadow habitat is not present. This species was recorded 5 miles N of the site in 2000, but the record is likely extirpated (CDFW 2024).
California jewelflower *Caulanthus californicus*	FE/-/1B.1	Species found in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland. Elevation: 70 - 1000 m Blooms February-May	**Low:** Grassland in washes and borders of the Project site may host this species. This species was recorded 1 mile W of the site in 1986 and at other locations in the hills, but the records are all likely extirpated (CDFW 2024).
Lemmon's jewelflower *Caulanthus lemmonii*	-/-/1B.2	Species is found in pinyon and juniper woodland, and valley and foothill grassland. Elevation: 80 – 1100 meters Blooms February-May	**Moderate:** Grassland in washes and borders of the Project site may host this species. This species was recorded 4 miles SE of the site in 2010 (CDFW 2024).
Hall's tarplant *Deinandra halliana*	-/-/1B.2	Cismontane woodland, chenopod scrub, valley and foothill grassland. Elevation: 300 – 1000 meters Blooms (March)April-May	**Low.** Suitable montane woodland habitat is not present. This species was recorded N of the site in 2017, but the record is likely extirpated. No records within 5 miles (CDFW 2024).
recurved larkspur *Delphinium recurvatum*	-/-/1B.2	Chenopod scrub, valley and foothill grassland, cismontane woodland. Elevation: 30 – 600 meters Blooms March-June	**Low:** Grassland in washes and borders of the Project site may host this species. No records within 5 miles.
Kern mallow *Eremalche parryi ssp. kernensis*	FE/-/1B.2	Species found in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodlands. Elevation: 100 – 1000 meters Blooms March-May	**Moderate:** Grassland in washes and borders of the Project site may host this species. This species was recorded 5 miles E of the site in 1973 (CDFW 2024).
Hoover's eriastrum *Eriastrum hooveri*	-/-/4.2	Species found in chenopod scrub, valley and foothill grassland, pinyon and juniper woodland. Elevation 45 – 810 meters Blooms March-July	**Low:** Grassland in washes and borders of the Project site may host this species. No records within 5 miles.
Temblor buckwheat *Eriogonum temblorense*	-/-/1B.2	Species found in valley and foothill grassland. Elevation: 300 – 900 meters Blooms (April)May-September	**Low:** The Project site is out of this species' preferred elevation range. No records within 5 miles.

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence Within the Project Area
Diablo Range hare-leaf *Lagophylla diabolensis*	-/-/1B.2	Cismontane woodland, valley and foothill grassland. Elevation: 300 – 900 meters Blooms April-September	**Low:** The Project site is out of this species' preferred elevation range No records within 5 miles.
alkali-sink goldfields *Lasthenia chrysantha*	-/-/1B.1	Vernal pools. Elevation: <100 meters Blooms February-April	**Absent.** No vernal pool habitat on-site. No records within 5 miles.
pale-yellow layia *Layia heterotricha*	-/-/1B.1	Cismontane woodland, coastal scrub, pinyon and juniper woodland, valley and foothill grassland. Elevation: 200 – 1800 meters Blooms March-June	**Absent.** Suitable montane woodland or coastal scrub habitat is not present. No records within 5 miles.
showy golden madia *Madia radiata*	-/-/1B.1	Valley and foothill grassland, cismontane woodland. Elevation: 20 – 1200 meters Blooms March-May	**Low:** Grassland in washes and borders of the Project site may host this species. No records within 5 miles.
Indian Valley bush-mallow *Malacothamnus aboriginum*	-/-/1B.2	Cismontane woodland, chaparral. Elevation: 135 – 1200 meters Blooms April-October	**Low.** Suitable montane woodland or chaparral habitat is not present. Recorded at headwaters of Canoas Creek west of the site in 1978 (CDFW 2024).
San Joaquin woollythreads *Monolopia congdonii*	FE/-/1B.2	Chenopod scrub, valley and foothill grassland. Elevation: Elevation: 90 – 700 meters Blooms February-May	**Moderate:** Grassland in washes and borders of the Project site may host this species. Numerous records within 5 to 10 miles of Project site (CDFW 2024).
shining navarretia *Navarretia nigelliformis ssp. radians*	-/-/1B.2	Cismontane woodland, valley and foothill grassland, vernal pools. Elevation: 150 – 1000 meters Blooms (March)April-July	**Low:** Grassland in washes and borders of the Project site may host this species. No records within 5 miles.
chaparral ragwort *Senecio aphanactis*	-/-/2B.2	Chaparral, cismontane woodland, coastal scrub. Elevation: 10 – 550 meters Blooms January-April(May)	**Absent.** Suitable montane woodland or chaparral habitat is not present. No records within 5 miles.

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence Within the Project Area

USGS 7.5-minute quads: Avenal, Coalinga, Guijarral Hills, Huron, Kreyenhagen Hills, La Cima, The Dark Hole, Garza Peak, Kettleman Plain

Status Codes:
USFWS (U.S. Fish and Wildlife Service)
- FE = Listed as Endangered by the Federal Government
- FT = Listed as Threatened by the Federal Government.
- FC = Listed as Candidate
- BBC = USFWS Bird of Conservation Concern
- FP = Proposed

CDFW (California Department of Fish and Wildlife)
- SE = Listed as Endangered by the State of California
- ST = Listed as Threatened by the State of California
- SR = Listed as Rare by the State of California
- SC = Candidate for Listing by the State of California
- CFP = California Fully Protected species
- SSC = Species of Special Concern
- WBWG = Western Bat Working Group

California Native Plant Society:
- List 1A=Plants presumed extinct in California
- List 1B=Plants rare, Threatened, or Endangered in California and elsewhere
- List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere
- List 3= Plants about which more information is needed
- List 4= Plants of limited distribution

An extension reflecting the level of threat to each species is appended to each rarity category as follows:
- .1 – Seriously endangered in California
- .2 – Fairly endangered in California
- .3 – Not very endangered in California

Potential to Occur Categories:
- Absent = The Project and/or immediate vicinity does not support suitable habitat for a particular species. Project site may be outside of the species' known range.
- Low Potential = The Project and/or immediate vicinity only provides limited habitat. In addition, the species' known range may be outside of the Project site.
- Moderate Potential = The Project and/or immediate vicinity provides suitable habitat.
- High Potential = The Project and/or immediate vicinity provides ideal habitat conditions or the species has been observed.
- Present = Species has been recorded within the Project Site or immediate vicinity.

SOURCES: California Native Plant Society, Inventory or Rare, Threatened and Endangered Plants of California, 2024. Available online at http://www.rareplants.cnps.org/; U.S. Fish and Wildlife Service (USFWS), iPac Information for Planning and Conservation. Online database powered by ECOS Environmental Conservation Online System, 2024. Available online at https://ecos.fws.gov/ipac/. California Department of Fish and Wildlife (CDFW), California Natural Diversity Data Base, Available online at http://dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp, 2024.

Appendix G

Cultural Resources and Tribal Cultural Resources

Confidential (on file at the County of Fresno Department of Public Works and Planning)

Cultural Resources Existing Conditions Report
Cornucopia Hybrid Project
County of Fresno, California

Avenal, California USGS 7.5-minute Quadrangle Topographic Map
Township 21 South, Range 16 East, Sections 34, 35, and 36, Township 22 South, Range 16 East, Sections 1, 2, and Range 17 East, Section 6

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Contact: Martin Nascimento, Senior Development Manager

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Charlie Mikulik, Senior Archaeologist, MA, RPA

Date: February 6, 2024
Revised: March 5, 2024

THIS REPORT CONTAINS SENSITIVE INFORMATION RELATING TO CULTURAL RESOURCES AND IS NOT INTENDED FOR PUBLIC DISTRIBUTION PURSUANT TO PUBLIC RESOURCES CODE, SECTION 21082.3(C)(2).

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For informational purposes and at the request of Cornucopia Hybrid, LLC (client), FirstCarbon Solutions (FCS) has prepared this existing conditions baseline report for the proposed Cornucopia Hybrid Project (proposed project) located within Fresno County, California. The purpose of this existing conditions baseline report is to document the presence or absence of any potentially significant prehistoric resources or historic properties located within the proposed project site. If cultural resources would be affected by the proposed project, this existing conditions baseline report may be used by the lead agency to assist it in developing recommendations to mitigate potential adverse environmental effects. To the extent practicable for an existing conditions baseline report, this report also follows California Office of Historic Preservation (OHP) procedures for cultural resource surveys and reporting.

1.1 - Project Description

The project applicant proposes to construct a new utility-scale 300-megawatt (MW) solar project consisting of approximately 686,880 solar modules rated at 550 watts (W), a 300 MW alternating current (AC) battery storage system and two prefabricated structures, one to be used for maintenance and operation service and the second for control services.

1.2 - Project Location

The project site consists of approximately 2,446.46 acres located in an unincorporated area of western Fresno County (County), California (Exhibit 1). The project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36, Township 22 South, Range 16 East, Sections 1, 2, and Range 17 East, Section 6 of the Avenal, California United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map (Exhibit 2). The project site is and is associated to Assessor's Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S and is bifurcated north to south by State Route (SR) 33 (South Lost Hills Road) and east to west by Sutter Avenue. Interstate 5 (I-5) and SR-33 provide regional access to the project site, while SR-33 and Sutter Avenue provide local access (Exhibit 3).

1.3 - Assessment Team

FCS Senior Archaeologist, Charles Mikulik, MA, RPA and Cultural Resource Specialist Ti Ngo, MA, authored this report and FCS Director, Dana DePietro, PhD, RPA, serves as the Principal Investigator. Professional qualifications for Dr. DePietro, Mr. Ngo, and Mr. Mikulik can be found in Appendix A.

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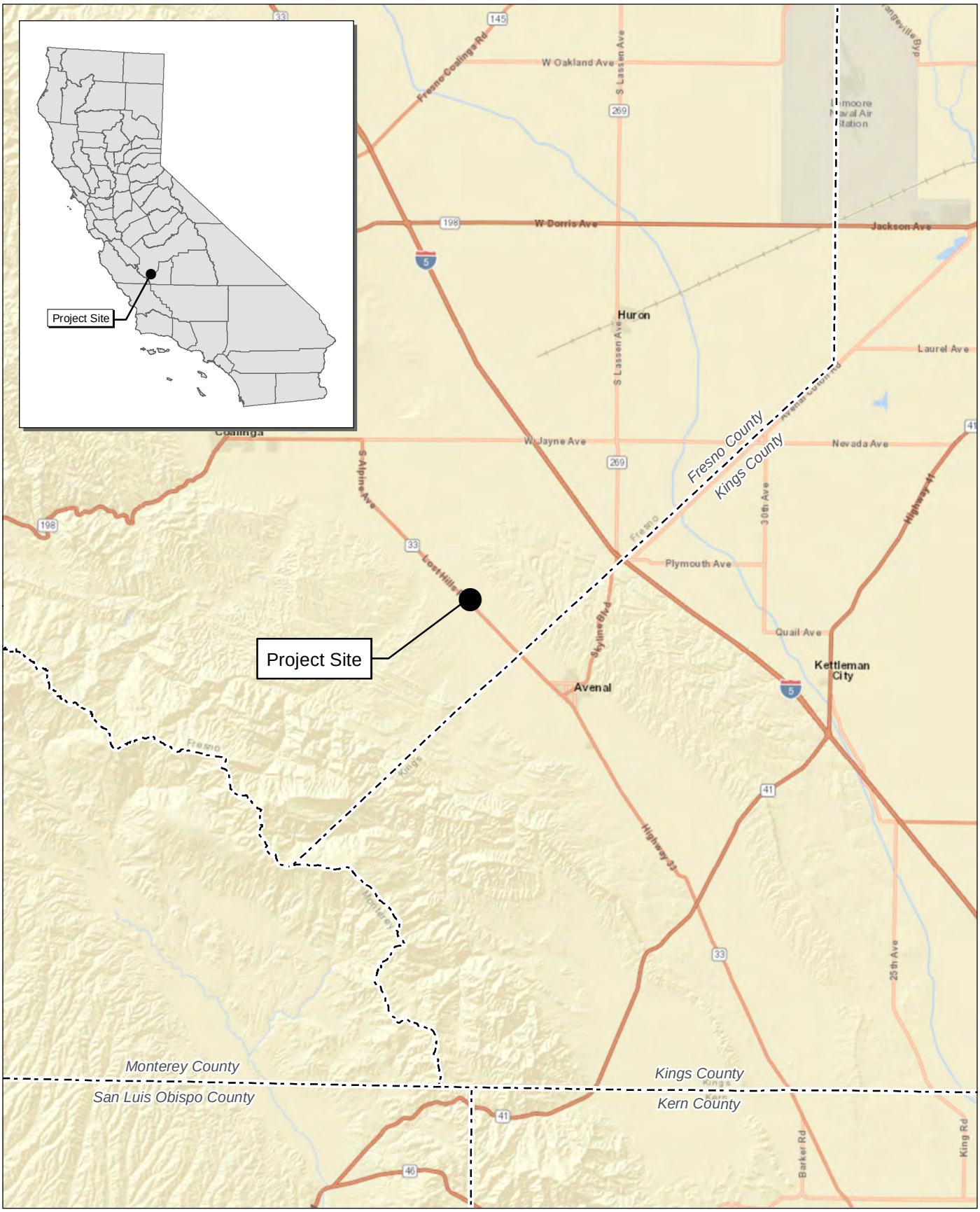

Source: Census 2000 Data, The California Spatial Information Library (CaSIL). ESRI World Street Map.

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Exhibit 1
Regional Location Map

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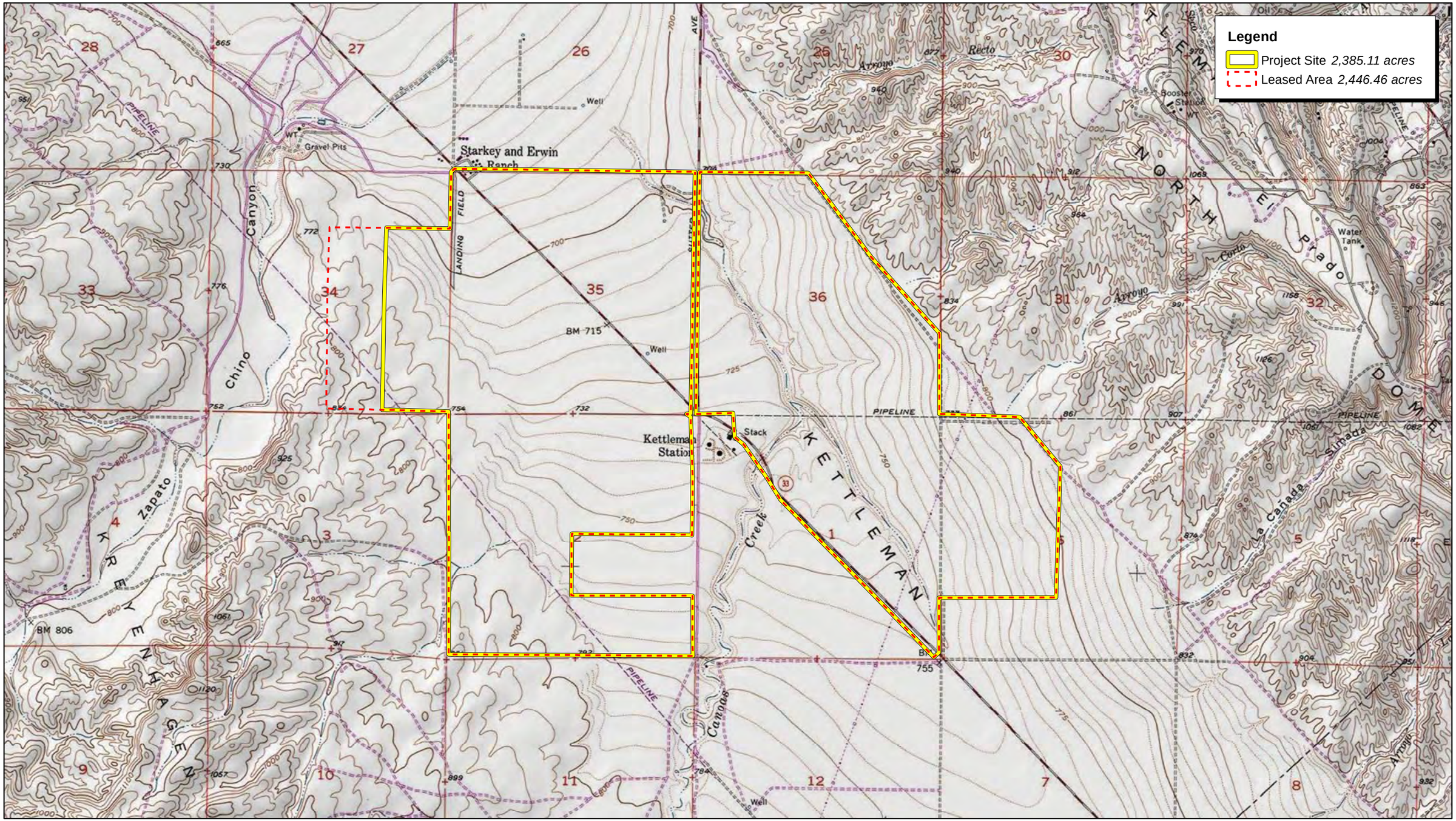

Source: USGS Avenal 7.5' Quadrangle / T21S R16E sec 34, 35, 36; T22S R16E sec 1, 2; T22S R17E sec 6

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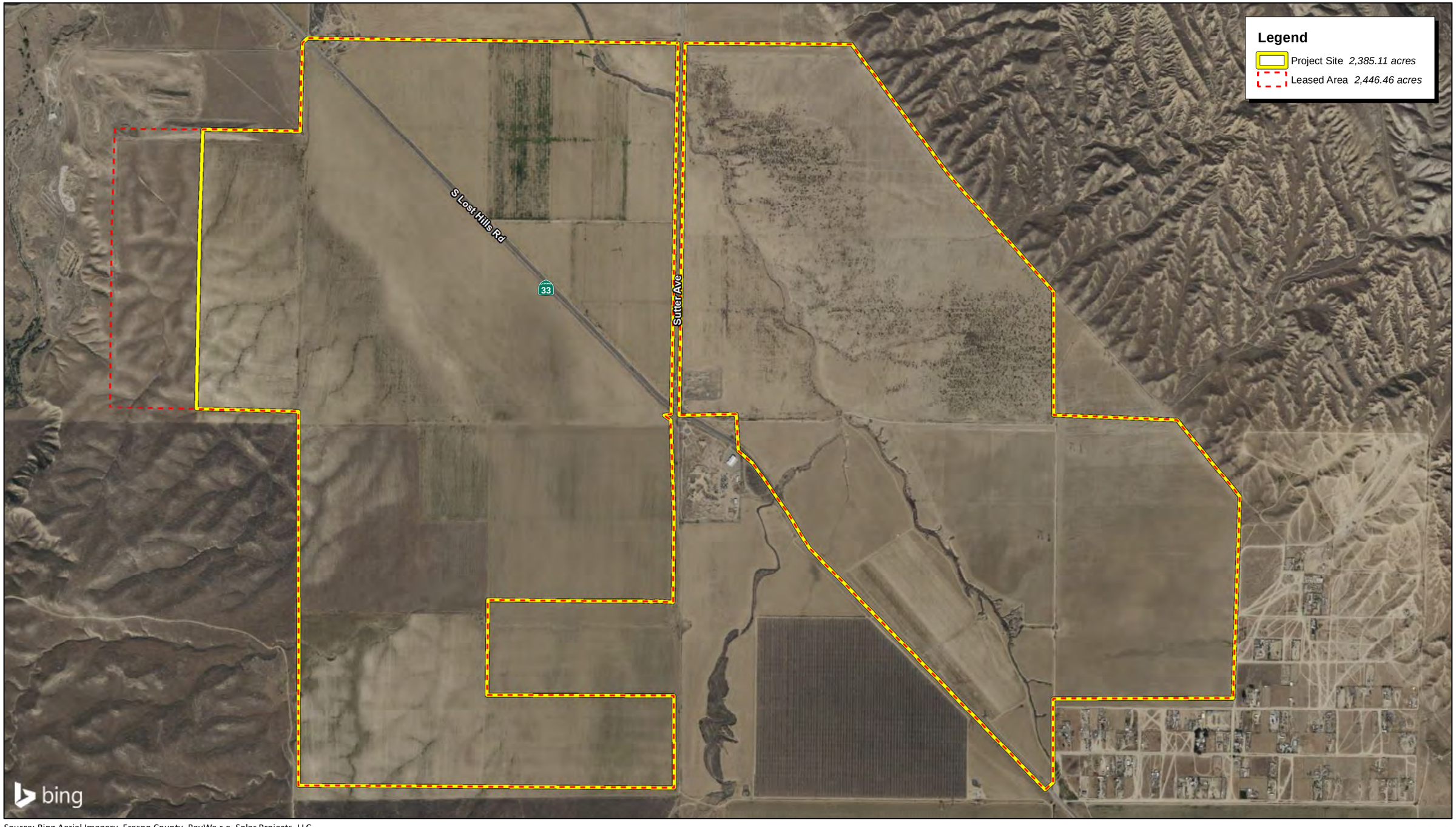
Exhibit 2
Local Vicinity Map
Topographic Base

CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
CULTURAL RESOURCES EXISTING CONDITIONS REPORT



Source: Bing Aerial Imagery. Fresno County. BayWa r.e. Solar Projects, LLC

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Feet

Exhibit 3
Local Vicinity Map
Aerial Base

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The following is a brief overview of the prehistory, ethnography, and historic background, providing context in which to understand the background and relevance of sites found in the general project area. This section is not intended to be a comprehensive review of the current resources available; rather, it serves as a general overview.

Further details can be found in ethnographic studies, mission records, and major published sources, including Beardsley (1948 and 1954), Bennyhoff (1950), Fredrickson (1973), Kroeber (1925), Chartkoff and Chartkoff (1984), and Moratto (1984).

2.1 - Prehistoric and Ethnographic Background

Early archaeological investigations in the San Joaquin Valley of California have primarily been conducted at sites located in the Buena Vista and Tulare Lakes regions. These investigations of the artifacts of the San Joaquin Valley's prehistoric cultural groups have revealed a complex history of cultural change that has occurred over time. Through these studies, a cultural chronological framework encompassing three basic periods has been developed. These patterns include:

- Early Period (12,000 Before Present [BP] to 8000 BP)
- Middle Period (8000 BP to 2500 BP)
- Late Period (2500 BP to Ethnohistoric Present)

Brief descriptions of these temporal ranges and their unique characteristics follow.

2.1.1 - Early Period (12,000 BP to 8000 BP)

Archaeological sites from the Early Period are not very well represented in the southern San Joaquin Valley, partially due to periodic episodes of erosion and deposition that have removed or buried large segments of the Early Period landscape. Currently, the earliest evidence of human occupation in the region comes from fluted and basally thinned projectile points in the Tulare Lake basin at the Witt Site (KIN-32). Hundreds of Late Pleistocene concave base points have been discovered from human occupation along the remnant shoreline of Tulare Lake in southern Kings County. Artifacts from this site include Clovis-like projectile points made of chert, chipped crescents, various scrapers, and other stone tools associated with the Fluted Point and/or Western Pluvial Lakes tradition. The Witt Site also contained faunal bones from horse, bison, ground sloth, and the tusk of a mammoth or mastodon (Greenwood and Associates 2012). The bones, including some human bone, have been radiocarbon dated to 11,000 to 13,000 BP (Rosenthal et al. 2007).

2.1.2 - Middle Period (8000 BP to 2500 BP)

The Middle Horizon is characterized by an increase in groundstone tools, including metates and manos. Middle Horizon site deposits include an abundance of expedient cobble-based pounding, chopping, scraping, and mulling tools, which reflect an increased dependence on vegetative foods that require processing. Archaeobotanical assemblages from foothill sites confirm that acorn and

pine nuts were targeted food plants (Jones and Klar 2007; Rosenthal et al. 2007). However, lithic technology remained relatively unchanged from the Early Period, in which stone tools were very similar to the Western Pluvial Lakes Tradition (Greenwood and Associates 2012).

2.1.3 - Late Period (2500 BP to Ethnohistoric Present)

The beginning of the Late Period corresponds with the onset of the Late Holocene environmental conditions, marked by an abrupt turn to cooler, wetter, and a more stable climate. Lakes that had dried or diminished during the later parts of the Middle Period returned to higher levels. Cultural diversity was more pronounced, marked by artifact styles, contrasting burial positions, and other elements of material culture. People were buried in flexed positions more frequently, and burial goods were more numerous than those from the Middle Period (Rosenthal et al. 2007). Both the Olivella shell bead and bow-and-arrow technology made their first appearance in the area. There was also a greater reliance on groundstone tools, indicating an increased dependence on nuts, seeds, and acorns. Villages and smaller residential communities developed along the many streams of the foothills and along the river channels and sloughs of the valley bottom. Occupation sites were also larger, reflecting semi-sedentism (Greenwood and Associates 2012).

2.2 - Native American Background

2.2.1 - Southern Valley Yokuts

At the time of European contact, most of the San Joaquin Valley and the foothills of the western slope of the Sierra Nevada were occupied by 40 or so groups classified together as the Yokuts (Silverstein 1978). Yokuts is a single Penutian language (Golla 2011) with a Foothills division and a Valley division of language dialects. The Yokuts were recognized as having three major subgroups: the Northern Valley, the Foothill, and the Southern Valley. Each of these ethnolinguistic groups was composed of autonomous, culturally, and linguistically related Tribes or Tribelets. Ethnohistoric evidence suggests the City of Visalia is in part of the Southern Valley Yokuts territory. The Southern Valley Yokuts were divided into true Tribes, with individual Tribelets having their own name, dialect, and territory (Golla 2011), and there is no evidence to suggest that they practiced any formal religion (Gayton 1948). Three of the Southern Valley dialect-Tribes were in the vicinity of Tulare Lake, these are *Tachi, Chunut, and Wowol*. The only known Southern Valley dialect spoken to the south of this area was *Yawelmani* in the vicinity of Bakersfield and Rancho Tejon. To the north and east of Tulare Lake several Tribes occupied land along the streams flowing out of the foothills into the sloughs and marshes of the valley floor (Golla 2011).

Alfred Kroeber divided a Yokuts classification system into Valley Divisions and Foothill Divisions based on ethnographic lines, geographic habitat, and dialect (Kroeber 1963). Here, the Foothill Division's worldview and economy were influenced more by their Shoshonean neighbors than the Valley Division Yokuts. Later, William Wallace divided the Yokuts into three subgroups, Southern Valley, Northern Valley, and Foothill, and shifted the known Tribelets among these divisions (Wallace 1978). The following is a review of ethnographic information associated with the Southern Valley Yokuts. The Southern Valley Yokuts occupied a rich environment with abundant water resources from the nearby sloughs, lake basins, and river systems. Swamps and tule marshes surrounded the waterways

and teemed with wildlife, including aquatic mammals, fish, and waterfowl. Adjacent grasslands provided food for herds of elk, antelope, and (in the winter) deer. The regional flora was equally, if not more, diverse and was used as a main staple of the Yokuts diet. The Southern Valley Yokuts dietary base relied on a mixed strategy of fishing, waterfowl hunting, shellfish, and plant collecting, with less emphasis on large-game hunting. Important vegetal resources included cattail roots, grasses, nuts, seeds, tule, and bulbs. The resource-rich environment allowed for permanent village sites, which typically were occupied throughout the year.

2.3 - Regional Historic Background

2.3.1 - The Spanish Period (1769–1821)

The formalization of Spanish routes in California were established by Father Junípero Serra and Gaspar de Portolà in 1769, in what was known as the Portolà Expedition. Although the Portolà party were not the first Europeans nor the first people to pass through the region, it was their observations and discoveries that formalized the routes and locations of the Mission System and facilitate trade and travel through California (Farquhar 1928). The route used by Portolà was further explored in detail by Lieutenant Colonel Juan Bautista de Anza and Father Pedro Font during the Anza Expedition that lasted from 1775-1776. The Anza Expedition was considered pivotal as it helped to establish practical relationships with the natives, who at the time were revolting in San Diego, and to further explore and map Monterey and the San Francisco Bay Area (Hyslop 2019).

The region that would become San Joaquin Valley was periodically visited by Franciscan friars, scouting the area for mission sites, but a military expedition was led by Gabriel Moraga in September and October of 1806. The expedition started in San Juan Bautista and to the San Joaquin Plain. Once there, Moraga traversed several tributaries that flow to the San Joaquin River and discovered and named the Merced River. Moraga additionally came upon the Tuolumne, Stanislaus, and Mokelumne Rivers. Moraga's expedition took him from the foot of the Sierras and the Rancherias between Kings River and Kern River. In 1808, Moraga traveled to Stockton and headed east to scouting sites for future missions. Moraga's discoveries and mapping of the region contributed to the knowledge of the geography and ethnography of the area. This information served pivotal to Father Narciso Duran, Father Ramón Abella, and Lieutenant Luis Antonio Argüello, who followed the San Joaquin River at least as far as the Stockton Channel in 1817, meticulously mapping the area for future mission establishments (Kyle 2002; Farquhar 1928). The diary kept by Father Duran helped illustrate how the region appeared prior to colonization as well as initial contact with the Yokut people.

2.3.2 - The Mexican Period (1821–1848)

In 1821, Mexico overthrew Spanish rule and the monopoly that the missions had in the area began to decline. By 1833, the Mexican government passed the Secularization Act, and the missions were reorganized as parish churches and lost their vast land holdings. Following the Secularization Act, the Mexican government initially planned on redistributing the land to the Native Americans, however, it was instead redistributed to prominent citizens. The last of the mission land holdings were relinquished in 1845, which led the way for the large ranchos common to California in the mid-1800s.

California experienced a period of success with the establishment of the ranchos, adopting the Spanish ranching traditions and focusing on the herding of cattle as well as adapting to the market trends of the time that included the trade of fur and pelts (Beck and Williams 1972); however, the constant threat of Russian invasion, the illegal squatting of American immigrants, and a growing threat of rebellion from the mission Indians prevented the region from achieving socio-political stability (Branch 1881). The growing tensions between Mexicans and American settlers led to the Bear Flag Revolt of 1846, led by U.S. Army Captain John C. Fremont and Ezekiel Merritt against Mexican General Mariano Vallejo, who was attempting to bring aid to the Mexican governor of California to suppress the growing wave of support for an American coup of California (NPS.gov 2023). The rebellion concluded with the takeover of Sonoma, thus weakening the little control that Mexico had over Alta California and paving the way for the United States to seize control of the Pacific Coast shortly thereafter (NPS.gov 2023)

By 1846, on the eve of the U.S.-Mexican War (1846 to 1848), the estimated population of California was 8,000 non-natives and 10,000 Native Americans. However, these estimates have been debated. Cook suggests the Native American population was 100,000 in 1850; the U.S. Census of 1880 reports the Native American population as 20,385 (Cook 1976).

2.3.3 - Fresno County

Fresno County, located in Central California, was established in 1856 from parts of Mariposa, Merced, and Tulare Counties and the first county seat was in the small township of Millerton. Fresno is named after Fresno Creek and the ash trees that surrounded the valley along the San Joaquin River (counties.org 2014). The community of Fresno began to grow from small mining settlements along the Fresno River. Moses J. Church developed canals to supply water to nascent agricultural lands and mining settlements in the region diverting water from the Kings River (Thickens 1946). The ease of access to water and the affordable land was a primary attraction to new settlers such as William Helm. In 1865, Helm purchased 2,640 acres of land in Fresno to raise sheep, eventually owning over 22,000 head of sheep. The growing population necessitated a need for the transportation of people and goods and in 1872, the first railroad depot was constructed by the Southern Pacific Railroad. This was followed by a larger depot, built in 1889 (NRHP 2010) establishing the central railway hub as a trading center for the whole of Fresno County.

The discovery of oil in Coalinga in the early 1900s in the western portion of Fresno County created an economic boom in the region. By 1910, the Coalinga Oil Fields, operated by the Standard Oil Company, was the largest producing oil plant in California (Coalinga Area Chamber of Commerce 2005). While over 912 million barrels of oil have been pumped from the Coalinga Oil Fields since the early 1900s, the remaining reservoir of oil is spent, amounting to less than 6 percent of its original capacity.

Today, Fresno County continues to be an agricultural hub of the California Central Valley, making farming the main source of economic stimulus in the region. It has a population of over one million people (Census.gov 2023).

2.3.4 - City of Coalinga

Located in southwest Fresno County, the area around present-day Coalinga was sparsely populated and utilized as pastureland for cattle and sheep prior to the 1870s when coal was discovered in the region. The Southern Pacific Railroad Company established coaling stations in the surrounding hills in 1888, naming them Coaling Station A, B, and C respectively. As a settlement developed around Coaling Station A, the name of the town was shortened from "Coaling Station A" to "Coalinga" (R.C. Baker Memorial Museum 2023).

Although oil was historically used by the Yokut Tribe to waterproof woven baskets in the area, European settlers to the area such as Frank Dusy found oil just beneath the surface in 1865 (R.C. Baker Memorial Museum 2023). The establishment of the Southern Pacific railway and coaling stations in 1888 led to an oil boom in Coalinga that lasted from 1890 to 1940. The Standard Oil Company quickly purchased land surrounding Coalinga and brought workers to the region. Notable wells included the Blue Goose that spewed over 1,000 barrels of oil a day starting in 1898 as well as the Silver Tip well which produced over 20,000 barrels a day beginning in 1909. In 1905, construction began on a pipeline that would bring oil from Coalinga to the San Francisco Bay Area. The oil fields surrounding Coalinga achieved a peak production of 19.5 million barrels annually in 1912, a number that would decline steadily over the next several decades decreasing to less than 5 million barrels a year by 1940 (Coalinga Area Chamber of Commerce 2005). While new technologies such as water flooding, steam flooding, fire flooding, and polymer flooding during the 1960s and 1970s would temporarily increase oil production in spent fields to a maximum of 7-8 million barrels per year, the number of barrels from the Coalinga Oil Fields would never reach its heyday during the 1910s and 1920s.

As Coalinga's population grew due to the influx of workers to the oil fields in the 1900s, a National Bank, taverns along Van Ness Street later referred to as "Whisky Row," schools, and housing were built. Following World War II, Coalinga's economy suffered a downturn due to the lower output of oil from its surrounding oil fields. Coalinga's economy steadily reverted to its agrarian roots. Cattle ranching, particularly that of nearby Harris Ranch, as well as almond and walnut orchards became the main driver of the local economy. On May 2, 1983, a 6.7 magnitude earthquake struck the town, destroying over 300 houses and damaging 690 buildings. Today, while oil remains a small part of its economy, Coalinga remains an agricultural hub of the Central Valley of California with a population of over 17,000 persons (Coalinga Area Chamber of Commerce 2005, Census.gov 2023).

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3.1 - Records Search

3.1.1 - Southern San Joaquin Valley Information Center Records Search

On May 1, 2023, a records search for the project site and a 0.5-mile search radius beyond the project boundary was conducted at the Southern San Joaquin Valley Information Center (SSJVIC) located at California State University. The current inventories of the NRHP, the CRHR, the California Historic Landmarks (CHL) list, the California Points of Historical Interest (CPHI) list, and the California Built Environment Resource Directory (BERD) for the County of Fresno were also reviewed to determine the existence of previously documented local historical resources.

The results from the records search indicate that no cultural resources have been recorded within the 0.5-mile search or within the project boundary. However, five area-specific survey reports are on file within the 0.5-mile radius, four of which partially address the project site. Surveys FR-00322 and FR-01052 partially address the northwestern boundary of the project. Survey FR-00067 and FR-02414 are Caltrans right-of-way linear surveys that do not directly address the project site (Table 1). This indicates that the project site has been partially surveyed for cultural resources. SSJVIC records search results can be found in Appendix B.

Table 1: Previous Investigations Within a 0.5-Mile Radius of the Project Site

Report No.	Report Title/Project Focus	Author	Date
FR-00067	Technical Report of Cultural Resources Studies for the Proposed WTG-West, Inc. Los Angeles to San Francisco and Sacramento, California Fiber Optic Cable Project.	No Author	1989
FR-00322	**Archaeological Survey Report for the Zapato Chino Canyon Mining Project, C. Oliver & Sons, Avenal Site**	**R.J. Cantwell**	**1985**
FR-01029	An Archaeological Survey for Acme Paving Lost Hills Road, Coalinga California	Donald G. Wren	1990
FR-01052	**An Archaeological Survey for Artesia Ready MIH Concrete, Inc. Lost Hills Road, Coalinga, California.**	**Donald G. Wren**	**1991**
FR-02414	Cultural Resources Inventory of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties Summary of Methods and Findings	Leach-Palm, Laura, Brandy, Paul, King, Jay, Mikkelson, Pat, Seil, Libby, Hartman, Lindsay, and Bradeen, Jill	2010

Source: Southern San Joaquin Valley Information Center (SSJVIC) Information Center Record Search. May 1, 2023.
Reports in **Bold** are within the project site.

3.1.2 - Historic Aerials

A review of 16 historic aerials from 1940 to 2020 indicates that from 1940 to the present time, the entirety of the project site consisted of land solely utilized for agricultural production. No additional construction or changes to the project site has occurred since 1940 (Historic Aerials 2023).

3.1.3 - Native American Heritage Commission Records Search

On May 2, 2023, FCS sent a letter to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File (SLF) for the project site. A response was received on May 30, 2023, indicating that the SLF search produced a negative result for Native American cultural resources in the project area. The NAHC included a list of 14 Tribal representatives available for consultation. To ensure Native American knowledge and concerns over potential unrecorded TCRs that may be affected by the proposed project are addressed, a letter containing project information and requesting any additional information was sent to each Tribal representative on June 8, 2023. Additional outreach on December 19, 2023, and again on December 26, 2023, and a phone call on January 3, 2024 (Table 2). A response was received from the Picayune Rancheria of Chukchansi Indian Tribe on January 4, 2024, stating that the Tribe had no comments on the proposed project. No additional responses have been received to date. A copy of the NAHC record searches and Native American Tribal correspondences can be found in Appendix C.

Table 2: Tribal Consultation Matrix

Tribal Contact	Correspondence History	Response from Tribal Contact
Big Sandy Rancheria of Western Mono Indians Tom Zizzo, Tribal Administrator	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Big Sandy Rancheria of Western Mono Indians Joel Marvin, Vice Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Big Sandy Rancheria of Western Mono Indians Elizabeth Kipp, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Cold Springs Rancheria of Mono Indians Carol Bill, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Dumna Wo-Wah Tribal Government Robert Ledger, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023	No response has been received to date.

Tribal Contact	Correspondence History	Response from Tribal Contact
	Phone Call: January 3, 2024 Voicemail left	
Kings River Choinumni Farm Tribe Stan Alec	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
North Valley Yokuts Tribe Katherine Perez, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
North Valley Yokuts Tribe Timothy Perez	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Picayune Rancheria of Chukchansi Indians Claudia Gonzales, Chairwoman	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	A call was received on January 4, 2024, stating that the Tribe had no comments or concerns about project.
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Table Mountain Rancheria Brenda Lavell, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Traditional Choinumni Tribe David Alvarez, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Tule River Indian Tribe Neil Peyron, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson	First email: June 8, 2023 Second email: December 19, 2023 Third email: December 26, 2023 Phone Call: January 3, 2024 Voicemail left	No response has been received to date.

3.2 - Pedestrian Survey Department of Park and Recreation and Buried Site Potential

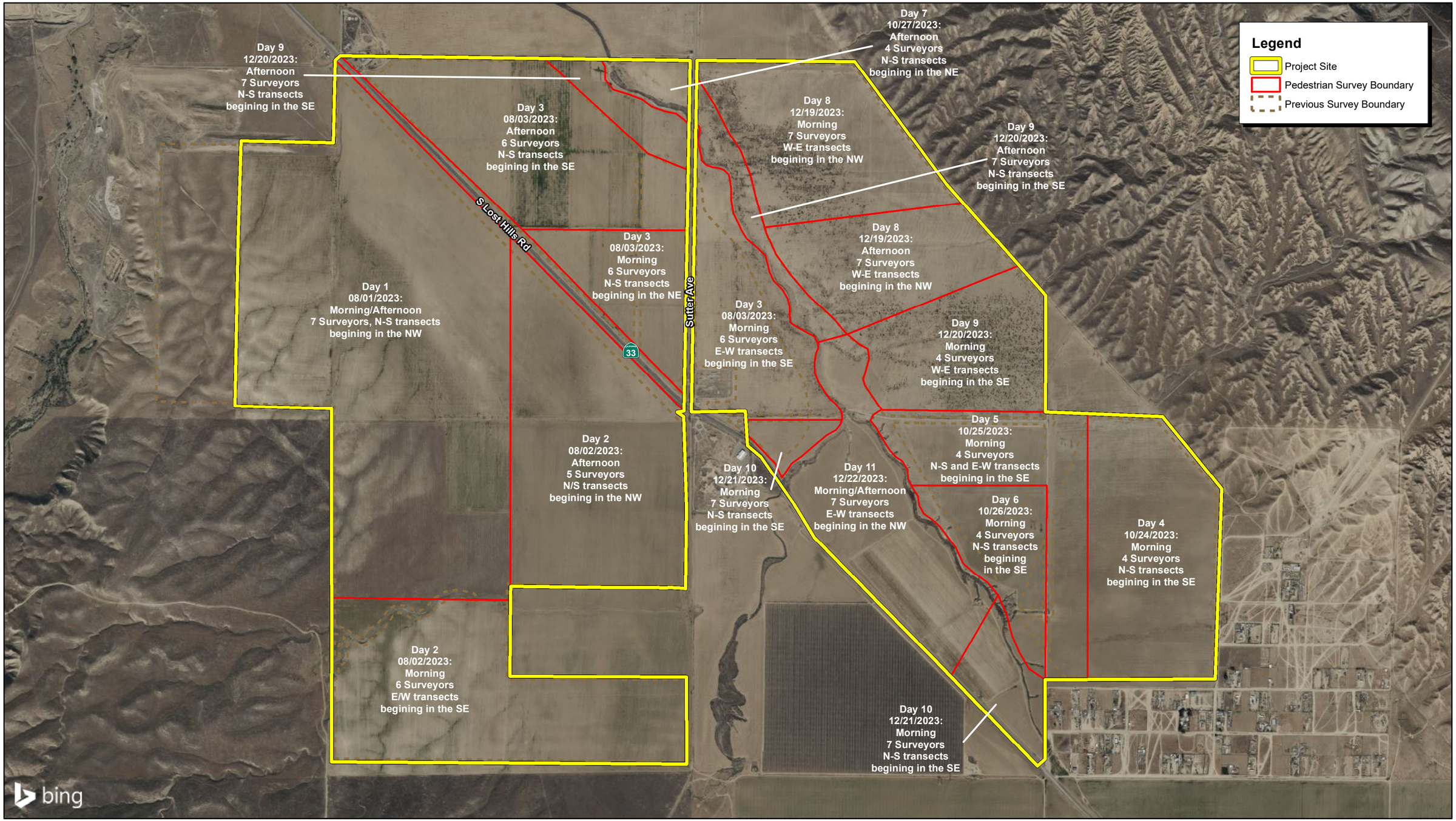
3.2.1 - Pedestrian Survey

The survey team conducted pedestrian surveys for unrecorded cultural resources in three rotations between August and December 2023 (Exhibit 4). All areas of proposed development were closely inspected for culturally modified soils or other indicators of potential historic or prehistoric resources. Survey conditions were documented using digital photographs and field notes. During the survey, the team examined all areas of the exposed ground surface for prehistoric artifacts (e.g., fire-affected rock, milling tools, worked stone tools, toolmaking debris, ceramics), soil discoloration and depressions that might indicate the presence of a cultural midden, faunal and human osteological remains, and features indicative of the former presence of structures or buildings (e.g., postholes, standing exterior walls, foundations) or historic debris (e.g., glass, metal, ceramics).

From August 1, 2023, to August 4, 2023, the survey team conducted a pedestrian survey for unrecorded cultural resources in the northwestern portion of the project site to the west and south of South Lost Hills Road. The survey began in the northwest corner of the project site and moved east utilizing north–south transects spaced at 15 meters intervals. On August 1, 2023, the survey team encountered an abandoned well in the northwest portion of the project site, in addition to two Franciscan Chert isolates. On August 2, 2023, the survey team found a lithic core fragment along the Zapato Chino Creek in the southwestern portion of the project site. Because the project site was recently disced, visibility of native soils was close to 100 percent. Native soils consisted of pale brown sandy clay soil (Munsell 10 YR 6/3) with inclusions of naturally occurring quartz, Franciscan chert, and granite stones ranging between 4-10 centimeters. For location and data recordation of findings, reference California Department of Parks and Recreation Forms (DPR) 523 forms: CHP-1, CHP-7, CHP-8.

The survey team conducted a second survey from October 24, 2023, to October 27, 2023. The survey began in the southeast corner of the project site and moved west utilizing north–south transects spaced at 15 meters intervals. Soil composition consisted of grayish brown sandy clay soils (Munsell 10 YR 5/2) with quartz, Franciscan chert, river stones and gypsum stones ranging from 3-7 centimeters. For location and data recordation of findings, reference DPR 523 form CHP-5

The survey team conducted a final survey of the project site from December 18–22, 2023. The survey began in the northern portion of the project site, east of Sutter Avenue and moved south utilizing west–east transects spaced at 15-meter intervals whenever possible. On December 20, 2023, the team encountered artifacts of cores, debitage, and a projectile point consisting of a composite of Franciscan chert and quartz in the northeast portion of the project site. Lithic concentration and debitage was found to the west of Canoas Creek in the southern portion of the project and glass fragments were found in the central portion of the project site, adjacent to South Lost Hills Road.



Source: Bing Aerial Imagery. Fresno County. BayWa r.e. Solar Projects, LLC

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Exhibit 4
Completed Survey Area

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CORNUCOPIA HYBRID, LLC
CORNUCOPIA HYBRID PROJECT
CULTURAL RESOURCES EXISTING CONDITIONS REPORT

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Soil visibility was almost 100 percent comprising of light brown sandy soils (Munsell 10 YR 6/2) with inclusions of basalt, quartz, Franciscan chert, slate, shale, schist, and river stones. For location and data recordation of findings, reference DPR 523 forms: CHP-2, CHP-3, and CHP-4.

Table 3 summarizes the three separate site visits, the personnel that attended and a brief description of activities.

Table 3: Survey Activities and Personnel

Survey Date	Survey Personnel	Survey Activities
August 1, 2023, through August 4, 2023	Dr. DePietro, Mr. Ngo, Mr. Macias, Mr. Banderas, Mr. Williams.	Surveyors completed transects, spaced approximately 15 meters apart. Individuals surveyed for both archaeological and paleontological resources. Transects and all finds were recorded using the FieldMaps program.
October 24, 2023 through October 27, 2023	Dr. DePietro, Mr. Ngo, Mr. Macias, Mr. Banderas, and Mr. Ochoa	Surveyors completed transects, spaced approximately 15 meters apart. Individuals surveyed for both archaeological and paleontological resources. Transects and all finds were recorded using the FieldMaps program.
December 19, 2023 through December 22, 2023	Mr. Ngo, Mr. Banderas, Mr. Ochoa, Mr. Grimes, and Mr. Drover	Surveyors completed transects, spaced approximately 15 meters apart. Individuals surveyed for both archaeological and paleontological resources. Transects and all finds were recorded using the FieldMaps program.

Additionally, isolated artifacts, both prehistoric and historic-era, were found throughout the project site. Pedestrian survey photographs can be found in confidential Appendix D.

3.2.2 - Department of Parks and Recreation Forms

The California DPR 523 forms are used for recording and evaluating the natural and human condition of the resources and the association of the resource to the physical landscape. The following section details the various cultural resources found in the project site and recorded on DPR523 Forms. The DPR 523 forms for the documented resources can be found in Appendix E.

CHP-1: Prehistoric

On August 2, 2023, the survey team encountered a core comprised of Franciscan chert in the southwest portion of the project site to the south of the Zapato Chino Creek. No other resources were found in the immediate vicinity.

CHP-2: Prehistoric

On December 21, 2023, the survey team encountered a projectile point fragment comprised of a composite of Franciscan chert and quartz alongside a lithic concentration of Franciscan chert in the central southern portion of the project site. An estimated 185 pieces of Franciscan chert debitage were found adjacent to the boundary of South Lost Hill Roads which extended northeast toward Canoas Creek. The site is rectangular in shape by 170 meters in length and 110 meters in width containing an estimate of 30 pieces of debitage of Franciscan chert. However, due to the recent discing of the area, this lithic concentration has been potentially broadcasted beyond its original site boundary.

CHP-3: Prehistoric

On December 20, 2023, a core comprising of Franciscan chert was found in the northeast boundary of the project site adjacent to the surrounding hills. Given their location and adjacent terrain, this isolate may have spread further northward from their original site located at CHP-2. No additional resources were found within the surrounding vicinity.

CHP-4: Prehistoric

On December 19, 2023, A 3.5-centimeter piece of Franciscan chert debitage was found in the central northeastern edge of the project site adjacent to the surrounding hills. Given its location, this isolate may have spread further northward from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

CHP-5: Prehistoric

On October 25, 2023, a 5-centimeter piece of Franciscan chert debitage was found in the central eastern portion of the project site. Given its location, this isolate may have spread further northward from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

CHP-6: Prehistoric

On August 2, 2023, A 5-centimeter piece of Franciscan chert debitage was found in the northwestern portion of the project site. Given its location, this isolate may have spread due to agricultural activity from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

CHP-7: Prehistoric

On August 1, 2023, a 3.5-centimeter piece of Franciscan chert debitage was encountered in the northwestern portion of the project site. Given its location, this isolate may have spread due to agricultural activity from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

CHP-8: Prehistoric

On August 1, 2023, A 3.5-centimeter piece of Franciscan chert debitage was found in the central western portion of the project site. Given its location, this isolate may have spread due to agricultural activity from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

Isolated Artifacts

On December 22, 2023, the survey team encountered one fragment of milk glass and two fragments of opaque brown glass in the central portion of the project site adjacent to South Lost Hills Road. An abandoned well and a green glass fragment was found in the northwest portion of the project site on August 1, 2023. The survey team also found an opaque clear glass fragment and a green glass fragment in the central portion of the project site east of South Lost Hill Roads on October 25 and October 26, 2023. Four clear glass fragments and three green glass fragments estimated to date to the 1980s was found adjacent to Sutter Road in the central portion of the project site on October 27, 2023. There were also two fragments of brick and three clear glass fragments found along the banks of Canoas Creek in the central portion of the project site on December 21, 2023.

On December 19, 2023, the survey team also encountered the following: the neck of a clear glass bottle that appears to be less than 45 years old and a clear glass fragment adjacent to South Lost Hill Roads in the central portion of the project site.

There are additional waterworn pieces of Franciscan chert in the central portion west of South Lost Hill Roads as well as in the northeast portion of the project site. It is not clear whether these materials are cultural. The distance between aforementioned historical and archaeological artifacts and their total number indicates a lack of depositional integrity that would constitute these artifacts as a site, which could provide significant additional information regarding the history of the project site.

3.2.3 - Buried Site Potential

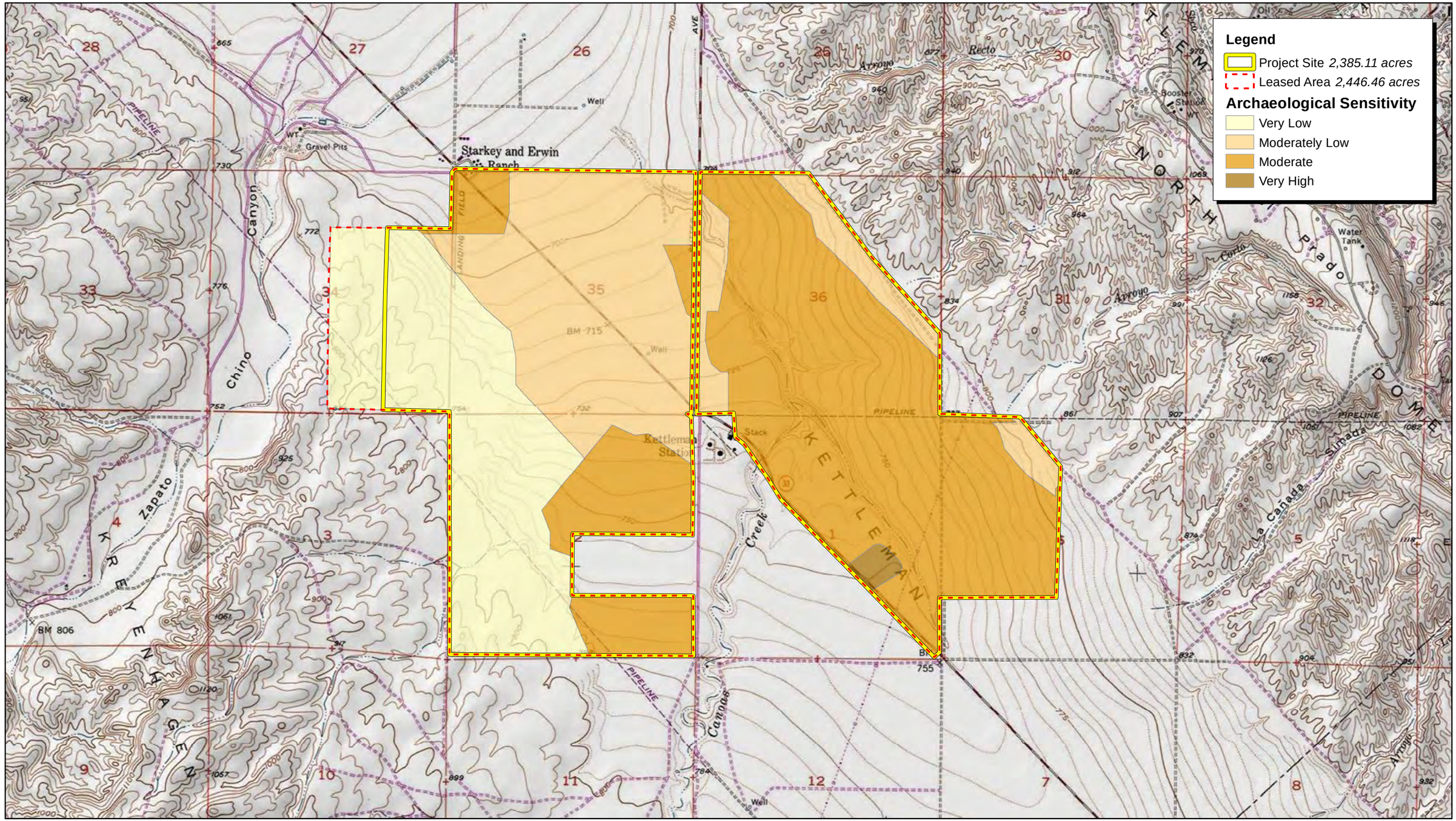
In addition to the pedestrian survey, the potential for unidentified cultural resources in the vicinity was analyzed using available geoarchaeological, soils, and geologic data for the general area and information from other nearby projects. Soils form as a vertical and horizontal profile displaying soil horizons, which generally lie horizontal to one another and parallel with the surface (Waters 1992; Stein 2001; Jones 2007). Older land surfaces often contain paleosols. Paleosols are buried soils that formed in the past but are not undergoing soil formation in the present. These soils are: (1) indicative of prolonged periods of land stability or past environmental conditions; (2) are useful stratigraphic markers for locating buried archaeological deposits and are well represented in archaeological contexts; (3) and aid in the correlation of depositional sequences of different areas (Meyer 2003; Rapp and Hill 2006)The subject parcel lies within the California Great Valley (Central Valley) Geomorphic Province extending from Redding in the north to the Bakersfield area in the south. The Great Valley province lies between the Coast Ranges and Sierra Nevada provinces and is a dominant feature of Central California’s landscape. The Great Valley is generally considered to be one of the world’s most productive agricultural regions (Alt and Hyndman 2016) and is underlain by

sediments to a maximum depth of nearly 17 kilometers (Moratto 1984). Most of the sediments that comprise the Great Valley eroded from the Sierra Nevada, including volcanic rocks, pale quartz, and feldspar sand (Alt and Hyndman 2016). In general, large archaeological deposits are concentrated near the courses of streams and wetlands (Moratto 1984).

According to past and current geological maps of California (Matthews and Brunett 1965; California Department of Conservation 2015), most of the project site and its 0.5-mile search radius buffer is situated upon quaternary Pleistocene-Holocene alluvium, lake, playa, and terrace deposits and the Pleistocene to Pliocene Tulare Formation. Approximately 10 percent of the project site is within Pliocene-Pleistocene deposits consisting of sandstone, shale, and gravel deposits and Pleistocene deposits consisting of older alluvium, lake, playa, and terrace deposits. Data available through the United States Department of Agriculture was also reviewed. There are 12 soil types within the project location. These soils are generally classified as alluvial and farmland soils, however none of them are generally known to contain buried A-Horizons (Soil Survey Staff 2023).

The potential sensitivity of the project location was assessed against a set of criteria identified by a geoarchaeological overview of the Central Valley that was prepared for the California Department of Transportation (Caltrans) Districts 6 and 9 (Meyer et al. 2010). This study mapped the "archaeological sensitivity," or potential to support the presence of buried prehistoric archaeological deposits, throughout the Central Valley based on geology and environmental parameters including distance to water and landform slope. The authors of the study concluded that sites consisting of flat, Holocene-era deposits near water resources had a moderate to high probability of containing subsurface archaeological deposits when compared to earlier Pleistocene deposits situated on slopes or further away from drainages, lakes, and rivers. Meyer et al. (2010) consider the majority of portion of the project location east of Highway 33 to be moderately sensitive for buried archaeological sites, with the northeastern area to be considered moderately low. The southeastern portion of the project location on the west side of Highway 33 is also considered to be moderately sensitive. Finally, the remaining portion of the project site on the west side of Highway 33 is considered to have a very low sensitivity for buried archaeological sites. Also note that the areas along the nearby creeks are considered to have a very high sensitivity.

Applying the criteria set forth in Meyer et al. (2010), all Holocene-era deposits have the potential to contain archaeological deposits, which increases with the ease of the slope and proximity to water resources. The Zapato Chino Creek cuts through the western portion of the project site during the winter and early spring and the Canoas Creek bisects the eastern portion of the project site along a north to south axis. This indicates a high potential for unanticipated buried cultural resources to be impacted by project construction along areas adjacent to the creek beds. Using all the available data an archaeological sensitivity map has been developed (Exhibit 5).



Source: USGS Avenal 7.5' Quadrangle / T21S R16E sec 34, 35, 36; T22S R16E sec 1, 2; T22S R17E sec 6

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Exhibit 5
Archaeological Sensitivity Map

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4.1 - Summary

Results from the SSJVIC indicate there are no previously recorded resources within the project site or the 0.5-mile search radius. Five area-specific survey reports are on file within the 0.5-mile search radius, two of which (FR-00322 and FR-01052) partially address the northwestern portion of the project site, suggesting that the majority of the project site has not been surveyed for cultural resources.

The NAHC SLF produced a negative result for TCRs within the project site. FCS contacted the 14 Tribal representatives via letter and/or email on June 8, 2023, December 19, 2023, and December 26, 2023 and a phone call on January 3, 2024. One response from the Picayune Rancheria of Chukchansi Indian Tribe was received on January 4, 2024.

The results of the pedestrian survey were positive for the identification of previously unidentified cultural resources. The cultural resources identified and recorded during the first pedestrian survey, which occurred from August 1 to August 4, 2023, cultural resources were identified and recorded on August 1 and 2, 2023. During the second pedestrian survey, which was conducted from October 24 to October 27, 2023, cultural resources were recorded and identified on October 25 and 26, 2023. For the final pedestrian survey, which was conducted from December 19 to December 22, 2023, cultural resources were identified on December 19, 20, 21 and 22, 2023. There are eight locations, CHP-1, CHP-2, CHP-3, CHP-4, CHP-5, CHP-6, CHP-7, and CHP-8, which were recorded on DPR forms (reference Appendix E) that qualify as individual prehistoric archaeological sites. The isolates identified on August 1, 2023, October 25, 26, and 27, 2023 and December 19, 21, and 22, 2023, were likely once part of a larger concentration that has been disturbed by past agricultural activities and it is currently impossible to determine whether there may a larger intact deposit without conducting additional archaeological studies (i.e., subsurface testing).

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Appendix A:
Personnel Qualifications

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DANA DOUGLAS DePIETRO, PH.D.—Cultural Resources Lead (North)

OVERVIEW

- More than 15 Years' Experience in Archaeology and Cultural Resources

Education

- Ph.D., Near Eastern Art and Archaeology, University of California at Berkeley, 2012
- M.A., Near Eastern Art and Archaeology, University of California at Berkeley, 2005
- B.A., Archaeology and History (double major), University of California at San Diego, 2002

Fellowships and Awards

- Albright Institute Educational and Cultural Affairs Fellowship (2015)
- Katherine Davis Foundation Projects for Peace Prize (2012)
- International House Gateway Fellowship (2011-2012)
- The George Franklin Dales Foundation Fellowship for Archaeological Research (2011)
- CAORC Multi-Country Dissertation Research Fellowship (2010)

Dana DePietro, Ph.D. is a Registered Professional Archaeologist who meets the Secretary of Interior's standards for historic preservation programs in archaeology. Dr. DePietro has over 15 years of experience in all aspects of cultural resource management, including prehistoric and historic archaeology, paleontology, materials conservation, history of art and architecture, and community engagement. He has experience in compliance with the National Environmental Policy Act (NEPA), the California Environment Quality Act (CEQA), the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARAP). Dr. DePietro has completed cultural resource projects that have involved agency, client, Native American, and subcontractor coordination; treatment plans and research design development; archival research; field reconnaissance; site testing; data recovery excavation; construction monitoring; site recordation; site protection/preservation, mapping/ cartography; spatial analysis/GIS; laboratory analysis; materials conservation; artifact curation and exhibition; and report production. He has completed projects in California within the jurisdiction of the Bureau of Land Management (BLM) and other federal agencies requiring compliance with Section 106 of the NHPA. He has also completed projects throughout California under CEQA for state and local governments and municipalities, including the California Department of Transportation (Caltrans) and has worked with clients to insure deliverables meet and exceed the standards set by the State Historic Preservation Office (SHPO).

RELATED EXPERIENCE AND CLIENT SUMMARY

FirstCarbon Solutions

As the Lead Archaeologist/Cultural Resource Specialist for FCS, Dr. DePietro conducts evaluations and performs field documentation of historic and prehistoric cultural resources; prepares environmental impact reports (EIRs), cultural resources assessments (CRAs), DPR forms and Section 106 reports; conducts mapping, GIS analysis, and state and county record searches; leads archaeological surveys and field monitoring efforts; and coordinates with state, federal and tribal officials and institutions for a variety of FCS projects, including the following:

DANA DOUGLAS DePIETRO, PH.D.—Cultural Resources Lead (North)

- Atherton Baptist Homes Master Plan/Phase II, City of Alhambra, Los Angeles County
- Biological and Cultural Resources Assistance 140-Acre Project Site Woodcrest, Riverside County, CA
- Blanchard Road Industrial EIR Project, City of San Jose, Santa Clara County, CA
- Bonadelle Tract 6120 AQ/GHG and Bio Tech Studies, City of Clovis, Fresno County, CA
- CEQA Analysis for Mayhew Way Project, City of Walnut Creek, Contra Costa County
- 2268 El Camino Real, Mountain View—II CEQA Compliance Checklist Project, City of Mountain View, Santa Clara County
- CEQA Documentation for New Science Building, City of Fairfield, Solano County
- CEQA Services for Clover Spring Open Space Preserve Project, City of Cloverdale, Sonoma County
- Chico Walmart Expansion Project, City of Chico, CA
- Cultural Resources Services for Froom Ranch/El Villagio Specific Plan, City of San Luis Obispo, CA
- Cultural Resource & Historic Evaluation for Sacramento Dome Theatre, City of Sacramento, CA
- Cultural Resources Services for Haven Berryessa Block 7 & 8 San Jose Flea Market, San Jose, CA
- Caltrans NEPA/CEQA Documentation and Permitting for the Dogtown Road Bridges Replacement Projects (San Domingo Creek, French Gulch, and Indian Creek), Calaveras County, CA
- Due Diligence for Meadowlark Project in Pleasanton, CA
- Due Diligence Services for the Montalcino Property, Napa County, CA
- Due Diligence Site Review for Parcel APN 68-241-30 located at 260 Bartlett Way Santa Cruz, CA
- Due Diligence Level IA Entitlements for the Boscell Road Osgood Project, City of Fremont, CA
- Trellis Residential Project EIR, City of Walnut Creek, CA
- El Dorado Materials Recovery Facility Remodeling Project, El Dorado County, CA
- Farmstand IS/MND, City of Healdsburg, CA
- La Paloma Winery Demo Project IS/MND, City of Clovis, CA
- Kaiser Dublin Medical Center EIR, City of Dublin, California
- Merced Gateway Master Plan Project EIR, City of Merced, CA
- Phase 1 Cultural Resource Assessment for 44 acres TTM No. 19992, Rancho Cucamonga, CA
- Bonadelle Tract 6120 Cultural Resources Study, City of Clovis, CA
- Professional Services to Support the Development of a Preferred Development Plan and Associated Regulatory Strategies for the Solano 360 Project, Solano County, CA
- Tassajara Parks EIR, Contra Costa County, California

Other Relevant Experience

The Society for Humanitarian Archaeological Research and Exploration

Dr. DePietro is the Founder and Executive Director of The Society for Humanitarian Archaeological Research and Exploration. He manages the projects, staff, and the daily operation of this not-for-profit organization. Dr. DePietro likewise establishes relationships with partner universities and institutions, writes grant proposals, supervises fundraising projects, and maintains accounts, financial records, and the organization's online presence.

University of California at Berkeley

Dr. DePietro was a lecturer at the University of California, Berkeley from August 2003 to January 2015. During his tenure, he prepared University-level source and lectures in the history of the modern and ancient Middle East, performed student advising and evaluation, and university administrative duties. Dr. DePietro provided resources and opportunities that empower people to critically engage with other cultures as well as with their own communities.

DANA DOUGLAS DePIETRO, PH.D.—Cultural Resources Lead (North)

Penn State University—Tel Akko Total Archaeology Project

Dr. DePietro was the Director of Community Engagement from 2013 to 2014 at the Penn State University for the Tel Akko Total Archaeology Project. He developed and executed a community engagement program, supervised staff and community participants, taught excavation and conservation techniques to groups of young people in Akko, and performed outreach, dialogue, and program developments in partnership[with community leaders.

Harvard University—Leon Levy Expedition to Ashkelon, Israel

Dr. De Pietro was the excavation supervisor during the summers of 2007-2013 for the Harvard University—Leon Levy Expedition to Ashkelon, Israel. He supervised the excavation and stratagraphic interpretation and instructed students in excavation techniques, data collection, photography, analysis, and publication.

Early Iron Age Cemetery Excavation—Dhamar, Yemen

Dr. De Pietro was the Area Supervisor during the summer of 2004 for the Early Iron Age Cemetery Excavation in Dhamar, Yemen. He supervised the excavation and stratagraphic interpretation, taught excavation techniques, strategy and implementation, field conservation, surveying techniques, data collection and analysis, and site management.

Journal of Associated Graduates in Near Eastern Studies (JAGNES)

Dr. DePietro was the Associate Editor from August 2003 to May 2012 for the Journal of Associated Graduates in Near Eastern Studiers (JAGNES). He solicited and proofread submissions, fundraising, and advertisements.

"Travel Today: Egypt" Magazine

Dr. De Pietro was an Archaeological Correspondent from December 2002 to February 2005. He wrote magazine articles, conducted relevant interviews and research, and procured photos and images to compliment articles.

TI NGO, MA—HISTORIAN AND CULTURAL RESOURCES ANALYST

OVERVIEW

- More than 12 years of experience

Education

- Master of Arts, History, University of California, Berkeley, CA, 2013
- Bachelor of Arts, History, with Departmental and General Honors, University of Chicago, Chicago, IL, 2005

Fellowships and Awards

- Fulbright Institute of International Education, 2014
- Center for Japanese Studies Fellowship, 2009–2013
- Sigmund Heller Traveling Fellowship, 2010
- Foreign Language and Area Studies Fellowship, 2009–2010

Ti Ngo, MA, is a Historian and Cultural Resources Analyst who meets the Secretary of the Interior's Standards for historic preservation. He has more than 12 years of experience and specializes in archival research, specifically online digital archives and databases. Mr. Ngo has served as a researcher and instructor for universities in the US and Japan. He has also conducted archaeological excavations in Israel. He has excellent writing and research skills, which have aided him in preparing stand-alone Cultural Resources Assessments (CRAs) and studies in compliance with CEQA and NEPA requirements.

RELATED EXPERIENCE AND CLIENT SUMMARY

Walnut Creek-Mixed Use Special District Project Supplemental EIR, City of Walnut Creek, CA

FCS is preparing the Supplemental EIR; biological and cultural resources analysis; air quality, GHG emissions, and energy analysis (including a construction and operational Health Risk Assessment); and noise analysis for the Walnut Creek-Mixed Use Special District Project. The project consists of amendments to the North Downtown Specific Plan (NDSP) that would create an Auto Sales–Custom Manufacturing Mixed-use Special District overlay on approximately 6.2 acres owned or controlled by Toyota Walnut Creek, the applicant. One of the goals is to facilitate redevelopment of the project site with mixed uses, including the enhanced auto sales and service uses, which would be maintained as part of any redevelopment, as well as a potential mix of multi-family residential, hotel, and/or other compatible non-residential uses.

Since the ultimate land use and site plan are not currently known and there are various ways in which the subject lands could ultimately be developed under the NDSP (as amended), in order to conduct the required environmental review, the Supplemental EIR includes an innovative approach and evaluates (based on the maximum reasonable development potential in light of reasonably available information) three potential development scenarios, each of which involves a different mix and allocation of potential uses that could reasonably be assumed along with the net increase in auto sales, service, and ancillary uses (which would remain a constant among all three development scenarios). As part of this analysis, FCS also prepared a Comparative Summary of Potential Impacts appendix to provide a conservative analysis while allowing flexibility with respect to the ultimate development scenario. The Draft

Supplemental EIR was published on June 30, 2023, and the public comment period ended on August 16, 2023.

Oak Road Townhouse Condominiums Project EIR and Peer Review of Technical Studies, Contra Costa County, CA

FCS prepared an EIR and peer reviewed technical studies for a proposed subdivision. The applicant (SummerHill Homes) is constructing 125 townhouse condominium units located in nineteen 3-story buildings and associated improvements on a 5.94-acre site in unincorporated Contra Costa County, adjacent to the City of Walnut Creek. The eight existing parcels are currently zoned Low- and Medium-density Single-family Residential (R-15), Medium- and High-density Multiple-family Residential (M-17), and High-density Multiple-family Residential (M-29). The project includes rezoning all eight parcels to Planned Unit District (P-1), a vesting tentative map to subdivide the parcels into 125 residential lots, and approval of a preliminary and final development plan. The FCS team peer reviewed the technical documents provided by the applicant, including the Air Quality/GHG Emissions Assessment, Arborist Report, Cultural Resources Memorandum and Cultural Resources Study, Environmental Noise Assessment, Phase I Environmental Site Assessment (ESA), Special-status Species Assessment, and Transportation Analysis Report. The Board of Supervisors approved the project on March 1, 2022.

Blue Wave Car Wash Project IS/MND and Technical Studies, City of Pittsburg, CA

FCS prepared the IS/MND and supporting technical studies for the Blue Wave Car Wash Project in the City of Pittsburg, California. Bluewave Express Car Wash and CEI Engineering (Applicant) proposed to develop a new stand-alone carwash and self-service vacuum facility on a 1.36-acre site. The project would include 26 parking spaces and a 100-foot drive-thru vehicle wash tunnel; three 12.5-foot drive-thru pay lanes; three drive-thru payment stations; 22 vacuum stalls; and paved driveways. FCS and its subconsultants prepared the technical analyses for the air quality/GHG emissions, biological resources, cultural resources, noise impacts, Phase I ESA, and traffic. City Council approved the IS/MND in February 2023.

Initial Study/Consistency Checklist and Addendum to the Richmond General Plan Final EIR for the 100 38th Street Project, City of Richmond, CA

FCS is preparing an Initial Study/Consistency Checklist and Addendum to the Richmond General Plan Final EIR for the 100 38th Street Project. The 2.84-acre project site is adjacent to the Richmond Superior Court complex and contains a decommissioned 2-story public office building. The project site is designated “Public, Cultural and Institutional” (“PCI”) by the City of Richmond General Plan and is zoned PCI by the Richmond Zoning Ordinance. The applicant, Eden Housing, Inc. (Eden), is proposing to redevelop the existing building and construct an additional building for a total of 135 affordable housing and multi-family units. The project would require a General Plan Amendment (GPA) to change the land use designation to medium-density mixed-use (Residential Emphasis). FCS is preparing a Checklist pursuant to CEQA to determine whether an Addendum to the General Plan EIR is the appropriate level of environmental review. FCS is also exploring whether the project would be eligible for a CEQA statutory exemption pursuant to Government Code section 21155.1 (Sustainable Communities Strategies), or whether a Sustainable Communities Environmental Assessment should be prepared, pursuant to Government Code section 21155.2. In support of the Checklist analysis, FCS is also preparing technical studies for air quality, biological resources, cultural resources, GHG emissions, and noise.

TI NGO, MA—HISTORIAN AND CULTURAL RESOURCES ANALYST

Sherburne Hills Residential Project EIR, Town of Danville, CA

FCS is preparing an EIR and technical studies for the Sherburne Hills Residential Project in the Town of Danville, California. A proposed Master Development Plan would divide the 20.03-acre project site's two existing parcels into three development areas. The development areas would contain a total of 18 single-family lots and 18 accessory dwelling units (ADUs). ADUs would either be attached, detached, or internal and would be deed restricted to persons qualifying as "low income." A new bridge crossing is proposed to provide access between the development areas for both pedestrians and vehicles. Areas of concern include biological resources and land use. FCS is in the process of completing technical studies for the proposed project, followed by the preparation of the EIR.

Solid Waste and Recycling Transfer Station Replacement Project CEQA Compliance, City of Berkeley, CA

FCS is providing CEQA compliance services to the City of Berkeley for the construction of a replacement Solid Waste and Recycling Transfer Station. The replacement Berkeley Transfer Station would increase the processing capacity of waste to more than 620 tons a day. It will also be a net zero energy facility and achieve a Leadership in Energy and Environmental Design (LEED) certification. Mr. Ngo wrote the Phase I CRA and attended public hearings on behalf of the client for the proposed project.

24493 Clawiter Road Industrial Warehouse IS/MND and Technical Studies, City of Hayward, CA

FCS prepared an IS/MND and associated technical studies for the Industrial Building Project at 24493 Clawiter Road. The applicant, Duke Realty Corporation, proposed to demolish the existing manufacturing and warehouse structure and construct a 157,725-square-foot, 50-foot-tall, 1-story tilt-up concrete warehouse and an office building. The building would be built to meet the City of Hayward Municipal Code's Industrial Design Guidelines per Section 10-1.1606 (R), which requires the preparation of a Sustainability Plan. This plan would incorporate Duke Realty's Industrial Building Sustainability Standards Guideline, and the building would achieve LEED certification from the US Green Building Council. Areas of concern included air quality, cultural resources, geology/soils, hazards/hazardous materials, hydrology and water quality, and transportation. The project and IS/MND were approved in December 2021.

Oak Hill Apartments Project EIR, Marin County, CA

FCS prepared an EIR and supporting technical studies for the Oak Hill Apartments Project in unincorporated Marin County. The project applicants, Eden and Education Housing Partners, Inc., proposed to develop approximately 6.7 acres of the 8.3-acre project site with a 100 percent affordable housing project, which would include the construction of two buildings containing up to 250 new apartments. The project site is located on land owned by the State of California. As such, the California Department of General Services (DGS) is the Lead Agency for the proposed project. The proposed project implements Executive Order N-06-19 through the development of affordable housing in a High Housing Needs zone on a site deemed suitable for affordable housing by the DGS and the Department of Housing and Community Development. The team prepared technical studies to address areas of concern including the air quality, GHG emissions, biological resources, cultural resources, geotechnical, ESAs, noise, and transportation.

TI NGO, MA—HISTORIAN AND CULTURAL RESOURCES ANALYST

Giovannoni Logistics Center EIR, City of American Canyon, CA

FCS is preparing an EIR for the Giovannoni Logistics Center project on 255.1 acres in the City of American Canyon. The applicant (Buzz Oates Construction, Inc.) proposes to develop a 2.4-million-square-foot logistics center on approximately 208 acres with the remaining 47.1 acres preserved as open space. Devlin Road and the Napa Valley Vine Trail would be extended through the project site to close the gap in these transportation facilities. The Giovannoni Logistics Center will cater to clients and customers in the e-commerce, wine, and food industry. Environmental issues include biological resources, cultural resources, air quality/GHG emissions, transportation, and noise. Mr. Ngo authored the Section 106 CRA and conducted the supporting pedestrian survey of the site to ascertain the possibility of any previously unrecorded cultural resources and utilized record searches from both the Native American Heritage Commission and the Northwest Information Center.

Yamane Warehouse Project CEQA Guidelines Sections 15168 and 15183 Consistency Checklist, City of Gilroy, CA

FCS prepared CEQA Guidelines Sections 15168 and 15183 Environmental Checklist and associated technical studies for an approximately 163,400-square-foot large-scale warehouse/distribution building on an 8.9-acre project site. The project merged two parcels through a parcel map, and the existing unpermitted structures on the project site will be demolished. The project required a variance (Minor Deviation) to allow the proposed project to be constructed at a height of 40 feet, whereas the M1 zoning district currently limits building heights to 35 feet. FCS prepared an Initial Study and supporting technical studies, including air quality/GHG emissions and energy, biological resources, cultural resources, and transportation. The evaluation concluded that the proposed project was consistent with the development density established in the General Plan and is within the scope of the General Plan and the General Plan EIR, and that no further CEQA documentation is required under Sections 15168 and 15183. The checklist was completed in August 2023.

455 Piercy Road Industrial Warehouse Project Initial Study and Technical Analysis, City of San José, CA

FCS prepared an Initial Study and technical analysis for the construction of an industrial building on 7.6 acres in the City of San José, California. The proposed project would include one new light industrial building and associated truck distribution infrastructure. The industrial building would be approximately 121,580 square feet, consisting of approximately 116,580 square feet of warehouse space and approximately 5,000 square feet of mezzanine office space. FCS prepared an Initial Study and required technical studies, including the Air Quality/GHG Emissions and Energy Impacts Analysis, Biological Resources Assessment (BRA), Phase I CRA, and Noise Impact Analysis Report. The Initial Study and project were approved on September 28, 2022. Mr. Ngo authored the CRA.

CA3-2590 Walsh Avenue Backup Generating Facility BRA and CRA, City of Santa Clara, CA

FCS prepared a BRA and CRA for the construction of a server farm and backup generating facility. The project applicant (Vantage Data Center) proposed to construct an emergency backup generating facility (CA3BGF) with a generation capacity of up to 96 megawatts to support the need to provide an uninterruptible power supply for the tenant's servers. The CA3BGF would consist of 44 diesel-fired backup generators arranged in a generation yard located on the north side of the project site. 40 of the generators would be dedicated to supporting the electricity needs of the data center in case of a loss of utility power, and four of the generators would be used to support redundant critical cooling equipment

and other general building and life safety services. Project elements would also include switchgear and distribution cabling to interconnect the generators to their respective portion of the building. Mr. Ngo both authored the CRA and conducted the pedestrian survey of the site to ascertain the possibility of any previously unrecorded cultural resources.

CA3-2590 Walsh Avenue Phase I CRA, City of Santa Clara, CA

FCS conducted a Phase I CRA for the proposed CA3-2590 Walsh Avenue Project in Santa Clara, California. The project, also known as the McLaren Backup Generating Project, sits on 6.69 acres containing a rectangular, single-story office building, which is surrounded by a wraparound parking lot and landscaping elements. The project applicant (Advantage Data Centers) proposed to construct an emergency backup generating facility (CA3BGF) with a generation capacity of up to 96 megawatts to support the need for the CA3DC to provide an uninterruptible power supply for the tenant's servers. FCS Senior Archaeologist, Dr. Dana DePietro and FCS Historian, Ti Ngo, conducted a pedestrian survey for unrecorded cultural resources at the proposed project site. The results of the inspection were negative for conclusive prehistoric and/or historic resources. The results of the analysis were documented in a Phase I CRA in August 2018.

Southside Russian River Shaded Fuel Break Vegetation Management Project Archaeological Survey, Sonoma County, CA

FCS provided a cultural resources general survey for the Southside Russian River Shaded Fuel Break and Vegetation Management Project, located near the town of Guerneville, California. The assessment would identify the presence or absence of potentially significant cultural resources within the Vegetation Treatment Plan (VTP Boundary), and, if present, propose recommendations for mitigation. The project area consists of a 100-foot-wide and approximately 4-mile-long (165 acres) corridor intersecting 12 privately owned parcels that would serve as a fuel break along the Pocket Canyon Ridge Road, in which 80 percent of hardwood trees that are 10 inches in diameter and smaller and 90 percent of brush would be removed to prevent the spread of fire from ground to crown. FCS performed record searches and pedestrian survey and prepared the Cultural Resources General Survey Report. FCS found that there were no known cultural resources that could be impacted by the proposed project. This project was completed successfully under the Board of Forestry and Fire Protection California Vegetation Treatment Program.

Electronic Readerboard Signs Project IS/MND and Technical Studies, City of Tracy, CA

FCS prepared an IS/MND along with technical studies, including Air Quality, GHG Emissions, and Energy Analysis; Biological Resources Analysis; Cultural Resources Analysis; and Noise Analysis to evaluate impacts related to construction and operation of the proposed billboards. The City of Tracy proposed to amend the Sign Ordinance set forth in Title 10, Chapter 10.08, Article 35 of the Municipal Code. As part of these revisions, the City added section(s) to 10.08.4460 relating to "digital freeway signs." The City revised related portions of the Municipal Code to ensure conformity with the updated Sign Ordinance. As part of the proposed project, the City also amended the Interstate-205 Corridor Specific Plan to ensure consistency with the proposed Municipal Code amendments, as this Specific Plan area is the only area in which digital freeway signs would be allowed.

The City anticipates that the proposed Sign Ordinance and Specific Plan Amendments would allow for a new digital freeway sign in the vicinity of the West Valley Mall and for the conversion of one existing

static freeway sign to a digital freeway sign. FCS evaluated environmental impacts associated with the construction and operation of the new digital freeway sign and conversion of the existing static freeway sign. The project was unanimously approved by the City Council in November 2021.

Oakville Vineyard Sump Cultural Monitoring, University of California, Davis, CA

FCS is currently providing cultural resources monitoring and recordation services for the Oakville Vineyard Sump Excavation Project on the University of California, Davis, campus. The project consists of the excavation of a new sump located in the University of California, Davis, and an experimental vineyard in Kalon Vineyards in Oakville, California. The proposed sump is expected to be 32 feet by 32 feet, with a depth of 20 feet. Five prehistoric archaeological resources (CA-NAP-179, CA-NAP-350, CA-NAP-398, CA-NAP-440, and CA-NAP-666) are known to be in the immediate area. As such, the FCS team is conducting a records search, relocation of the sites, worker sensitivity training, and construction monitoring for archaeological resources to mitigate potential negative impacts to archaeological resources. This work is being carried out in cooperation with the University of California, Davis, and Native American tribes that expressed interest in the project.

Rajkovich Way Residential Project Class 32 Categorical Exemption Memorandum and Technical Studies, City of Hollister, CA

FCS prepared a Class 32 Categorical Exemption Memorandum and associated technical studies for the Rajkovich Way Residential Project located at the southwest corner of Rajkovich Way and San Juan Hollister Road. The applicant, Republic Urban Properties, LLC, is proposing to develop 50 townhomes on an approximately 2.45-acre site that is currently vacant and undeveloped. Each townhome would be one of four building types: threeplex, fourplex, fiveplex, or fiveplex with live/work units. The project would also include 28,000 square feet of common open space, 17,050 square feet of landscaping, 113 parking spaces, 12 bicycle parking spaces, and an approximately 1,334-square-foot building containing the leasing office, recreation center, and a pool. The project is pending the transportation study.

Barber Yard Specific Plan Project EIR, City of Chico, CA

FCS is preparing an EIR and supporting technical analyses for the potential environmental effects of the proposed Barber Yard Specific Plan, a comprehensive planning document that would establish specific guiding principles and strategy for development of a 133-acre area within the City of Chico, as well as off-site improvements, including a stormwater detention pond and associated storm drain alignments and outfall, which are located within unincorporated Butte County. Formerly occupied by the Diamond Match Factory (1906 to 1975) and Louisiana-Pacific Corporation (1984 to 1989), the site is bound by existing residential neighborhoods, the Union Pacific Railroad, and rural residential and agricultural uses. FCS is preparing an EIR along with the following technical studies: Air Quality, GHG Emissions, and Energy Analysis; BRA; CRA; Historic Built Environment Assessment; Noise Impact Analysis; Phase I ESA; Phase II ESA; and Traffic Impact Assessment. The FCS will also peer review the applicant-provided hydrology and geotechnical reports.

Addendum to the Desert Hot Springs General Plan EIR for Project Viento, City of Desert Hot Springs, CA

FCS is preparing an Addendum to the Desert Hot Springs General Plan EIR and supporting technical studies for Project Viento in the City of Desert Hot Springs, California. The project applicant, Seefried Industrial Properties, Inc., is proposing to construct an approximately 3.4-million square-foot sortable

multi-story e-commerce warehouse and distribution center for consumer products on approximately 94.62 acres of undeveloped land. The land surrounding the project site is mainly comprised of undeveloped land, designated as Light Industrial (I-L) to the north, Open Space—Conservation (OS-C) to the east, Business Park (C-BP) and I-L to the west, and Highway Commercial (C-H) to the south. FCS is also preparing technical studies or conducting technical analyses, including an Air Quality, GHG Emissions, and Energy Analysis; BRA; Phase I CRA; Paleontological Records Search; and a Noise Impact Analysis.

Proposed Eastside School Phase I CRA, Riverside Unified School District, Riverside, CA

FCS prepared a CRA for the Riverside Unified School District to expand and relocate Lincoln Continuation High School. For the CRA, FCS researched the history of the District, particularly its history in racially desegregating its schools following the historic Brown v. Board of Education verdict in 1954. Mr. Ngo conducted the archival research and writing for the cultural and historical section of the report.

Other Relevant FCS Experience

- 1335 Galindo Street Project Cultural Monitoring, City of Concord, CA
- Ameresco Pipeline Project Section 106 Report, City of Pittsburg, CA
- 1014 Chesley Avenue Self-storage Facility Cultural Monitoring, City of Richmond, CA
- 3101 Garrity Way Homewood Suites Project Initial Study/Checklist and Technical Studies, City of Richmond, CA
- 731 West Cutting Boulevard Industrial Project IS/MND and Technical Studies, City of Richmond, CA
- PowerPlant Park Project Biological and Cultural Monitoring Services, City of Richmond, CA
- Heritage Park Pioneer Cemetery Improvements Project Regulatory Permitting, Pre-construction Surveys, and Construction Monitoring, City of Dublin, CA
- San Leandro Town Square Residential Project Cultural/Historic Evaluation and Class 32 Exemption Memorandum and Technical Studies, City of San Leandro, CA
- Washington Avenue Assembly Project Technical Studies, City of San Leandro, CA
- Gateway Property Initial Study/Consistency Checklist and Technical Studies, City of Dixon, CA
- Fairfield Train Station Specific Plan Planning Area 1 Multi-family Residential Project Environmental Review, City of Fairfield, CA
- Fieldcrest Residential Project Archaeological and Paleontological Monitoring Services, City of Fairfield, CA
- 384 Fairgrounds Drive Self-storage Project Regulatory Services, City of Vallejo, CA
- Woodacre 1 Summit Drive Project Due Diligence Services, Woodacre, CA
- Technology Way Buildings A and B Project Biological Site Assessment/Cultural Resources Report, Napa County, CA
- Napa Warehouse Project Phase I CRA, Napa County, CA
- Browns Valley Subdivision Project IS/MND, City of Napa, CA
- Napa Valley Wine Train 15612 CEQA Analysis, City of Napa, CA
- Kern Avenue Residential Project IS/MND and Technical Studies, City of Gilroy, CA
- Digital Billboard Project IS/MND and Technical Studies, City of Gilroy, CA
- Edes Street Townhomes Residential Project Technical Studies, City of Morgan Hill, CA
- 600 Edmundson Ave Residential Project Biological Services, City of Morgan Hill, CA
- 2628 Union Avenue Project Class 32 Exemption Memorandum and Technical Studies, City of San José, CA

TI NGO, MA—HISTORIAN AND CULTURAL RESOURCES ANALYST

- San José Pedro Street Residential Project IS/MND, City of San José, CA
- Pecten Lane GPA Initial Study, City of San José, CA
- Project Rosco Industrial Project IS/MND and Technical Studies, Sonoma County, CA
- Canine Companions Early Development Center Expansion IS/MND, City of Santa Rosa, CA
- 851 Brittain Lane Residential Project Addendum or Consistency Checklist, City of Santa Rosa, CA
- Construction Materials Processing Plant EIR, Town of Windsor, CA
- Guernewood Neighborhood Association Shaded Fuel Break Project Cultural Resources General Survey, Guernewood, CA
- Rio Nido Vegetation Management Project Cultural Resources General Survey, Rio Nido, CA
- 420-unit Multi-family Housing Project CEQA Initial Study, City of Manteca, CA
- Watsonville Subdivision Project Cultural Monitoring Services, City of Watsonville, CA
- Logistics Facility Project EIR and Technical Studies, Madera County, CA
- Cornucopia Hybrid Solar Project Technical Studies, Fresno County, CA
- Ritchie Site Shirk and Riggin Industrial Park Project Technical Studies and Entitlement Support, City of Visalia, CA
- North Main Center EIR and Technical Studies, City of Carson, CA
- Legacy Anaheim Residential Project CEQA Infill Streamlining Appendix N Checklist, City of Anaheim, CA
- Orange Street Residential Development Project CEQA-level Due Diligence Memoranda, City of Eastvale, CA

Prior Work Experience

Instructor, University of California Berkeley, CA

Mr. Ngo was an instructor at the University of California Berkley from 2012 to 2015. He taught courses on political economy, Japanese history, and reading and writing composition. He also mentored first generation and minority students through the Berkeley Connect program.

Researcher, Oral History Project (Japanese Internment during World War II), University of California, Berkeley, CA

As a Researcher, Mr. Ngo translated and catalogued various documents from a Japanese internment camp in Arizona.

Volunteer and Instructor, Prison University Project, Mount Tamalpais College, San Quentin, CA

Mr. Ngo was a volunteer and instructor at the San Quentin Prison from 2012 to 2013. He taught college-level English 101 literature courses to inmates and participated in their tutoring program.

Director, The Society for Humanitarian Archaeological Research and Exploration

Mr. Ngo is a Director for The Society for Humanitarian Archaeological Research and Exploration (SHARE). This non-profit organization brings together Jewish and Arab high school students in Israel every summer to work on an archaeological dig together. They not only learn how to excavate and record archaeological resources but also work together across communities to build understanding. In addition to working on archaeological sites with the students in Israel, Mr. Ngo helps to direct the marketing and fundraising campaign for SHARE.

TI NGO, MA—HISTORIAN AND CULTURAL RESOURCES ANALYST

Visiting Research Fellow and Fulbright Institute of International Education Scholar, Institute of Social Sciences, University of Tokyo, Japan

As a Visiting Research Fellow, Mr. Ngo conducted archival research on Japanese migration and colonial settlements in Micronesia and the South Pacific. He presented his research at various conferences in both the US and Japan.

Publication

Ngo, T. (2012). Mapping Economic Development: The South Seas Government and Sugar Production in Japan's South Pacific Mandate, 1919–1941. Cross-Currents: East Asian History and Culture Review, e-Journal No. 2. https://cross-currents.berkeley.edu/sites/default/files/e-journal/articles/ngo.pdf

Presentations

Ngo, T. (2016). Confronting the Mandate to Modernize: Japan and the United States in Micronesia, 1919–1979. New Approaches and Perspectives in East Asian Studies. University of California, Berkeley, CA.

Ngo, T. (2015). Cornering the Sugar Market: The South Seas Development Company and Japanese Imperial Interests in Southeast Asia. Panel Organizer at the Association for Asian Studies Annual Conference, The Business of Interwar: Japanese Companies and the Construction of Transitional Markets. Sheraton Hotel and Towers, Chicago, IL.

Ngo, T. (2014). One Model of Modernization: Japanese Bureaucrats, Navy Officers, and Internationalist Technocrats in Japan's South Pacific Mandate, 1919–1937. Panel Organizer at the Association for Asian Studies Annual Conference. Marriott Downtown, Philadelphia, PA.

Ngo, T. (2013). The Mythos of Agrarian Production: Economic "Modernization," Labor Policy, and Southern Expansion in Japan's South Pacific Mandate. Modern History Workshop. Waseda University, Tokyo, Japan.

Ngo, T. (2013). Imperial Aspirations in the Age of Wilsonian Internationalism: Japan's South Pacific Mandate and the New Rhetoric of Overseas Expansion. Asian Studies Conference Japan. J.F. Oberlin University, Machida, Japan.

Ngo, T. (2013). Economic Development and Imperial Aspirations in Japan's South Pacific Mandate. Japan History Group. Tokyo University, Tokyo, Japan.

Ngo, T. (2013). Economic Development and Imperial Aspirations in Japan's South Pacific Mandate. Association for Asian Studies Annual Conference. Manchester Grand Hyatt, San Diego, CA.

Ngo, T. (2012). Productivity as Progress: Visions of Economic Development and Government Policies in Japan's South Pacific Mandate. Association of Japanese Studies. University of California, Berkeley, CA.

Ngo, T. (2012). Ethnicity and the Labor Problem in Japan's South Pacific Mandate: Anthropology in the Categorization of Indigenous Populations. Haas Junior Scholars Conference. University of California, Berkeley, CA.

TI NGO, MA—HISTORIAN AND CULTURAL RESOURCES ANALYST

Ngo, T. (2011). Framing Economic Development: Japanese Imperial Maps of the South Pacific and their Implications. Japanese Imperial Maps Conference. Stanford University, Stanford, CA.

Ngo, T. (2011). The Biological Foundations of Civilization: Ideologies Underlying Japanese Colonial Policies in Taiwan and the South Pacific, 1898–1933. Columbia Graduate Student Conference. Columbia University, New York, NY.

FIRSTCARBON SOLUTIONS™

CHARLES J. MIKULIK, MA—SENIOR CULTURAL RESOURCES SPECIALIST

OVERVIEW

- More than 15 years of experience

Education

- Master of Arts, Cultural Resources Management, Sonoma State University, Rohnert Park, CA, 2014
- Bachelor of Arts (with Distinction), Anthropology, Sonoma State University, Rohnert Park, CA, 2007
- Associate in Arts, Psychology, Los Medanos College, Pittsburg, CA 2004
- Associate in Arts, Liberal Arts, Los Medanos College, Pittsburg, CA 2004

Professional Affiliations

- Member, Society for California Archaeology, 2007–present
- Board Member and Former Chair of the Board of Directors, Glen Ellen Historical Society (GEHS), 2011–Present

Charles J. Mikulik, MA, has more than 15 years of experience in cultural resource project management, archaeological investigations, California Historical Resources Information System (CHRIS) research, and geographic information system (GIS) data management and map production for cultural resources management (CRM) compliance projects in various regions of the US. He has specialized knowledge in archaeology, database and archival management, ethnography, oral history, community engagement, fieldwork, and report production. Mr. Mikulik is well versed in preparing environmental documents that comply with the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), Section 106 and Section 110 of the National Historic Preservation Act (NHPA), the Federal Land Policy and Management Act, and numerous county and city ordinances. Mr. Mikulik meets the Secretary of Interior's Professional Qualification Standards for Archaeology. Prior to working as a senior staff member for FCS, Mr. Mikulik owned and operated two small cultural resources compliance firms: Charles Mikulik Archaeological Consulting, LLC (CMAC) and Cultural Resources Practitioners, LLC (CRP).

RELATED EXPERIENCE AND CLIENT SUMMARY

Prior Project Experience

Charles Mikulik Archaeological Consulting (CMAC) – Principal and Cultural Resources Lead

- AT&T Livermore Basin-El Charro Archaeological Monitoring Study for Installation of a Monopine Tower and Related Infrastructure, City of Livermore, CA
- Residential Construction Project Extended Phase I and Phase II Investigation of P-27-002666 (CA-MNT-002148), City of Pacific Grove, CA
- On Call CEQA Consultation for Various Construction Projects Records Searches, Historical and Archaeological Reviews, and Assessments, Santa Clara County, CA
- National Register of Historic Places Registration Form, Sonoma State Home Historic District Nomination, Eldridge, Sonoma County, CA

CHARLES J. MIKULIK, MA—SENIOR CULTURAL RESOURCES SPECIALIST

- Federal Communications Commission (FCC) Telecommunications Programmatic Agreement Projects Cultural Resources Compliance Studies for T-Mobile and AT&T, Various Locations, CA

Cultural Resources Practitioners (CRP) – Principal and Cultural Resources Lead

- McCandless Park Project Archaeological Testing, City of Milpitas, CA
- Site P-44-000481 Archaeological Test Excavation, Boulder Creek, Santa Cruz County, CA
- South San Francisco General Plan Update, Research and GIS Specialist, San Mateo County, CA
- North Orinda Emergency Fuel Break Project Cultural Resources Sensitivity Assessment, Initial Site Survey and Inventory, Archaeological Monitoring, and Planning and Mitigation Recommendations, Contra Costa County, CA
- AT&T and BLM Project A012CFA, Class III Cultural Resources Inventory, Fresno County, CA
- *Asilomar State Marine Reserve, Residential Construction Project, Archaeological Reconnaissance and Site Record Update, City of Pacific Grove, CA*
- *AT&T Project A018HCD Cultural Resources Investigation, San Benito County, CA*
- Crown Castle Sacramento Cell Sites Project Research Specialist, Cultural Resources Survey, and GIS Data Management, City of Sacramento, CA
- Cannabis Cultivation and Residential Project Cultural Resources Study, Guerneville, Sonoma County, CA
- AT&T Project A00WPXX Phase I Cultural Resources Investigation, Marshall Gold Discovery State Historic Park, El Dorado County, CA
- Cannabis Cultivation and Private Residential Project Cultural Resources Study, Cazadero, Sonoma County, CA
- Occidental Road Project Archaeological Fieldwork, Research Specialist, GIS Data Management, Tribal Consultation, and Technical Report, City of Sebastopol, CA
- Interstate 880 in Castro Valley Project, FCC Collocation Project, Cultural Resources Field Survey, and GIS Data Management, City of San Lorenzo, CA
- Fox Hollow Development Project Post Discovery Action Plan, Archaeological Excavation, and Technical Report, City of Santa Rosa, CA
- Carbona Monopole Telecommunications Facility Project Archaeological Fieldwork, GIS Data Management, Tribal Consultation, and ASR, San Joaquin County, CA
- Crystal Springs Residential Project Geoarchaeological and Archaeological Support Services, City of St. Helena, CA
- Bacon Pipeline Project CHRIS Records Search, Cultural Resources Field Survey, and Cultural Resource GIS Map Production, City of South San Francisco, CA
- FCC Regulations Compliance under NHPA On-Call Research and Field Surveys, Alameda, Sonoma, San Mateo, San Francisco, and Santa Clara Counties, CA
- Dollarhide Estate Vineyard Project Geoarchaeological and Archaeological Supportive Services, City of St. Helena, CA
- 7800 Giusti Road Project Archaeological Fieldwork, Archival Research and GIS Data Management, Forestville, Sonoma County, CA

CHARLES J. MIKULIK, MA—SENIOR CULTURAL RESOURCES SPECIALIST

Other Prior Employment Experience

- Alta Archaeological Consulting LLC, City of Santa Rosa, CA
- US Department of Agriculture Mendocino National Forest, Grindstone District, City of Willows, CA
- The Sanberg Group, Inc., City of Santa Fe Springs, CA
- AECOM, City of Sacramento, CA
- URS Corporation, City of Oakland, CA
- TRC Solutions, City of Irvine, CA
- Anthropological Studies Center, City of Rohnert Park, CA
- North Coast Resource Management, City of Santa Rosa, CA
- California OHP, City of Sacramento, CA

Professional Presentations

2017. *Moving Forward, while working in the Present: An Interactive Forum Designed to Reconnect SCA Members to the California Historical Resources Information System*. Participant. Presented at the Society for California Archaeology Annual Meeting. Fish Camp, CA.

2016. *What Happened to Archaeology?: A Study of Changing Landscapes in Heritage Management, Glen Ellen California*. Presented at the Santa Cruz Archaeological Society. Santa Cruz, CA.

2016. *Cultural Resource Districts: Using DPR 523d Forms in Cultural Resources Management*. Presented at the Society for California Archaeology Northern Data Sharing Meeting. Ontario, CA.

2016. *Cultural Resource Districts: Using DPR 523d Forms in Cultural Resources Management*. Presented at the Society for California Archaeology Annual Meeting. Ontario, CA.

2015. *SDC: Yesterday, Today & Tomorrow*. Presented on May 23rd, Glen Ellen Historical Society, Annual Meeting.

2014. *Not Losing the Real Glen Ellen*. Presented on February 22nd, Glen Ellen Historical Society Lecture Series.

2012. *What We Say and Do Matters!: The Application of Ethnographic Methods and Theory in Cultural Resource Management*. Presented at the Sixth Annual Graduate Student Showcase. Sonoma State University.

2012. *What We Say and Do Matters!: The Application of Ethnographic Methods and Theory in Cultural Resource Management*. Presented at the Society for California Archaeology Annual Meeting. San Diego, CA.

2007. *The Impact of Dam Construction: Socio-Economic Changes in San Ignacio, Belize*. Presented at the Society for Applied Anthropology. Tampa, FL.

2006. *Culture and the Process of Change: The Significance of Music in a Belizian Village*. Presented at the Society of Applied Anthropology. Vancouver, BC, Canada.

Appendix B:
Northwest Information Center Records Search Results

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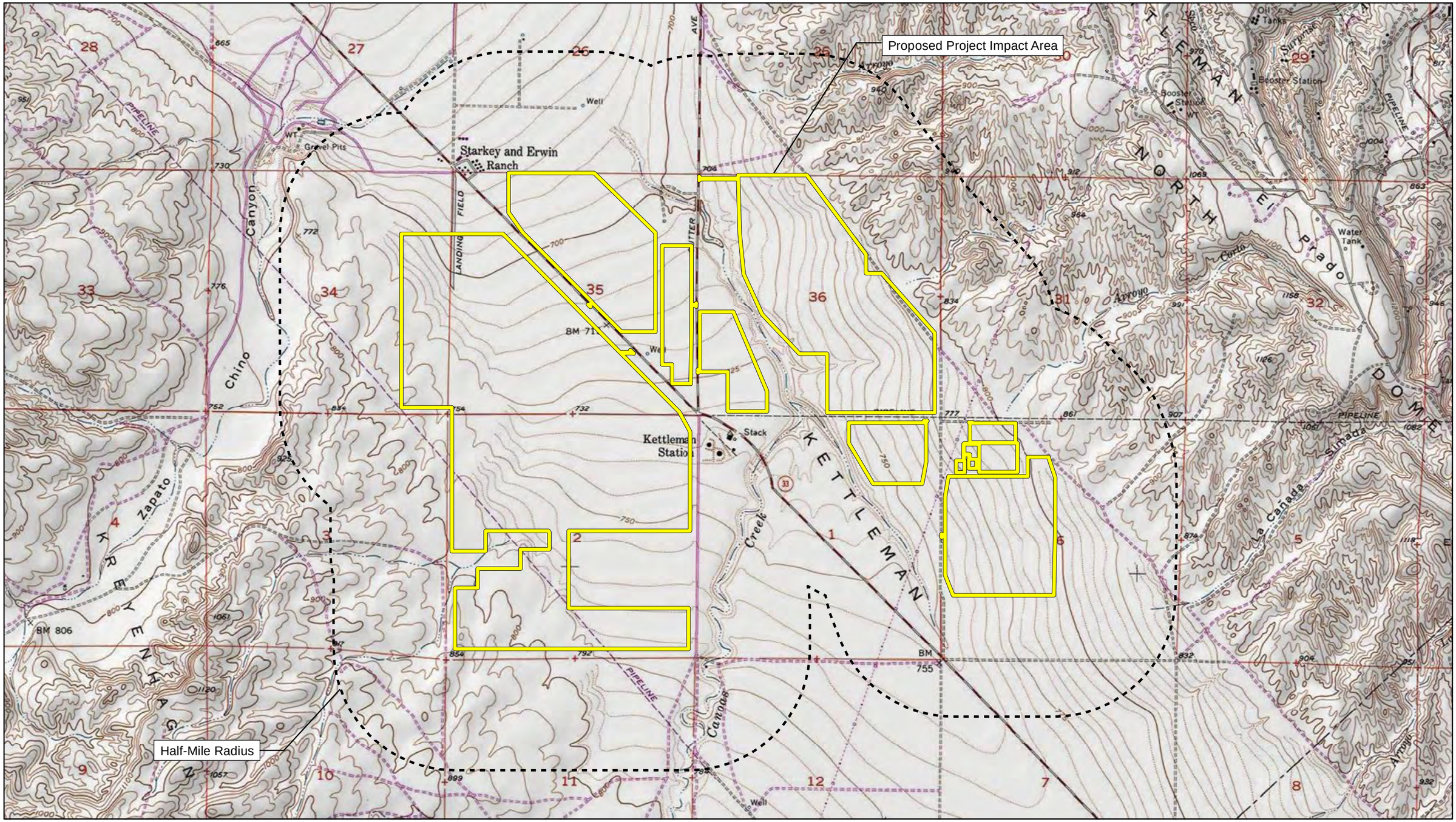

Source: USGS Avenal 7.5' Quadrangle / T21S, R16E, Sections 25, 26, 27, 34, 35, 36; T21S, R17E, Section 31; T22S, R16E, Sections 1, 2, 3, 10, 11, 12; T22S, R17E, Sections 6, 7.

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Exhibit A
Record Search Map

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

5/1/2023

Dana DePietro
FirstCarbon Solutions
1350 Treat Blvd., Suite 380
Walnut Creek, CA 94597

Re: Fresno Cornucopia Solar Project
Records Search File No.: 23-148

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Avenal USGS 7.5' quads. The following reflects the results of the records search for the project area and the 0.5 mile radius:

As indicated on the data request form, the locations of archaeological resources and reports are provided in the following format: ☒ custom GIS maps ☐ GIS data

Resources within project area:	None
Resources within 0.5 mile radius:	None
Reports within project area:	FR-00067, 00322, 01052, 02414
Reports within 0.5 mile radius:	FR-01029

Resource Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Database Printout (details):	☐ enclosed	☐ not requested	☒ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☐ enclosed	☐ not requested	☒ nothing listed
Report Copies:	☒ enclosed	☐ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see https://dot.ca.gov/programs/environmental-analysis/cultural-studies/california-historical-bridges-tunnels

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see https://www.slc.ca.gov/shipwrecks/

Soil Survey Maps: Not available at SSJVIC; please see http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jeremy E David
Assistant Coordinator

Report List

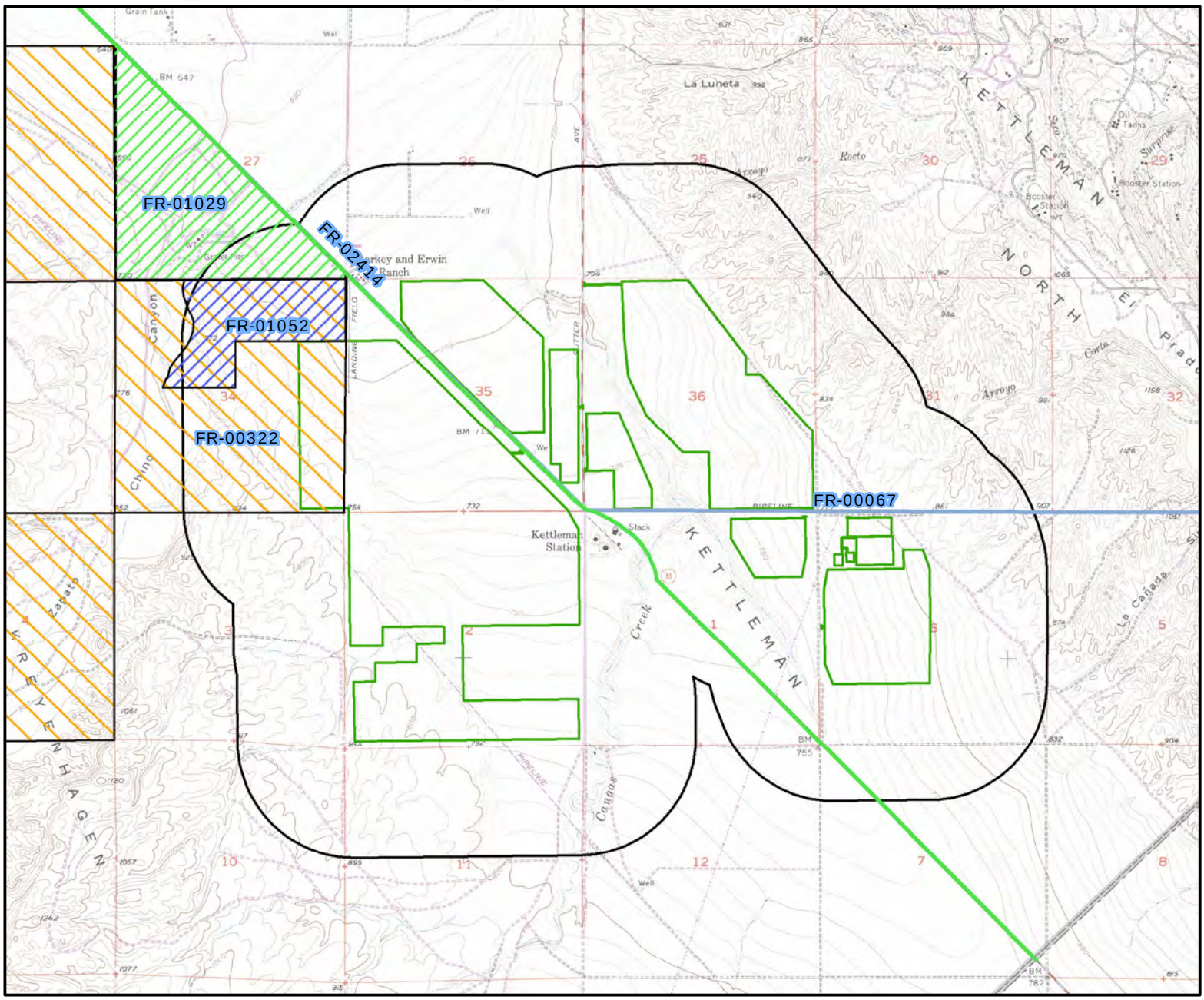
SSJVIC Record Search 23-148

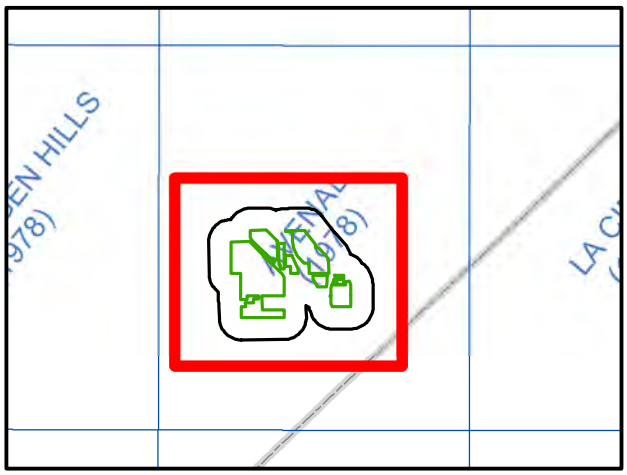
Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
FR-00067	NADB-R - 1141240	1989	Unknown	Technical Report of Cultural Resources Studes for the Proposed WTG-West, Inc. Los Angeles to San Francisco and Sacramento, California Fiber Optic Cable Project.	Biosystems Analysis, Inc.	
FR-00322		1985	Cantwell, R.J.	Archaeological Survey Report for the Zapato-Chino Canyon Mining Project, C. Oliver & Sons, Avenal Site	Individual Consultant	
FR-01029		1990	Wren, Donald G.	An Archaeological Survey fo Acme Paving Lost Hills Road, Coalinga California	Individual Consultant	
FR-01052		1991	Wren, Donald G.	An Archaeological Survey for Artesia Ready-MIH Concrete, Inc. Lost Hills Road, Coalinga, California	Individual Consultant	
FR-02414	Submitter - Contract No. 06A1106; Submitter - Expenditure Authorization No. 06-0A7408	2010	Leach-Palm, Laura, Brandy, Paul, King, Jay, Mikkelson, Pat, Seil, Libby, Hartman, Lindsay, and Bradeen, Jill	Cultural Resources Inventory of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties Summary of Methods and Findings	Far Western Anthrpological Research Group, Inc., Davis and JRP Historical Consulting, LLC, Davis	10-004703, 10-005797, 10-005809, 10-005810, 10-006207

California Historical Resources Information System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic





May depict confidential cultural resource locations. Do not distribute.

Map pages depicting no data have been excluded.

Project Area

Record Search radius

N
W E
S

0 0.2 0.4 0.8 Miles

0 0.25 0.5 1 Kilometers

SSJV Information Center Record Search 23-148
Requester: Dana DePietro
Project Name: Fresno Cornucopia Solar Project
USGS 7.5' Quad(s): Avenal
County: Fresno

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Appendix C:
Native American Heritage Commission and Tribal Correspondence

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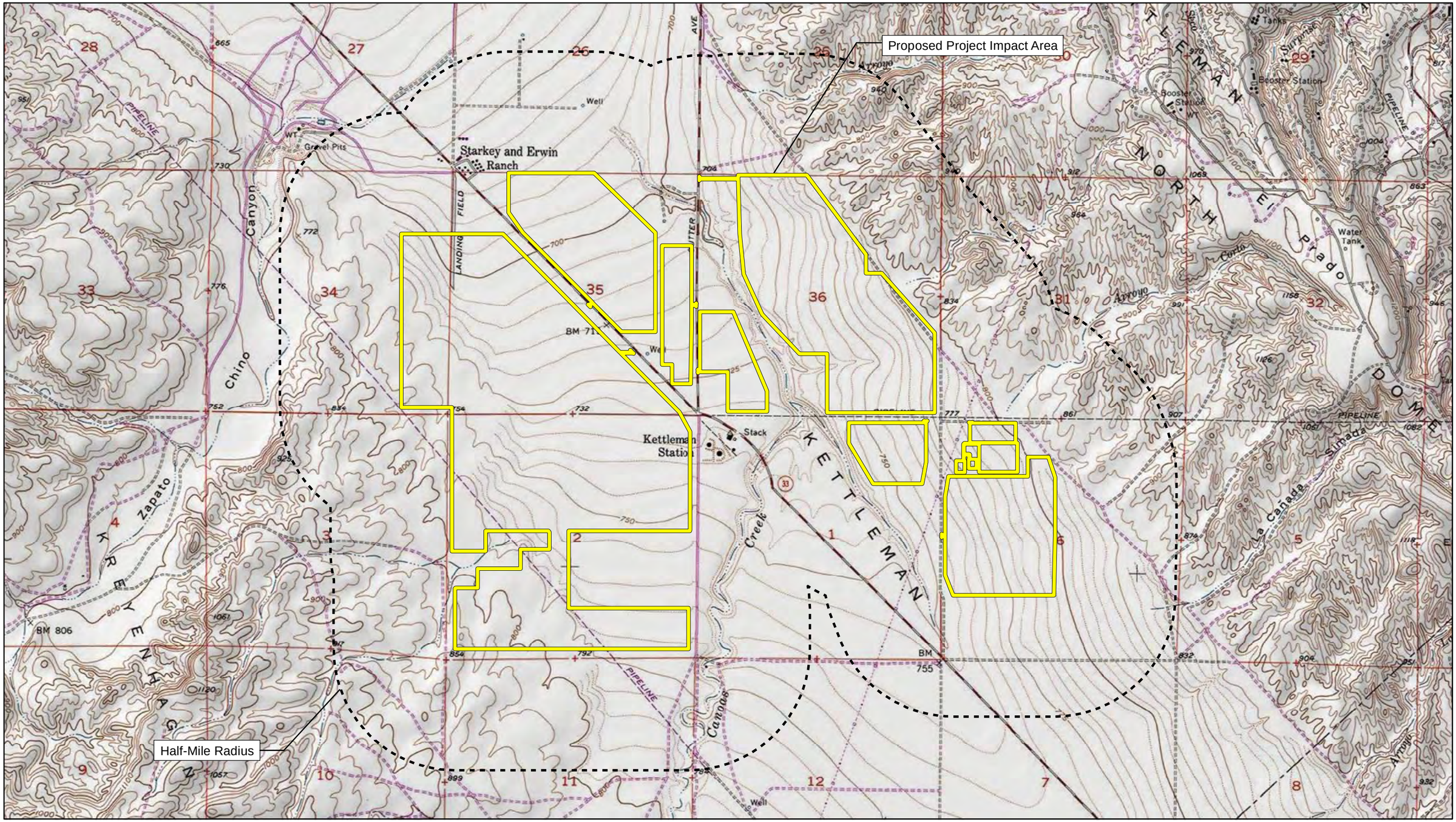

Source: USGS Avenal 7.5' Quadrangle / T21S, R16E, Sections 25, 26, 27, 34, 35, 36; T21S, R17E, Section 31; T22S, R16E, Sections 1, 2, 3, 10, 11, 12; T22S, R17E, Sections 6, 7.

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Exhibit A
Record Search Map

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
[Vacant]

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
[Vacant]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

May 30, 2023

Dr. Dana DePietro
FCS

Via Email to: ddepietro@fcs-intl.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, Fresno Cornucopia Solar Project, Fresno County

Dear Dr. DePietro:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

- Any report that may contain site forms, site significance, and suggested mitigation measures.

  All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
Fresno County
5/30/2023

Big Sandy Rancheria of Western Mono Indians
Tom Zizzo, Tribal Administrator
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602
Phone: (559) 374 - 0066
Tzizzo@bsrnation.com
Western Mono

Big Sandy Rancheria of Western Mono Indians
Joel Marvin, Vice Chairperson
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602
Phone: (559) 374 - 0066
Jmarvin@bsrnation.com
Western Mono

Big Sandy Rancheria of Western Mono Indians
Elizabeth Kipp, Chairperson
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602
Phone: (559) 374 - 0066
Fax: (559) 374-0055
Lkipp@bsrnation.com
Western Mono

Cold Springs Rancheria of Mono Indians
Carol Bill, Chairperson
P.O. Box 209
Tollhouse, CA, 93667
Phone: (559) 855 - 5043
Fax: (559) 855-4445
coldsprgstribe@netptc.net
Mono

Dumna Wo-Wah Tribal Government
Robert Ledger, Chairperson
2191 West Pico Ave.
Fresno, CA, 93705
Phone: (559) 540 - 6346
ledgerrobert@ymail.com
Foothill Yokut
Mono

Kings River Choinumni Farm Tribe
Stan Alec,
3515 East Fedora Avenue
Fresno, CA, 93726
Phone: (559) 647 - 3227
Foothill Yokut

North Valley Yokuts Tribe
Katherine Perez, Chairperson
P.O. Box 717
Linden, CA, 95236
Phone: (209) 887 - 3415
canutes@verizon.net
Costanoan
Northern Valley Yokut

North Valley Yokuts Tribe
Timothy Perez,
P.O. Box 717
Linden, CA, 95236
Phone: (209) 662 - 2788
huskanam@gmail.com
Costanoan
Northern Valley Yokut

Picayune Rancheria of Chukchansi Indians
Claudia Gonzales, Chairwoman
P.O. Box 2226
Oakhurst, CA, 93644
Phone: (559) 412 - 5590
cgonzales@chukchansitribe.net
Foothill Yokut

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8
Lemoore, CA, 93245
Phone: (559) 924 - 1278
Fax: (559) 924-3583
Southern Valley Yokut

Table Mountain Rancheria
Brenda Lavell, Chairperson
P.O. Box 410
Friant, CA, 93626
Phone: (559) 822 - 2587
Fax: (559) 822-2693
rpennell@tmr.org
Yokut

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Fresno Cornucopia Solar Project, Fresno County.

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue — Foothill Yokut
Fresno, CA, 93720
Phone: (559) 217 - 0396
Fax: (559) 292-5057
davealvarez@sbcglobal.net

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589 — Yokut
Porterville, CA, 93258
Phone: (559) 781 - 4271
Fax: (559) 781-4610
neil.peyron@tulerivertribe-nsn.gov

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokut
Salinas, CA, 93906 — Mono
Phone: (831) 443 - 9702
kwood8934@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Fresno Cornucopia Solar Project, Fresno County.

June 8, 2023

Kings River Choinumni Farm Tribe
Stan Alec
3515 East Fedora Avenue
Fresno, CA, 93726

Subject: Proposed Fresno Cornucopia Project

Dear Stan Alec:

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (ISMND) for the proposed Fresno Cornucopia Solar Project on behalf of Fresno County. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposes to construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road).

A Records Search map with a 0.5 mile buffer around the site is enclosed for your reference.

As part of the cultural resources assessment, FCS conducted a Sacred Lands File (SLF) search and California Historical Resource Information System (CHRIS). The results of the SLF records search was negative. The CHRIS search showed that there are no recorded resources within the project site or a 0.5-mile radius of the project site. Additionally 4 cultural resources reports are recorded within the project site and 1 cultural resources report is recorded within a 0.5-mile radius of the project site. The Native American Heritage Commission (NAHC) suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

UNITED STATES

T +1 888 826 5814
T +1 714 508 4100
F +1 714 508 4110
E info@fcs-intl.com

Irvine
250 Commerce
Suite 250
Irvine, CA 92602

Bay Area
1350 Treat Boulevard
Suite 380
Walnut Creek, CA 94597

Central Valley
7726 N. First Street
#413
Fresno, CA 93720

Inland Empire
967 Kendall Drive
#A-537
San Bernardino, CA 92407

Sacramento Valley
2351 Sunset Boulevard
Suite 170-301
Rocklin, CA 95765

Utah
2901 Bluegrass Boulevard
Suite 200-62
Lehi, UT 84043

Connecticut
2 Corporate Drive
Suite 450
Shelton, CT 06484

New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

CANADA

UNITED KINGDOM

PORTUGAL

FRANCE

KENYA

AUSTRALIA

PHILIPPINES

CHINA

MALAYSIA

SINGAPORE

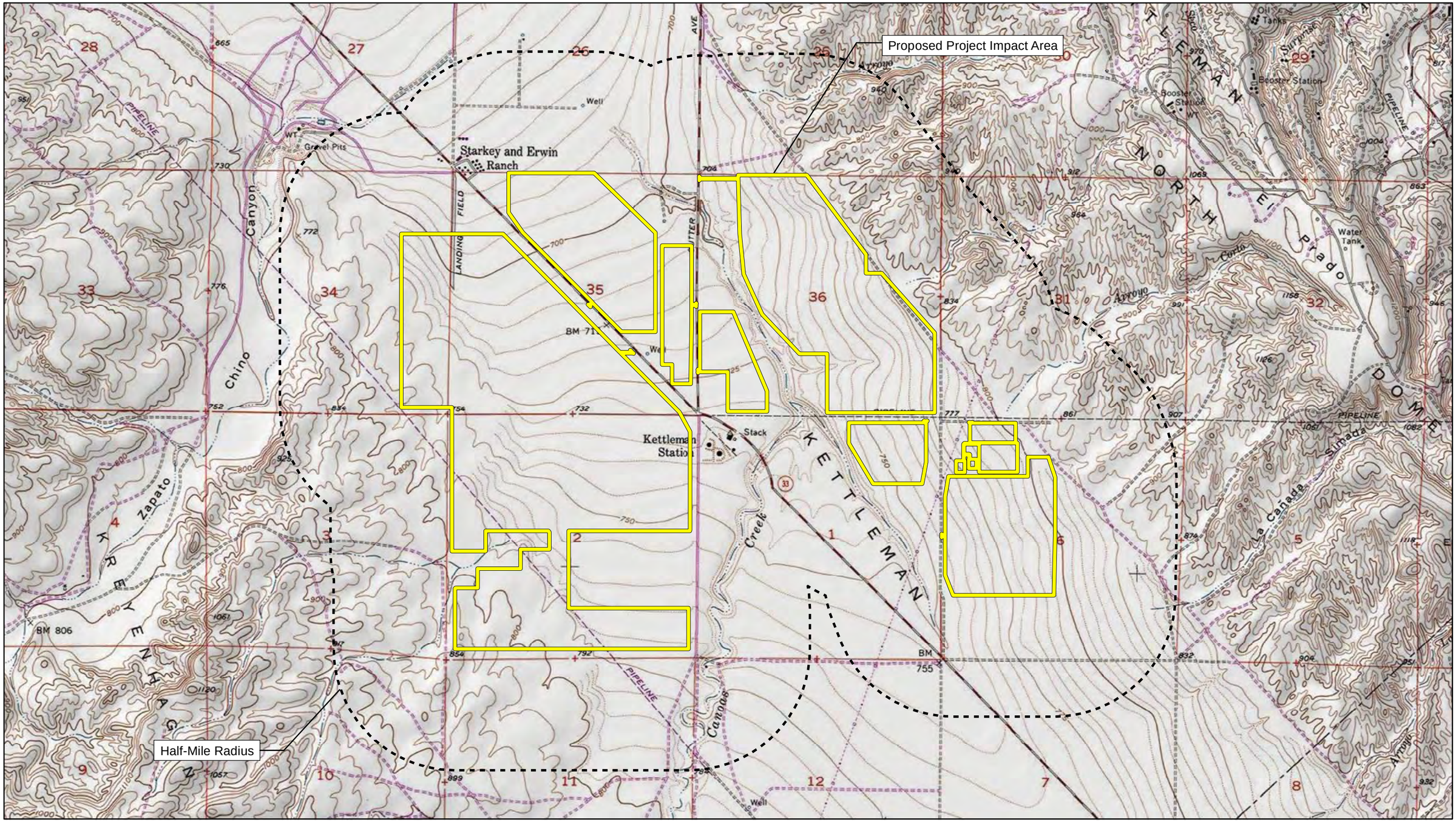
Please note that this letter is a request for information pertaining to a cultural resources assessment and is not notification of a project under Senate Bill (SB) 18, Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation Act. Designated lead agencies under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) are handling project notification and consultation requirements. Please feel free to contact me at 530.219.1432 or via email at ddepietro@fcs-intl.com and thank you for your valuable assistance.

Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

Attachment A:
Records Search Map



Source: USGS Avenal 7.5' Quadrangle / T21S, R16E, Sections 25, 26, 27, 34, 35, 36; T21S, R17E, Section 31; T22S, R16E, Sections 1, 2, 3, 10, 11, 12; T22S, R17E, Sections 6, 7.

FIRSTCARBON SOLUTIONS™

2,000 1,000 0 2,000 Feet

Exhibit A
Record Search Map

June 8, 2023

Cold Springs Rancheria of Mono Indians
Carol Bill, Chairperson
P.O. Box 209
Tollhouse, CA, 93667

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Bill:

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (ISMND) for the proposed Fresno Cornucopia Solar Project on behalf of Fresno County. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposes to construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road).

A Records Search map with a 0.5 mile buffer around the site is enclosed for your reference.

As part of the cultural resources assessment, FCS conducted a Sacred Lands File (SLF) search and California Historical Resource Information System (CHRIS). The results of the SLF records search was negative. The CHRIS search showed that there are no recorded resources within the project site or a 0.5-mile radius of the project site. Additionally 4 cultural resources reports are recorded within the project site and 1 cultural resources report is recorded within a 0.5-mile radius of the project site. The Native American Heritage Commission (NAHC) suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

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Central Valley
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#413
Fresno, CA 93720

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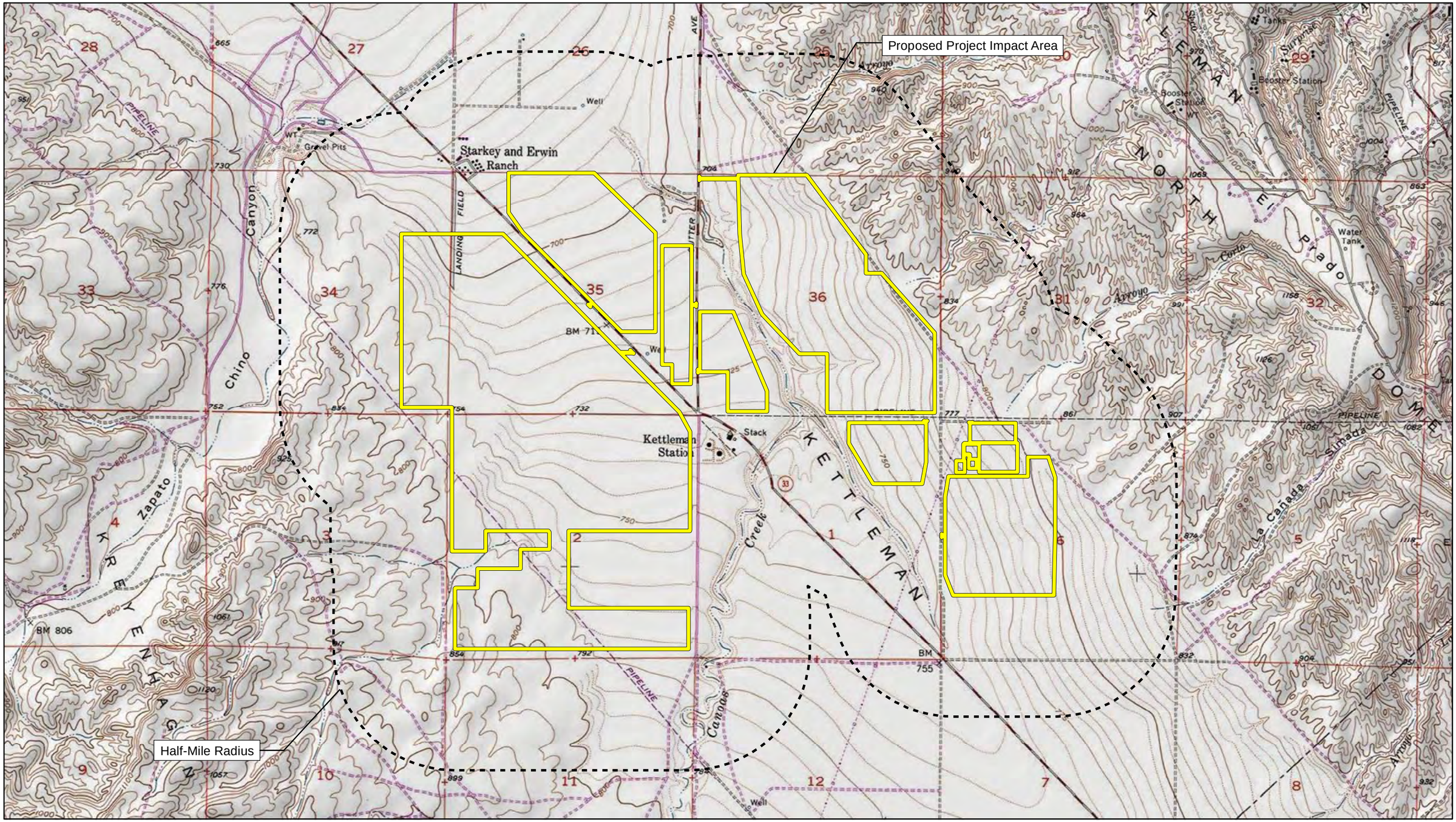
Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

Attachment A:
Records Search Map



Source: USGS Avenal 7.5' Quadrangle / T21S, R16E, Sections 25, 26, 27, 34, 35, 36; T21S, R17E, Section 31; T22S, R16E, Sections 1, 2, 3, 10, 11, 12; T22S, R17E, Sections 6, 7.

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Exhibit A
Record Search Map

June 8, 2023

North Valley Yokuts Tribe
Katherine Perez, Chairperson
P.O. Box 717
Linden, CA, 95236

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Perez:

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (ISMND) for the proposed Fresno Cornucopia Solar Project on behalf of Fresno County. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposes to construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road).

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As part of the cultural resources assessment, FCS conducted a Sacred Lands File (SLF) search and California Historical Resource Information System (CHRIS). The results of the SLF records search was negative. The CHRIS search showed that there are no recorded resources within the project site or a 0.5-mile radius of the project site. Additionally 4 cultural resources reports are recorded within the project site and 1 cultural resources report is recorded within a 0.5-mile radius of the project site. The Native American Heritage Commission (NAHC) suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

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Sincerely,

Dana Douglas DePietro, PhD
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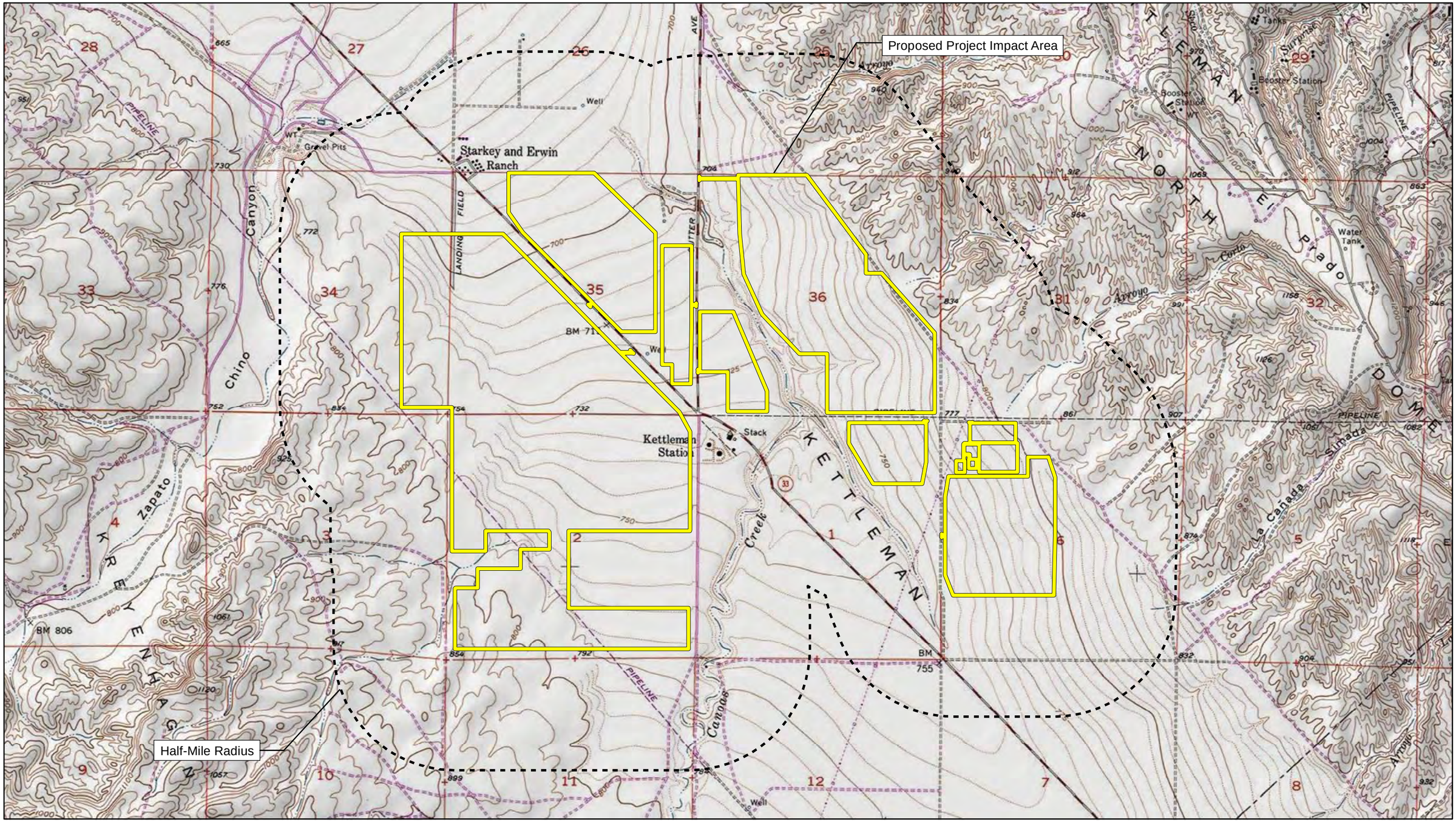

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Exhibit A
Record Search Map

June 8, 2023

Big Sandy Rancheria of Western Mono Indians
Elizabeth Kipp, Chairperson
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Kipp:

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (ISMND) for the proposed Fresno Cornucopia Solar Project on behalf of Fresno County. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposes to construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road).

A Records Search map with a 0.5 mile buffer around the site is enclosed for your reference.

As part of the cultural resources assessment, FCS conducted a Sacred Lands File (SLF) search and California Historical Resource Information System (CHRIS). The results of the SLF records search was negative. The CHRIS search showed that there are no recorded resources within the project site or a 0.5-mile radius of the project site. Additionally 4 cultural resources reports are recorded within the project site and 1 cultural resources report is recorded within a 0.5-mile radius of the project site. The Native American Heritage Commission (NAHC) suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

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Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
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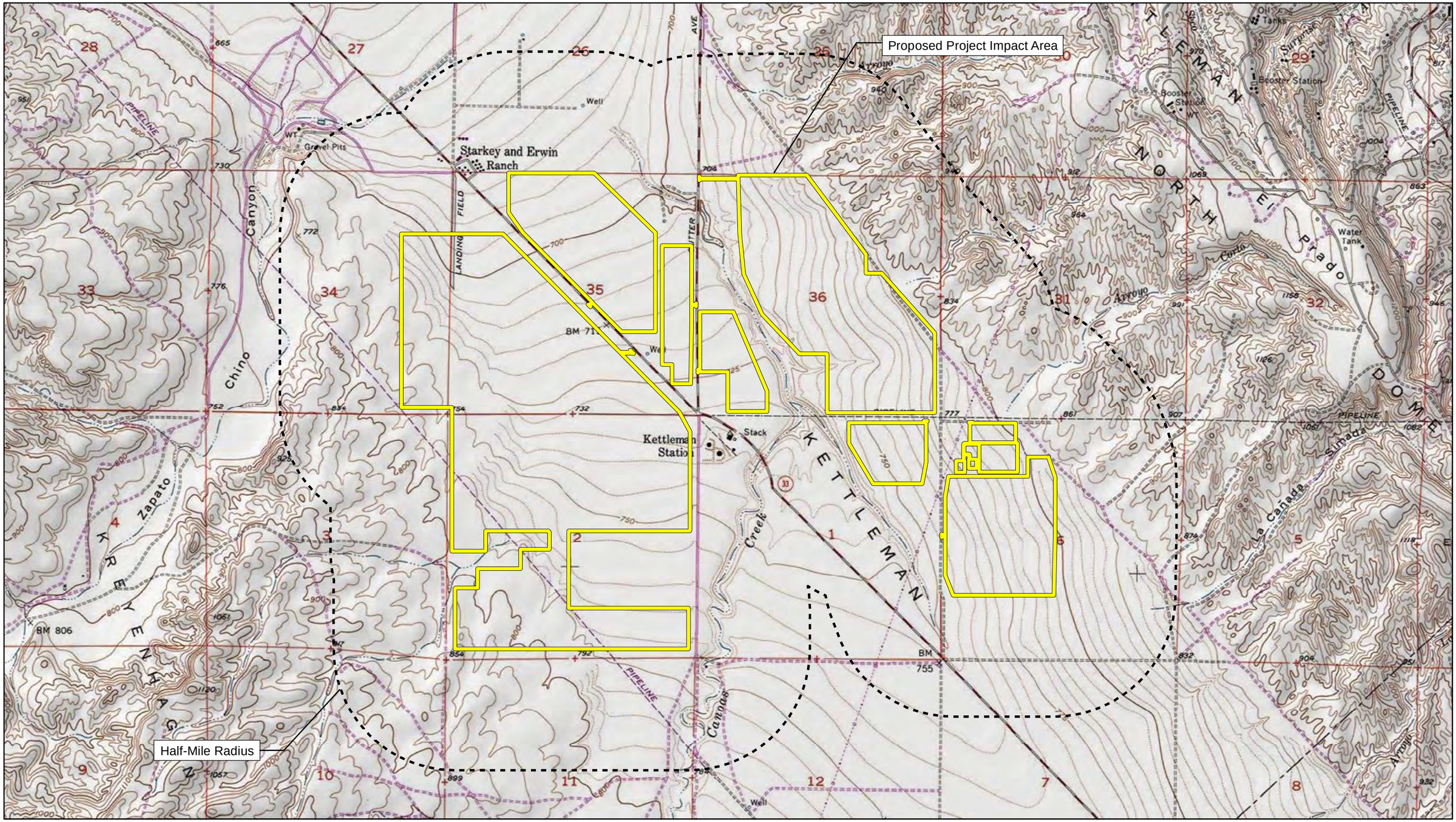

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Exhibit A
Record Search Map

June 8, 2023

Dumna Wo-Wah Tribal Government
Robert Ledger, Chairperson
2191 West Pico Ave.
Fresno, CA, 93705

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Ledger:

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (ISMND) for the proposed Fresno Cornucopia Solar Project on behalf of Fresno County. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposes to construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road).

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Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

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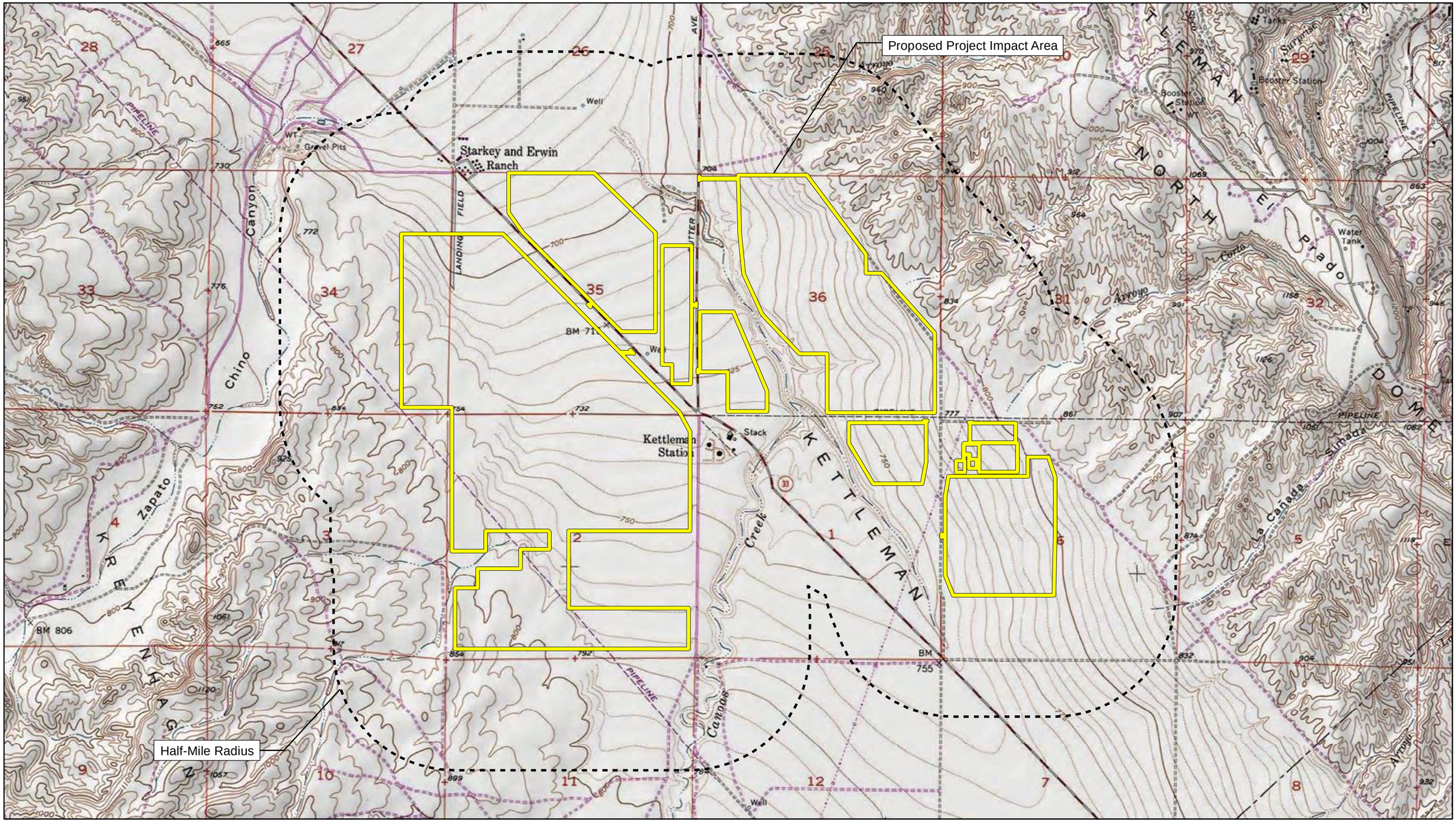

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Exhibit A
Record Search Map

June 8, 2023

Big Sandy Rancheria of Western Mono Indians
Joel Marvin, Vice Chairperson
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602

Subject: Proposed Fresno Cornucopia Project

Dear Vice Chairperson Marvin:

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (ISMND) for the proposed Fresno Cornucopia Solar Project on behalf of Fresno County. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposes to construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road).

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Dana Douglas DePietro, PhD
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FirstCarbon Solutions
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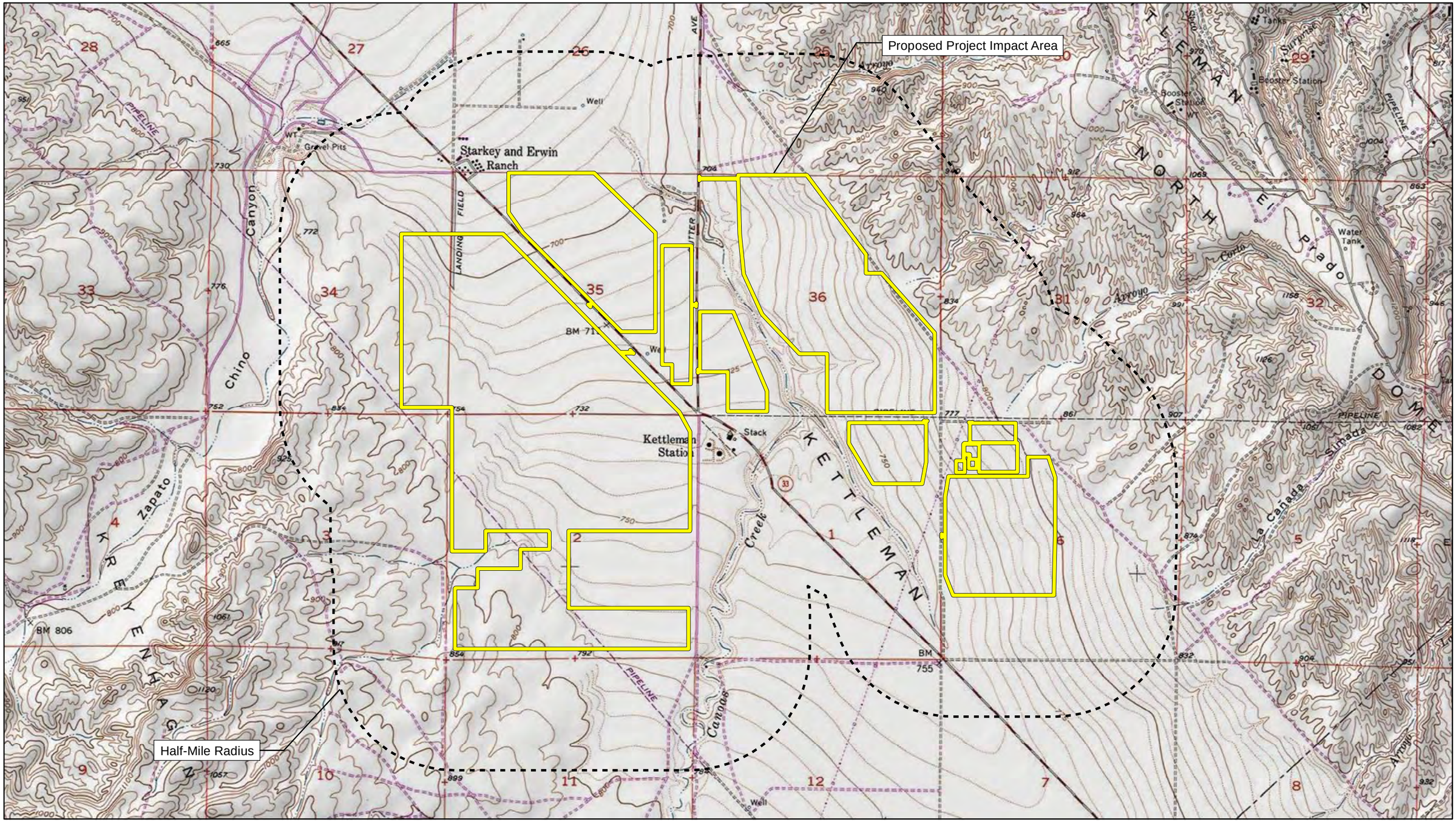

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Exhibit A
Record Search Map

June 8, 2023

Big Sandy Rancheria of Western Mono Indians
Tom Zizzo, Tribal Administrator
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602

Subject: Proposed Fresno Cornucopia Project

Dear Tom Zizzo:

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (ISMND) for the proposed Fresno Cornucopia Solar Project on behalf of Fresno County. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposes to construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road).

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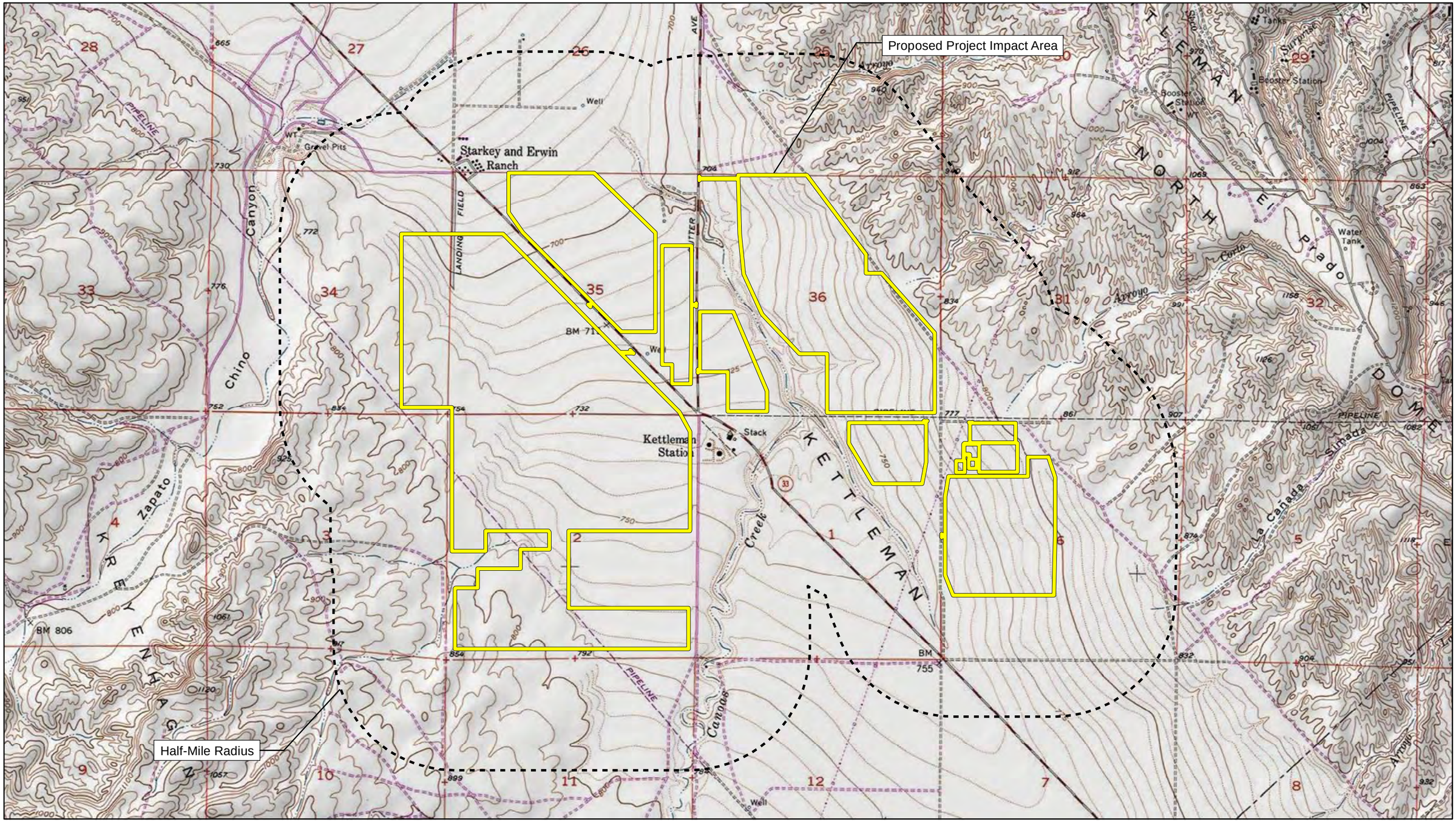

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Exhibit A
Record Search Map

Table 3: Tribal Consultation Matrix

Tribal Contact	Date Letter Sent	Date of 1st Follow Up Attempt	Date of 2nd Follow-Up Attempt	Response from Tribal Contact
Big Sandy Rancheria of Western Mono Indians Tom Zizzo, Tribal Administrator	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Voicemail.	
Big Sandy Rancheria of Western Mono Indians Joel Marvin, Vice Chairperson	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Voicemail.	
Big Sandy Rancheria of Western Mono Indians Elizabeth Kipp, Chairperson	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Voicemail.	
Cold Springs Rancheria of Mono Indians Carol Bill, Chairperson	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Called, no voice mailbox.	
Dumna Wo-Wah Tribal Government Robert Ledger, Chairperson	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Voicemail.	
Kings River Choinumni Farm Tribe Stan Alec	December 19, 2023. USPS.	December 27, 2023. USPS.	January 3, 2024. Called, no voice mailbox.	
North Valley Yokuts Tribe Katherine Perez, Chairperson	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Voicemail.	
North Valley Yokuts Tribe Timothy Perez	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Voicemail.	
Picayune Rancheria of Chukchansi Indians Claudia Gonzales, Chairwoman	December 19, 2023. USPS.	December 27, 2023. USPS.	January 3, 2024. Voicemail for Nick Lambert, new tribal administrator.	Received call back on January 4, 2024. No comments or concerns about project.
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson	December 19, 2023. USPS.	December 27, 2023. USPS.	January 3, 2024. Voicemail.	
Table Mountain Rancheria Brenda	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Left message with	

Lavell, Chairperson			receptionist.	
Traditional Choinumni Tribe David Alvarez, Chairperson	December 19, 2023. USPS.	December 27, 2023. USPS.	January 3, 2024. Voicemail.	
Tule River Indian Tribe Neil Peyron, Chairperson	December 19, 2023. Email. .	December 26, 2023. Email.	January 3, 2024. Voicemail.	
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson	December 19, 2023. Email.	December 26, 2023. Email.	January 3, 2024. Called, no voice mailbox.	

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FCS INTERNATIONAL, INC.

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December 19, 2023

Kings River Choinumni Farm Tribe
Stan Alec
3515 East Fedora Avenue
Fresno, CA, 93726

Subject: Proposed Fresno Cornucopia Project

Dear Stan Alec:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

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FIRSTCARBONSOLUTIONS™

Sincerely,

Charles Mikulik, M.A., RPA
Senior Cultural Resources Specialist
FirstCarbon Solutions
2999 Oak Road, Suite 250 Walnut
Creek, CA 94597

Enclosed

Attachment A: Record Search Map

Attachment A:
Records Search Map

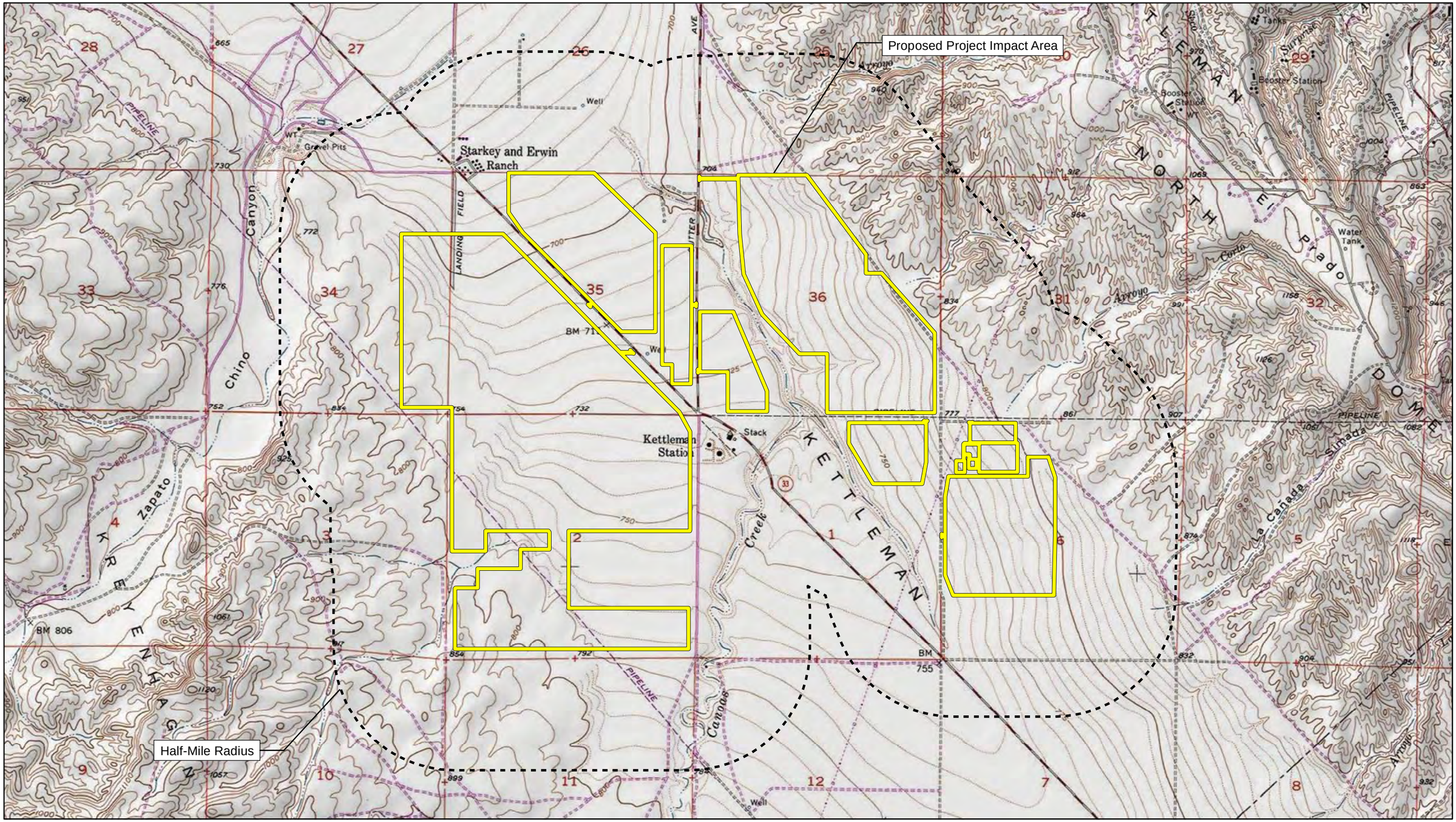

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Exhibit A
Record Search Map

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San Bernardino, CA 92407

Sacramento Valley
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Colorado
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Suite 200
Boulder, CO 80301

Connecticut
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Suite 450
Shelton, CT 06484

New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

December 19, 2023

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue
Fresno, CA, 93720

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Alvarez:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

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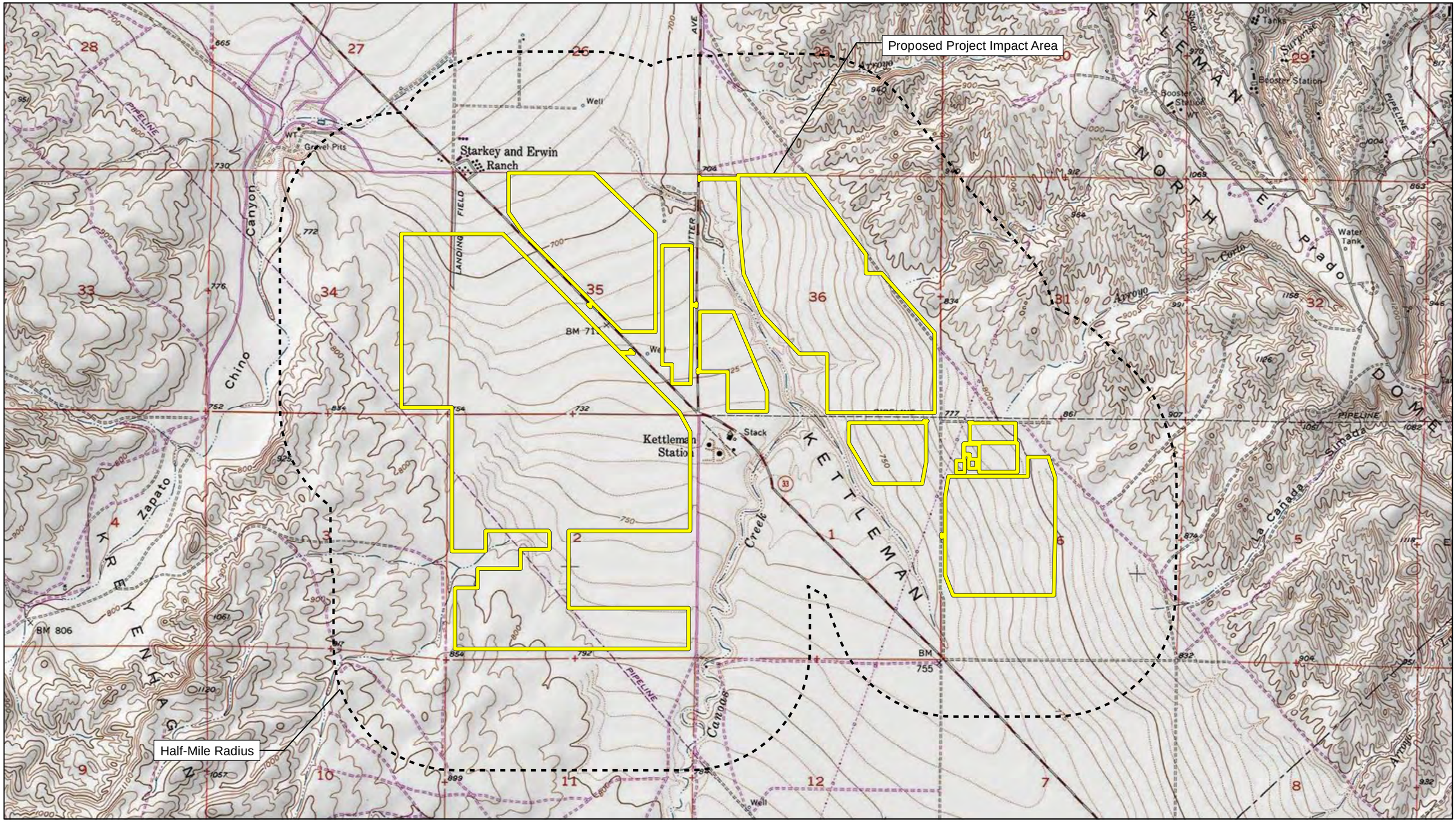

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10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

December 19, 2023

Cold Springs Rancheria of Mono Indians
Carol Bill, Chairperson
P.O. Box 209
Tollhouse, CA, 93667

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Bill:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

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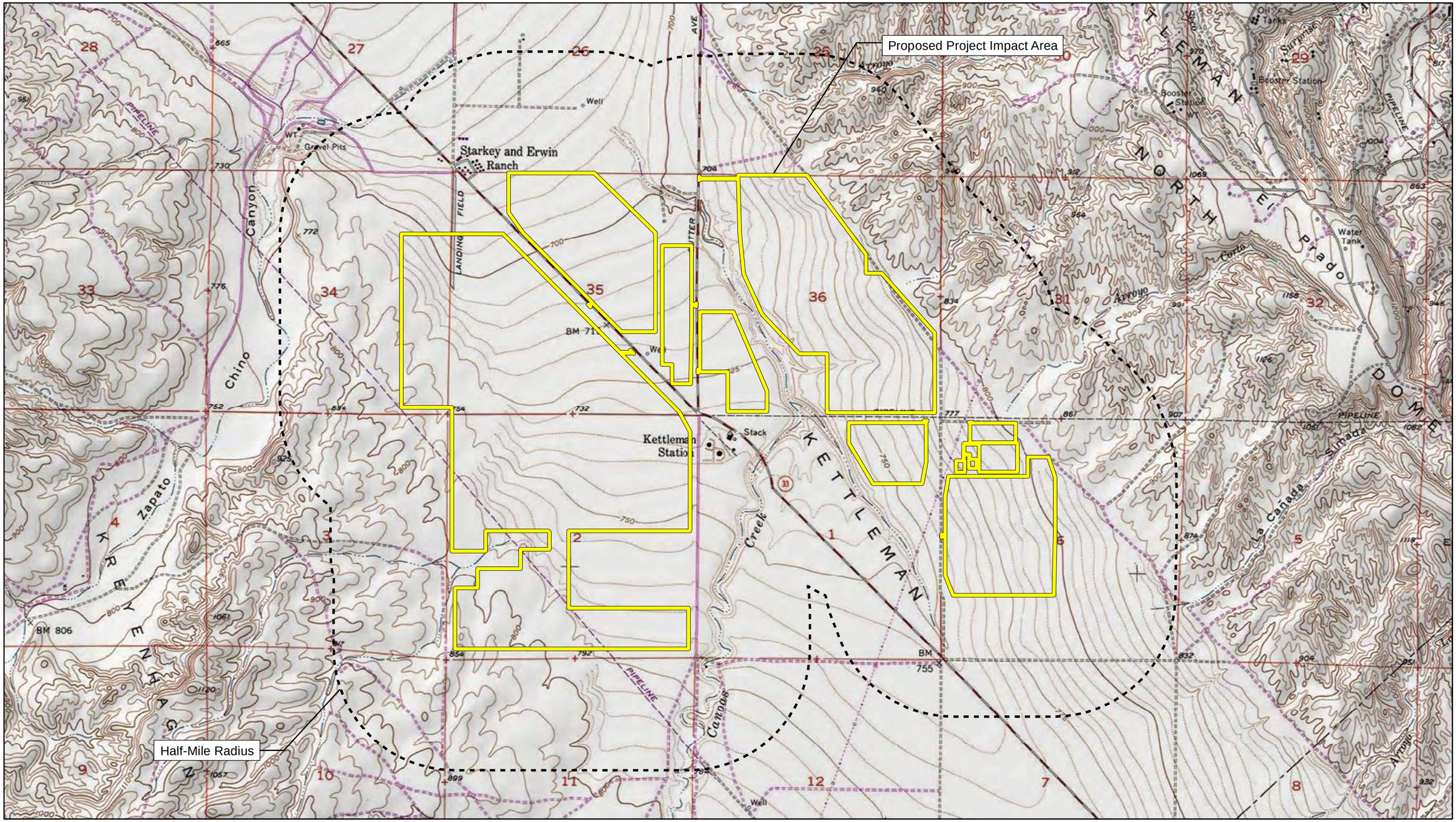

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December 19, 2023

Picayune Rancheria of Chukchansi Indians
Claudia Gonzales, Chairwoman
P.O. Box 2226
Oakhurst, CA, 93644

Subject: Proposed Fresno Cornucopia Project

Dear Chairwoman Gonzales:

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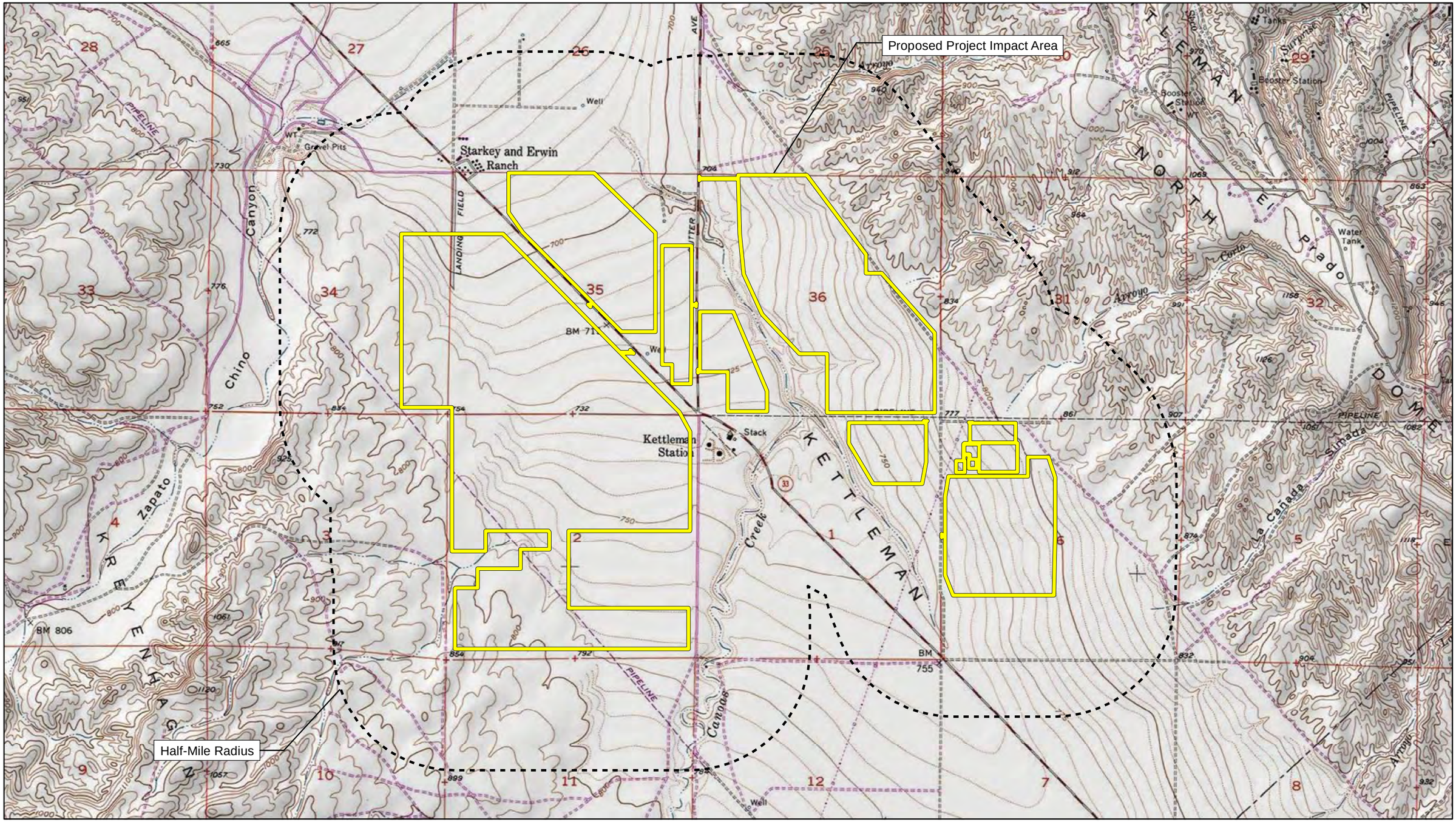

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December 19, 2023

North Valley Yokuts Tribe
Katherine Perez, Chairperson
P.O. Box 717
Linden, CA, 95236

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Perez:

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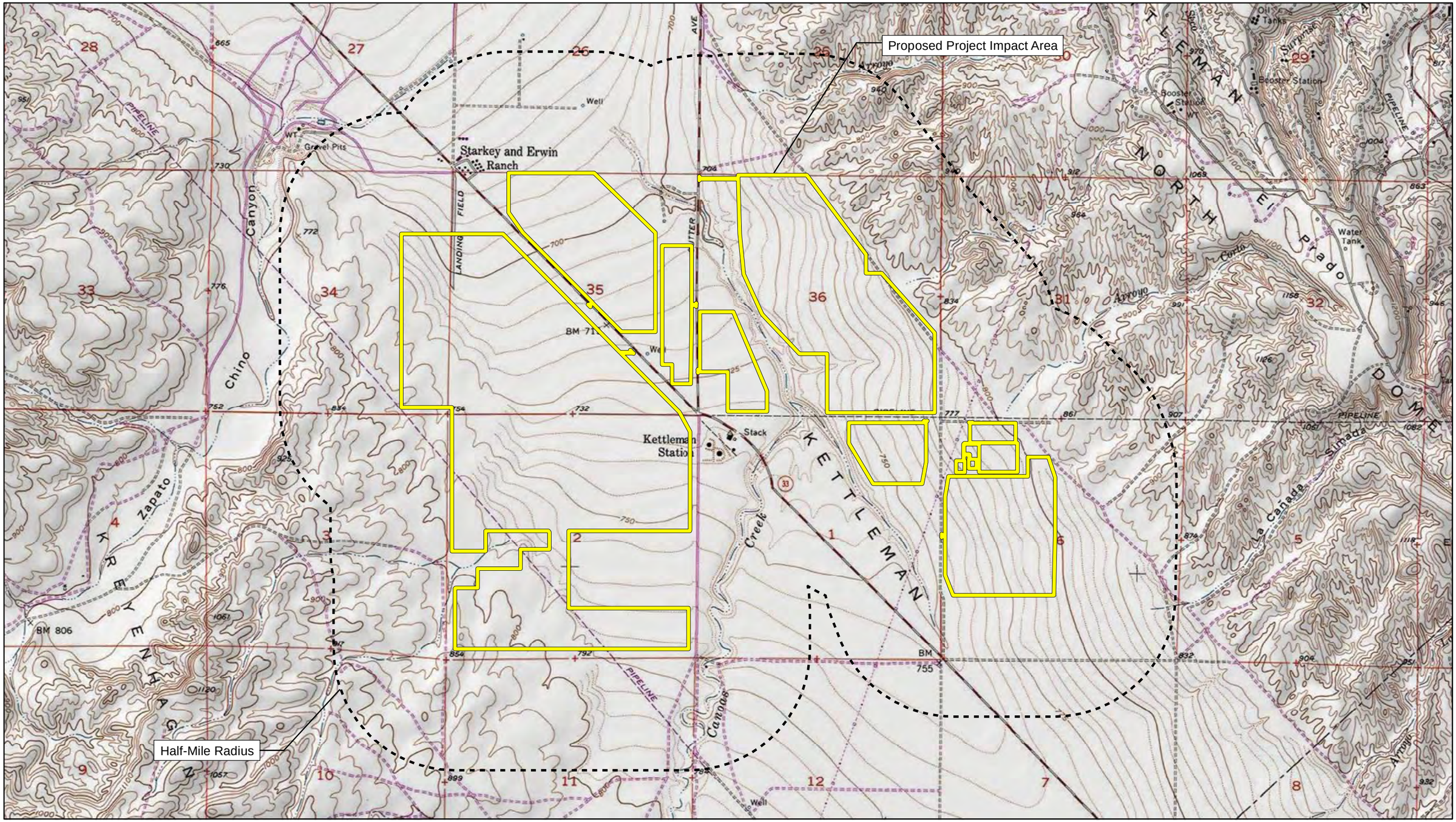

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December 19, 2023

Big Sandy Rancheria of Western Mono Indians
Elizabeth Kipp, Chairperson
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Kipp:

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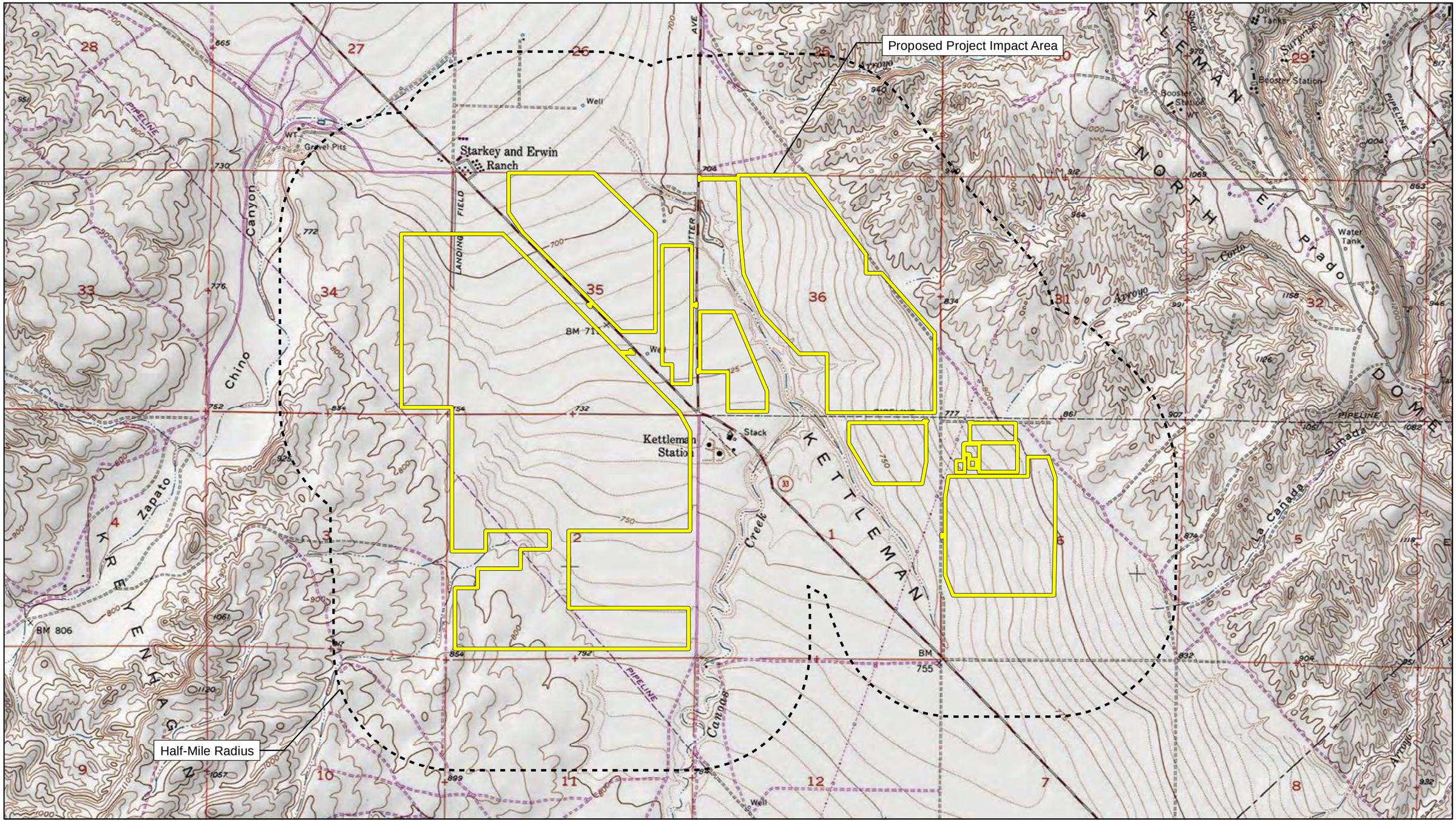

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December 19, 2023

Table Mountain Rancheria
Brenda Lavell, Chairperson
P.O. Box 410
Friant, CA, 93626

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Lavell:

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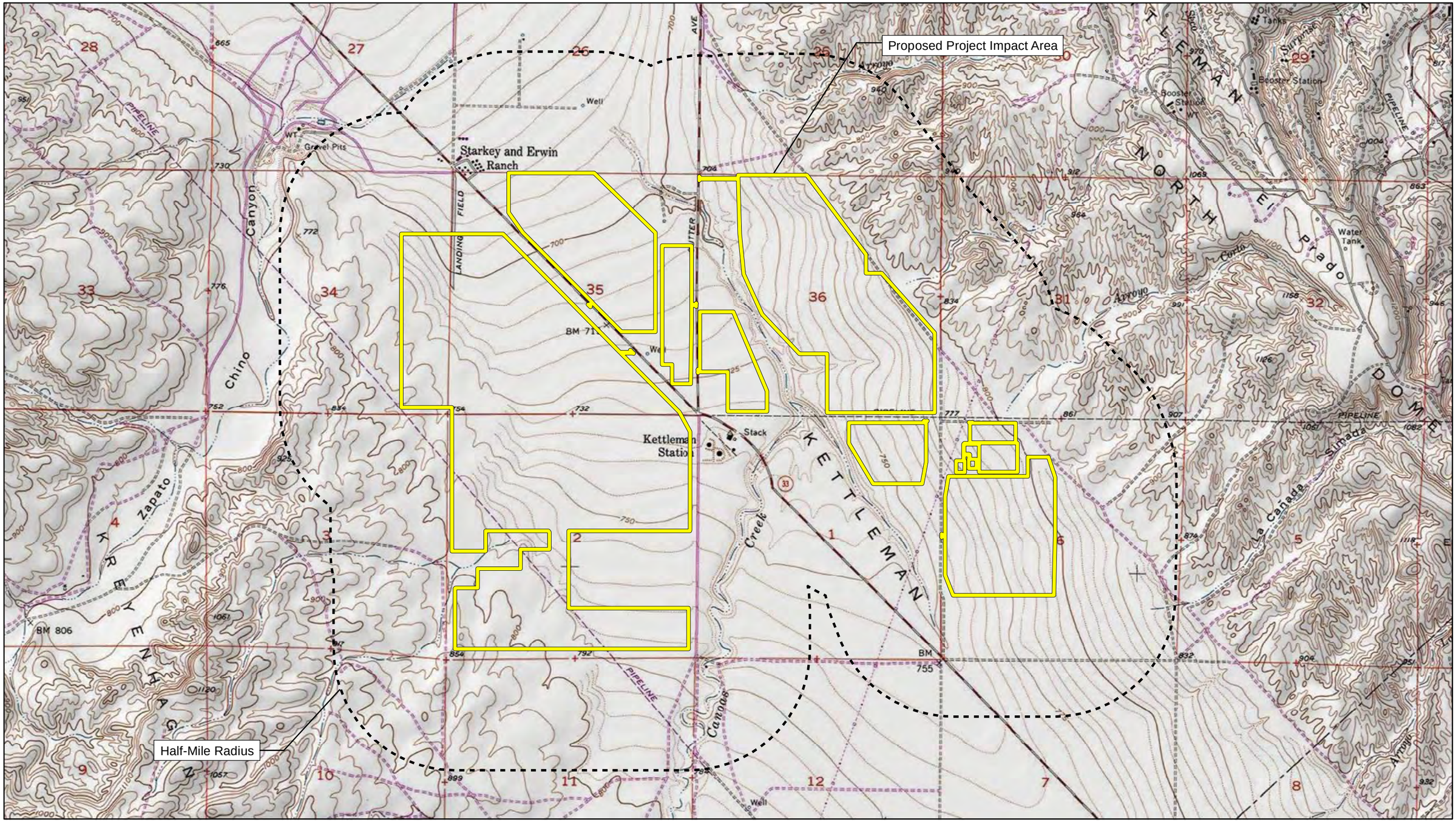

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FIRSTCARBONSOLUTIONS
FCS INTERNATIONAL, INC.

December 19, 2023

Dumna Wo-Wah Tribal Government
Robert Ledger, Chairperson
2191 West Pico Ave.
Fresno, CA, 93705

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Ledger:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

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Inland Empire
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San Bernardino, CA 92407

Sacramento Valley
2351 Sunset Boulevard
Suite 170-301
Rocklin, CA 95765

Utah
2901 Bluegrass Boulevard
Suite 200-62
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Colorado
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Connecticut
2 Corporate Drive
Suite 450
Shelton, CT 06484

New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

FIRSTCARBONSOLUTIONS™

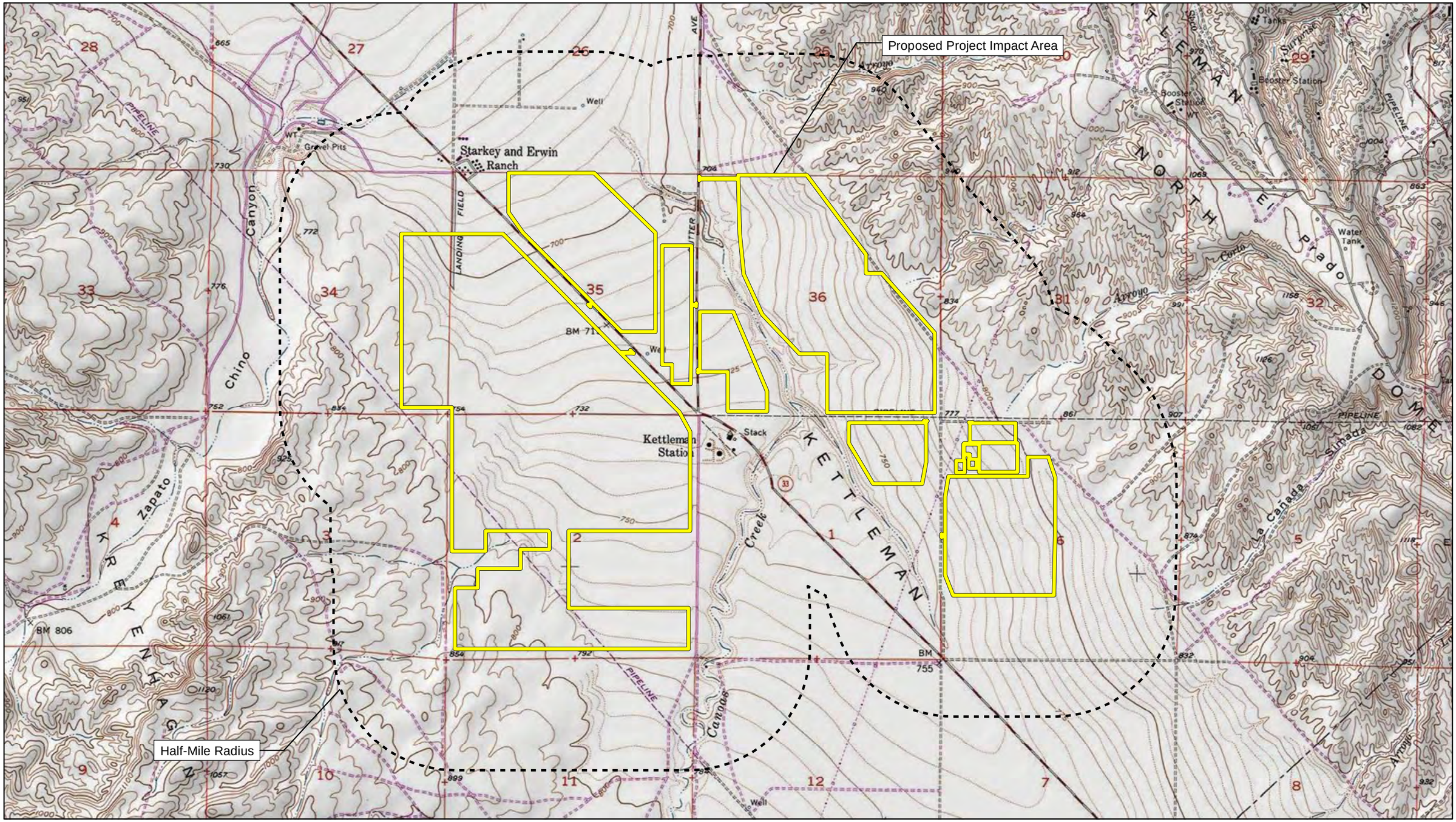
Sincerely,

Charles Mikulik, M.A., RPA
Senior Cultural Resources Specialist
FirstCarbon Solutions
2999 Oak Road, Suite 250 Walnut
Creek, CA 94597

Enclosed

Attachment A: Record Search Map

Attachment A:
Records Search Map



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December 19, 2023

Big Sandy Rancheria of Western Mono Indians
Joel Marvin, Vice Chairperson
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602

Subject: Proposed Fresno Cornucopia Project

Dear Vice Chairperson Marvin:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

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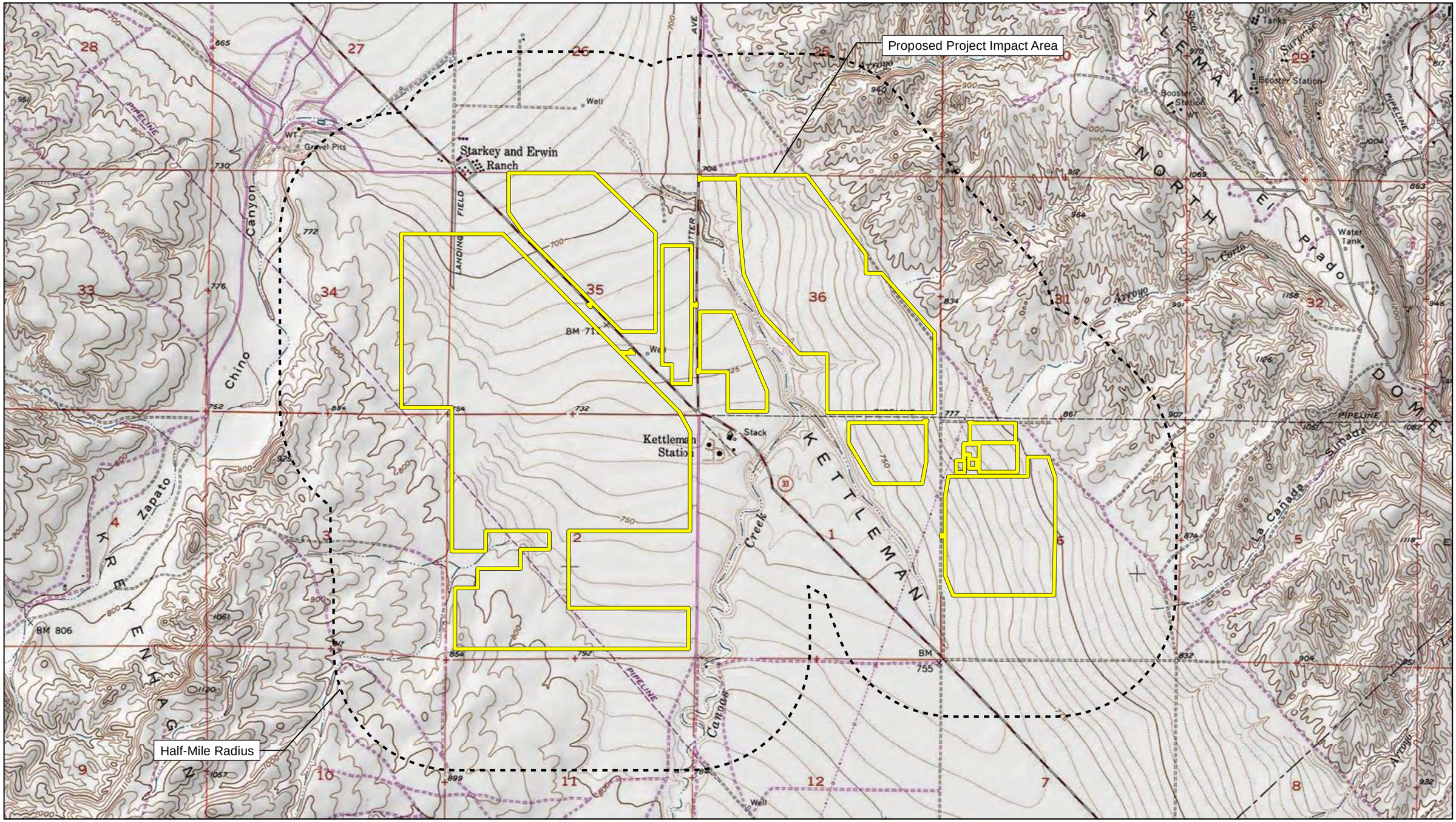

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December 19, 2023

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville, CA, 93258

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Peyron:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

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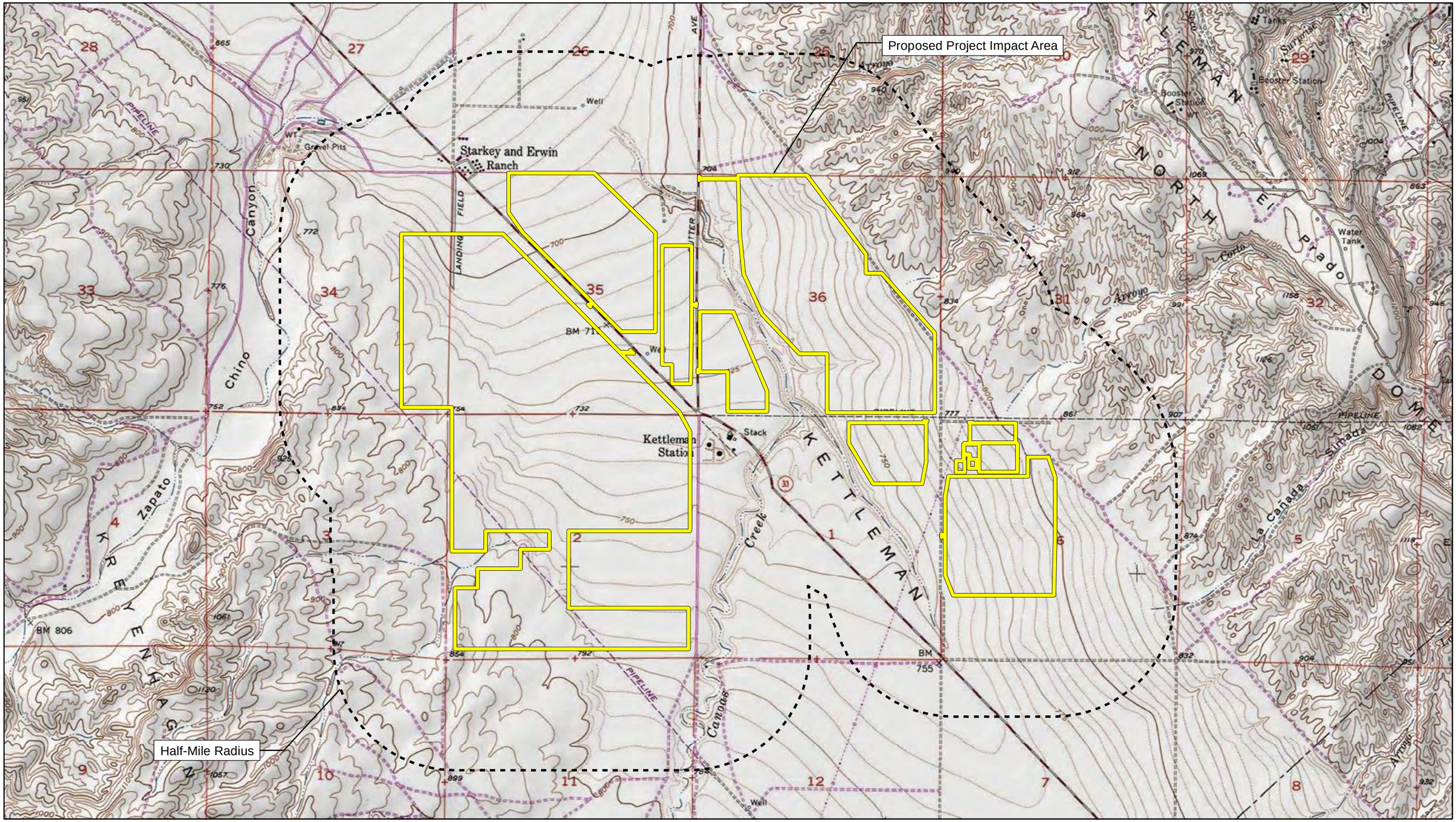

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December 19, 2023

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8
Lemoore, CA, 93245

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Sisco:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

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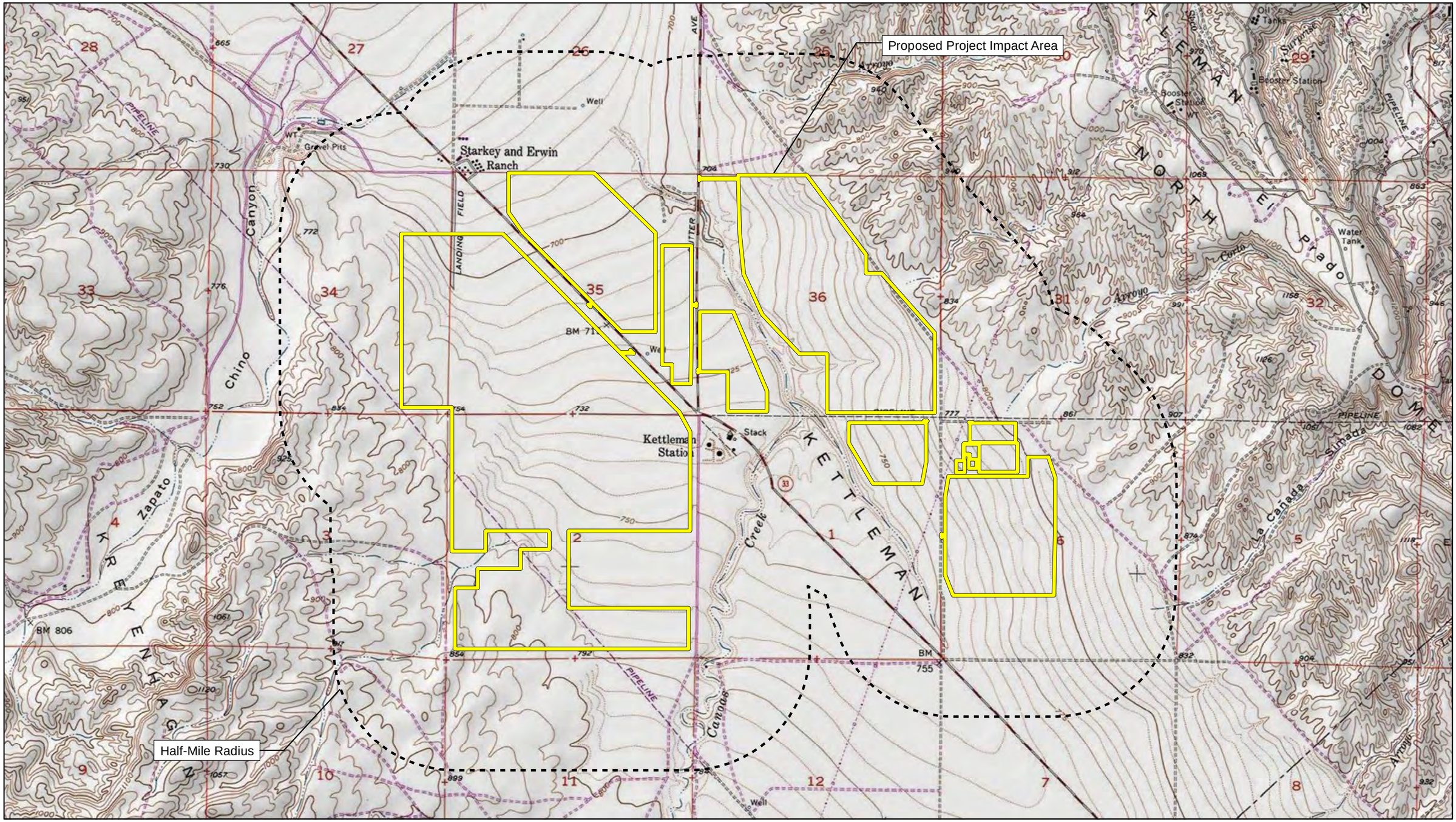

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December 19, 2023

North Valley Yokuts Tribe
Timothy Perez
P.O. Box 717
Linden, CA, 95236

Subject: Proposed Fresno Cornucopia Project

Dear Timothy Perez:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

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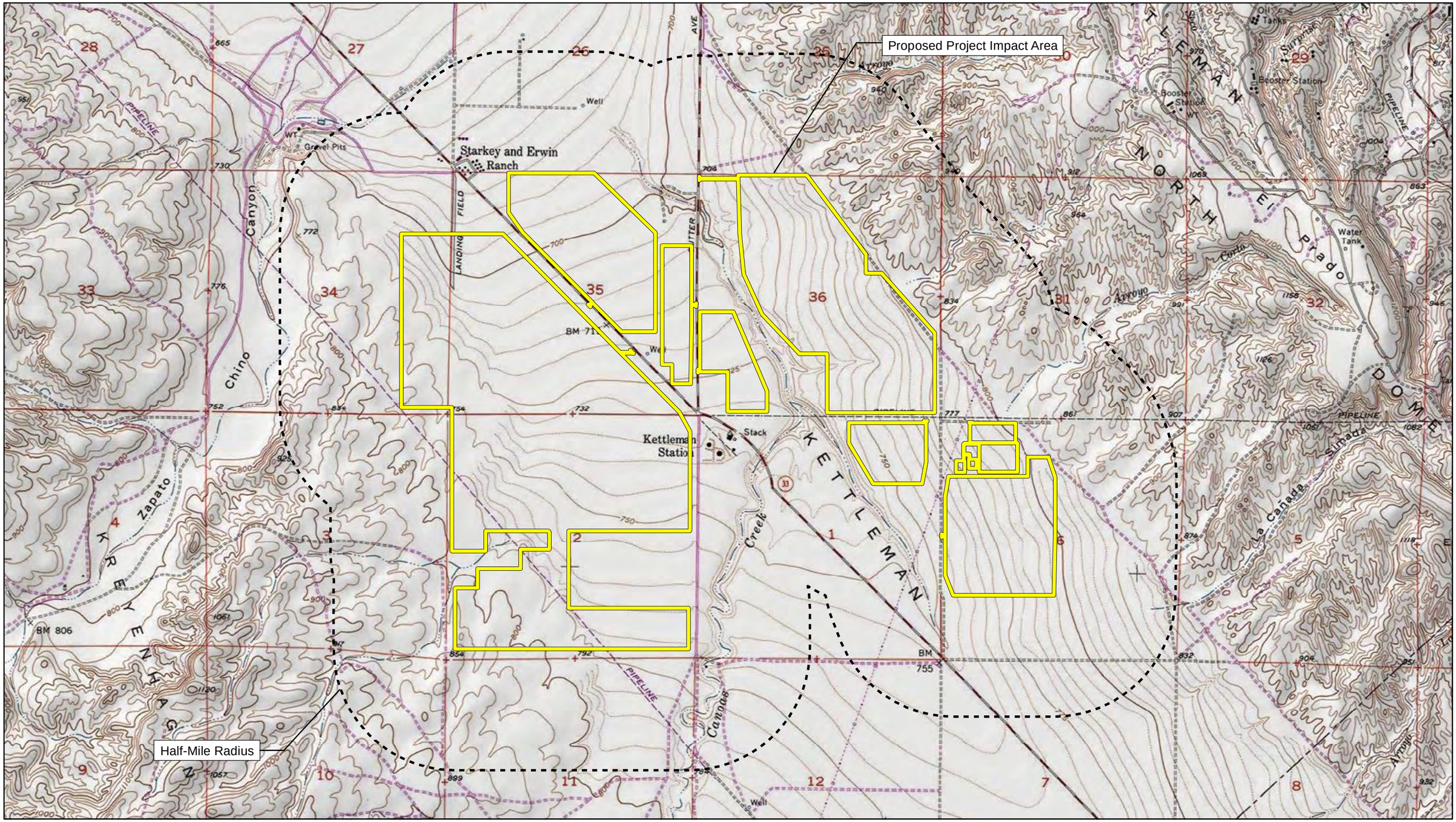

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December 19, 2023

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA, 93906

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Woodrow:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

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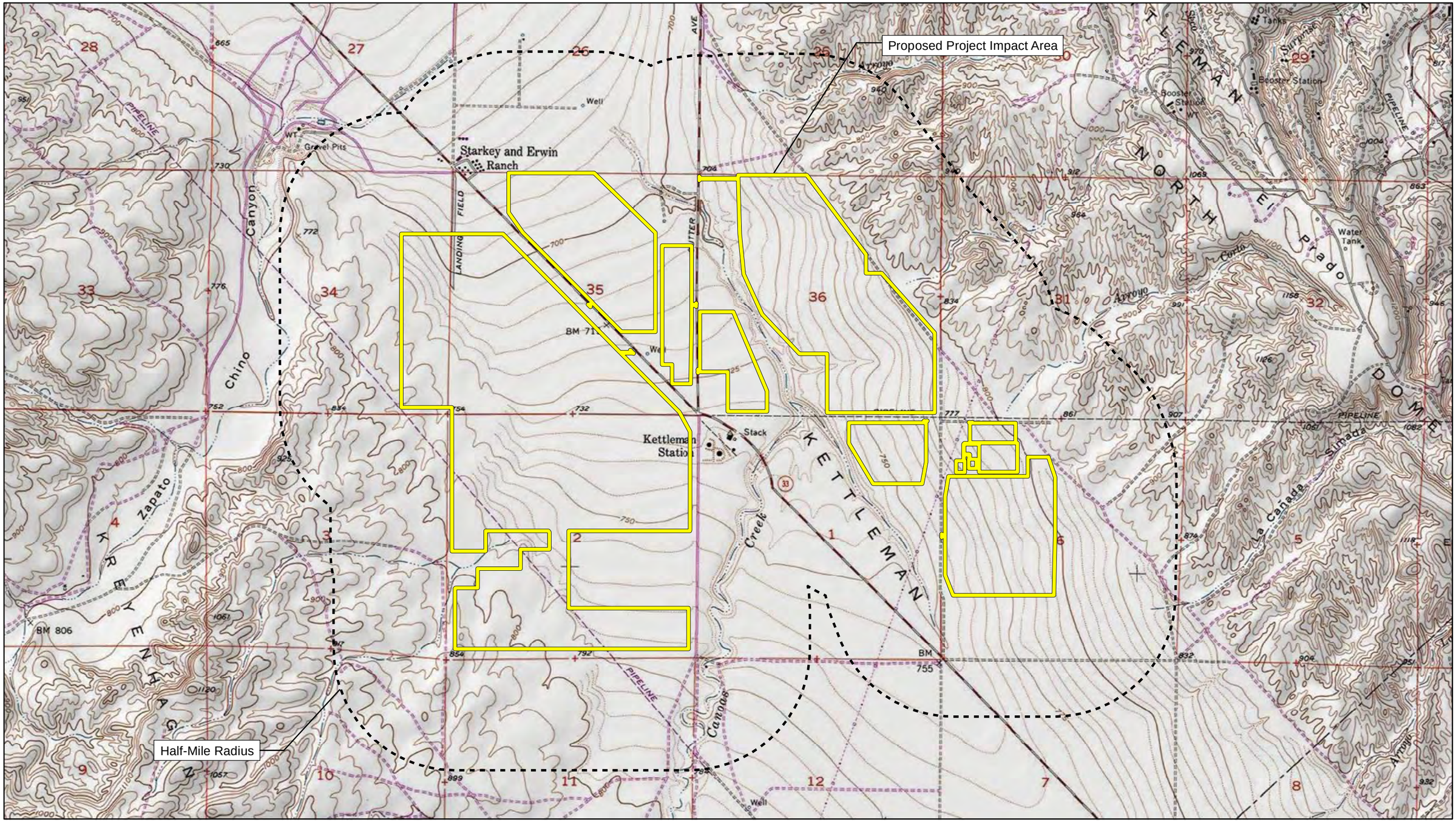

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December 19, 2023

Big Sandy Rancheria of Western Mono Indians
Tom Zizzo, Tribal Administrator
P.O. Box 337 37387 Auberry Mission Road
Auberry, CA, 93602

Subject: Proposed Fresno Cornucopia Project

Dear Tim Zizzo:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County).

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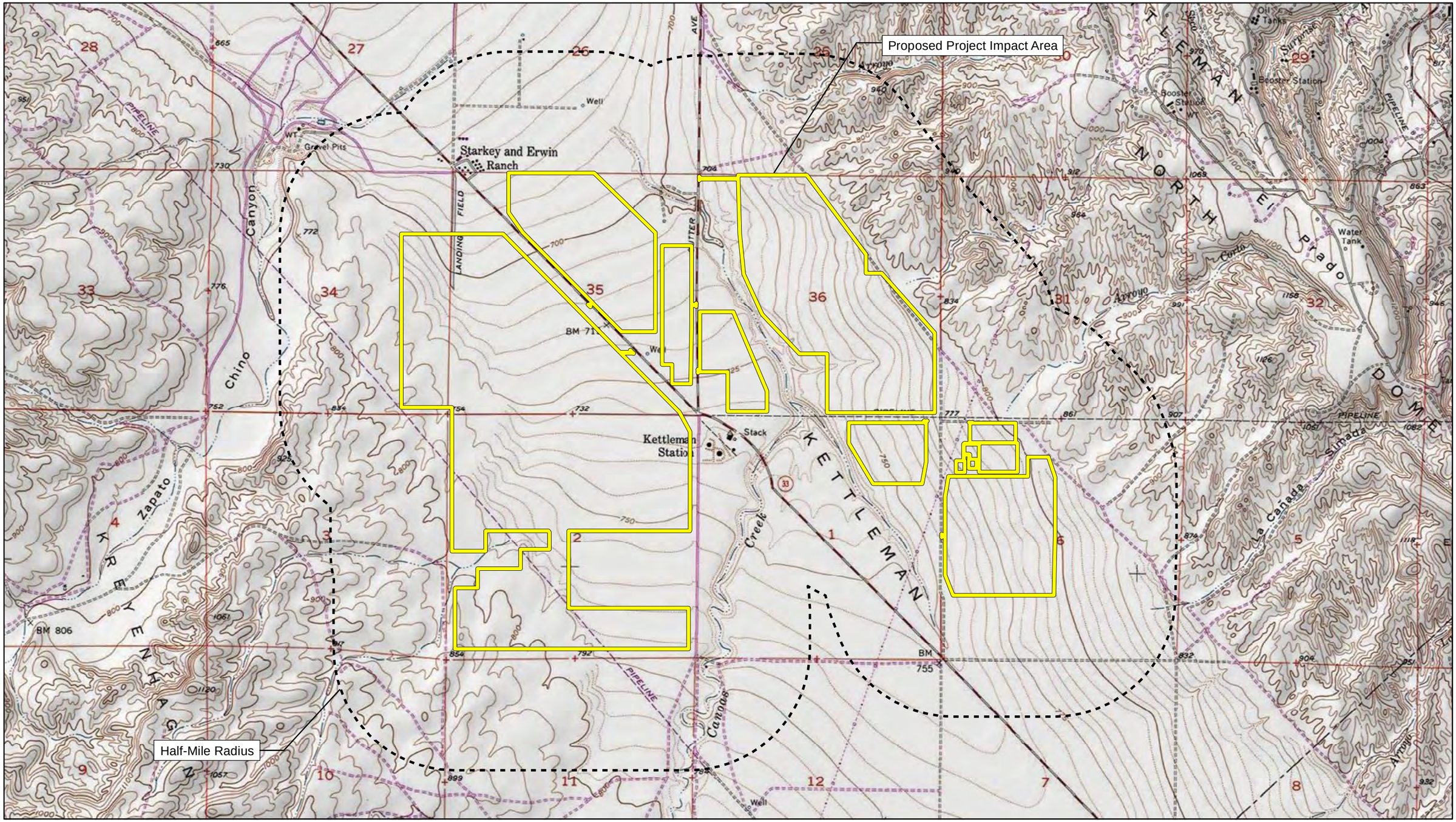

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December 26, 2023

Kings River Choinumni Farm Tribe
Stan Alec
3515 East Fedora Avenue
Fresno, CA, 93726

Subject: Proposed Fresno Cornucopia Project

Dear Stan Alec:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County). We are following up to provide another opportunity to comment.

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

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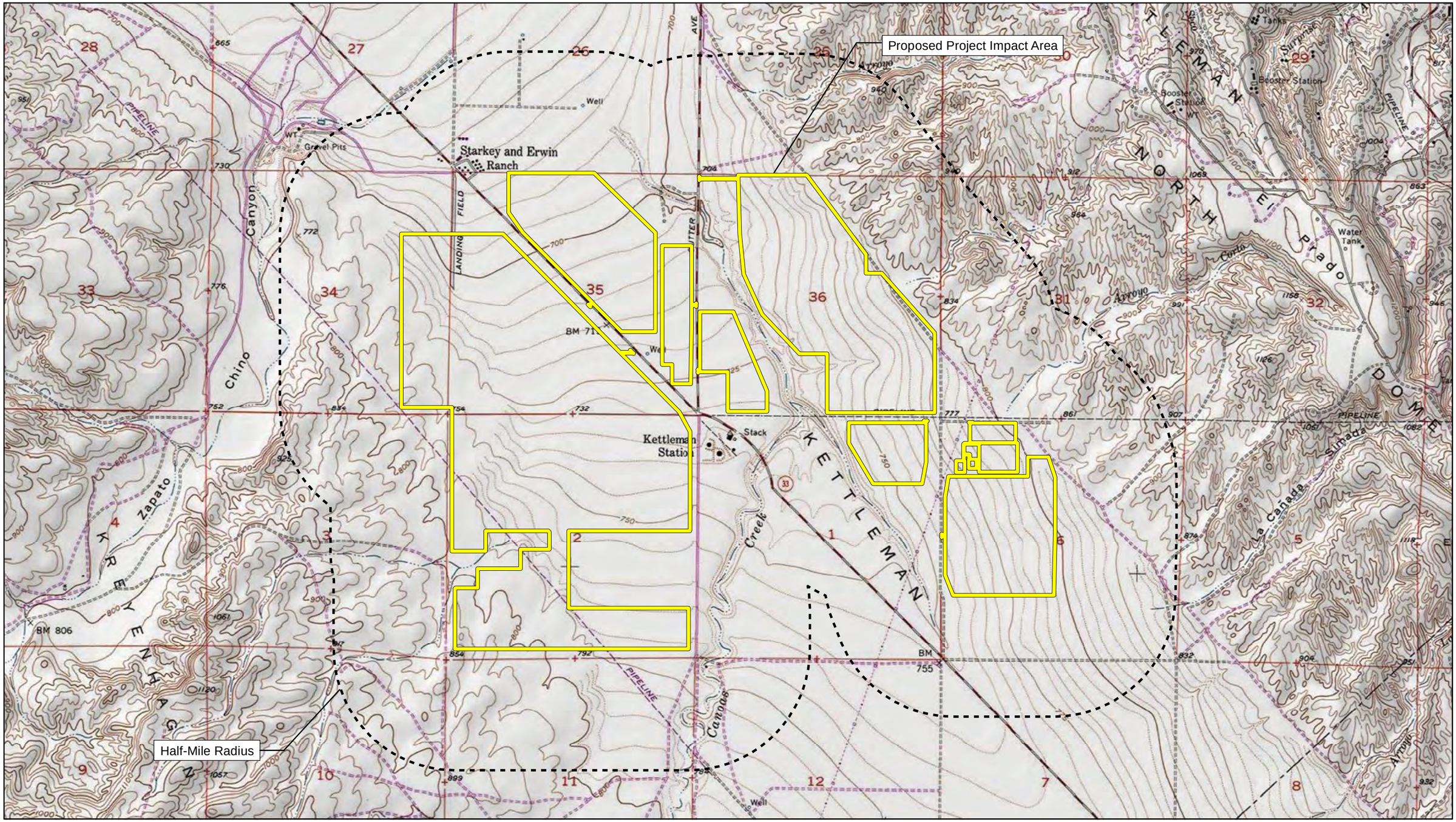
Senior Cultural Resources Specialist
FirstCarbon Solutions
2999 Oak Road, Suite 250 Walnut
Creek, CA 94597

Enclosed

Attachment A: Record Search Map

Attachment A:
Records Search Map



Source: USGS Avenal 7.5' Quadrangle / T21S, R16E, Sections 25, 26, 27, 34, 35, 36; T21S, R17E, Section 31; T22S, R16E, Sections 1, 2, 3, 10, 11, 12; T22S, R17E, Sections 6, 7.

FIRSTCARBON SOLUTIONS™

2,000 1,000 0 2,000 Feet

Exhibit A
Record Search Map

FIRSTCARBONSOLUTIONS
FCS INTERNATIONAL, INC.

UNITED STATES

T +1 888 826 5814
T +1 714 508 4100
T 303 938 5500
F +1 714 508 4110
E info@fcs-intl.com

Irvine
250 Commerce
Suite 210
Irvine, CA 92602

Bay Area
2999 Oak Road
Suite 250
Walnut Creek, CA 94597

Central Valley
7726 N. First Street
#413
Fresno, CA 93720

Inland Empire
967 Kendall Drive
#A-537
San Bernardino, CA 92407

Sacramento Valley
2351 Sunset Boulevard
Suite 170-301
Rocklin, CA 95765

Utah
2901 Bluegrass Boulevard
Suite 200-62
Lehi, UT 84043

Colorado
5480 Valmont Road
Suite 200
Boulder, CO 80301

Connecticut
2 Corporate Drive
Suite 450
Shelton, CT 06484

New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

December 26, 2023

Traditional Choinumni Tribe
David Alvarez, Chairperson
2415 E. Houston Avenue
Fresno, CA, 93720

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Alvarez:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County). We are following up to provide another opportunity to comment.

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

As part of the cultural resources assessment, FCS conducted a California Historical Resource Information System (CHRIS) search, and requested that the Native American Heritage Commission (NAHC) perform a search of its Sacred Lands File (SLF). The results of the SLF records search was negative. The CHRIS search showed that there are no recorded resources within the project site or a 0.5-mile radius of the project site. Additionally, four cultural resources reports are recorded within the project site and 1 cultural resource report is recorded within a 0.5-mile radius of the project site. The NAHC suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

Please note that this letter is a request for information pertaining to Section 106 of the National Historic Preservation Act and is not notification of a project under Senate Bill (SB) 18 or Assembly Bill (AB) 52. Designated lead agencies under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) are handling project notification and consultation requirements. Please feel free to contact me at 707.591.6523 or via email at cmikulik@fcs-intl.com and thank you for your valuable assistance.

FIRSTCARBONSOLUTIONS™

Sincerely,

Charles Mikulik, M.A., RPA
Senior Cultural Resources Specialist
FirstCarbon Solutions
2999 Oak Road, Suite 250 Walnut
Creek, CA 94597

Enclosed

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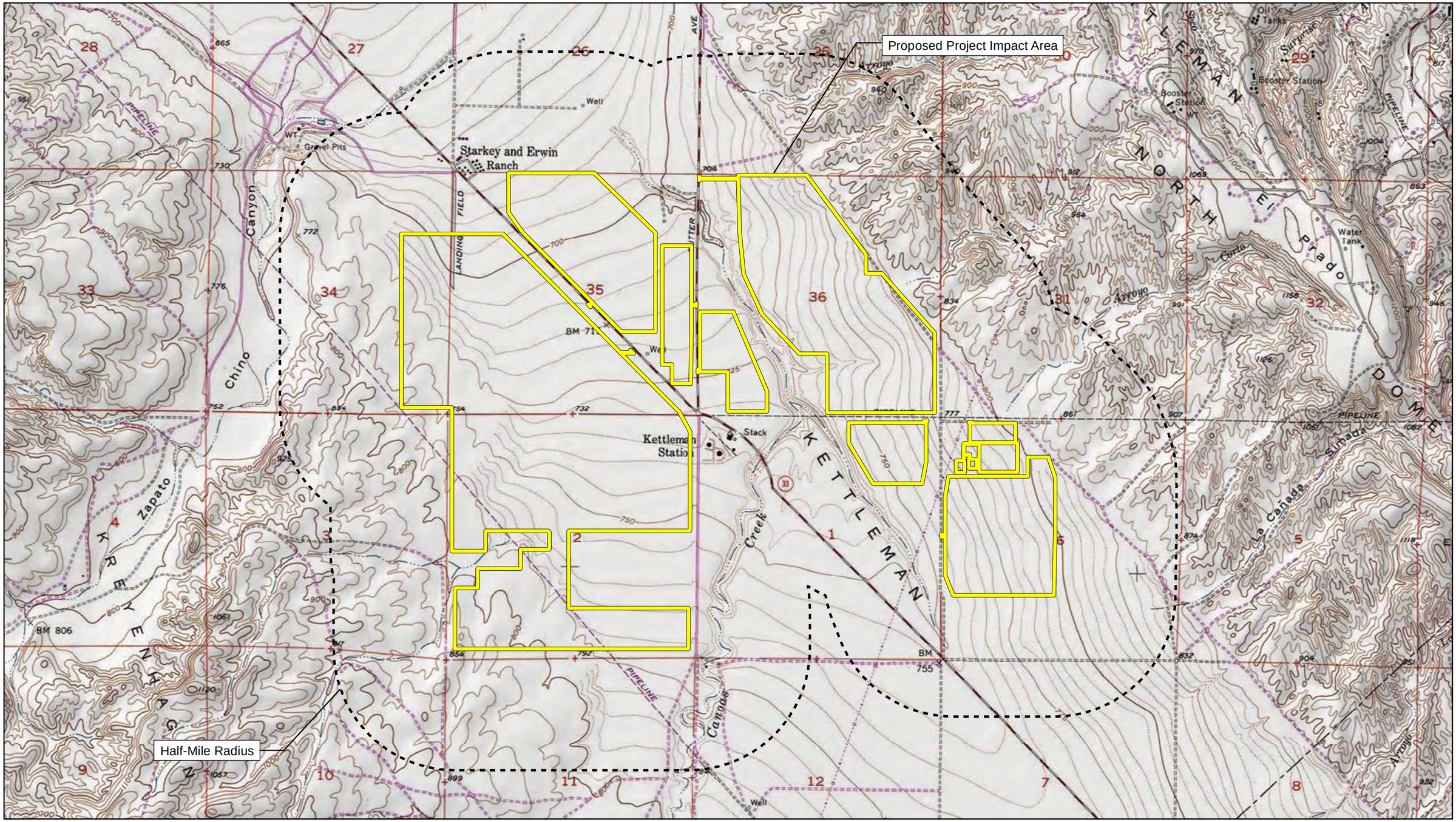

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San Bernardino, CA 92407

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Rocklin, CA 95765

Utah
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Suite 200-62
Lehi, UT 84043

Colorado
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Suite 200
Boulder, CO 80301

Connecticut
2 Corporate Drive
Suite 450
Shelton, CT 06484

New York
10 Monument Street
Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

December 26, 2023

Picayune Rancheria of Chukchansi Indians
Claudia Gonzales, Chairwoman
P.O. Box 2226
Oakhurst, CA, 93644

Subject: Proposed Fresno Cornucopia Project

Dear Chairwoman Gonzales:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County). We are following up to provide another opportunity to comment.

The proposed project construct a new utility-scale solar project between the cities of Coalinga and Avenal on an approximately 2,937-acre site in the western area of Fresno County. The project site is located approximately 4 miles west of Interstate 5 (I-5), and it is bifurcated by State Route (SR) 33 (South Lost Hills Road). A Records Search map with a 0.5-mile buffer around the site is enclosed for your reference.

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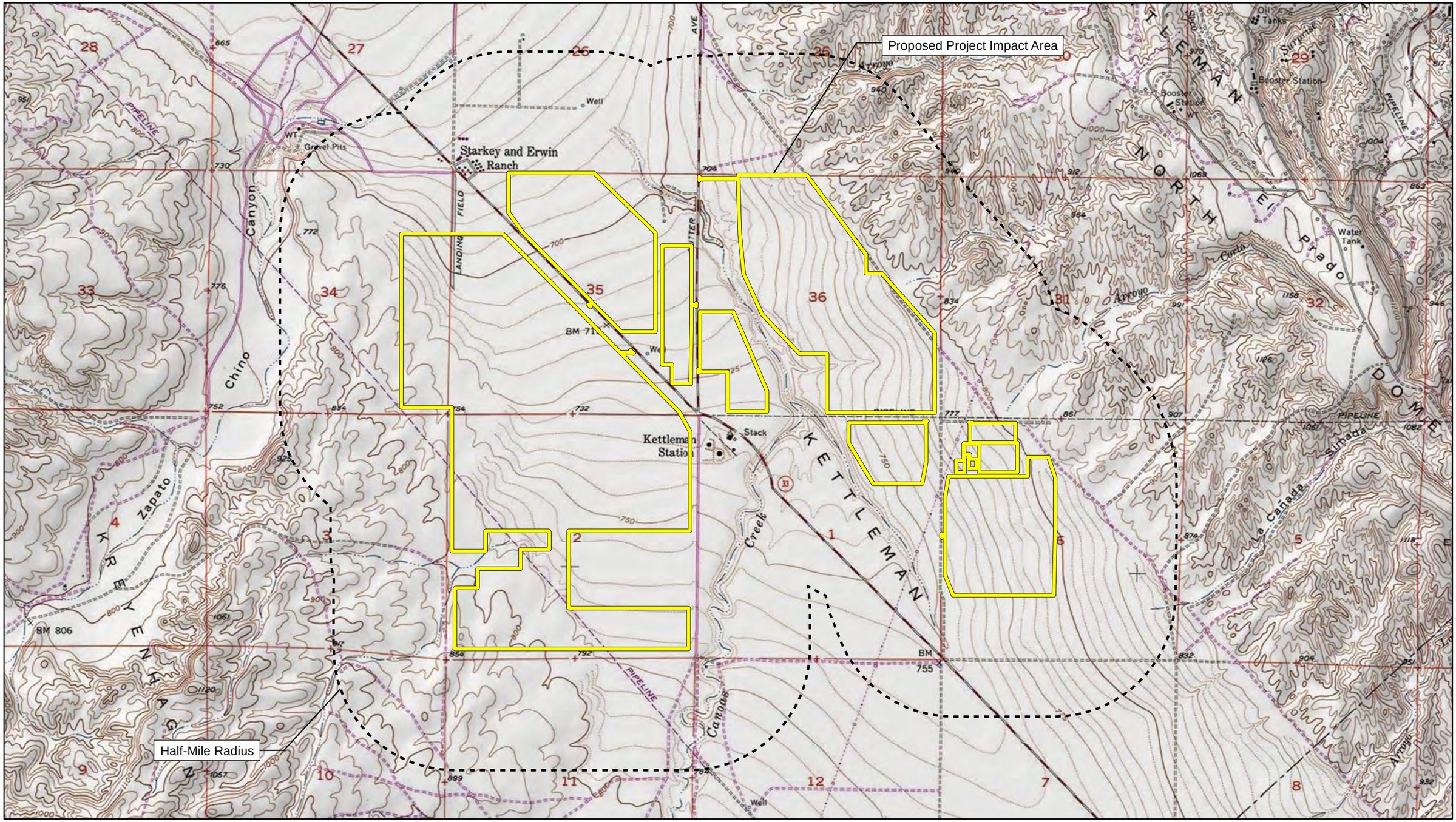

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Suite 450
Shelton, CT 06484

New York
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Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

December 26, 2023

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8
Lemoore, CA, 93245

Subject: Proposed Fresno Cornucopia Project

Dear Chairperson Sisco:

FirstCarbon Solutions (FCS) is conducting a cultural analysis under Section 106 of the National Historic Preservation Act for the proposed Proposed Fresno Cornucopia Project in Fresno County (County). We are following up to provide another opportunity to comment.

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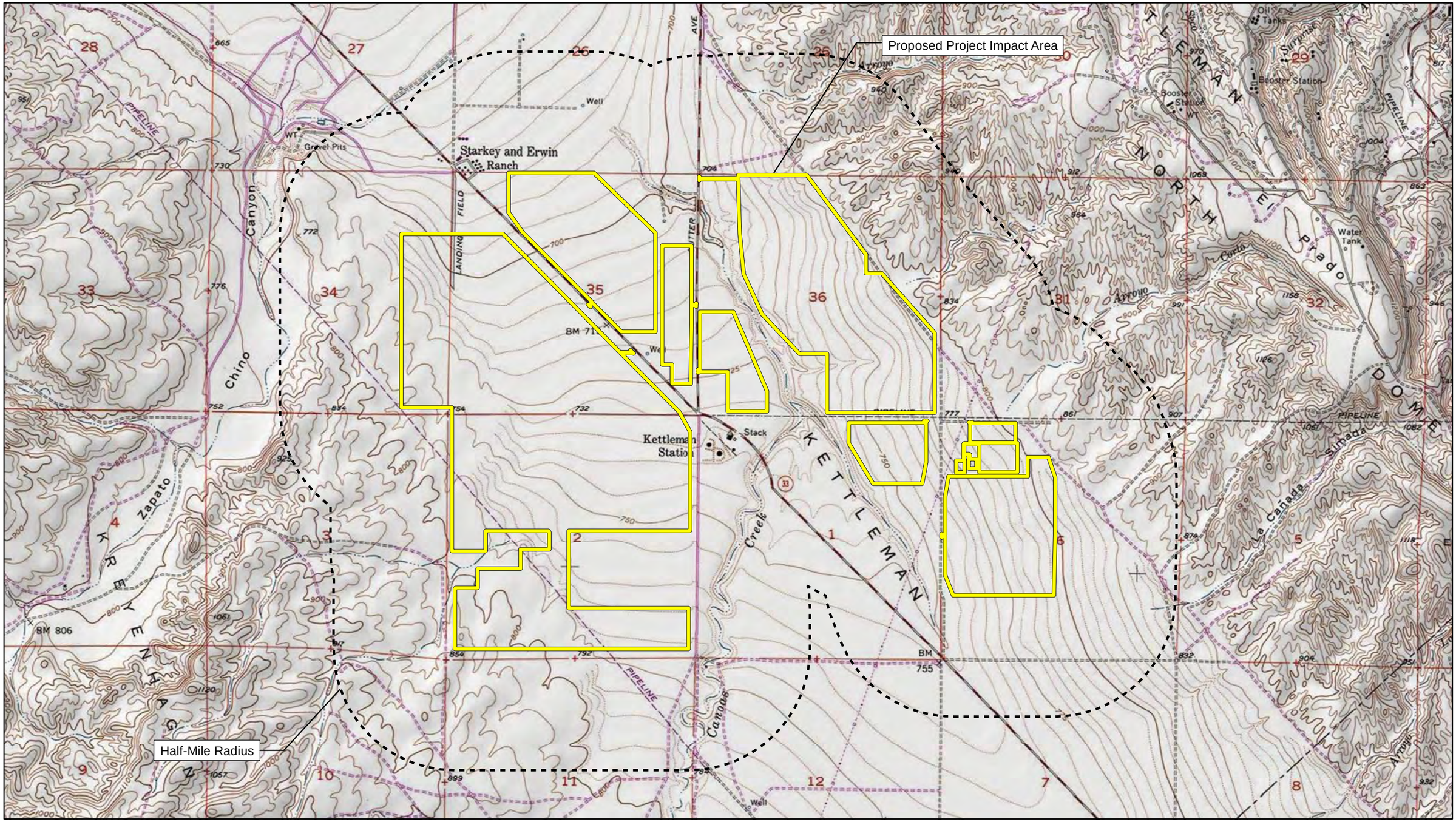
Records Search Map



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FIRSTCARBON SOLUTIONS™

2,000 1,000 0 2,000 Feet

Exhibit A
Record Search Map

From: Maddie Dolan
To: neil.peyron@tulerivertribe-nsn.gov
Cc: Cultural Resources
Subject: RE: 5852.0001 Cornucopia Solar Project Section 106
Date: Tuesday, December 26, 2023 4:55:00 PM

Hello,

I am following up on this request for information pertaining to Section 106 of the National Historic Preservation Act. Please feel free to contact Dana DePietro at ddepietro@fcs-intl.com if you would like to provide input. Thank you for your assistance.

Best,

Madelyn Dolan (she | her | hers)
Environmental Services, Assistant Project Manager
Mobile +1 925 451 7133

Note: My work hours are Monday-Thursday during normal business hours.

FirstCarbon Solutions (FCS)
An ADEC Innovation
LinkedIn | Facebook | Twitter

From: Maddie Dolan
Sent: Tuesday, December 19, 2023 11:15 AM
To: neil.peyron@tulerivertribe-nsn.gov
Cc: Cultural Resources <culturalres@fcs-intl.com>
Subject: 5852.0001 Cornucopia Solar Project Section 106

Hello,

Attached is a request for information pertaining to Section 106 of the National Historic Preservation Act. Please feel free to contact Charles Mikulik at cmikulik@fcs-intl.com if you would like to provide input. Thank you for your assistance.

Best,

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Environmental Services, Assistant Project Manager
Mobile +1 925 451 7133

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FirstCarbon Solutions (FCS)
An ADEC Innovation
LinkedIn | Facebook | Twitter

From: Maddie Dolan
To: huskanam@gmail.com
Cc: Cultural Resources
Subject: RE: 5852.0001 Cornucopia Solar Project Section 106
Date: Tuesday, December 26, 2023 4:56:00 PM

Hello,

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Environmental Services, Assistant Project Manager
Mobile +1 925 451 7133

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From: Maddie Dolan
Sent: Tuesday, December 19, 2023 11:13 AM
To: huskanam@gmail.com
Cc: Cultural Resources <culturalres@fcs-intl.com>
Subject: 5852.0001 Cornucopia Solar Project Section 106

Hello,

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An ADEC Innovation
LinkedIn | Facebook | Twitter

From: Maddie Dolan
To: kwood8934@aol.com
Cc: Cultural Resources
Subject: RE: 5852.0001 Cornucopia Solar Project Section 106
Date: Tuesday, December 26, 2023 4:55:00 PM

Hello,

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From: Maddie Dolan
Sent: Tuesday, December 19, 2023 11:15 AM
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Cc: Cultural Resources <culturalres@fcs-intl.com>
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Environmental Services, Assistant Project Manager
Mobile +1 925 451 7133

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An ADEC Innovation
LinkedIn | Facebook | Twitter

From: Maddie Dolan
To: tzizzo@bsrnation.com
Cc: Cultural Resources
Subject: RE: 5852.0001 Cornucopia Solar Project Section 106
Date: Tuesday, December 26, 2023 4:57:00 PM

Hello,

I am following up on this request for information pertaining to Section 106 of the National Historic Preservation Act. Please feel free to contact Dana DePietro at ddepietro@fcs-intl.com if you would like to provide input. Thank you for your assistance.

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Environmental Services, Assistant Project Manager
Mobile +1 925 451 7133

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LinkedIn | Facebook | Twitter

From: Maddie Dolan
Sent: Tuesday, December 19, 2023 11:10 AM
To: tzizzo@bsrnation.com
Cc: Cultural Resources <culturalres@fcs-intl.com>
Subject: 5852.0001 Cornucopia Solar Project Section 106

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Environmental Services, Assistant Project Manager
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An ADEC Innovation
LinkedIn | Facebook | Twitter

From:	Maddie Dolan
To:	coldsprgstribe@netptc.net
Cc:	Cultural Resources
Subject:	RE: 5852.0001 Cornucopia Solar Project Section 106
Date:	Tuesday, December 26, 2023 4:56:00 PM

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From: Maddie Dolan
Sent: Tuesday, December 19, 2023 11:11 AM
To: coldsprgstribe@netptc.net
Cc: Cultural Resources <culturalres@fcs-intl.com>
Subject: 5852.0001 Cornucopia Solar Project Section 106

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From: Maddie Dolan
To: Katherine Perez
Cc: Cultural Resources
Subject: RE: 5852.0001 Cornucopia Solar Project Section 106
Date: Tuesday, December 26, 2023 4:56:00 PM

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From: Maddie Dolan
Sent: Tuesday, December 19, 2023 11:12 AM
To: Katherine Perez <canutes@verizon.net>
Cc: Cultural Resources <culturalres@fcs-intl.com>
Subject: 5852.0001 Cornucopia Solar Project Section 106

Hello,

Attached is a request for information pertaining to Section 106 of the National Historic Preservation Act. Please feel free to contact Charles Mikulik at cmikulik@fcs-intl.com if you would like to provide input. Thank you for your assistance.

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From: Maddie Dolan
To: Liz Kipp
Cc: Cultural Resources
Subject: RE: 5852.0001 Cornucopia Solar Project Section 106
Date: Tuesday, December 26, 2023 4:56:00 PM

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From: Maddie Dolan
Sent: Tuesday, December 19, 2023 11:11 AM
To: Liz Kipp <lkipp@bsrnation.com>
Cc: Cultural Resources <culturalres@fcs-intl.com>
Subject: 5852.0001 Cornucopia Solar Project Section 106

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LinkedIn | Facebook | Twitter

From: Maddie Dolan
To: rpennell@tmr.org
Cc: Cultural Resources
Subject: RE: 5852.0001 Cornucopia Solar Project Section 106
Date: Tuesday, December 26, 2023 4:56:00 PM

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From: Maddie Dolan
Sent: Tuesday, December 19, 2023 11:14 AM
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From: Maddie Dolan
To: ledgerrobert@ymail.com
Cc: Cultural Resources
Subject: RE: 5852.0001 Cornucopia Solar Project Section 106
Date: Tuesday, December 26, 2023 4:56:00 PM

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From:	Maddie Dolan
To:	jmarvin@bsrnation.com
Cc:	Cultural Resources
Subject:	RE: 5852.0001 Cornucopia Solar Project Section 106
Date:	Tuesday, December 26, 2023 4:57:00 PM

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Appendix D:
Project Area Photographs

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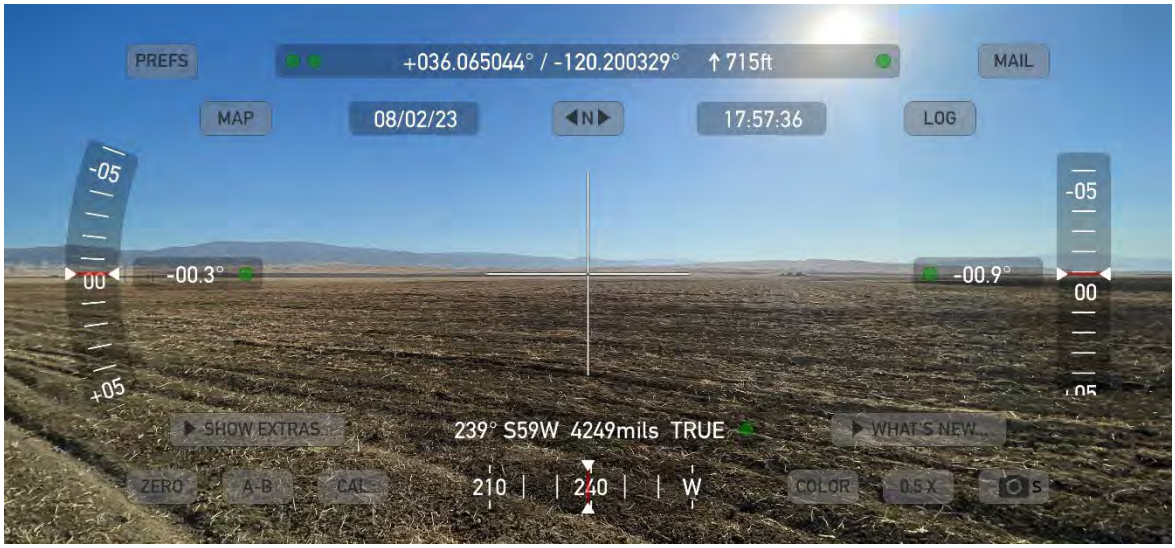


Photograph 1: View from the northwest corner of the APE; facing southwest. August 2, 2023

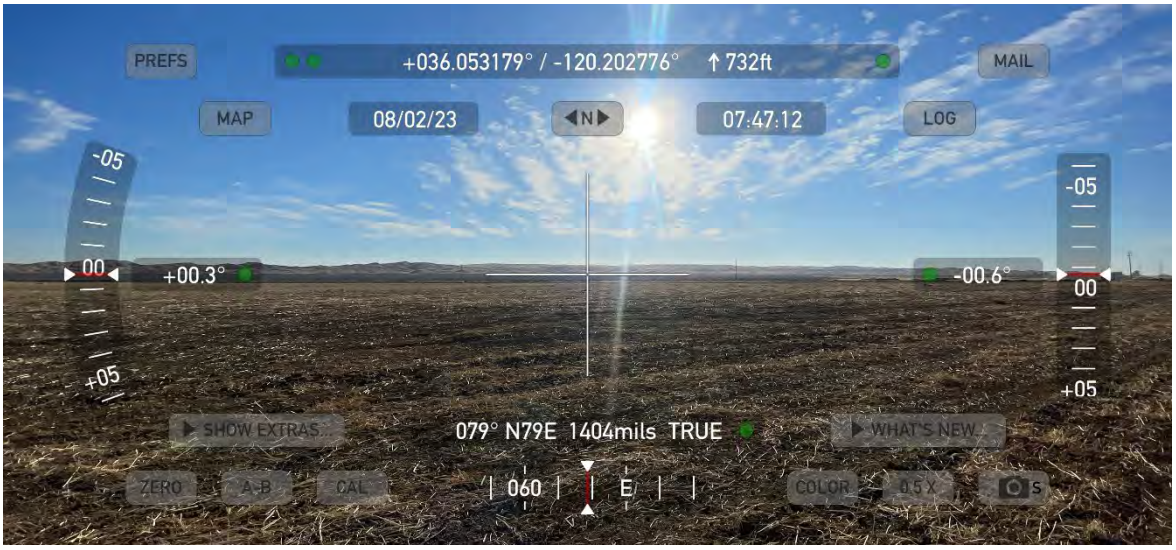
Photograph 2: View from the north central portion of the APE west of South Lost Hill Roads; facing southeast. August 2, 2023

Photograph 3: View from the central southern portion of the APE west of South Lost Hill Road; facing southwest. August 2, 2023

Photograph 4: View from the central portion of the APE west of South Lost Hill Road; facing southeast. August 2, 2023

Photograph 5: View from the central portion of the APE west of South Lost Hill Road; facing southeast. August 2, 2023

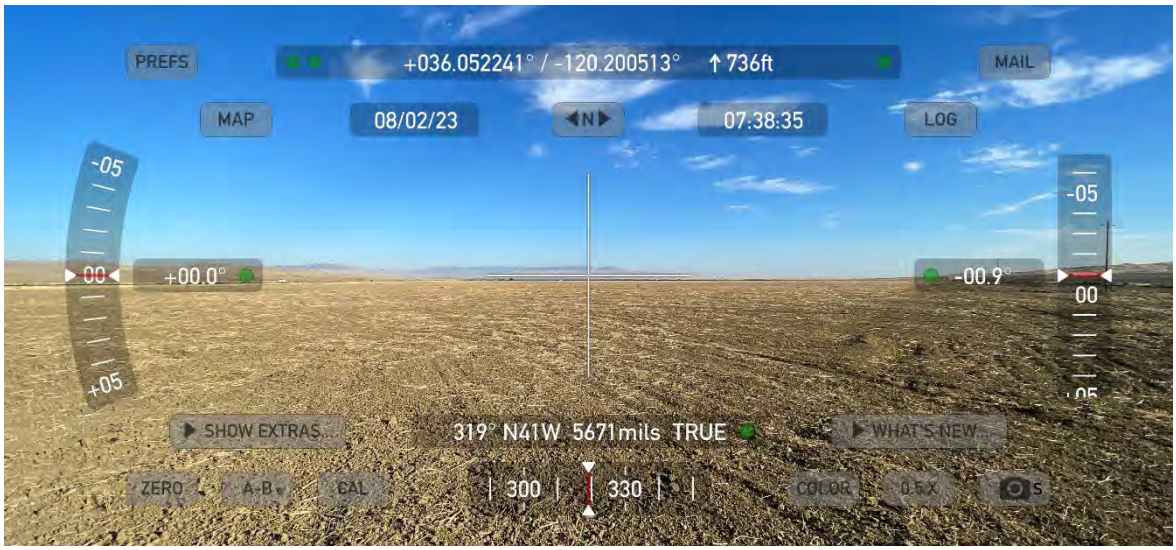
Photograph 6: View from the central southern portion of the APE west of South Lost Hill Road; facing northwest. August 2, 2023



Photograph 7: View from the central southern portion of the APE west of South Lost Hill Road; facing northwest. August 2, 2023

Photograph 8: View from the central southern portion of the APE east of South Lost Hill Road; facing northeast. August 2, 2023

Photograph 9: View from the southeast corner of the APE; facing northwest. August 2, 2023

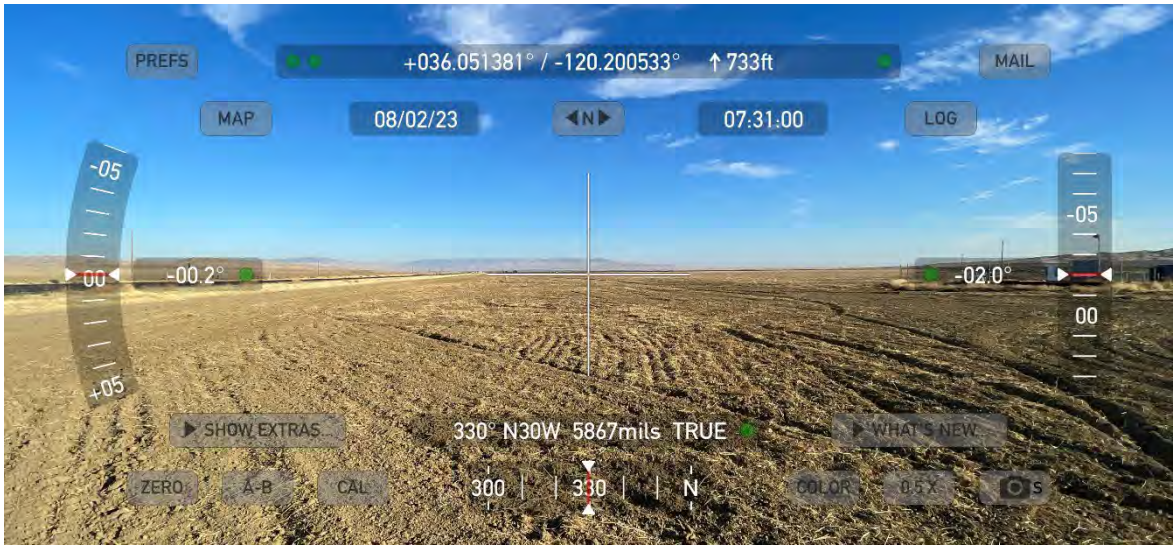


Photograph 10: View from the central southern portion of the APE east of South Lost Hill Road; facing northeast. August 2, 2023

Photograph 11: View from the central portion of the APE east of South Lost Hill Road; facing southeast. August 2, 2023

Photograph 12: View from the central eastern portion of the APE east of South Lost Hill Road; facing southeast. August 2, 2023

Photograph 13: View from the eastern boundary of the APE along Sutter Avenue; facing southwest. August 2, 2023



Photograph 14: View from the eastern boundary of the APE east of Sutter Avenue; facing northwest. August 2, 2023

Photograph 15: View from the eastern boundary of the APE east of Sutter Avenue; facing northwest.
August 1, 2023

Photograph 16: View from the northern boundary of west of Lost Hill Road; facing southwest.
August 1, 2023

Photograph 17: View from the northern boundary of the APE east of Sutter Avenue; facing southwest. August 1, 2023

Photograph 18: View from the northern boundary of the APE east of Sutter Avenue; facing southwest. August 1, 2023

Photograph 19: View from the southeastern boundary of the APE; facing northwest. August 1, 2023

Photograph 20: View from the southern boundary of the APE; facing northeast. August 2, 2023

Photograph 21: View from the central portion of the APE east of Sutter Avenue; facing southwest. August 2, 2023

Photograph 22: View from the southern boundary of the APE; facing northeast. August 2, 2023

Photograph 23: View from the eastern boundary of the APE; facing southeast. August 2, 2023

Photograph 24: View from the central southern portion of the APE along Sutter Avenue; facing southeast. August 2, 2023

Photograph 25: View from the central eastern portion of the APE; facing northwest. August 3, 2023

Photograph 26: View from the central eastern portion of the APE; facing southeast. August 3, 2023

Photograph 27: View from the central eastern portion of the APE; facing northeast. August 3, 2023

Photograph 28: View from the central eastern portion of the APE; facing northwest. August 3, 2023

Photograph 29: View from the northeastern portion of the APE; facing southeast. August 2, 2023

Photograph 30: Representative soil composition in the northwest portion of the APE. August 1, 2023

Photograph 31: Representative overview of ground cover in the northwestern portion of the APE west of South Lost Hill Road; facing southeast. August 1, 2023

Photograph 32: Abandoned well found in the northwest portion of the APE; facing east. August 2, 2023

Photograph 33: Representative level of visibility of native soil in the central portion of the APE; facing southeast. August 1, 2023

Photograph 34: Representative level of visibility of native soil in the southern portion of the APE; facing west. August 2, 2023

Photograph 35: Representative view of native soils in the southern boundary of the APE. August 2, 2023

Photograph 36: Representative view of groundcover and vegetation in the southwestern portion of the APE; facing west. August 2, 2023

Photograph 37: Representative view of native soils in the southwestern portion of the APE. August 2, 2023

Photograph 38: Representative view of ground cover in the central portion of the APE east of South Lost Hill Road; facing west. August 3, 2023

Photograph 39: Representative view of native soil in the central portion of the APE east of South Lost Hills Road. August 3, 2023

Photograph 40: Representative view of ground cover from the central portion of the APE; facing east. August 3, 2023

Photograph 41: View from the southeast corner of the APE; facing northwest. October 24, 2023

Photograph 42: Representative view of the level of visibility of native soil from the southeast portion of the APE; facing west. October 24, 2023

Photograph 43: Representative view of native soil from the southeast portion of the APE; facing west. October 24, 2023

Photograph 44: Representative view of native soil from the central northeastern portion of the APE. October 25, 2023

Photograph 45: Fossilized shell found in the central northeastern portion of the APE. October 25, 2023

Photograph 46: Fossilized shell found in the central northeastern portion of the APE. October 25, 2023

Photograph 47: Opaque glass fragment found in the central northeastern portion of the APE. October 25, 2023

Photograph 48: Overview of Canoas Creek in the central portion of the APE; facing east. October 25, 2023

Photograph 49: Cross-section of soil from the central portion of the APE; facing north. October 26, 2023

Photograph 50: Overview from the northern boundary of the APE adjacent to Sutter Avenue; facing south. December 18, 2023

Photograph 51: Representative view of ground cover from the northern boundary of the APE adjacent to Sutter Avenue; facing west. December 18, 2023

Photograph 52: Representative view of native soil from the northern boundary of the APE adjacent to Sutter Avenue. December 18, 2023

Photograph 53: View from the north central portion of the APE; facing east. December 19, 2023

Photograph 54: Representative view of native soil from the northeastern boundary of the APE. December 18, 2023

Photograph 55: A 5-centimeter worked core of Franciscan chert found in northeast boundary of the APE adjacent to the surrounding hills. December 19, 2023

Photograph 56: Fragment of green glass found in the central portion of the APE adjacent to Sutter Avenue. December 19, 2023

Photograph 57: Fossilized shell found in the northeastern portion of the APE. December 19, 2023

Photograph 58: Flaked Franciscan Chert found in the northeastern portion of the APE.

Photograph 59: Representative view of ground cover from the central portion of the APE; facing east. December 19, 2023

Photograph 60: Overview of archaeological site CHP-2 in the central portion of the APE; facing west. December 21, 2023

Photograph 61: Representative view of the native soil from the southern portion of the APE. December 21, 2023

Photograph 62: View of ground cover from the central portion of the APE adjacent to South Lost Hills Road; facing northwest. December 21, 2023

Photograph 63: Overview of Canoas Creek from the central portion of the APE; facing northeast. December 21, 2023

Photograph 64: A projectile fragment comprised of a composite of Franciscan Chert and quartz found in the central portion of the APE (CHP-2). December 21, 2023

Photograph 65: Debitage comprised of Franciscan Chert found in the central portion of the APE (CHP-2). December 21, 2023

Photograph 66: Modern green glass fragment found in the central portion of the APE. December 22, 2023

Photograph 67: Clear glass fragment found in the central portion of the APE. December 22, 2023

Photograph 68: Cross-section of soil from the central portion of the APE; facing east. December 22, 2023

Photograph 69: Overview from the central portion of APE; facing southeast. December 22, 2023

Photograph 70: A core comprised of Franciscan Chert to the south of the Zapato Chino Creek (CHP-1). August 2, 2023

Photograph 71: A 3.5-centimeter piece of Franciscan Chert debitage in the northeastern portion of the APE (CHP-4). December 19, 2023

Photograph 72: A piece of worked Franciscan chert (CHP-7). August 1, 2023

Photograph 73: A 5-centimeter piece of Franciscan Chert debitage in the central eastern portion of the APE (CHP-5). October 25, 2023

Photograph 74: A 3.5-centimeter piece of Franciscan Chert debitage was found in the central western portion of the APE (CHP-8). August 1, 2023

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Appendix E:
Department of Parks and Recreation Form

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State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) CHP-1
P1. Other Identifier:

***P2. Location:** ☒ **Not for Publication** . **Unrestricted**
***a. County** Fresno County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Avenal **Date** 1954, 1976 ed **T** 22S; **R** 16E; NW 1/4 **of** SW 1/4 **of Sec** 2; MD **B.M.**
c. Address N/A City Coalinga Zip 93210
d. UTM: (Give more than one for large and/or linear resources) Zone 10S , 750690 mE/ 3992033 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
APN: 090-030-03

***P3a. Description:** A possible edge modified core comprised of Franciscan Chert was found to the south of the Zapato Chino Creek. Given its location, this isolate may have redeposited due to agricultural activity from its original site located at CHP-2. No other resources were found in the immediate vicinity.

***P3b. Resource Attributes:** (List attributes and codes) AP16 (lithic isolate)
***P4. Resources Present:** Building Structure Object Site District Element of District ☒ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) 8/2/2023

***P6. Date Constructed/Age and Source:** Historic ☒ Prehistoric Both
Unknown

***P7. Owner and Address:**
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

***P8. Recorded by:** Ti Ngo, MA
First Carbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

***P9. Date Recorded:** August 2, 2023

***P10. Survey Type:** Intensive surface survey

***P11. Report Citation:** Ngo, Ti and Charles Mikulik. 2024. Section 106 Cultural Resources Assessment, Cornucopia Hybrid Project, Fresno County, California. FirstCarbon Solutions.

***Attachments:** NONE ☒Location Map Continuation Sheet Building, Structure, and Object Record
Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
Artifact Record Photograph Record Other (List):

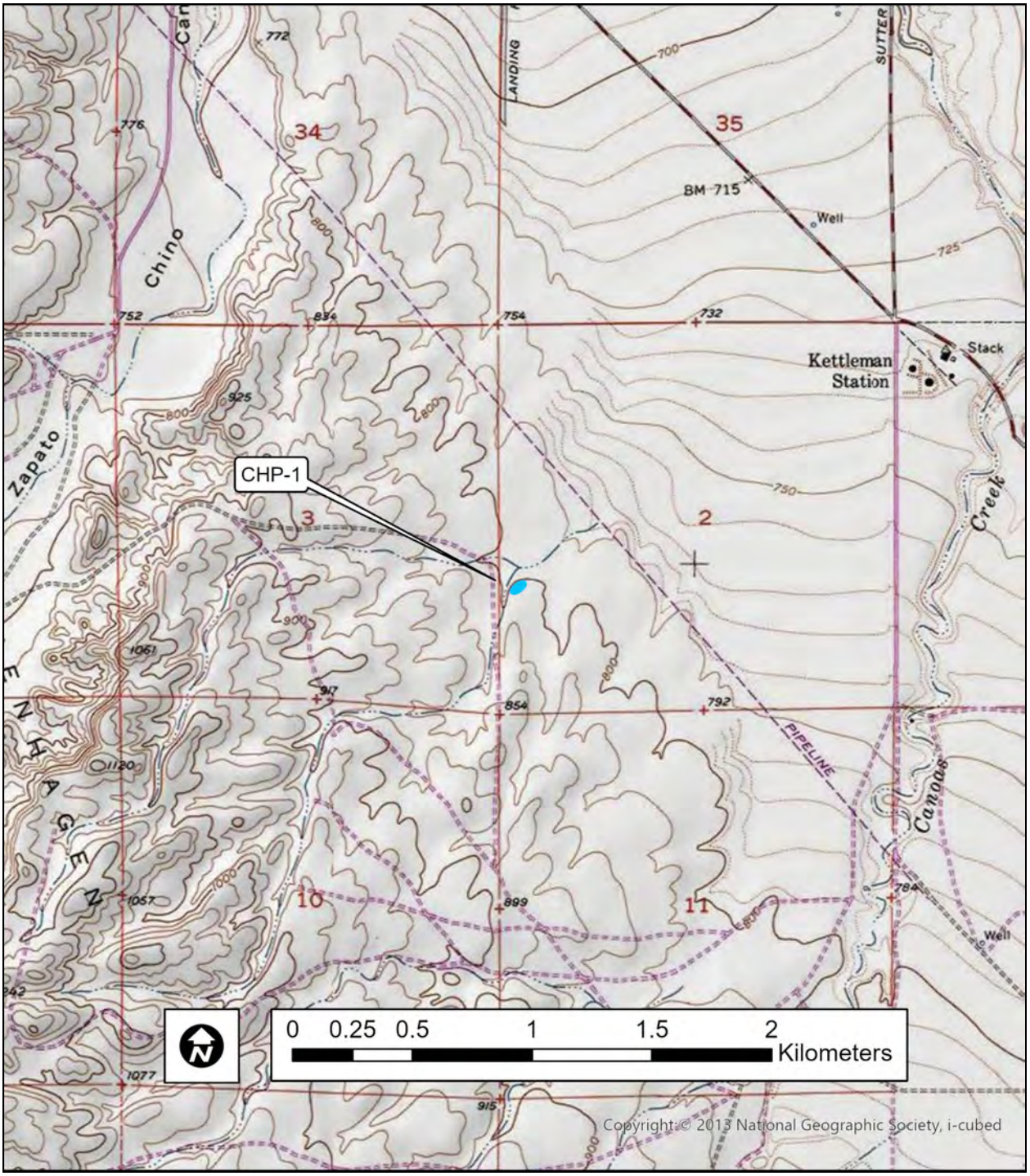
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #** CHP-1

***Map Name:** Avenal ***Scale:** 1:24,000 ***Date of map:** 1954; 1976ed



State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 8 ***Resource Name or #:** (Assigned by recorder) CHP-2
P1. Other Identifier:

***P2. Location:** ☒ **Not for Publication** **Unrestricted**

***a. County** Fresno County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Avenal **Date** 1954, 1976 ed **T** 22S; **R** 16E; NE 1/4 **of** SE 1/4 **of Sec** 1; MD **B.M.**

c. Address: Edge of Highway 33/South Lost Hills Road City Coalinga Zip 93210

d. UTM: Zone 10S, 753430mE/ 3992227mN

e. Other Locational Data: APN: 090-030-06S, approximately 720 meters northeast of the intersection of Highway 33 and Lost Hills Road.

***P3a. Description:** This site is comprised of a projectile point fragment made of what appears to be both Franciscan chert and quartz within a concentration of Franciscan chert debitage. It was identified adjacent to Highway 33 and extends northeast towards Canoas Creek. The site is rectangular in shape by 170 meters in length and 110 meters in width containing an estimate of 30 pieces of debitage of Franciscan Chert. However, due to the recent discing of the area, this lithic concentration has likely been broadcasted beyond its original site boundary. See documentation for CHP-1, CHP-3, CHP-4, CHP-5, CHP-6, CHP-7, and CHP-8.

***P3b. Resource Attributes:** (List attributes and codes) AP2 (lithic scatter)

***P4. Resources Present:** Building Structure Object ☒ Site District Element of District Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: Overview, facing NE, 12/21/2023

***P6. Date Constructed/Age and Source:** Historic ☒ Prehistoric Both Age unknown

***P7. Owner and Address:**
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

***P8. Recorded by:** Ti Ngo, MA, First Carbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

***P9. Date Recorded:** December 21, 2023

***P10. Survey Type:** Intensive surface survey

***P11. Report Citation:** Ngo, Ti and Charles Mikulik. 2024. Section 106 Cultural Resources Assessment, Cornucopia Hybrid Project, Fresno County, California. FirstCarbon Solutions.

***Attachments:** NONE ☒Location Map ☒Continuation Sheet Building, Structure, and Object Record
☒Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
Artifact Record Photograph Record ☒ Other (List): Sketch Map

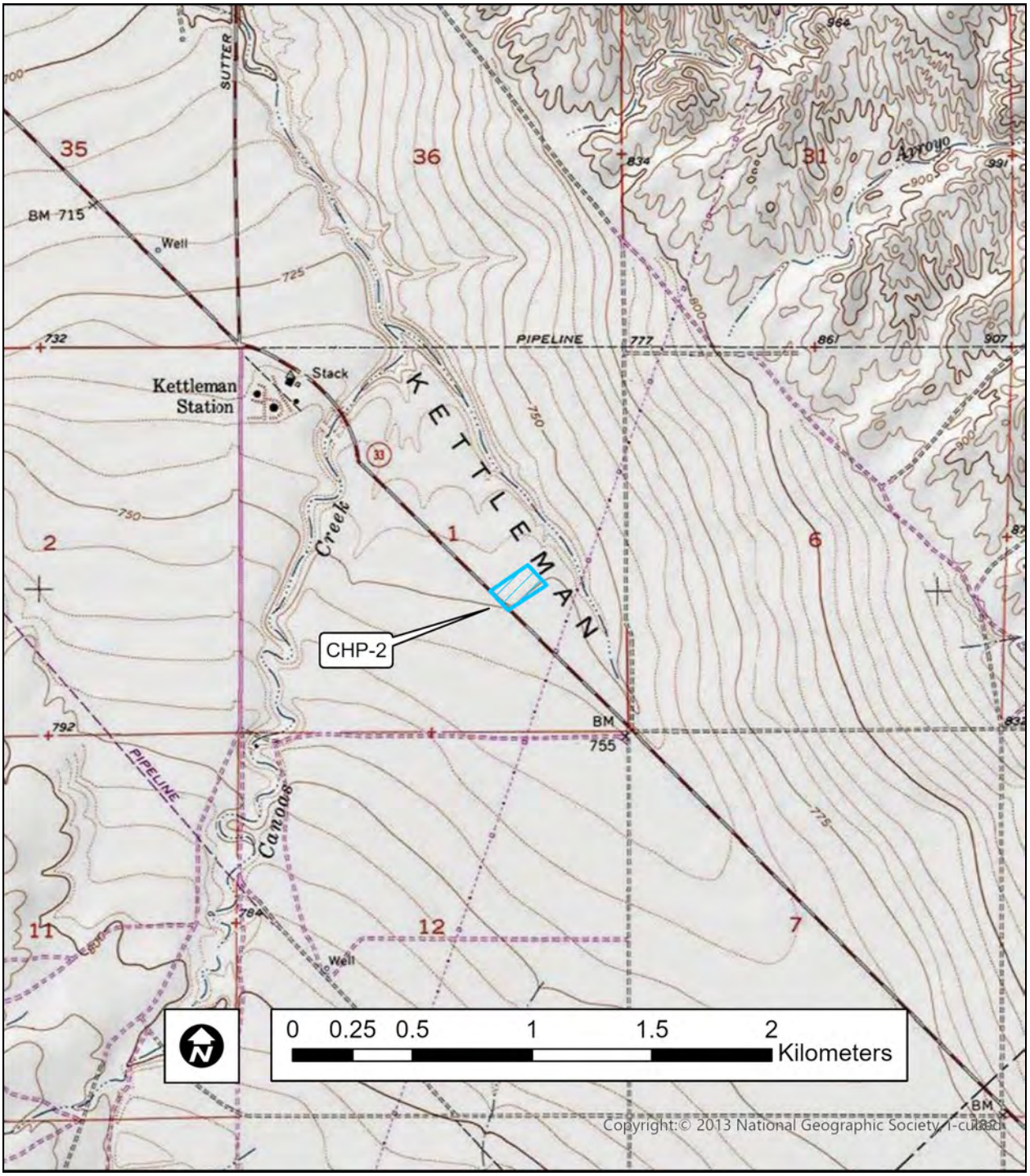
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #** CHP-2

***Map Name:** Avenal ***Scale:** 1:24,000 ***Date of map:** 1954; 1976 ed.



ARCHAEOLOGICAL SITE RECORD

***A1. Dimensions: a. Length:** 170m. (NE/SW) **× b. Width:** 110 m. (NW/SE)
Method of Measurement: ☒ Paced ☐ Taped ☐ Visual estimate ☐ Other: GPS/GIS data
Method of Determination (Check any that apply.): ☒ Artifacts ☐ Features ☐ Soil ☐ Vegetation ☐ Topography ☐ Cut bank ☐ Animal burrow ☐ Excavation ☐ Property boundary ☐ Other (Explain):

Reliability of Determination: ☐ High ☒ Medium ☐ Low Explain: Site may extend below the surface and its extent is not possible to conclusively determine based on a surface survey alone.

Limitations (Check any that apply): ☐ Restricted access ☐ Paved/built over ☐ Site limits incompletely defined ☒ Disturbances ☒ Vegetation ☐ Other (Explain): Likely disturbed by agricultural activities and road construction

A2. Depth: ☐ None ☒ Unknown Method of Determination: Surface survey
***A3. Human Remains:** ☐ Present ☐ Absent ☐ Possible ☒ Unknown (Explain): Impossible to determine without subsurface investigation.

***A4. Features** (Number, briefly describe, indicate size, list associated cultural constituents, and show location of each feature on sketch map.):

The site is a sparse lithic concentration with no other identifiable features or loci.

***A5. Cultural Constituents (**Describe and quantify artifacts, ecofacts, cultural residues, etc., not associated with features.):

A projectile point fragment comprised of a composite of Franciscan chert and quartz within a concentration of Franciscan Chert was found. There are approximately 30 pieces of lithic debitage fragments comprised of Franciscan Chert ranging from 2 to 5 centimeters in length and width.

***A6. Were Specimens Collected?** ☒ No ☐ Yes (If yes, attach Artifact Record or catalog and identify where specimens are curated.)
***A7. Site Condition:** ☐ Good ☒ Fair ☐ Poor (Describe disturbances.): Likely disturbed by agricultural activities and the construction of Highway 33. However, the site does appear to retain integrity of location.

***A8. Nearest Water:** Canoas Creek is approximately 150 meters to the northeast of the estimated site boundary.

***A9. Elevation:**
A10. Environmental Setting (Describe culturally relevant variables such as vegetation, fauna, soils, geology, landform, slope, aspect, exposure, etc.)**:** Located within Kettleman Plain in the vicinity of Canoas Creek. Due to vegetation, visibility of soils was approximately 75% across the site. Visible soils consisted of dark grayish brown silty clay soil (Munsell 10 YR 4/2) with inclusions of schist, river stones, shale and naturally occurring Franciscan chert ranging from 2-6 centimeters.

A11. Historical Information: None available. The site is within the boundaries of the Southern Valley Yokuts according to currently accepted anthropological data.

***A12. Age:** ☒ Prehistoric ☐ Protohistoric ☐ 1542-1769 ☐ 1769-1848 ☐ 1848-1880 ☐ 1880-1914 ☐ 1914-1945 ☐ Post 1945 ☐ Undetermined **Describe position in regional prehistoric chronology or factual historic dates if known:**
Due to the lack of diagnostic artifacts, the age of the site is impossible to determine without additional testing (i.e. excavation and laboratory analysis)

A13. Interpretations (Discuss data potential, function[s], ethnic affiliation, and other interpretations): This resource is likely the remains of stone tool manufacturing site associated with the Southern Valley Yokuts.

A14. Remarks: None.

A15. References (Documents, informants, maps, and other references): None.

A16. Photographs (List subjects, direction of view, and accession numbers or attach a Photograph Record.): See Continuation Sheets.

Original Media/Negatives Kept at: FirstCarbon Solutions

***A17. Form Prepared by:** Ti Ngo and Charles Mikulik **Date:** January 31, 2024
Affiliation and Address: FirstCarbon Solutions, 2999 Oak Road, Suite 250 Walnut Creek, California 94597

***Required information**

State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

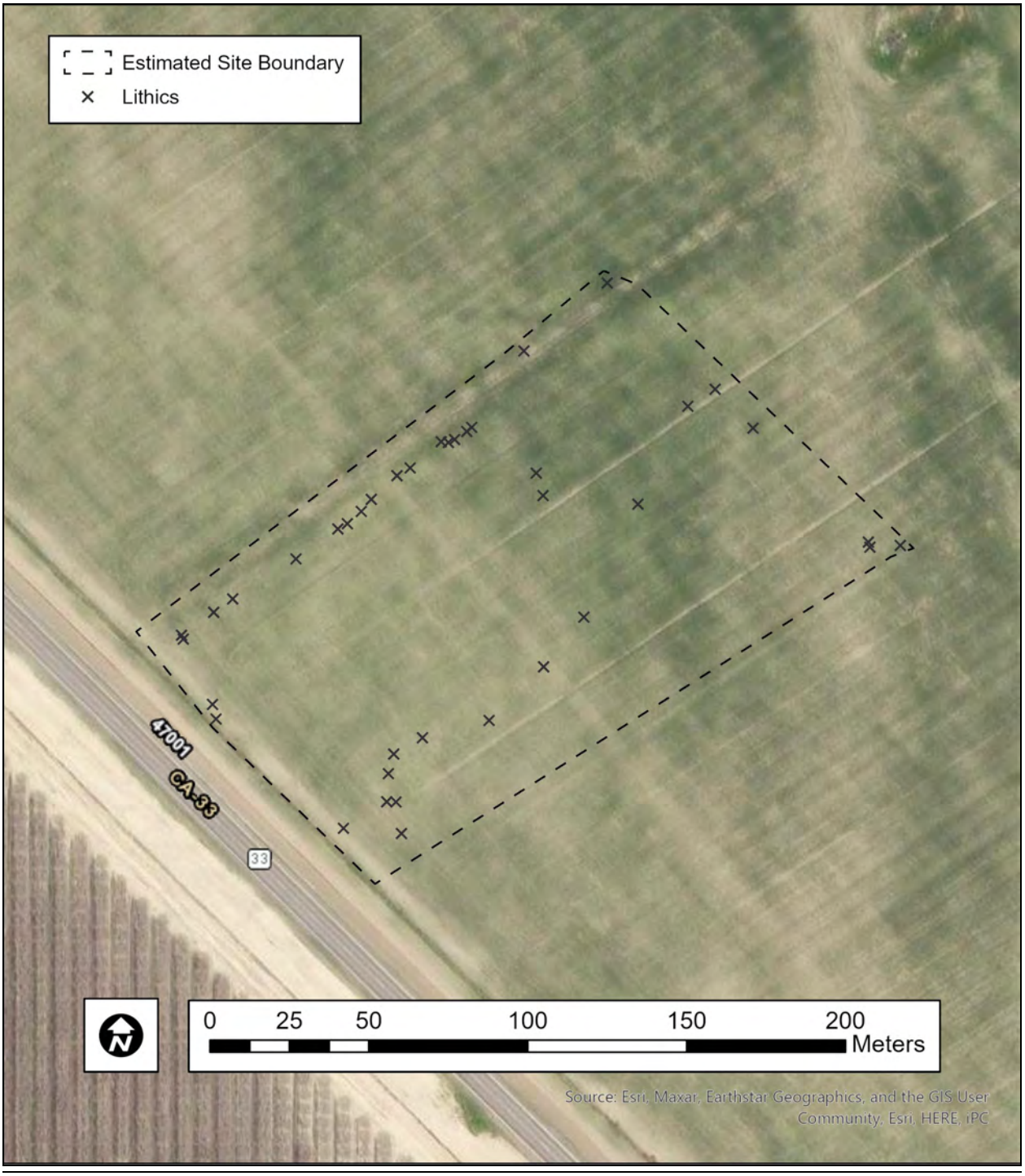
SKETCH MAP

Primary #
HRI#
Trinomial

***Resource Name or #** (Assigned by recorder) CHP-2

***Drawn by:** C. Mikulik

***Date of map:** 1/31/2024



NOTE: Include bar scale and north arrow.

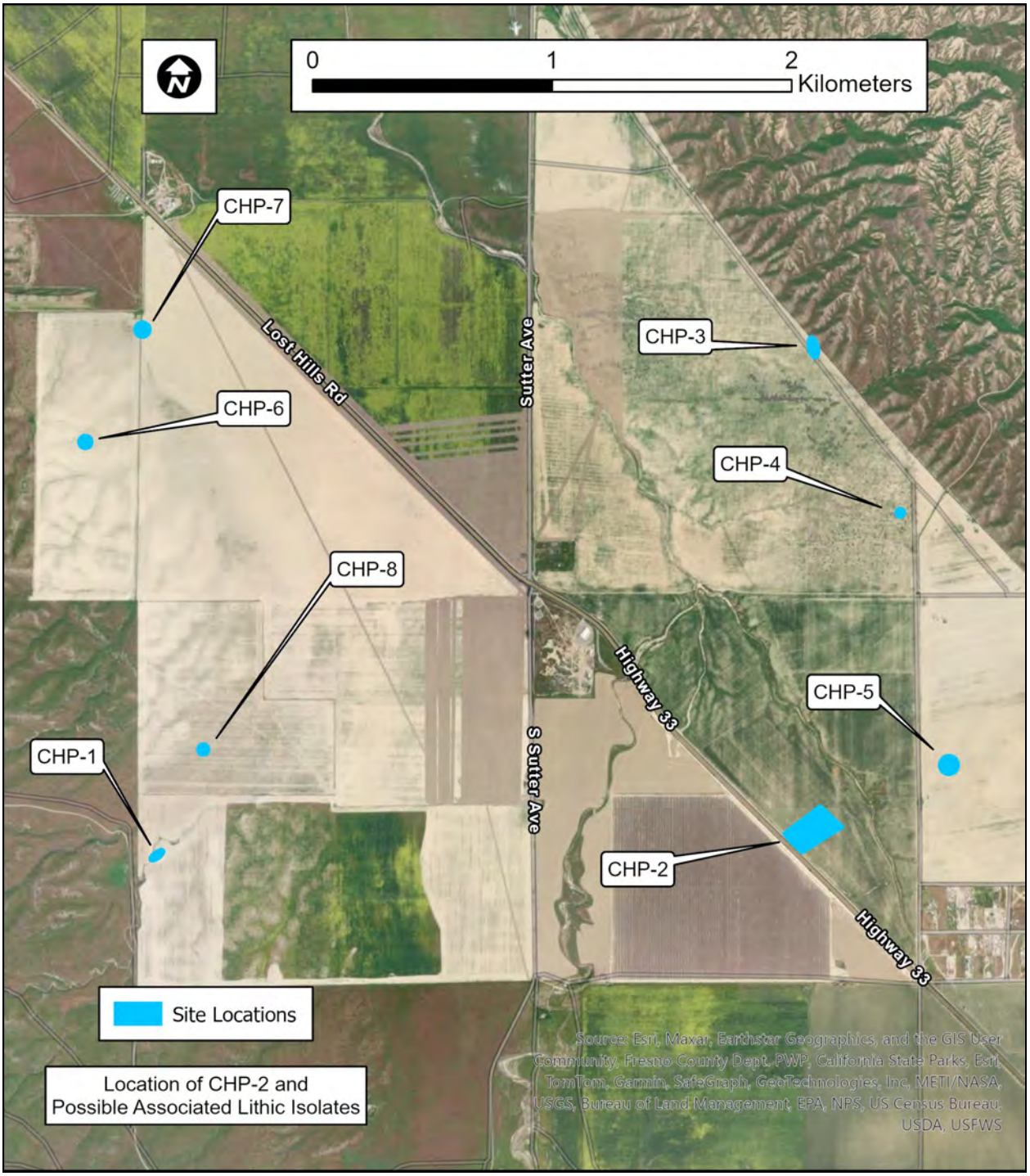
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 5 **of** 8 ***Resource Name or #** CHP-2

***Map Name:** Aerial Imagery ***Scale:** 1:24,000 ***Date of map:** 2022



1: Lithic biface fragment (chert and quartz?)

2: Lithic biface fragment (chert and quartz?)

3: Fragments of debitage consisting of Franciscan chert found in the central portion of the site.

4 and 5: Fragments of Franciscan chert debitage.

State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) CHP-3
P1. Other Identifier:

***P2. Location:** ☒ **Not for Publication** . **Unrestricted**

***a. County** Fresno County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Avenal **Date** 1954, 1976 ed **T** 21S; **R** 16E ; SE 1/4 **of** NE 1/4 **of Sec** 36; MD**B.M.**

c. Address N/A City Coalinga Zip 93210

d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 753371 mE/ 3994239 mN

e. Other Locational Data: APN: 085-110-12

***P3a. Description:** A 5-centimeter core comprising of Franciscan Chert was found in the northeast boundary of the APE adjacent to the surrounding hills. Given its location, this isolate may have redeposited further northward from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

***P3b. Resource Attributes:** (List attributes and codes) AP16 (lithic isolate)

***P4.Resources Present:** Building Structure Object Site District Element of District ☒ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) 12/20/2023

***P6. Date Constructed/Age and Source:** Historic ☒ Prehistoric Both
Unknown

***P7. Owner and Address:**
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

***P8. Recorded by:** Ti Ngo, MA
First Carbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

***P9. Date Recorded:** December 20, 2023

***P10. Survey Type:** Intensive surface survey

***P11. Report Citation:** Ngo, Ti and Charles Mikulik. 2024. Section 106 Cultural Resources Assessment, Cornucopia Hybrid Project, Fresno County, California. FirstCarbon Solutions.

***Attachments:** NONE ☒Location Map Continuation Sheet Building, Structure, and Object Record
Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
Artifact Record Photograph Record Other (List):

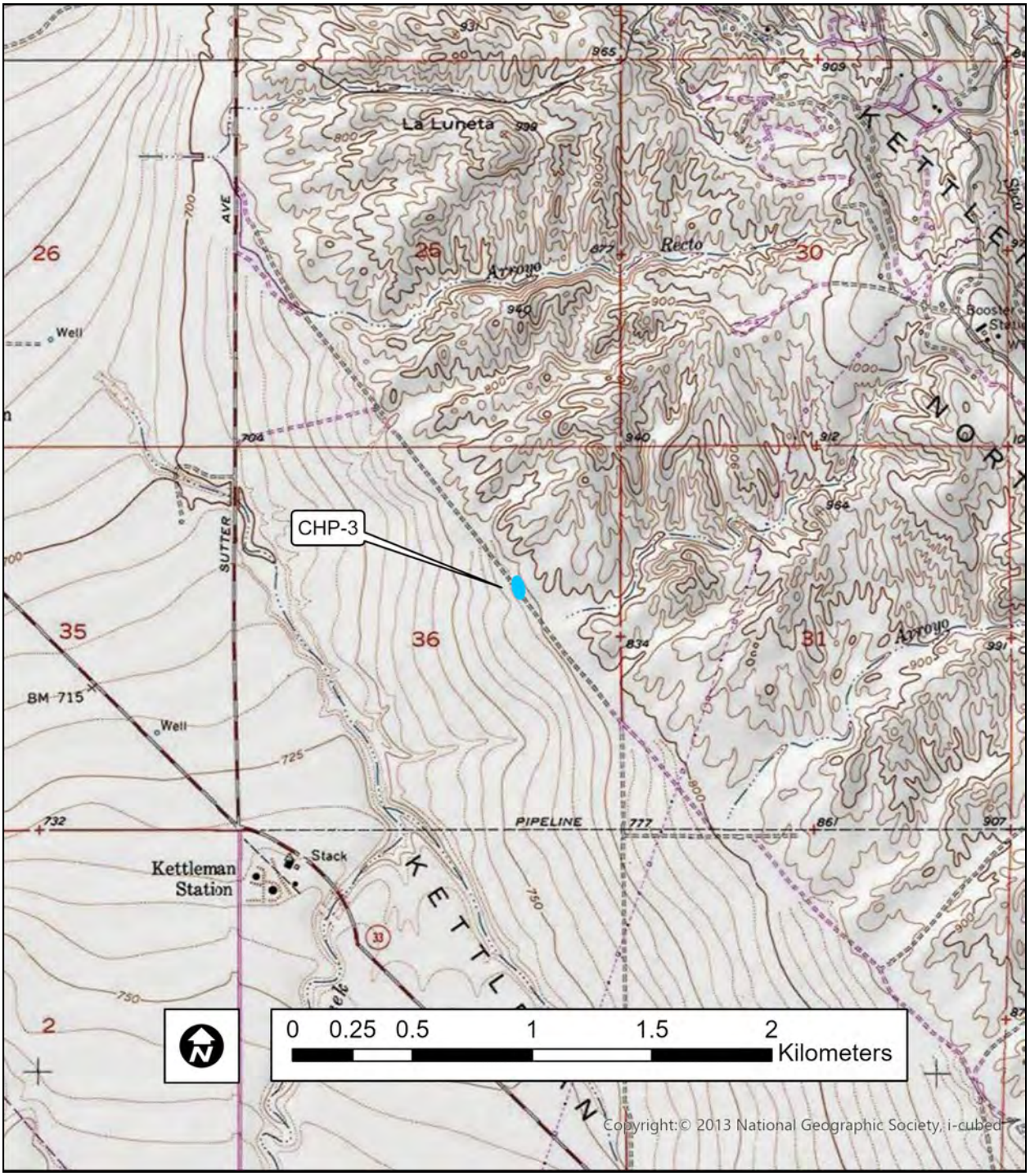
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** ____ ***Resource Name or #** CHP-3

***Map Name:** Avenal ***Scale:** 1:24,000 ***Date of map:** 1954; 1976 ed.



State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

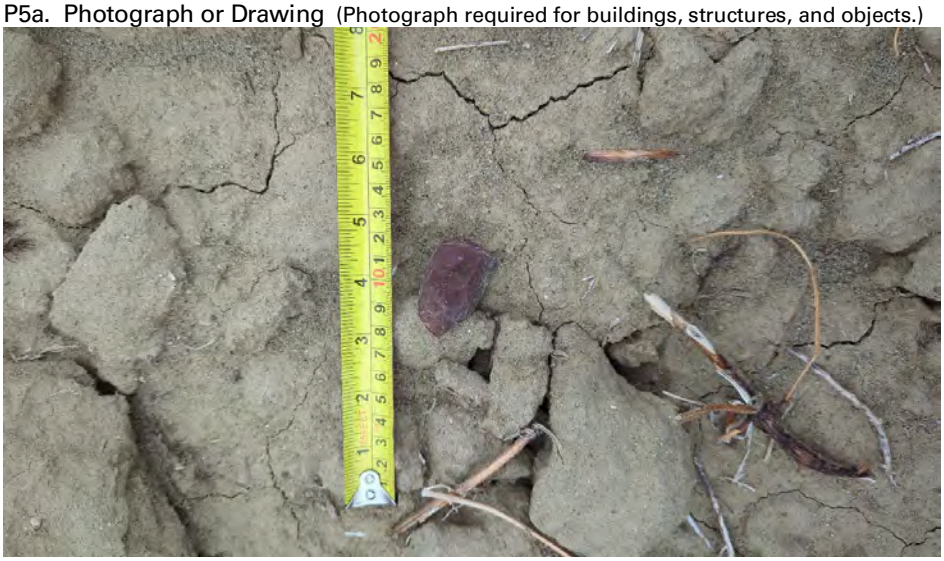
Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) CHP-4
P1. Other Identifier:

*P2. **Location:** ☒ **Not for Publication** . **Unrestricted**
***a. County** Fresno County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Avenal **Date** 1954, 1976 ed **T** 21S; **R** 16E; SE 1/4 **of** SE 1/4 **of Sec** 36; MD **B.M.**
c. Address N/A City Coalinga Zip 93210
d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 753756mE/ 3993561mN
e. Other Locational Data: APN: 085-110-12

***P3a. Description:** A 3.5-centimeter piece of Franciscan Chert debitage was found in the central northeastern edge of the APE adjacent to the surrounding hills. Given its location, this isolate may have spread further northward from its original site located at CHP-2 due to agricultural activity. No additional resources were found within the surrounding vicinity.

***P3b. Resource Attributes:** (List attributes and codes) AP16 (lithic isolate)
***P4. Resources Present:** Building Structure Object Site District Element of District ☒ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)



P5b. Description of Photo: (view, date, accession #) 12/19/2023

***P6. Date Constructed/Age and Source:** Historic ☒ Prehistoric Both
Unknown

***P7. Owner and Address:**
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

***P8. Recorded by:** Ti Ngo, MA
First Carbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

***P9. Date Recorded:** December 19, 2023

***P10. Survey Type:** Intensive surface survey

***P11. Report Citation:** Ngo, Ti and Charles Mikulik. 2024. Section 106 Cultural Resources Assessment, Cornucopia Hybrid Project, Fresno County, California. FirstCarbon Solutions.

***Attachments:** NONE ☒Location Map Continuation Sheet Building, Structure, and Object Record
Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
Artifact Record Photograph Record Other (List):

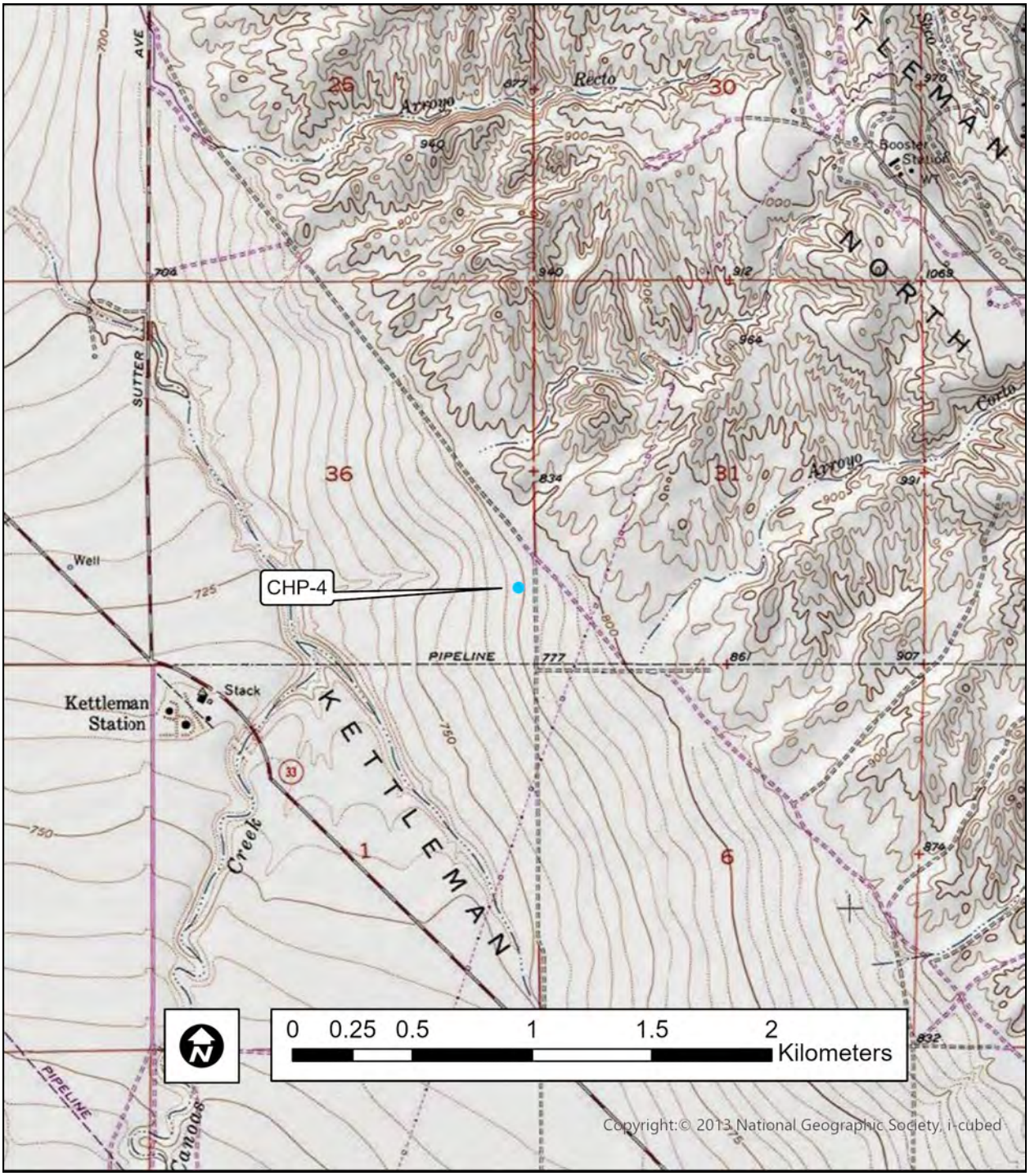
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #** CHP-4

***Map Name:** Avenal ***Scale:** 1:24,000 ***Date of map:** 1954; 1976 ed.



State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) CHP-5
P1. Other Identifier:

***P2. Location:** ☒ **Not for Publication** . **Unrestricted**

***a. County** Fresno County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Avenal **Date** 1954, 1976 ed **T** 22S; **R** 17E; SW 1/4 **of** NW 1/4 **of Sec** 6; MD**B.M.**

c. Address N/A City Coalinga Zip 93210

d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 753993mE/ 3992514mN

e. Other Locational Data: APN: 090-040-01

***P3a. Description:** A 5-centimeter piece of Franciscan Chert debitage was found in the central eastern portion of the APE. Given its location, this isolate may have spread further northward from its original site located at CHP-2 due to agricultural activity. No additional resources were found within the surrounding vicinity.

***P3b. Resource Attributes:** (List attributes and codes) AP16 (lithic isolate)

***P4. Resources Present:** Building Structure Object Site District Element of District ☒ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) 10/25/2023

***P6. Date Constructed/Age and Source:** Historic ☒ Prehistoric Both
Unknown

***P7. Owner and Address:**
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

***P8. Recorded by:** Ti Ngo, MA
First Carbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

***P9. Date Recorded:** October 25, 2023

***P10. Survey Type:** Intensive surface survey

***P11. Report Citation:** Ngo, Ti and Charles Mikulik. 2024. Section 106 Cultural Resources Assessment, Cornucopia Hybrid Project, Fresno County, California. FirstCarbon Solutions.

***Attachments:** NONE ☒Location Map Continuation Sheet Building, Structure, and Object Record
Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
Artifact Record Photograph Record Other (List):

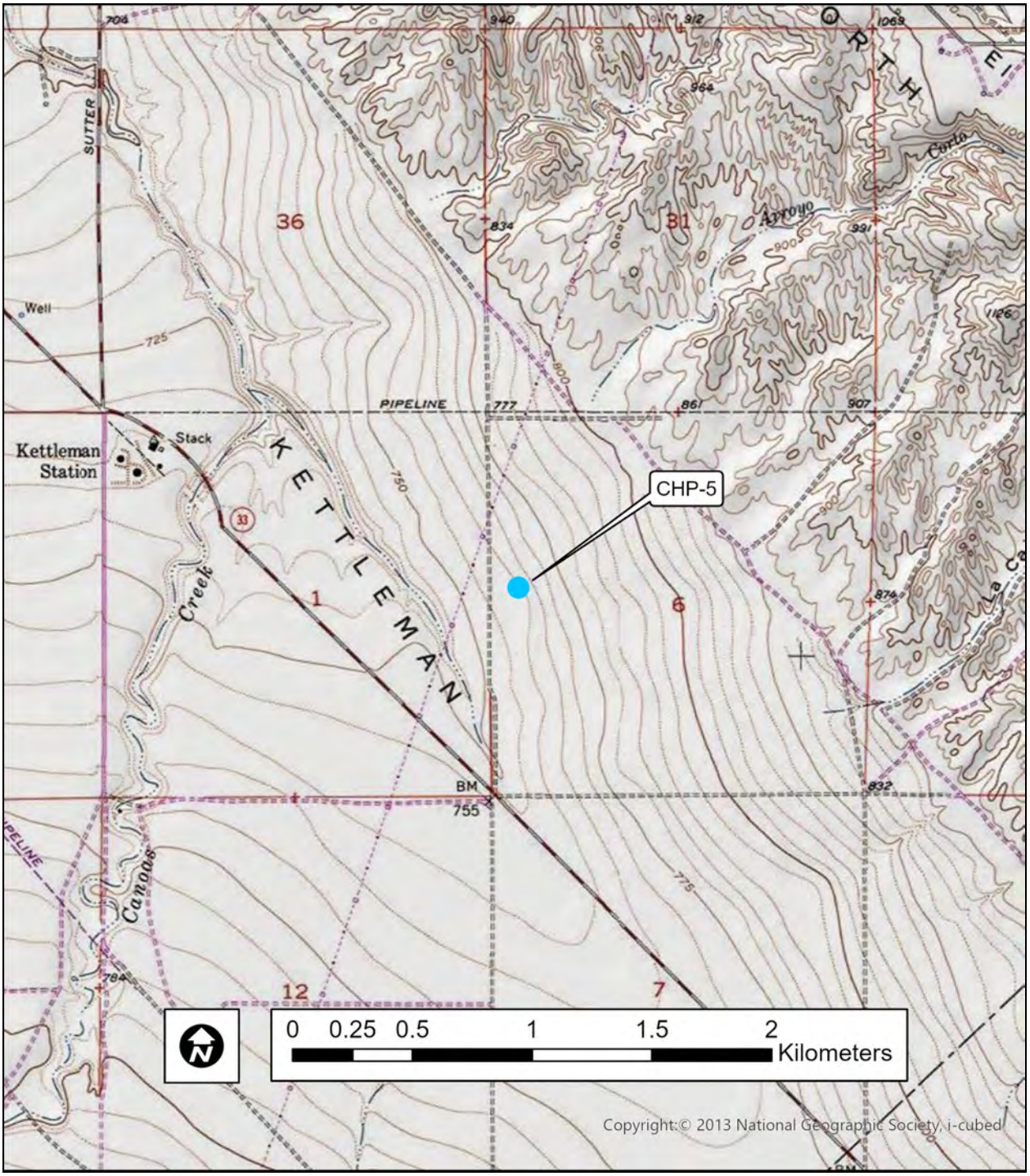
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** ____ ***Resource Name or #** CHP-5

***Map Name:** Avenal ***Scale:** 1:24,000 ***Date of map:** 1954; 1976 ed.



State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) CHP-6
P1. Other Identifier:

***P2. Location:** ☒ **Not for Publication** . **Unrestricted**
***a. County** Fresno County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Avenal **Date** 1954, 1976 ed **T** 21S; **R** 16E; NE 1/4 **of** SE 1/4 **of Sec** 34; MD **B.M.**
c. Address N/A City Coalinga Zip 93210
d. UTM: (Give more than one for large and/or linear resources) Zone 10S , 750339mE/ 3993749mN
e. Other Locational Data: APN: 085-110-23S

***P3a. Description:** A 5-centimeter piece of Franciscan Chert debitage was found in the northwestern portion of the APE. Given its location, this isolate may have been redeposited due to agricultural activity from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

***P3b. Resource Attributes:** (List attributes and codes) AP16 (lithic isolate)
***P4. Resources Present:** Building Structure Object Site District Element of District ☒ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) 8/2/2023

***P6. Date Constructed/Age and Source:** Historic ☒ Prehistoric
Both
Unknown

***P7. Owner and Address:**
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

***P8. Recorded by:** Ti Ngo, MA
First Carbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

***P9. Date Recorded:** August 2, 2023
***P10. Survey Type:** Intensive surface survey

***P11. Report Citation:** Ngo, Ti and Charles Mikulik. 2024. Section 106 Cultural Resources Assessment, Cornucopia Hybrid Project, Fresno County, California. FirstCarbon Solutions.

***Attachments:** NONE ☒Location Map Continuation Sheet Building, Structure, and Object Record
Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
Artifact Record Photograph Record Other (List):

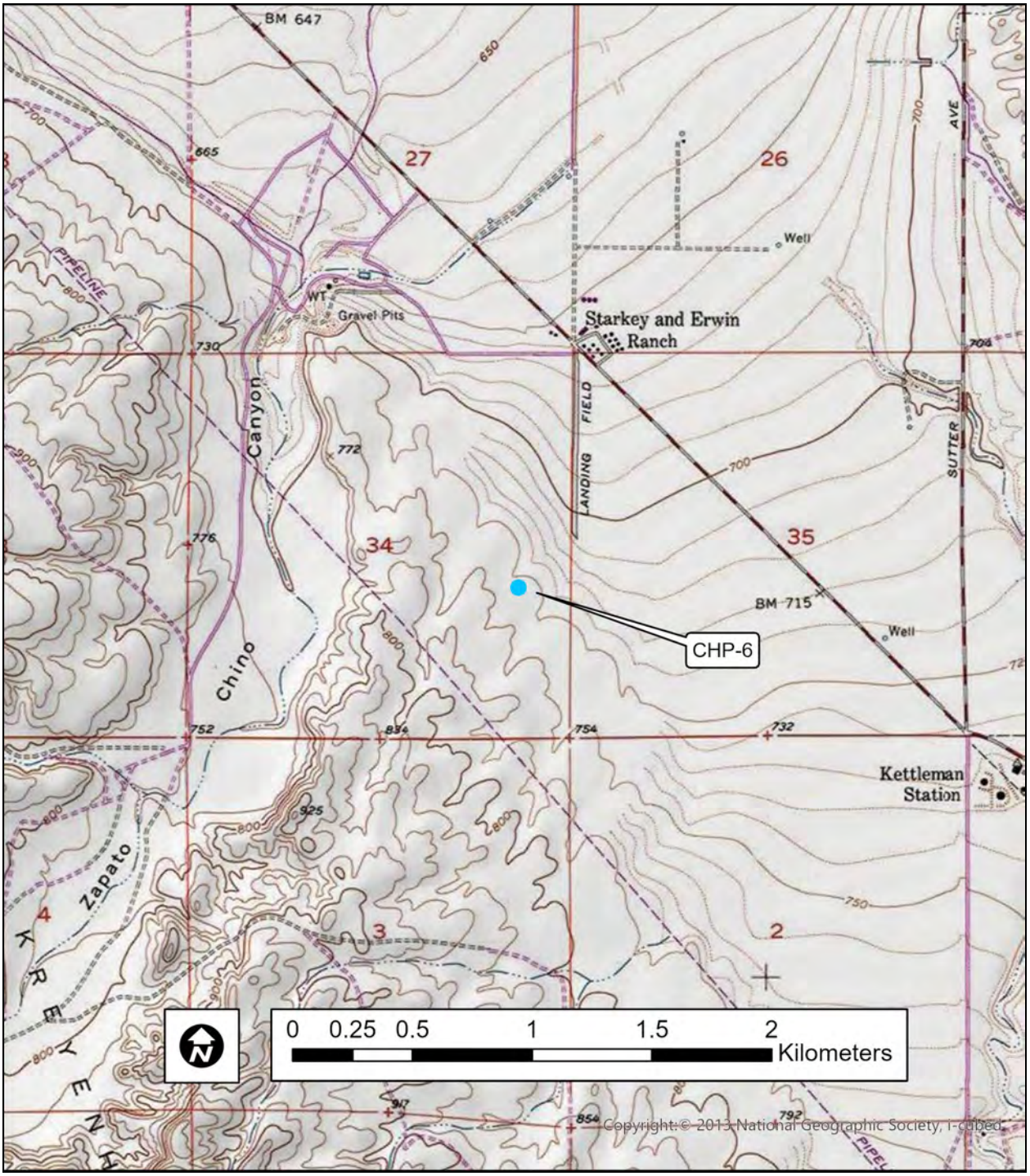
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

***Resource Name or #** CHP-6

***Map Name:** Avenal ***Scale:** 1:24,000 ***Date of map:** 1954; 1976 ed.



State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) CHP-7
P1. Other Identifier:

***P2. Location:** ☒ **Not for Publication** . **Unrestricted**
***a. County** Fresno County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Avenal **Date** 1954, 1976 ed **T** 21S; **R** 16E; SW 1/4 **of** NW 1/4 **of Sec** 35; MD **B.M.**
c. Address N/A City Coalinga Zip 93210
d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 750564mE/ 3994227mN
e. Other Locational Data: APN: 085-110-13S

***P3a. Description:** A 3.5-centimeter piece of Franciscan Chert debitage was found in the northwestern portion of the APE. Given its location, this isolate may have been redeposited due to agricultural activity from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

***P3b. Resource Attributes:** (List attributes and codes) AP16 (lithic isolate)
***P4. Resources Present:** Building Structure Object Site District Element of District ☒ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) 7/1/2023

***P6. Date Constructed/Age and Source:** Historic ☒ Prehistoric Both Unknown

***P7. Owner and Address:**
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

***P8. Recorded by:** Ti Ngo, MA
First Carbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

***P9. Date Recorded:** August 1, 2023

***P10. Survey Type:** Intensive surface survey

***P11. Report Citation:** Ngo, Ti and Charles Mikulik. 2024. Section 106 Cultural Resources Assessment, Cornucopia Hybrid Project, Fresno County, California. FirstCarbon Solutions.

***Attachments:** NONE ☒Location Map Continuation Sheet Building, Structure, and Object Record
Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
Artifact Record Photograph Record Other (List):

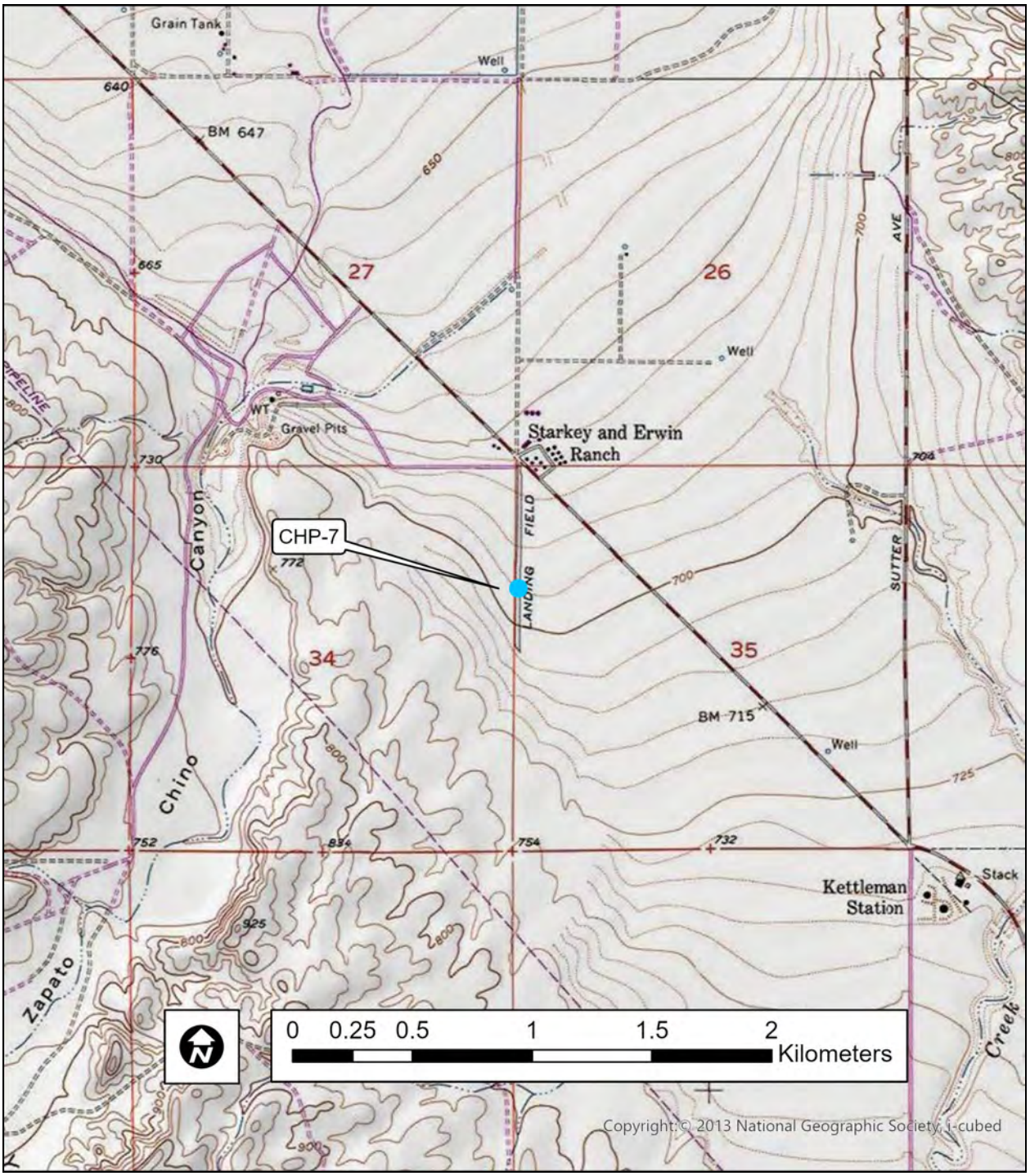
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** 2 ***Resource Name or #** CHP-7

***Map Name:** Avenal ***Scale:** 1:24,000 ***Date of map:** 1954; 1976 ed.



State of California X The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings
Review Code | Reviewer | Date

Page 1 **of** 2 ***Resource Name or #:** (Assigned by recorder) CHP-8
P1. Other Identifier:

***P2. Location:** ☒ **Not for Publication** . **Unrestricted**
***a. County** Fresno County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Avenal **Date** 1954, 1976 ed **T** 22S; **R** 16E; SW 1/4 **of** NW 1/4 **of Sec** 2; MD **B.M.**
c. Address N/A City Coalinga Zip 93210
d. UTM: (Give more than one for large and/or linear resources) Zone 10S, 750872mE/ 3992482mN
e. Other Locational Data: APN: 090-030-02S

***P3a. Description:** A 3.5-centimeter piece of Franciscan Chert debitage was found in the central western portion of the APE. Given its location, this isolate may have been redeposited due to agricultural activity from its original site located at CHP-2. No additional resources were found within the surrounding vicinity.

***P3b. Resource Attributes:** (List attributes and codes) AP16 (lithic isolate)
***P4. Resources Present:** Building Structure Object Site District Element of District ☒ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) 8/1/2023

***P6. Date Constructed/Age and Source:** Historic ☒ Prehistoric Both
Unknown

***P7. Owner and Address:**
Cornucopia Hybrid, LLC
18575 Jamboree Road, Suite 850
Irvine, CA 92612

***P8. Recorded by:** Ti Ngo, MA
First Carbon Solutions
2999 Oak Road, Suite 250
Walnut Creek, CA 94597

***P9. Date Recorded:** August 1, 2023

***P10. Survey Type:** Intensive surface survey

***P11. Report Citation:** Ngo, Ti and Charles Mikulik. 2024. Section 106 Cultural Resources Assessment, Cornucopia Hybrid Project, Fresno County, California. FirstCarbon Solutions.

***Attachments:** NONE ☒Location Map Continuation Sheet Building, Structure, and Object Record
Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
Artifact Record Photograph Record Other (List):

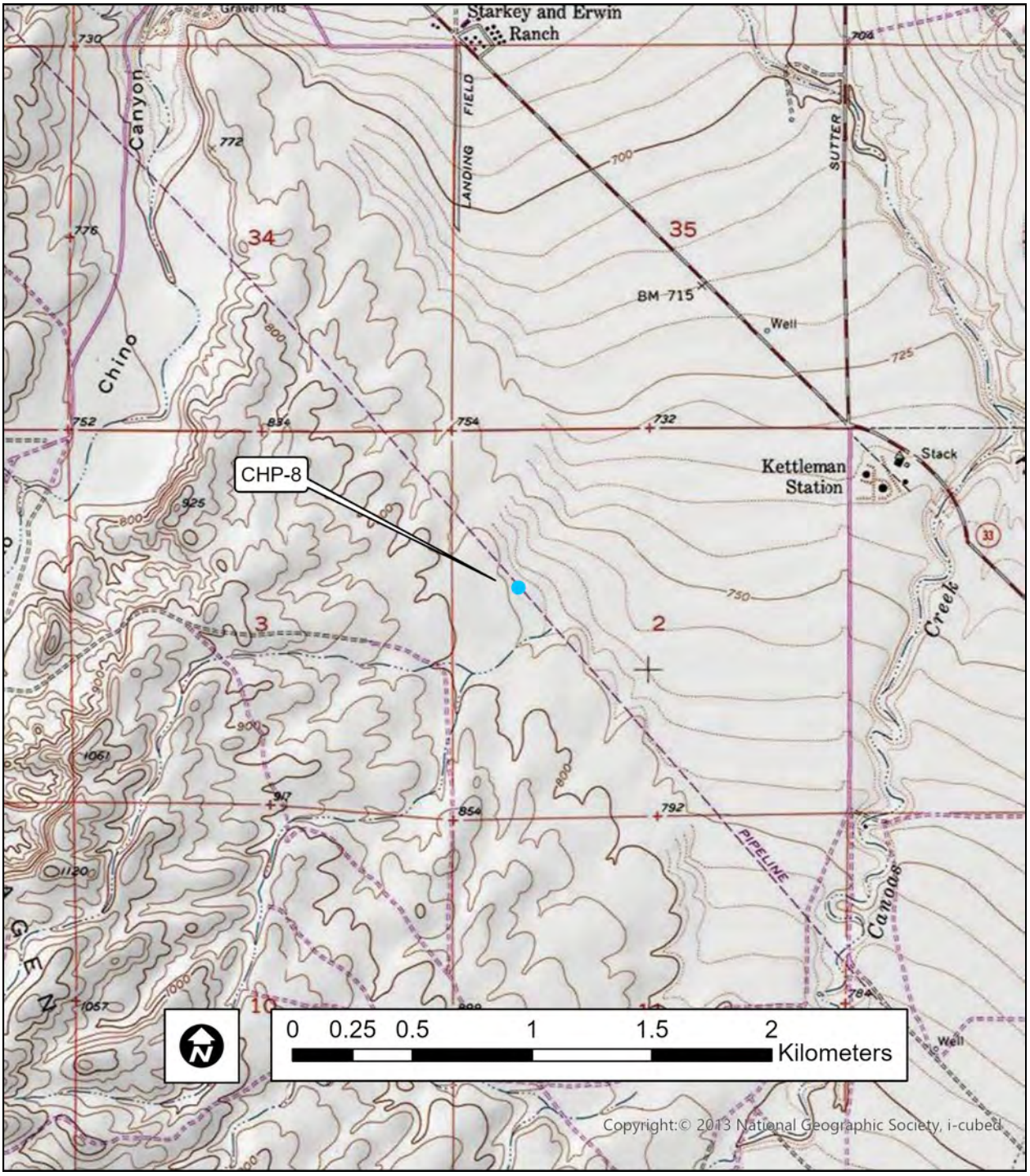
State of California - The Resources Agency Primary #
DEPARTMENT OF PARKS AND RECREATION HRI#

LOCATION MAP

Trinomial

Page 2 **of** 2 ***Resource Name or #** CHP-8

***Map Name:** Avenal ***Scale:** 1:24,000 ***Date of map:** 1954; 1976 ed.



Appendix F:
Cultural Resources Regulations and Evaluation Criteria

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CULTURAL RESOURCES REGULATIONS AND EVALUATION CRITERIA

Local, state, and federal government agencies have developed laws and regulations designed to protect significant cultural resources that may be affected by projects regulated, funded, or undertaken by the agency. Federal and state laws that govern the preservation of historic and archaeological resources of national, state, regional, and local significance include the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA). In addition, laws specific to work conducted on federal lands include the Archaeological Resources Protection Act, the American Antiquities Act, and the Native American Graves Protection and Repatriation Act (NAGPRA).

The following federal or CEQA criteria were used to evaluate the significance of potential impacts on cultural resources for the proposed project. An impact is considered significant if it would affect a resource eligible for listing in the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR), or if it is identified as a unique archaeological or Tribal Cultural Resource (TCR).

Federal-Level Evaluations

National Historic Preservation Act

The NHPA of 1966, as amended, established the NRHP, which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 Code of Federal Regulations 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events;
- It is associated with significant people in the past;
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction; or
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA) amended the Antiquities Act of 1906 (16 United States Code [USC] §§ 431–433) and set a broad policy that archaeological resources are important to the nation and should be protected and required special permits before the excavation or removal of

archaeological resources from public or Indian lands. The purpose of the ARPA was to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites that are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act (AIRFA) established federal policy to protect and preserve the inherent rights of freedom for Native American groups to believe, express, and exercise their traditional religions. These rights include but are not limited to access to sites, use and possession of sacred objects, and freedom to worship through ceremonials and traditional rites.

Native American Graves Protection and Repatriation Act

The NAGPRA of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and Tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American Tribe claiming affiliation.

State Level Evaluation Processes

An archaeological site may be considered a historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California per Public Resources Code Section 5020.1(j) or, if it meets the criteria for listing on the CRHR per the California Code of Regulations at Title 14 California Code of Regulations Section 4850.

The most recent amendments to the CEQA Guidelines direct lead agencies to first evaluate an archaeological site to determine whether it meets the criteria for listing in the CRHR. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the CRHR, potential adverse impacts to it must be considered as stated in Public Resources Code Sections 21084.1 and 21083.2(l). If an archaeological site is considered not to be a historical resource, but meets the definition of a “unique archaeological resource” as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

With reference to Public Resources Code Section 21083.2, each site found within a project area will be evaluated to determine whether it is a unique archaeological resource. A unique archaeological resource is described as 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 one or more 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.

As used in this report, a "non-unique archaeological resource" means an archaeological artifact, object, or site that does not meet the criteria for eligibility for listing on the CRHR, as noted in subdivision (g) of Public Resources Code Section 21083.2. A non-unique archaeological resource requires no further consideration, other than the simple recording of its components and features. Isolated artifacts are typically considered non-unique archaeological resources. Historic structures that have had their superstructures demolished or removed can be considered historic archaeological sites and are evaluated following the processes used for prehistoric sites. Finally, the California State Office of Historic Preservation (OHP) recognizes an age threshold of 45 years. Cultural resources built less than 45 years ago may qualify for consideration, but only under the most extraordinary circumstances.

Title 14 of the California Code of Regulations, Chapter 3, Section 15064.5, is associated with determining the significance of impacts to archaeological and historical resources. Here, the term historical resource includes the following:

1. A resource listed in, or determined eligible by the State Historical Resources Commission, for listing in the CRHR (PRC § 5024.1; Title 14 CCR § 4850, *et seq.*).
2. A resource included in a local register of historical resources, as defined in Public Resources Code Section 5020.1(k) or identified as significant in a historical resource survey meeting the Public Resources Code Section 5024.1(g) requirements, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be historically significant if the resource meets the criteria for listing on the CRHR (PRC § 5024.1; Title 14 CCR § 4852) including the following:
   A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
   B. Is associated with the lives of persons important in our past.
   C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
   D. Has yielded, or may be likely to yield, information important in prehistory or history.

Typically, archaeological sites exhibiting significant features qualify for the CRHR under Criterion D because such features have information important to the prehistory of California. A lead agency may determine that a resource may be a historical resource as defined in Public Resources Code Sections 5020.1(j) or 5024.1, even if it is:

- Not listed in or determined to be eligible for listing in the CRHR.
- Not included in a local register of historical resources pursuant to Public Resources Code Section 5020.1(k).
- Identified in a historical resources survey per Public Resources Code Section 5024.1(g).

California Register of Historical Resources

As defined by CEQA Guidelines Section 15064.5(a)(3)(A-D), a resource shall be considered historically significant if the resource meets the criteria for listing on the CRHR. The CRHR and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model, since the NHPA provides the highest standard for evaluating the significance of historic resources. A resource that meets the NRHP criteria is clearly significant. In addition, a resource that does not meet the NRHP standards may still be considered historically significant at a local or State level.

California Environmental Quality Act

The CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. CEQA Guidelines direct lead agencies to evaluate archaeological sites to determine whether they meet the criteria for listing in the CRHR. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the CRHR, potential adverse impacts to it must be considered. If an archaeological site is considered not to be a historical resource but meets the definition of a “unique archaeological resource” as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

Native American Heritage Commission Sacred Lands File

Section 5097.91 of the Public Resources Code established the whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands. This inventory is referred to as the NAHC Sacred Lands File (SLF). Under Section 5097.9 of the Public Resources Code, a State policy of noninterference with the free expression or exercise of Native American religion was articulated along with a prohibition of severe or irreparable damage to Native American sanctified cemeteries, places of worship, religious or ceremonial sites or sacred shrines located on public property. Section 5097.98 of the Public Resources Code specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a County Coroner. Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

California Assembly Bill 52—Effects on Tribal Cultural Resources

Assembly Bill (AB) 52 was signed into law on September 25, 2014, and provides that any public or private "project with an effect that may cause a substantial adverse change in the significance of a Tribal Cultural Resource is a project that may have a significant effect on the environment." TCRs include "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the CRHR or included in a local register of historical resources." Under prior law, TCRs were typically addressed under the umbrella of "cultural resources," as discussed above. AB 52 formally added the category of "Tribal Cultural Resources" to CEQA, and extends the consultation and confidentiality requirements to all projects, rather than just projects subject to Senate Bill (SB) 18 as discussed above.

The parties must consult in good faith, and consultation is deemed concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect on a TCR (if such a significant effect exists); or (2) when a party concludes that mutual agreement cannot be reached. Mitigation measures agreed upon during consultation must be recommended for inclusion in the environmental document. AB 52 also identifies mitigation measures that may be considered to avoid significant impacts if there is no agreement on appropriate mitigation. Recommended measures include:

- Preservation in place.
- Protecting the cultural character and integrity of the resource.
- Protecting the traditional use of the resource.
- Protecting the confidentiality of the resource.
- Permanent conservation easements with culturally appropriate management criteria.

Fresno County General Plan 2000

Historical, Cultural, and Geological Resources

Fresno County's history includes at least five indigenous Native American Tribes and Spanish, Mexican, and American colonization. There are many archaeological and historic sites and a large stock of historically significant buildings and landmarks in the county. The county also contains several unique geological features and geological resources of bygone eras.

Policies in this section seek to preserve the historical, archaeological, paleontological, geological, and cultural resources of the county through development review, acquisition, encouragement of easements, coordination with other agencies and groups, and other methods.

Goal

Goal OS-J To identify, protect, and enhance Fresno County's important historical archaeological, paleontological, geological, and cultural sites and their contributing environment.

Policies

Policy OS-J.1 The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archaeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archaeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

Policy OS-J.2 The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

Policy OS-J.3 The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

Policy OS-J.4 The County shall maintain an inventory of all sites and structures in the County determined to be of historical significance (Index of Historic Properties in Fresno County).

Policy OS-J.5 The County shall support the registration by property owners and others of cultural resources in appropriate landmark designations (i.e., National Register of Historic Places, California Historical Landmarks, Points of Historical Interest, or Local Landmark).

Policy OS-J.6 The County shall provide for the placement of historical markers or signs on adjacent County roadways and major thoroughfares to attract and inform visitors of important historic resource sites. If such sites are open to the public, the County shall ensure that access is controlled to prevent damage or vandalism.

Policy OS-J.7 The County shall use the State Historic Building Code and existing legislation and ordinances to encourage preservation of cultural resources and their contributing environment.

Policy OS-J.8 The County shall support efforts of other organizations and agencies to preserve and enhance historic resources for educational and cultural purposes through maintenance and development of interpretive services and facilities at County recreational areas and other sites.

Implementation Programs

Program OS-J.A The County shall adopt and implement an ordinance to protect and preserve significant archaeological, historical, and geological resources. The ordinance shall provide for implementation of applicable development conditions, open space

easements, tax incentives, related code revisions and other measures as needed. (Policy OS-J.1)

Threshold of Significance

If a project will have a significant impact on a cultural resource, several steps must be taken to determine whether the cultural resource is a "unique archaeological resource" under CEQA. If analysis and/or testing determine that the resource is a unique archaeological resource and therefore subject to mitigation prior to development, a threshold of significance should be developed. The threshold of significance is a point where the qualities of significance are defined and the resource is determined to be unique under CEQA. A significant impact is regarded as the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource will be reduced to a point that it no longer meets the significance criteria. Should analysis indicate that project development will destroy the unique elements of a resource; CEQA Guidelines require that that the project implement appropriate and feasible mitigation measures. The preferred form of mitigation is to preserve the resource in place, in an undisturbed state. However, as that is not always possible or feasible, appropriate mitigation measures may include, but are not limited to:

1. Planning construction to avoid the resource.
2. Deeding conservation easements.
3. Capping the site prior to construction.

If a resource is determined to be a "non-unique archaeological resource," no further consideration of the resource by the lead agency is necessary.

Tribal Consultation

The following serves as an overview of the procedures and timeframes for the Tribal Consultation process, for the complete Tribal Consultation Guidelines, please refer to the State of California Office of Planning and Research website.

Prior to the amendment or adoption of general or specific plans, local governments must notify the appropriate Tribes of the opportunity to conduct consultation for the purpose of preserving or mitigating impacts to cultural places located on land within the local government's jurisdiction that is affected by the plan adoption or amendment. The Tribal contacts for this list are maintained by the NAHC and are distinct from the Most Likely Descendant (MLD) list. It is suggested that local governments send written notice by certified mail with return receipt requested. The Tribes have 90 days from the date they receive notification to request consultation. In addition, prior to adoption or amendment of a general or specific plan, local government must refer the proposed action to Tribes on the NAHC list that have traditional lands located within the city or county's jurisdiction. Notice must be sent regardless of prior consultation. The referral must allow a 45-day comment period.

In brief, notices from the local government to the Tribes should include:

- A clear statement of purpose.

- A description of the proposed general or specific plan, the reason for the proposal, and the specific geographic areas affected.
- Detailed maps to accompany the description.
- Deadline date for the Tribes to respond.
- Government representative(s) contact information.
- Contact information for project proponent/applicant, if applicable.

The basic schedule for this process is:

- **30 days**: time the NAHC has to provide Tribal contact information to the local government; this is recommended, not mandatory.
- **90 days:** time the Tribe has to respond indicating whether or not they want to consult. Note: Tribes can agree to a shorter timeframe. In addition, consultation does not begin until/unless requested by the Tribe within 90 days of receiving notice of the opportunity to consult. The consultation period, if requested, is open-ended. The Tribes and local governments can discuss issues for as long as necessary or productive, and need not result in agreement.
- **45 days**: time the local government has to refer proposed action, such as adoption or amendment to a general or specific plan, to agencies, including the Tribes. Referral is required even if there has been prior consultation. This opens the 45-day comment period.
- **10 days**: time the local government has to provide the Tribes with notice of a public hearing.

California Assembly Bill 52—Effects on Tribal Cultural Resources

AB 52 amended the CEQA statute to identify an additional category of resource to be considered under CEQA, called "Tribal Cultural Resources." It added Public Resources Code Section 21074, which defines "Tribal Cultural Resources" as follows:

1.(a) "TRIBAL CULTURAL RESOURCES" are either of the following:
  (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following:
    A) Included or determined to be eligible for inclusion in the CRHR.
    B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
  (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

Rincon Consultants, Inc.
7080 North Whitney Avenue, Suite 101
Fresno, California 93720
559-228-9925

Project No: 23-15487

John Crosby, Senior Permitting Manager
BayWa r.e. Solar Projects, LLC
18575 Jamboree Road, Suite 850
Irvine, California 92612
Via email: john.crosby@baywa-re.com

Subject: Supplemental Cultural Resources Memorandum for the Cornucopia Hybrid Project, Fresno County, California

Dear Mr. Crosby:

BayWa r.e. Solar Projects, LLC (BayWa) retained Rincon Consultants, Inc. (Rincon) to prepare a supplemental cultural resources memorandum for the Cornucopia Hybrid Project (project) in an unincorporated area of Fresno County. The project includes a new utility-scale, 300-megawatt (MW) solar facility consisting of approximately 686,880 solar modules rated at 550 watts, a 300 MW battery storage system and two prefabricated structures, on an approximately 2,446-acre project site.

First Carbon Solutions (FCS) prepared a Cultural Resources Report (report) for the project dated March 5, 2024, (FCS 2024) and submitted the report to Fresno County (County). The County's third-party reviewer, Environmental Science Associates (ESA), provided six comments on the FCS report that require clarification or additional data for the report to support the California Environmental Quality Act (CEQA) document prepared for the project.

Rincon prepared this memorandum to respond to ESAs comments and present sufficient data to support a CEQA impacts analysis for cultural resources on the project. This memorandum was authored by Rincon Archaeologist Lucas Nichols, BA and Senior Cultural Resources Project Manager Breana Campbell-King, MA, RPA, with Cultural Resources Principal Nichole Jordan, MA, RPA, reviewing for quality control. Ms. Campbell-King and Ms. Jordan meet the Secretary of the Interior's *Professional Qualification Standards* for prehistoric and historic archeology (National Park Service [NPS] 1983).

ESA Comments and Rincon Response

Italicized below are the comments provided by ESA (Koenig 2024), followed by Rincon's response. These responses provide additional clarification for the reviewer and or recommended changes that can be considered in support of the CEQA impacts analysis for cultural resources on the project.

1. *It is unclear why CHP-1, CHP-3, CHP-4, CHP-5, CHP-6, CHP-7, and CHP-8 were recorded as archaeological sites. These resources are all isolated artifacts and should be treated as such for the analysis*

Section 3.2.1. indicates eight prehistoric archaeological resources were recorded on California Department of Parks (DPR) forms during the pedestrian survey completed for the project. Section 3.2.2. further characterizes these resources with their own subheading as **CHP-1, CHP-2, CHP-3, CHP-4, CHP-5, CHP-6, CHP-7,** and **CHP-8**. The DPR forms completed for the project correctly identify **CHP-1, CHP-3, CHP-4, CHP-5, CHP-6, CHP-7,** and **CHP-8** as isolates and **CHP-2** as a site.

To provide clarity on the classification of the identified prehistoric archaeological resources they can be subdivided into prehistoric isolates and/or sites based on the quantity of artifacts observed (Table 1). Seven out of the eight recorded resources (**CHP-1, 3-8**) were identified as single prehistoric artifacts, either a core or debitage, and therefore should be considered isolates. As such these seven isolates should be categorized with the other *Isolated Artifacts* subheading in Section 3.2.2. **CHP-2** contains a projectile point fragment and approximately 30 pieces of chert debitage and is characterized as an archaeological site.

Table 1 Newly Identified Cultural Resources

Temporary Identifier	Resource Classification	Description
CHP-1	Prehistoric Isolate	One Franciscan chert core
CHP-2	Prehistoric Site	Franciscan chert and quartz projectile point fragment and diffuse and sparse Franciscan chert debitage (lithic) scatter (approximately 30 pieces)
CHP-3	Prehistoric Isolate	One Franciscan chert core
CHP-4	Prehistoric Isolate	One piece of Franciscan chert debitage
CHP-5	Prehistoric Isolate	One piece of Franciscan chert debitage
CHP-6	Prehistoric Isolate	One piece of Franciscan chert debitage
CHP-7	Prehistoric Isolate	One piece of Franciscan chert debitage
CHP-8	Prehistoric Isolate	One piece of Franciscan chert debitage

2. *The buried site potential analysis is not clear. The analysis states that the criteria used to identify sensitivity includes geoarchaeological, soils, and geologic data, as well as environmental parameters including distance to water and landform slope. The text states that the areas of high sensitivity include proximity to water resources including Zapato Chino Creek and Canoas Creek. However, Exhibit 5 shows the location of documented site CHP-2 as the area of high buried site sensitivity. This area actually had resources identified on the surface. Please clarify the buried archaeological sensitivity for the project site.*

Section *3.2.3 - Buried Site Potential* addresses the potential for subsurface or buried archaeological deposits within the project site. The text below is a suggested replacement for the text found in Section 3.2.3.

Geoarchaeological Sensitivity

The likelihood for the project site to contain subsurface archaeological deposits or features is based on a number of variables including the age and type of geologic units and soil/sediment types present, types of archaeological resources, proximity to watercourses, former land use, and topography. According to published geologic mapping, the following three geologic units are mapped at surface within the project site: 1) Pleistocene- and Holocene age alluvium, lake, playa, and terrace deposits within the centra portion of the project; 2) Pleistocene-age older alluvium, lake, playa, and terrace deposits along the western edge of the project site; and 3) Pliocene- and Pleistocene-age sandstone, shale, and gravel deposits in the project site's southeastern corner (California Department of Conservation 2024). Pleistocene- and Holocene-age alluvial surfaces are the most likely landforms to contain pre-contact archaeological resources. Since human populations increased over time, Late Holocene-age soils are more likely to yield archeological resources than older, Early Holocene or Pleistocene-age soils (Meyer et al. 2010). Therefore, the Pleistocene- and Holocene-age geologic unit mapped in the central portion of the project site is of appropriate age to naturally bury and preserve archaeological resources, with the Holocene-age deposits having greater sensitivity than the

Pleistocene deposits given their age. The Pliocene-age geologic unit predates human occupation of North American and is not conducive to the natural burial and preservation of archaeological materials.

Soils mapping indicates seven main soil series have been documented within the project site including the Cerini, Ciervo, Excelsior, Guijarral, Milham, Panoche, and Yribarren series (California Soil Resource Lab 2024). These soil series are found on fan skirts, foot-slopes, fan remnants, and alluvial fans and are formed in alluvium derived from sedimentary or granitic rock that has been transported to its location through alluvial processes. Alluvium represents sediments transported by water that accumulate over time depending on landform type, and are, therefore, depositional in nature, which is conducive to the burial of archaeological materials (Waters 1992). The alluvial nature of the soil types present in the project site elevate the subsurface archaeological sensitivity.

The potential for alluvial activities to bury prehistoric archaeological resources can be correlated within known prehistoric archaeological resources. Section *3.1.1 - Southern San Joaquin Valley Information Center Records Search* indicates that no prehistoric archaeological resources have been recorded within a 0.5-mile radius of the project site. Five previous cultural resources studies have been completed within a 0.5-mile radius of the project, three of those studies overlapped less than 5 percent of the project site. The limited amount of previous archaeological studies within the vicinity of the project site do not provide enough evidence to address the possibility of encountering buried archaeological resources within the project site. The survey conducted for this project identified seven prehistoric isolates and one prehistoric archaeological site within the project site, the presence of these resources indicates the area was used prehistorically increasing the possibility for buried cultural deposits. Additionally, a review of the USGS topographic map for *Coalinga, CA* (1:125,000 scale) identified two historical structure within the western portion of the project site, which elevates the potential for buried archaeological features to be present.

The potential for prehistoric archaeological sites has been positively correlated with proximity to water resources and can vary depending on the size, accessibility, and perennial availability of water. Areas with the highest archaeological sensitivity are those located within 394 feet of intermittent or perennial streams (Meyer et al. 2010). The central portion and eastern half of the project site are bisected by Canoas Creek, a perennial water source which heightens the archaeological sensitivity of this portion of the project site (Attachment 1: Figure 1). Additionally, several unnamed intermittent water sources originating from the mountains to the northeast and southwest of the project site provide additional areas of sensitivity.

A landform's topography affects the sensitivity for subsurface archaeological deposits. Landforms with steep topography have less sensitivity than those with generally flat topography. This is due to the erosional nature of slopes as they are not ideal for habitation or long-term use. In contrast, areas of generally flat topography represent depositional contexts and are conducive to habitation and longer-term use. Therefore, areas with slopes of 10 degrees or less have greater potential for buried resources. Approximately 90 percent of the project site contains relatively level slopes of 0 to 5 percent, excluding the western most portion of the project site which contains slopes from 5 to 15 percent.

Section *3.1.2 - Historic Aerials* indicates that a majority of the project site has been utilized for agricultural production since at least 1940, and therefore subject to over 80 years of plowing and associated ground disturbances. These agricultural activities may have displaced subsurface resources vertically and horizontally anywhere from one to two feet. The integrity of any surficial resource that may be present within the plow zone may have been affected by the existing conditions, however resources below these depths are likely to retain integrity.

Based on the factors outlined above, the subsurface archaeological sensitivity assessment ranges from low to high, but generally has a moderate to high potential to contain subsurface archaeological

resources (Figure 1). Subsurface archaeological sensitivity is highest within 394 feet of Canoas Creek and the unnamed intermittent water sources in the northeast and southwest edges of the project site and within 100 feet of the historical structure that was visible on the 1912 USGS topographic map. The central portion of the project site with Pleistocene- and Holocene-age alluvial landforms has a moderate subsurface archaeological sensitivity compared to the areas of low sensitivity including where slopes are greater than 10 percent and in areas of Pliocene-age landforms, such as the western portion of the project site.

3. *The summary is not conclusive of the results of the survey. The summary notes that "isolates identified on August 1, 2023, October 25, 26, and 27, 2023 and December 19, 21, and 22, 2023, were likely once part of a larger concentration that has been disturbed by past agricultural activities and it is currently impossible to determine whether there may a larger intact deposit without conducting additional archaeological studies (i.e., subsurface testing)." To what isolates does this refer? To the isolated prehistoric artifacts (which are referred to as sites) or to the isolated historic-era artifacts identified that include glass and ceramic fragments?*

The prehistoric resources appear to be discrete and should be classified as isolates (see Table 1 of this memorandum). The historic-period isolates may correlate with former structures that are depicted on historic-period USGS topographic maps from 1912.

It is unlikely the artifacts observed onsite are in their original context. Agricultural practices often displace artifacts during activities such as grading, plowing, ripping of soils, etc.; however, it is unlikely that the artifacts observed onsite have been moved greater than several feet (either vertically or horizontally) from their original location (Odell and Cowan 1987, Seawright 2015). Therefore, it is unlikely that the prehistoric artifacts originated from CHP-2 as the isolates are over one to three kilometers away from the documented boundaries of CHP-2.

4. *Is the author recommending subsurface testing for the historic-era artifacts? This is not clear. However, based on the identified resources this does not appear warranted for the historic-era artifacts?*

Section *3.2.2 – Department of Parks and Recreation Forms* subheading *Isolated Artifacts* indicates historic period and modern glass, and brick fragments were identified throughout the project site. The finds were isolated (i.e. not part of a larger feature such as a trash scatter) and fragmentary. It is unknown if the artifacts retain any diagnostic features to ascertain their function. There was no indication in the report that there could be a subsurface component, or deposits associated with the historic period isolates, such as a large and dense surficial scatter of historic period refuse, which can be indicative of multiple or prolonged depositional use. Isolated historic period artifacts generally do not have subsurface components. Topographic maps from 1912 and subsequent versions of the maps through 1939 depict two structures on the project site to the west of the intersection of Sutter Avenue and CA-33. It is possible that features (footings, privy, etc.) associated with the structure may exist. Currently subsurface testing in this area is not recommended as aerial imagery from 1940 shows no sign or evidence of the structure. Isolated historical refuse is common in areas such as agricultural fields and along roadsides and by themselves are not eligible as an historical resource or unique archaeological resource under Criteria 1 through 4 as defined by CEQA. Therefore, there is not sufficient evidence to warrant subsurface testing in areas where historic period artifacts were identified.

5. *Does the author recommend any actions regarding the prehistoric resources, including the one archaeological site identified in the project site (CHP-2)? This is not clear. Please provide additional recommendations for prehistoric resources.*

The study identified eight prehistoric archaeological resources including one prehistoric site and seven prehistoric isolates. Rincon assumes the project can be designed to avoid archaeological site CHP-2. Rincon recommends that prior to project related ground disturbing activities Environmentally Sensitive Area (ESA) fencing be placed around the site to ensure the resource is not inadvertently impacted by the project. The seven isolates were observed on the ground surface in areas highly disturbed by agricultural activity. There is no evidence that any of these isolates are associated with events that have made a significant contribution to the broad patterns of the Central Valley region or California's history (does not meet Criterion 1) or that it is associated with the lives of persons important in our past (does not meet Criterion 2). The resources do not embody any distinctive characteristics (does not meet Criterion 3). Isolated chert cores, projectile points, and debitage are common in the Central Valley and generally do not add to our knowledge or understanding of the region's prehistory. All of the resources do not appear to be in situ (in their original place) due to substantial past agricultural disturbances. The research potential of the resources has been exhausted by their initial recordation and few meaningful conclusions can be drawn from further study (does not meet Criterion 4). Thus, Rincon recommends CHP-1, CHP-3, CHP-4, CHP-5, CHP-6, CHP-7, and CHP-8 ineligible for listing in the CRHR as a historical resource or unique archaeological resource as defined by CEQA and require no further management.

Due to the development history of the western portion of the project site and the presence of historic-period artifacts noted during the pedestrian survey, monitoring should be completed within 100 feet of the development footprint of the historical structures that are no longer extant.

Rincon recommends the following mitigation be included for the project:

Archaeological Monitoring and Discovery Plan

Prior to the start of permitted ground disturbing activities, an Archaeological Monitoring and Discovery Plan should be prepared by a qualified archaeologist who meets or exceeds the Secretary of Interior Standards for Archaeology. The monitoring plan should include a description of the archaeological sensitivity on the project, archaeological monitoring methodology including areas where additional monitoring protocols are warranted due to elevated sensitivity including near the boundaries of CHP-2 and within 100-feet of the location of historical structures that are no longer extant, locations of resources that require the use of ESA fencing, the authority of the monitor to halt construction should a discovery be made, contact information should a discovery be made, definition of site types typically present within the area, define the types of resources that would require that work be halted or redirected, provide a research design should a discovery be made, provide the protocols for unanticipated discoveries (e.g., who to call and next steps for documentation), review and approval protocols (e.g., define review periods for agencies and stakeholders), and dispute resolution.

Worker Environmental Awareness Program (WEAP)

Prior to the start of ground disturbance, the construction crew should participate in on-site training on the proper procedures to follow if cultural resources are uncovered during the project excavations, site preparation, or other related activities. This Worker Environmental Awareness Program should include a comprehensive discussion of applicable laws and penalties under the law, samples or visuals of artifacts that might be found in the vicinity of the project site, a discussion of what such artifacts may look like when partially buried or wholly buried and then freshly exposed, a discussion of what

prehistoric and historic-period archaeological deposits look like at the surface and when exposed during construction, and instruction that employees are to halt work in the vicinity of a discovery (within 100 feet). This information should be provided in an informational brochure that outlines reporting procedures in the event of a discovery and should be provided to all individuals working on site.

Environmentally Sensitive Area

Prior to project related ground disturbing activities Environmentally Sensitive Area (ESA) fencing should be placed around the boundaries of CHP-2 to ensure the resource is not inadvertently impacted by the project. The ESA should be checked by the onsite archaeologist throughout the duration of the project to ensure it is in good condition. The ESA should be removed once project related construction is completed.

Archaeological Monitoring

Archaeological monitor(s) and Native American monitor(s) should be on-site during permitted ground-disturbing activities. Activities that would require an archaeological monitor include mass grading and excavation with mechanical equipment. In areas where agricultural practices have occurred, monitoring should be initiated once ground disturbing activities such as rough grading encounter previously undisturbed soils. Based on the agricultural disturbances, undisturbed soils are expected to be encountered roughly 12 inches below the ground surface. Activities requiring the use of hand tools are not recommended for monitoring unless they occur within 50 feet of an ESA (should one be established). During monitoring, the monitors will examine the work areas for the presence of prehistoric artifacts (e.g., chipped stone tools and production debris, stone milling tools, ceramics), historic-period debris (e.g., metal, glass, ceramics), and/or soil discoloration that might indicate the presence of a cultural midden. Each monitor should maintain a daily log documenting ground-disturbing activity, work locations, description, and provenience of any archaeological discoveries (if any), and any necessary action items for monitoring.

Archaeological monitoring may be reduced or terminated at the discretion of the archaeologist in consultation with the County, as warranted by conditions such as encountering bedrock, the presence of fill soil, or negative findings during initial ground disturbance. If monitoring is reduced to spot-checking, spot-checking should occur when ground disturbance moves to a new location or when ground disturbance will extend to depths not previously excavated (unless those depths are within bedrock).

Unanticipated Discovery of Cultural Resources

In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be prehistoric, then a Native American representative shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for CRHR eligibility shall be completed. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the California Code of Regulations (CCR) Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any

significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. Fresno County shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the CHRIS, per CCR Guidelines Section 15126.4(b)(3)(C).

6. *Appendix C would benefit with a table and an example letter instead of the multitude of copies.*

It is acceptable practice to include all evidence of communication with the Native American Heritage Commission and the associated outreach with tribes that are traditionally and culturally affiliated with the geographic area. Therefore, recommended edits are respectfully declined.

Should you have any questions concerning this memorandum, please do not hesitate to contact Breana Campbell-King at 760-517-9128 or bcampbell@rinconconsultants.com.

Sincerely,
Rincon Consultants, Inc.

Lucas Nichols, BA
Archaeologist

Breana Campbell-King, MA, RPA
Senior Cultural Resources Project Manager

Nichole Jordan, MA, RPA
Principal – Cultural Resources

Attachments

Figure 1 Geoarchaeological and Subsurface Archaeological Sensitivity Map

References

California Department of Conservation

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FSC (FirstCarbon Solutions)

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USGS

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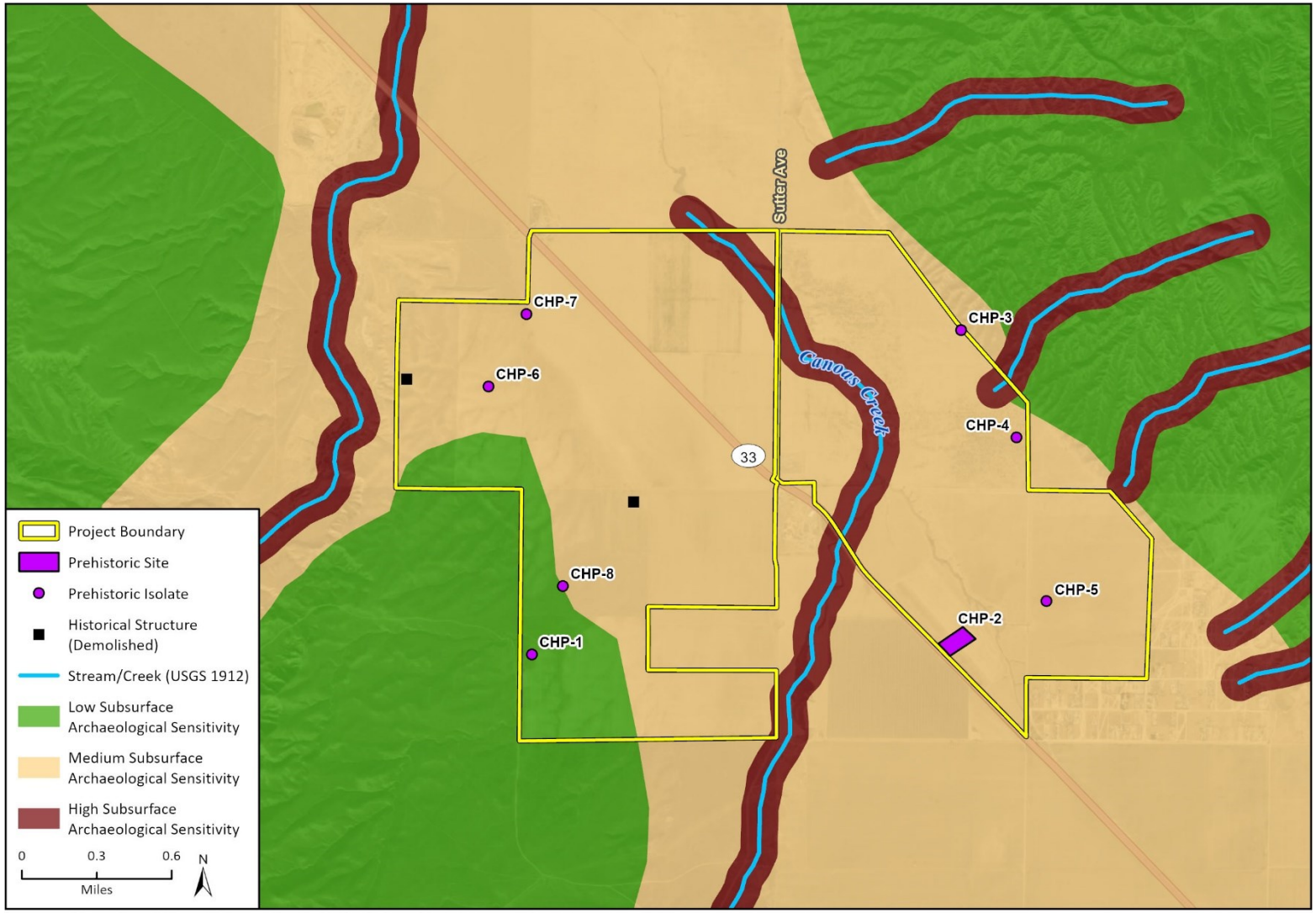
Attachments

Figure 1 Geoarchaeological and Subsurface Archaeological Sensitivity Map



Imagery provided by Microsoft Bing and its licensors © 2024. Additional data provided by the United States Geological Survey (1912) and California Department of Conservation (2024).

23-15487 CR
Fig X Archaeological Sensitivity Map

Appendix H

Paleontological Resources

Confidential (on file at the County of Fresno Department of Public Works and Planning)

Kenneth L. Finger, Ph.D.
Consulting Paleontologist

18208 Judy St., Castro Valley, CA 94546-2306 510.305.1080 klfpaleo@comcast.net

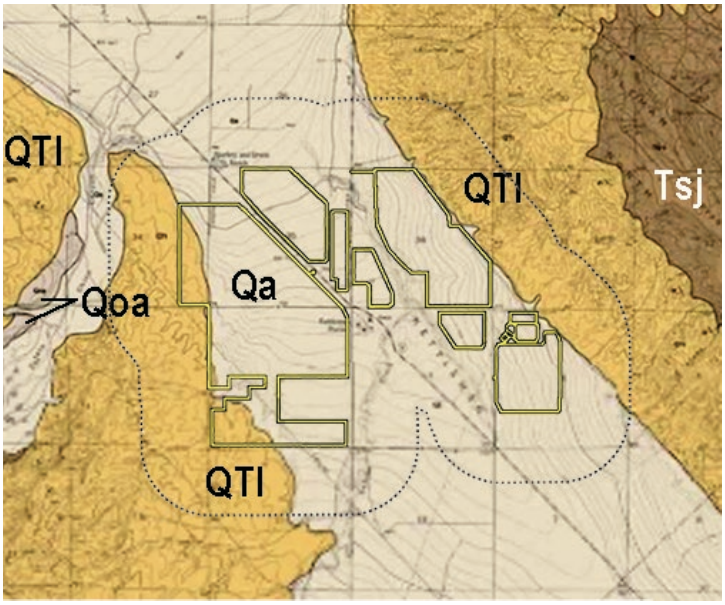
June 15, 2023

Dana DePietro
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Re: Paleontological Records Search for the Fresno Cornucopia Solar Project (5852.0001), Fresno County

Dear Dr. DePietro:

As per the request of Madelyn Dolan, I have performed a paleontological records search on the University of California Museum of Paleontology (UCMP) database for the Fresno Cornucopia Solar Project. The Applicant proposes to construct a new utility-scale solar project located about four miles west of Interstate 5 (I-5), on the Kettleman Plain between Coalinga and Avenal. The project site is on approximately 2,937-acres and is bifurcated by State Route (SR) 33 (South Lost Hills Road). Its PRS location is E¼, Sec. 34 and most of Sec. 35 and 36, T21S, R16E; NE¼, Sec. 1 and most of Sec 2, T21S, R17E; and E½, Sec. 6, T22S, R17E, Avenal quadrangle (USGS 7.5'-series topographic map).



Geologic Units

According to the part of the geologic map of Matthews and Burnett (1965) shown here, the entire project site (yellow outlines at center) and surrounding half-mile search area (finely dotted outline) are on Holocene alluvium (Qa) and the Pleistocene to Pliocene Tulare Formation (QTl). Older (Holocene to late Pleistocene?) alluvium (Qoa) and the late Pliocene San Joaquin Formation (Tsj) are outside of the search perimeter.

UCMP Records Search

The paleontological records search focused on the nonmarine Tulare Formation, which is in Alameda, Fresno, Kern, Kings, and Fresno counties. Woodring et al. (1940, p. 104) and Page (1983) note that the lower part of the Tulare Formation contains the largest fossil assemblages of

freshwater mollusks (chiefly bivalves and gastropods) known on the Pacific coast. The UCMP database lists 16 vertebrate and two plant localities in the Tulare Formation. The vertebrate localities yielded 199 specimens, predominately *Orthodon* (Sacramento blackfish) but also including *Acipenser* (sturgeon), *Arcoplites* (Sacramento perch), Batoidea (rays), *Actinemys marmorata* (western pond turtle), *Geochelone*? (tortoise), cf. *Branta* (scoter), *Borophagus diversidens* (bone-crushing dog), *Ischyrosmilus ischyrus* (felid), Delphinidae (oceanic dolphins), *Parapontoporia* (dolphin), and *Equus occidentalis* (western horse). Some of the specimens have been documented by Merriam (1903), Wang et al. (1999), Brown et al. (2005), Boessenecker and Poust (2015), and Tseng and Geisler (2016). The one locality in Fresno County is on the other side of the Kettleman Hills, about four miles east of the project site; it yielded two specimens of *Orthodon.*

The database also lists two plant localities in the Tulare Formation: the one in Stanislaus County yielded 26 specimens from the Pleistocene Corcoran Clay, while that in Kern County was collected for unidentified plant microfossils.

Paleontological Assessment and Mitigation Recommendations

A preconstruction paleontological walkover of the project site is not recommended because the exact spots of planned excavations are not yet defined, and the valley floor is relatively flat and consists mostly of Holocene deposits. Paleontological monitoring of earth-disturbing construction activities is also not recommended because Fresno County is represented by just a single locality that yielded only two fish opercula. Despite this paucity of vertebrate fossils in the County, however, the expansive Tulare Formation has a high sensitivity and moderate potential for significant paleontological resources in California. I therefore recommend having a professional paleontologist provide the field crew with a pre-construction orientation that will assist them in recognizing vertebrate fossil remains and in following the appropriate procedure if that occurs.

Should any significant paleontological resources (e.g., bones, teeth, well-preserved plant elements) be unearthed by the construction crew, their activities should be diverted at least 15 feet from the find until a professional paleontologist has assessed it and, if deemed significant, salvaged it in a timely manner. Collected fossils should be deposited in an appropriate repository, such as the UCMP, where they will be properly curated and made available for future research.

Sincerely,

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July 8, 2024
Project No: 23-15487

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Via email: john.crosby@baywa-re.com

Subject: Supplemental Paleontological Resources Memorandum for the Cornucopia Hybrid Project, Fresno County, California

Dear Mr. Crosby:

BayWa r.e. Solar Projects, LLC (BayWa) retained Rincon Consultants, Inc. (Rincon) to prepare a supplemental paleontological resources memorandum for the Cornucopia Hybrid Project (project) in an unincorporated area of Fresno County. The project includes a new utility-scale, 300-megawatt (MW) solar facility consisting of approximately 686,880 solar modules rated at 550 watts, a 300 MW battery storage system and two prefabricated structures, on an approximately 2,446-acre project site.

On April 11, 2024, a Paleontological Records Search was submitted on behalf of BayWa r.e. Solar Projects for review by the Fresno County in the context of the BayWa Cornucopia Hybrid Solar Project. Kenneth Finger, Ph.D., prepared the records search, which is dated June 15, 2023. Fresno County's third-party reviewer, Environmental Science Associates (ESA), provided one comments on the report that require clarification or additional data for the report to support the California Environmental Quality Act (CEQA) document prepared for the project.

Rincon prepared this memorandum to respond to ESA's comment and present sufficient data to support a CEQA impacts analysis for paleontological resources on the project.

ESA Comment and Rincon Response

The following section includes Rincon's response to address ESA's comment.

Comment 1:

The review agrees with the geological context and potential paleontological significance of the Tulare Formation and Quaternary Alluvium as noted in the paleontological records search. However, the mitigation recommendations by Dr. Finger fail to mitigate the effects of excavation into the Tulare Formation. A pre-construction training is not considered appropriate for excavation into a unit with established 'high sensitivity' (SVP 2010). Current industry standards would recommend monitoring where activity directly impacts the Tulare Formation or where the depth of excavation is anticipated to impact the Tulare Formation or older alluvium. Based on the geological mapping directly west of the project, it is likely additional older alluvium would be encountered adjacent to the exposures of the Tulare Formation below the young alluvium. Mitigation measures should also clearly acknowledge that the principal paleontologist would have the ability to reduce or cease monitoring based on actual conditions.

Response

The majority of the site is mapped as low sensitivity Holocene alluvium with the high sensitivity Tulare Formation limited to the western-most portion of the project site, as documented in Dr. Kennith's report. Topsoil is present within agricultural areas of the Central valley, and in the San Joaquin Valley topsoil depths typically range from 20 inches to 40 inches. Therefore, within portions of the project site underlain by mapped Tulare Formation, ground disturbance that extends beyond the topsoil layers may encounter sensitive paleontological resources. Ground disturbing activity that may exceed existing topsoil depths in areas mapped as Tulare Formation would be limited to trenching. Site preperation, road grading and clearing would not be expected to exceed the depth of topsoil. Destruction of unique or scientifically important fossils from excavations exceeding topsoil depth would be considered a significant impact under CEQA. To reduce potential impacts to less than significant, the following mitigation measure is recommended:

Paleontological Monitoring and Salvage.

Monitoring: Paleontological monitoring should be conducted within portions of the project site mapped as Tulare Formation. Monitoring would be limited to ground-disturbing construction activities that would exceed the depth of topsoil (20" to 40") and potentially impact previously undisturbed sediments of the Tulare Formation. Paleontological monitoring should be conducted by a paleontological monitor with experience in the collection and salvage of paleontological resources, overseen by a Qualified Paleontologist who meets the minimum standards of the SVP (2010).

The Qualified Professional Paleontologist may recommend that monitoring be reduced in frequency or ceased entirely based on geologic observations. Such decisions shall be subject to review and approval by the lead agency. In the event of a fossil discovery by the paleontological monitor or construction personnel, all construction activity within 50 feet of the find shall cease, and the Qualified Professional Paleontologist shall evaluate the find. If the fossil(s) is (are) not scientifically significant, then construction activity may resume. If it is determined that the fossil(s) is (are) scientifically significant, the following shall be completed:

Fossil Salvage: The paleontological monitor shall salvage (excavate and recover) the fossil to protect it from damage/destruction. Typically, fossils can be safely salvaged quickly by a single paleontological monitor with minimal disruption to construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. After the fossil(s) is (are) salvaged, construction activity may resume.

Fossil Preparation and Curation: Fossils shall be prepared to a curation-ready condition and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Professional Paleontologist.

Final Paleontological Mitigation Report: Upon completion of ground-disturbing activities (or laboratory preparation and curation of fossils, if necessary), the Qualified Professional Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts. The report shall include a summary of the field and laboratory methods employed; an overview of project geology; and, if fossils were discovered, an analysis of the fossils, including physical description, taxonomic identification, and scientific significance. The report shall be submitted to the lead agency and, if fossil curation occurred, the designated scientific institution.

Thank you for the opportunity to support your environmental analysis needs for this important project. Please contact me if you have any questions.

Sincerely,
Rincon Consultants, Inc.

David Daitch, Ph.D.
Vice President/Senior Ecologis

Appendix I

Phase I Environmental Site Assessment

PHASE I ENVIRONMENTAL SITE ASSESSMENT

CORNUCOPIA SOLAR PROJECT

LOST HILLS ROAD

FRESNO COUNTY, CALIFORNIA

PREPARED FOR:

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September 29th, 2023

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1.0 SUMMARY

Cameron-Cole, LLC (Cameron-Cole) has completed a Phase I Environmental Site Assessment (ESA) for an approximately 2,385-acre property located near the intersection of State Route 33 (Lost Hills Road) and Sutter Avenue, and approximately 7.5 miles southeast of Coalinga, Fresno County, California, hereinafter referred to as the "property", "subject property", "site", or "SP". The assessment was performed in accordance with the Master Environmental Services Agreement between Cameron-Cole, and First Carbon Solutions (FCS). The scope of services conforms to the scope and limitations of the American Society for Testing and Materials International (ASTM International) Standard Practice for Environmental Site Assessments, Designation: E1527-21. The purpose of this Phase I ESA is to identify, to the extent feasible pursuant to the ASTM International Standard E1527-21, recognized environmental conditions (RECs) in connection with the subject property.

According to records maintained by the Fresno County Assessor's office, The subject property is associated with eight assessor's parcel number (APNs), including parcels with APNs 090-030-06S, -04S, -02S, -03, 090-040-01; and 085-110-23S, -12, and -13S.

The goal of this Phase I ESA is to identify the presence or likely presence of hazardous substances or petroleum products on the subject property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water on the property. The findings of this report are summarized below and may include known or suspected RECs, Controlled Recognized Environmental Conditions (CRECs), Historical Recognized Environmental Conditions (HRECs), Vapor Encroachment Conditions (VECs), or Business Environmental Risks (BERs) identified during the performance of this Phase I ESA.

It is the opinion of Cameron-Cole that two subsurface petroleum product pipelines which cross beneath the subject property constitute Business Environmental Risks. There were no RECs, CRECs, HRECs, or VECs identified at the subject property at the time of this report.

2.0 INTRODUCTION

2.1 Purpose

Cameron-Cole performed a Phase I ESA for a roughly 2,385-acre property located near the intersection of State Route 33 (Lost Hills Road) and Sutter Avenue, in Fresno County, California in accordance with the Master Environmental Services Agreement between Cameron-Cole and FCS (the Client) on behalf of the Bay Wa r.e. Solar Projects LLC (the User). The assessment was conducted in general conformance with the ASTM International Standard E1527-21 Standard Practice for Environmental Site Assessments. This ESA was designed to identify, to the extent feasible, the presence or likely presence of RECs in connection with the property.

This ESA allows the "User" to benefit from one of the defenses referenced in the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability: the innocent landowner defense, the contiguous property owner defense, or bona fide prospective purchaser defense. These defenses are collectively referred to as the "landowner liability protections," or "LLPs". ASTM International Standard E1527-21 constitutes "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35)(B). Cameron-Cole considers FCS to be the Client and BayWa r.e. Solar Projects LLC to be the "User" of this report.

The goal of this Phase I ESA is to identify RECs in connection with the subject property consistent with ASTM International Standard E1527-21. A REC is defined as:

"1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment ; 2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or 3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment."

2.2 Detailed Scope of Services

This Phase I ESA was conducted in accordance with the Master Environmental Services Agreement between Cameron-Cole and FCS. The scope of services consists of completing a Phase I ESA in general accordance with ASTM International Standard E1527-21 and the Scope of Services specified in the Master Agreement.

2.3 Significant Assumptions

Historical resources, personal interviews, and federal and state agency files regarding site operations and past historical use have been considered when presenting Cameron-Cole's findings and opinions. Cameron-Cole considers all information provided by our environmental database subcontractor regarding regulatory status of facilities to be current, accurate, and complete. Although Cameron-Cole made no independent investigation as to the accuracy and completeness of other information derived from secondary sources, Cameron-Cole assumes such information is reliable and representative of site conditions.

2.4 Limitations and Exceptions of Assessment

2.4.1 Site-Specific Limitations

Subsurface investigations were not conducted as part of this assessment.

2.4.2 Data Gaps

A data gap is a lack of, or inability to, obtain information required by ASTM International Standard E1527-21 despite good faith efforts to gather such information. Data gaps may result from incompleteness in any of the activities required by ASTM International Standard E1527-21. According to the ASTM International Standard Practice E1527-21, data gaps are only significant if "other information and/or professional experience raise reasonable concerns involving the data gap". The subject property has historically been used for agricultural purposes and may have included pesticide application; however, our research was not able to determine conclusively quantities or type of pesticides, or if at all used. The lack of information surrounding pesticide use is a "data gap"; however, considering the current zoning of the subject property and the anticipated lease of the property for use as a solar energy project, this data gap is not considered "significant". The EP considers the possible historical application of pesticides on the subject property to constitute a *de minimis* condition.

Reasonable efforts were made to interview all key site managers or owners of the subject property via electronic correspondence of a pre-site visit questionnaire, at the time of this ESA, completed questionnaires have not been received from Mr. Ryan Gregg and Mr. James Anderson. While the lack of completed interviews from these property owners is considered a "data gap", it is not considered "significant" due to the review of available historic materials such as aerial photographs, as well as in person site reconnaissance having not identified any information that cause "reasonable concerns involving the effect of the data gap on the ability of the environmental professional to render an opinion regarding whether conditions exist that that are indicative of recognized environmental conditions or controlled recognized environmental conditions."

At the time of reconnaissance, portions of the site were inaccessible due to locked gates. These areas include parcels 090-030-04S, 090-030-03, and 085-10-13S. Cameron-Cole does not consider the lack of physical access to these portions of the site to constitute a significant data gap as the open nature of the site allowed all areas to be visible from the perimeter or other accessible areas.

It is the opinion of the EP that none of these data gaps affect our ability to render an opinion on whether conditions exist that are indicative of RECs, we therefore do not consider there to be any "significant data gaps" in this Phase I ESA.

2.4.3 General Limitations and Exceptions

The Phase I ESA is produced in accordance with customary principles and practices in the applicable fields of environmental science and engineering. Cameron-Cole is not responsible for conclusions, opinions, or recommendations made by others based upon the information presented herein.

Although industry standard practices are employed, Phase I ESAs are inherently limited, given that findings and conclusions are developed from limited site evaluation and research. In performing a Phase I ESA, Cameron-Cole can only rely upon those records regarding the subject property and surrounding properties which are available to the public, and which can reasonably be obtained by Cameron-Cole. Cameron-Cole's opinions, conclusions and recommendations are therefore limited to those which can be derived from such

available and reasonably obtainable records. It is often necessary for Cameron-Cole to rely on information prepared or obtained by others to complete the Phase I ESA. Cameron-Cole makes no warranty or representation as to the accuracy or completeness of information obtained from third parties. Additionally, changes may result with the passage of time with respect to characteristics of the subject property and those of surrounding properties. Cameron-Cole and its representatives do not warrant for or against future changes in operations or conditions, nor do they warrant for or against conditions present of a type or at a location not specifically addressed in the Phase I ESA.

Subject to the limitations stated herein, the opinions presented in Phase I ESA are valid for a period of 180 days from the date of issuance.

Air, soil, and groundwater testing are not part of the Phase I ESA Report. This Phase I ESA is not intended to establish whether air, soil, or groundwater contamination, or waste disposal is present or not present on the subject property or on surrounding properties. Knowledge of actual environmental conditions on the subject property or on any surrounding properties can only be obtained from air, soil, and groundwater testing, the installation of groundwater monitoring wells, and possible additional testing, all of which are outside the scope of the Phase I ESA.

Reasonable efforts were made within the scope of this Phase I ESA to identify the presence of underground storage tanks (USTs), aboveground storage tanks (ASTs), and ancillary equipment on or near the subject property. Limitations to the Phase I ESA exist regarding USTs and ASTs, in as much as information was obtained by Cameron-Cole solely through its review of unobstructed and readily accessible areas, database information, and interviews. Such methods (which are considered industry standard) do not preclude the actual presence of subsurface equipment (including USTs) or regulated materials that are hidden from view due to historical activity such as site paving, re-grading, construction, or debris pile storage. Similarly, it is possible that additional UST facilities not listed in regulatory database files may exist at the subject property or on properties adjacent to the subject property due to owner/operator registration negligence, filing errors with the state regulatory agency or other reasons over which Cameron-Cole has no control or ability to determine.

Conclusions in the Phase I ESA regarding potential environmental impact of properties and facilities surrounding the subject property are based upon reasonably available information obtained from environmental databases and inferred groundwater flow direction.

No environmental assessment can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of a Phase I ESA is solely intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with the subject property, and this practice recognizes reasonable limits of time and cost. The Phase I ESA has been prepared for the exclusive use and benefit of FCS subject to the terms and conditions specified in the Master Environmental Services Agreement between Cameron-Cole, LLC. and FCS. The Phase I ESA is for the sole and exclusive use and benefit of FCS. Cameron-Cole makes no warranty as to the Phase I ESA except as to FCS's exclusive use of the Phase I ESA. The Client bears the sole responsibility for ensuring that the Phase I ESA is distributed or disseminated to only those third parties to whom FCS is strictly obligated by contract, law, regulation, or ordinance to provide it. Cameron-Cole disclaims all liability to any person or entity other than FCS who uses or relies on the Phase I ESA in any way whatsoever without the express written consent of both FCS and Cameron-Cole.

Third-party reliance letters may be issued upon request and upon payment of the then current fee for such letters, and only if Cameron-Cole, FCS, and the User provide express written consent for any such reliance letters.

3.0 SUBJECT PROPERTY DESCRIPTION

3.1 Location and Legal Description

The subject property is located near the intersection of State Route 33 (Lost Hills Road) and Sutter Avenue, approximately 7.5 miles southwest of Coalinga, Fresno County, California. A local vicinity map illustrating the subject property approximate boundary is provided as Figure 1 and a regional vicinity map showing the subject properties regional location as Figure 2. According to records maintained by the Fresno County Assessor's office, the subject property is associated with eight Assessor's Parcel Numbers (APNs). The SP contains all of parcels with APNs 090-030-04S, 090-030-02S, 090-030-03, and 085-110-13, and select parts of four other parcels. The subject property includes areas of parcel 090-030-06S to the northeast of Lost Hills Road. Nearly all of parcel 090-040-01 excluding the northeast corner, as well as approximately the eastern half of parcel 085-110-23S. Also included in the SP is parcel 085-110-12 excluding the hills in the northeastern section of the parcel.

3.2 Site and Vicinity Characteristics

The subject property consists of eight parcels with surface area totaling approximately 2,385 acres. The SP is large and consists of undeveloped land with portions of it historically used for agricultural purposes. The surrounding area is generally rural with much of the surrounding land either being undeveloped rangeland or being intermittently used for agricultural purposes throughout its history. A small number of residential structures are located to the southeast of the SP along Lost Hills Road. Southeast of the intersection of Lost Hills Road and Sutter Avenue, bordering the SP to the west, north, and east there is a commercial property which hosts a warehouse.

3.3 Current Uses of the Property

The subject property is currently undeveloped land at the time of Cameron-Cole's site reconnaissance, based upon the nature of the land and review of various documents it is evident that select areas of the subject property has been intermittently used for agricultural and animal grazing purposes throughout its history.

3.4 Descriptions of Structures, Roads, and Other Improvements to the Site

The subject property can be accessed via State Route 33 (Lost Hills Road) and Sutter Avenue, both of which traverse through sections of the SP (see Figure 1). Multiple unpaved access roads give access to various parts of the SP. Improvements include fencing and locked gates to prevent unauthorized access, limited small structures, and limited infrastructure associated with the agricultural use of the land such as groundwater supply wells and irrigation infrastructure.

4.0 USER PROVIDED INFORMATION

For the User to qualify for one of the LLPs offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001, Section 6 of ASTM International Standard E1527-21 requires the User to provide the environmental professional (EP) the following information:

- The existence of environmental cleanup liens;
- Activity and Use Limitations (AULs) recorded against the subject property;
- Specialized knowledge or experience of the User;
- Relationship of the purchase price to the fair market value of the subject property if it were not contaminated;
- Commonly known or reasonably ascertainable information about the subject property; and
- The degree of obviousness of the presence of contamination at the subject property.

4.1 Title Records

A historical chain-of-title report and an environmental lien report were not provided by the User or obtained and reviewed by Cameron-Cole as part of the approved scope of services for this project.

4.2 Environmental Liens or Activity and Use Limitations

Mr. Martin Nascimento, Senior Development Manager for the BayWa r.e Solar Projects. LLC, indicated via a completed User Questionnaire (Appendix B) that he was not aware of any environmental liens or AULs, such as engineering controls, land use restrictions, and institutional controls that have been filed or recorded on the subject property.

4.3 Specialized Knowledge

Mr. Nascimento indicated he does not possess specialized knowledge or experience that is material to RECs in connection with the subject property.

4.4 Commonly Known or Reasonably Ascertainable Information

Mr. Nascimento was asked to provide any commonly known or reasonably ascertainable information within the local community about the subject property that is material to RECs in connection with the subject property. He indicated that he was not aware of any such information regarding the subject property.

4.5 Valuation Reduction for Environmental Issues

Mr. Nascimento indicated that he has no reason to believe that the valuation of the property has been reduced in comparison with fair market value due to contamination known to or believed to be present on the property.

4.6 Owner, Property Manager, and Occupant Information

According to Mr. Nascimento, there are no current residential occupants of the subject property. Owners of the SP include Mr. James Kreyenhagen, Mr. Ryan Gregg, and Mr. James Anderson.

4.7 Proceedings Involving the Property

Mr. Nascimento indicated that he is unaware of any proceedings regarding the subject property.

4.8 Reason for Performing Phase I ESA

Mr. Nascimento did not indicate a reason for completing the Phase 1 Environmental Site Assessment on a User Questionnaire completed on April 26th, 2023.

5.0 RECORDS REVIEW

5.1 Standard Environmental Record Sources and Other Ascertainable Records Sources

Envirosite provided Cameron-Cole with a comprehensive government agency information search in accordance with ASTM International Standard E1527-21. The regulatory search information and a legend of the database acronyms are presented as Appendix C, Regulatory Agency Search Report Maps depicting properties listed in the various databases searched by Envirosite are also provided. The table below provides a summary of the identified standard (ASTM required) federal, state, tribal, and local environmental database records reviewed along with each record's approximate minimum search distance (AMSD) from the subject property.

STANDARD ENVIRONMENTAL DATABASE RECORD SUMMARY

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
FEDERAL RCRA NON-CORRACTS TSD FACILITIES LIST								
ARCHIVED RCRA TSDF		0.500	0	0	0	--	--	0
RCRA_TSDF		0.500	0	0	0	--	--	0
FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS								
AST PBS		0.25	0	0	--	--	--	0
EPA UST		0.25	0	0	--	--	--	0
FEMA UST		0.25	0	**0**	--	--	--	0
INDIAN UST R7		0.25	0	**0**	--	--	--	0
AST – CA		0.25	0	0	--	--	--	0
FID UST - CA		0.25	0	0	--	--	--	0
HIST AST - CA		0.25	0	0	--	--	--	0
HIST UST - CA		0.25	0	0	--	--	--	0
UST - CA		0.25	0	0	--	--	--	0
FEDERAL CERCLIS LIST								
CERCLIS NFRAP		0.50	0	0	0	--	--	0
CERCLIS-HIST		0.50	0	0	0	--	--	0
FEDERAL FACILITY		1.00	0	0	0	**0**	--	0
SEMS_8R_ACTIVE SITES		0.50	0	0	0	--	--	0
SEMS_8R_ARCHIVED SITES		0.50	0	0	0	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
FEDERAL RCRA CORRACTS FACILITIES LIST								
CORRACTS		1.00	0	0	0	0	--	0
HIST CORRACTS 2		1.00	0	0	0	0	--	0
FEDERAL DELISTED NPL SITE LIST								
DELISTED NPL		1.00	0	0	0	0	--	0
DELISTED PROPOSED NPL		1.00	0	0	0	0	--	0
SEMS_DELETED NPL		1.00	0	0	0	0	--	0
FEDERAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LIST								
EPA LF MOP		0.50	0	0	0	--	--	0
FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS								
EPA LUST		0.50	0	0	0	--	--	0
HIST INDIAN LUST R4		0.50	0	0	0	--	--	0
HIST INDIAN LUST R8		0.50	0	0	0	--	--	0
LUST REG 1 - CA		0.50	0	0	0	--	--	0
LUST REG 2 – CA		0.50	0	0	0	--	--	0
LUST REG 3 – CA		0.50	0	0	0	--	--	0
LUST REG 4 – CA		0.50	0	0	0	--	--	0
LUST REG 5 – CA		0.50	0	0	0	--	--	0
LUST REG 6 – CA		0.50	0	0	0	--	--	0
LUST REG 7 – CA		0.50	0	0	0	--	--	0
LUST REG 8 – CA		0.50	0	0	0	--	--	0
LUST REG 9 – CA		0.50	0	0	0	--	--	0
SLIC REG 1 – CA		0.50	0	0	0	--	--	0
SLIC REG 2 – CA		0.50	0	0	0	--	--	0
SLIC REG 3 – CA		0.50	0	0	0	--	--	0
SLIC REG 4 – CA		0.50	0	0	0	--	--	0
SLIC REG 5 – CA		0.50	0	0	0	--	--	0
SLIC REG 6 – CA		0.50	0	0	0	--	--	0
SLIC REG 7 – CA		0.50	0	0	0	--	--	0
SLIC REG 8 – CA		0.50	0	0	0	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
SLIC REG 9 – CA		0.50	0	0	0	--	--	0

FEDERAL ERNS LIST

ERNS		SP	0	--	--	--	--	0

FEDERAL INSTITUTIONAL CONTROLS/ENGONEERING CONTROLS REGISTRIES

FED E C		0.50	0	0	0	--	--	0
FED I C		0.50	0	0	0	--	--	0
RCRA IC_EC		0.25	0	0	--	--	--	0

FEDERAL RCRA GENERATORS LIST

HIST RCRA_CESQG		0.25	0	0	--	--	--	0
HIST RCRA_LQG		0.25	0	0	--	--	--	0
HIST RCRA_NONGEN		0.25	0	0	--	--	--	0
HIST RCRA_SQG		0.25	0	0	--	--	--	0
RCRA_LQG		0.25	0	0	--	--	--	0
RCRA_NONGEN		0.25	0	0	--	--	--	0
RCRA_SQG		0.25	0	1	--	--	--	1
RCRA_VSQG		0.25	0	0	--	--	--	0

FEDERAL NPL SITE LIST

NPL EPA R1 GIS		1.00	0	0	0	0	--	0
NPL EPA R3 GIS		1.00	0	0	0	0	--	0
NPL EPA R6 GIS		1.00	0	0	0	0	--	0
NPL EPA R8 GIS		1.00	0	0	0	0	--	0
NPL EPA R9 GIS		1.00	0	0	0	0	--	0
PART NPL		1.00	0	0	0	0	--	0
PROPOSED NPL		1.00	0	0	0	0	--	0
SEMS_FINAL NPL		1.00	0	0	0	0	--	0
SEMS_PROPOSED NPL		1.00	0	0	0	0	--	0

STATE- AND TRIBAL - EQUIVALENT CERCLIS

ENVIROSTOR - CA		1.00	0	0	0	0	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
HIST TOXIC PITS – CA		1.00	0	0	0	0	--	0
OIL & GAS CLEANUP – CA		0.500	0	0	0	--	--	0
SWRCB CLENAUP – CA		0.50	0	0	0	--	--	0
SWRCB NON_CASE		0.50	0	0	0	--	--	0
TOXIC PITS – CA		1.00	0	0	0	0	--	0
STATE AND TRIBAL EQUIVALENT NPL								
HIST RESPONSE – CA		1.00	0	0	0	0	--	0
RESPONSE – CA		1.00	0	0	0	0	--	0
STATE RCRA GENERATORS LIST								
HWG – CA		0.25	0	1	--	--	--	1
STATE AND TRIBAL BROWNFIELD SITES								
TRIBAL BROWNFIELDS		0.50	0	0	0	--	--	0
STATE AND TRIBAL VOLUNTARY CLEANUP SITES								
VCP – CA	0.50	0	0	0	0	--	--	0
LOCAL BROWNFIELDS LIST								
BROWNFIELDS-ACRES		0.50	0	0	0	--	--	0
FED BROWNFIELDS		0.50	0	0	0	--	--	0
LOCAL LISTS OF HAZARDOUS WASTE / CONTAMINATED SITES								
FED CDL		SP	0	--	--	--	--	0
UST HIST CDL		SP	0	--	--	--	--	0
CDL – CA		SP	0	--	--	--	--	0
SCH – CA		0.25	0	0	--	--	--	0
RECORDS OF EMERGENCY RELEASE REPORTS								
HMIRS (DOT)		SP	0	--	--	--	--	0
CHIMIRS – CA		SP	0	--	--	--	--	0
HIST CHMIRS – CA		SP	0	--	--	--	--	0
LOCAL LAND RECORDS								
LIENS 2		SP	0	--	--	--	--	0
DEED – CA		0.50	0	0	0	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
HIST LIENS – CA		SP	0	--	--	--	--	0
LIENS - 2		SP	0	--	--	--	--	0
LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES								
ODI		0.50	0	0	0	--	--	0
TRIBAL ODI		0.50	0	0	0	--	--	0
HAULERS – CA		0.50	0	0	0	--	--	0
SWRCY – CA		0.50	0	0	0	--	--	0

SP = Subject Property

Cameron-Cole also conducted a search of other ascertainable records related to the subject property and surrounding properties, where applicable. The table below provides a summary of the other ascertainable records reviewed along with each record AMSD from the subject property:

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
AFS		SP	0	--	--	--	--	0
ALT FUELING		0.25	0	0	--	--	--	0
ARENAS		SP	0	--	--	--	--	0
ARENAS 2		SP	0	--	--	--	--	0
BRS		SP	0	--	--	--	--	0
CDC HAZDAT		1.00	0	0	0	0	--	0
0CHURCHES		SP	0	--	--	--	--	0
COAL ASH DOE		0.50	0	0	0	--	--	0
COAL ASH EPA		0.50	0	0	0	--	--	0
COAL GAS		1.00	0	0	0	0	--	0
COLLEGES		SP	0	--	--	--	--	0
COLLEGES 2		SP	0	--	--	--	--	0
CONSENT (DECREES)		1.00	0	0	0	0	--	0
CORRECTIVE ACTIONS_2020		0.50	0	0	0	0	--	0
DAYCARE		SP	0	--	--	--	--	0
DOD		1	0	0	0	0	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
DEBRIS EPA LF		0.50	0	0	0	--	--	0
DEBRIS EPA SWRCY		0.50	0	0	0	--	--	0
DOD OPS		SP	0	--	--	--	--	0
ECHO		SP	0	--	--	--	--	0
ENOI		SP	0	--	--	--	--	0
EPA FUELS		SP	0	--	--	--	--	0
EPA OSC		SP	0	--	--	--	--	0
EPA WATCH		SP	0	--	--	--	--	0
FA HWF		SP	0	--	--	--	--	0
FEDLAND		1.00	0	0	0	2	--	2
FRS		SP	0	--	--	--	--	0
FTTS		SP	0	--	--	--	--	0
FTTS INSP		SP	0	--	--	--	--	0
FUDS		1.00	0	0	0	0	--	0
GOV MANSIONS		SP	0	--	--	--	--	0
HIST AFS		SP	0	--	--	--	--	0
HIST AFS 2		SP	0	--	--	--	--	0
HIST DOD		1.00	0	0	0	0	--	0
HIST LEAD_SMELTER		SP	0	--	--	--	--	0
HIST MLTS		SP	0	--	--	--	--	0
HIST PCB TRANS		SP	0	--	--	--	--	0
HIST PCS ENF		1.00	0	0	0	0	--	0
HIST PCS FACILITY		1.00	0	0	0	0	--	0
HIST SSTS		SP	0	--	--	--	--	0
HOSPITALS		SP	0	--	--	--	--	0
ICIS		SP	0	--	--	--	--	0
INACTIVE PCS		1.00	0	0	0	1	--	1
LUCIS		0.50	0	0	0	--	--	0
LUCIS 2		0.50	0	0	0	--	--	0
MANIFEST EPA		0.25	0	0	--	--	--	0
MGP		1.00	0	0	0	0	--	0
MIN OPERATIONS		0.25	0	0	--	--	--	0
MINES		0.25	0	0	--	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
MINES USGS		0.25	0	0	--	--	--	0
MLTS		SP	0	--	--	--	--	0
NPL AOC		1	0	0	0	0	--	0
NPL LIENS		SP	0	--	--	--	--	0
NURSING HOMES		SP	0	--	--	--	--	0
OSHA		SP	0	--	--	--	--	0
PADS		SP	0	--	--	--	--	0
PCB TRANSFORMER		SP	0	--	--	--	--	0
PCS ENF		1.00	0	0	0	1	--	1
PCS FACILITY		1.00	0	0	0	1	--	1
PFAS FED SITES		0.50	0	0	0	--	--	0
PFAS INDUSTRY		0.50	0	0	0	--	--	0
PFAS MANIFEST		0.50	0	0	0	--	--	0
PFAS NPL		0.50	0	0	0	--	--	0
PFAS PROD		0.50	0	0	0	--	--	0
PFAS SPILLS		0.50	0	0	0	--	--	0
PFAS TRIS		0.50	0	0	0	--	--	0
PFAS UCMR3		0.50	0	0	0	--	--	0
PFAS WQP		0.50	0	0	0	--	--	0
PRISONS		SP	0	--	--	--	--	0
PRP		SP	0	--	--	--	--	0
RAATS		SP	0	--	--	--	--	0
RADINFO		SP	0	--	--	--	--	0
RMP		0.5	0	0	0	--	--	0
ROD		1.0	0	0	0	0	--	0
SCHOOLS PRIVATE		SP	0	--	--	--	--	0
SCHOOLS PUBLIC		SP	0	--	--	--	--	0
SCRD DRYCLEANER		0.25	0	0	--	--	--	0
SEMS_SMELTER		SP	0	--	--	--	--	0
SSTS		SP	0	--	--	--	--	0
STORMWATER		SP	0	--	--	--	--	0
TOSCA-PLANT		SP	0	--	--	--	--	0
TRIS		SP	0	--	--	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
UMTRA		0.50	0	0	0	--	--	0
VAPOR		0.50	0	0	0	--	--	0
BOND EXPENDITURE PLAN – CA		1.00	0	0	0	0	--	0
CALEPA SITES - CA		0.25	0	0	--	--	--	0
CIWQS - CA		SP	0	--	--	--	--	0
CIWQS 2 - CA		SP	0	--	--	--	--	0
CORTESE – CA		0.50	0	0	0	--	--	0
CUPA_FRESNO COUNTY		0.25	0	0	--	--	--	0
DAYCARE - CA		SP	0	--	--	--	--	0
DRYCLEANERS - CA		0.25	0	0	--	--	--	0
DRYCLEANERS_ANTELOPE VALLEY – CA		0.25	0	--	--	--	--	0
DRYCLEANERS_BAY AREA = CA		0.25	0	0	--	--	--	0
DRYCLEANERS_FEATHER BASIN UNIFIED – CA		0.25	0	0	--	--	--	0
DRYCLEANERS_GREAT BASIN UNIFIED – CA		0.25	0	0	--	--	--	0
DRYCLEANERS_MOJAVE DESERT – CA		0.25	0	0	--	--	--	0
DRYCLEANERS_MONTEREY BAY – CA		0.25	0	0	--	--	--	0
DRYCLEANERS_NORTH COAST UNIFIED – CA		0.25	0	0	--	--	--	0
DRYCLEANERS_NORTH COAST UNIFIED - CA		0.25	0	0	--	--	--	0
DRYCLEANERS_NORTHERN SIERRA - CA		0.25	0	0	--	--	--	0
DRYCLEANERS_SAN JOAQUIN VALLEY - CA		0.25	0	0	--	--	--	0
DRYCLEANERS_SAN LUIS OBISPO - CA		0.25	0	0	--	--	--	0
DRYCLEANERS_SOUTH COAST - CA		0.25	0	0	--	--	--	0
DRYCLEANERS_YOLO-SOLANO COUNTIES - CA		0.25	0	0	--	--	--	0
EMI – CA		SP	0	--	--	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (Miles)	<1/8 Mile	1/8-1/4 Mile	1/4-1/2 Mile	1/2-1 Mile	>1 Mile	TOTAL MAPPED
FA - CA		SP	0	--	--	--	--	0
FA 2 – CA		SP	0	--	--	--	--	0
FIRE AREAS - CA		1.00	2	1	0	0	--	3
HAZNET - CA		0.25	0	1	--	--	--	1
HIGH FIRE – CA		1.00	1	0	0	1	--	2
HIST CORTESE – CA		0.50	0	0	0	--	--	0
HIST HAZNET - CA		0.25	0	0	--	--	--	0
HIST HWP - CA		1	0	0	0	0	--	0
HIST LDS - CA		0.50	0	0	0	--	--	0
HIST MCS - CA		1	0	0	0	0	--	0
HIST NFA - CA		0.50	0	0	0	--	--	0
HWM-COMMERCIAL FACILITIES - CA		0.25	0	0	--	--	--	0
HWP - CA		1	0	0	0	0	--	0
HWT - CA		0.25	0	0	--	--	--	0
LDS - CA		0.5	0	0	0	--	--	0
MCS - CA		1	0	0	0	0	--	0
MWMP - CA		0.25	0	0	--	--	--	0
MWMP 2 - CA		0.25	0	0	--	--	--	0
NFA - CA		0.50	0	0	0	--	--	0
NFE - CA		0.50	0	0	0	--	--	0
NPDES - CA		0	0	--	--	--	--	0
PERCHLORATE 2 - CA		0.50	0	0	0	--	--	0
PFAS - CA		0.50	0	0	0	--	--	0
PFAS DOD - CA		0.50	0	0	0	--	--	0
PFAS GAMA - CA		0.50	0	0	0	--	--	0
RFR - CA		0	0	--	--	--	--	0
SWAT – CA		SP	0	--	--	--	--	0
WDR - CA		0	0	--	--	--	--	0
WDS - CA		0	0	--	--	--	--	0
WILDLANDS – CA		1.00	0	0	0	0	--	0
WIP – CA		0.25	0	0	--	--	--	0

SP = Subject Property

5.1.1 Database Descriptions

The databases identified during the search with positive hits or are defined below. Searched databases which did not have any results have been omitted from the descriptions section. A complete list of database descriptions is presented in the Government Records Report (Appendix C):

- FEDLAND: Federal lands from the Protected Areas Database (PAD-US).
- FIRE AREAS – CA: The multi-agency statewide database of the fire perimeters.
- HAZNET – CA: List of hazardous waste manifests from when hazardous waste is transported from generators to permitted recycling, treatment, storage, or disposal facilities by registered hazardous waste transporters.
- HIGH FIRE – CA: Fire hazard severity zones mapped as areas of significant fire hazards based on fuels, terrain, weather, and other factors.
- HWG – CA: Hazardous waste generator listings.
- INACTIVE PCS: Inactive Permitted Facilities to discharge wastewater.
- PCS: Permitted facilities to discharge wastewater (Federal equivalent to NPDES).
- RCRA_SQG: Identifies small quantity hazardous waste generators. List generators who produce more than 100 kilograms and less than 1,000 kilograms of hazardous waste per month.

5.2 Standard Environmental Record and Other Ascertainable Records Review

The following discussion provides a review of results from the standard environmental records and other ascertainable records search with respect to the subject property as well as the adjacent or nearby properties. Per the discretion of the EP, some results may be omitted from this review if they are interpreted to be not of environmental significance based on threat of a material release, distance from the subject property, lower topographic elevations, and interpreted groundwater flow direction. The complete Envirosite report is included as Appendix C and contains all points of interest that were identified within the AMSD.

SUBJECT PROPERTY

The subject property was not identified in any of the standard or other ascertainable records databases searched.

Adjacent and Nearby Off-Site Properties within the AMSD

The following provides a summary of relevant identified off-site points of interest with respect to interpreted groundwater flow direction which is inferred to flow northerly based upon site topography (see Sections 5.6.1 and 6.2.1).

North (Down-Gradient)

SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC. | AVENAL AGGREGATE & ASPHALT, 45315 Lost Hills Road, located 3,769-ft northwest from the SP was identified in the **CALEPA SITES - CA, CIWQS – CA, CUPA_FRESNO COUNTY – CA, ECHO, FRS, HAZNET – CA, HWG – CA, ICIS, INACTIVE PCS, NPDES – CA, PCS ENF, PCS FACILITY, RFR – CA,** and **STORMWATER** databases.

- The **HWG** – **CA** and **HAZNET – CA** databases identify this facility as a former waste generator which became inactive on 6/30/2015. Manifest information details the disposition of oil containing waste to an authorized facility in 2008. The nature of the business is identified as a producer of asphalt and other aggregate materials.
- **CALEPA SITES – CA** identifies this property of being of environmental interest for its presence in the US EPA Air Emission Inventory System (EIS).
- **CUPA_FRESNO COUNTY – CA, ECHO, FRS and CIWQS – CA** identify this facility as a waste generator which operated an aggregate business.
- **CWIQS – CA, INACTIVE PCS, PCS ENF, INACTIVE PCS, NPDES,** and **STORMWATER** databases identify this facility has previously holding permits as a wastewater discharger.

South (Up-Gradient)

No locations were identified in the database search to the south-east of the subject property.

East (Cross-Gradient)

CAMARENA BROS YARD, 47940 LOST HILLS ROAD, located 988-ft southeast from the SP was identified in the **ECHO, FRS,** HAZNET **– CA**, **HWG – CA, and RCRA_SQG** databases.

- The **ECHO** and **FRS** databases identify this property as a “general freight trucking, local” facility with no identified violations or corrective actions.
- The **HAZNET – CA** and **HWG – CA** databases identify this property as formerly being a hazardous waste generator. It is shown as being inactive as of 6/30/2021. No information is provided detailing the type or quantity of waste handed or the disposition of such waste.
- The **RCRA_SQG** database identifies this property as a “small quantity” hazardous waste generator, the type of waste identified as being generated include “polychlorinated biphenyls and material containing PCB’s D001 – ignitable waste”.

West (Cross-Gradient)

No locations were identified in the database search to the west of the subject property.

Based upon the above-described historical records, it is the EP’s opinion that due to the distance between the identified properties and the subject property, as well as considering the inferred groundwater flow direction that the identified properties do not pose a significant environmental risk to the subject property.

5.3 Vapor Encroachment Condition Summary

Cameron-Cole conducted a review of available environmental records and conditions observed on the subject property and adjoining parcels to evaluate the potential for a VEC to exist on the subject property. Cameron-Cole did not identify on-property or off-property land/business uses conducive to a VEC impact to the subject property at this time.

5.4 Unmappable Sites

The Envirosite Government Records Report (Appendix C) includes a summary of identified points of intertest that may be in the general area of the subject property; yet do not have adequate location addresses or latitude/longitude coordinates to pinpoint their exact location in relation to the subject property. One unmappable site was identified in the government records report furnished by Envirosite, based on information provided in the government records report, this site is identified as "Granite Rock Co." and is shown as formerly being a hazardous waste cleanup site with a completion date of 7/1/1988. Nothing relating to this site was identified during our site reconnaissance. Based upon this site not being identified in the proximity of the SP, as well as the significant amount of time between the date of closure and the completion of this report it is the EP's opinion that this unmappable site does not pose an environmental risk to the subject property.

5.5 Additional Environmental Record Sources

In addition to the standard government records database search, Cameron-Cole accessed various local and state record sources to inquire about any property on or in the vicinity of the SP which may pose an environmental risk. The result of this search is summarized below.

5.5.1 County Property Assessor/Appraiser

According to records maintained by the Fresno County Assessor's office, the subject property encompasses the entirety of parcels with APNs 090-030-04S, 090-030-02S, 090-030-03, 085-110-13S, it also includes select parts of parcels identified with APNs 090-030-06S, 090-040-01, 085-110-12, 085-110-23S.

5.5.2 Other Record Sources

Cameron-Cole searched the California Department of Toxic Substances Control GeoTracker web application on September 27th, 2023, inquiring if there are any records regarding environmental violations, releases, or hazardous material or petroleum product storage, storage tanks or any other environmental concern at, or within the immediate vicinity of the subject property. No relevant listings were identified.

Cameron-Cole reviewed the National Pipeline Mapping System through the general public map viewer on September 27th, 2023. The viewer identified three pipelines that run below the SP (Figure 3). A crude oil pipeline crosses parcel 085-110-12 and 090-030-06S. Two collocated pipelines transporting crude oil and natural gas respectively run under parcel 085-110-13S parallel with South Lost Hills Road, This system additionally identified that a small release of 3 barrels of crude oil petroleum product was released in 2002 at the off-site property that is located to the interior of the central subject property and identified by Fresno County APN 090-030-05S. Based on the age of the release, type of material released, and no recent release identified, it is the EP's opinion that this incident does not represent a REC to the subject property at this time. It is the opinion of the EP that the presence of these pipelines represents a BER to the subject property. The management of these pipelines remains under the purview of their respective owners, due consideration should be given if any development is to take place which could result in a leak or other environmental issue in relation to them.

5.6 Physical Setting Sources

5.6.1 Topography

Figure 2 shows the approximate property boundaries in relation to the regional vicinity. The map along with

topographic quadrangles for the region were reviewed to establish the physical setting of the subject property and surrounding area. The subject property's elevation ranges from approximately 710-ft to 810-feet above mean sea level elevation and generally slopes in northerly direction.

5.6.2 Soils/Geology

The Envirosite report provides a summary of the United States Department of Agriculture (USDA) Soil Survey of the subject property's general area. Due to the large size of the SP the Envirosite report identified eight soil types present on and around the SP. Soil types that are present on the SP include Guijarral, Milham, Excelsior, Yribarren, Cerini, Panoche, Ciervo, and Polvadero. A complete summary of all soil types identified within the SP and their characteristics, as well as a map showing the approximate extent of each type is available within the government records report provided as Appendix C.

5.6.3 Hydrology

Two seasonal tributaries (Canoas and Garza Creeks) traverse near the eastern half of the subject property flowing from the south-southeast to the northwest (Figure 1). Based on topographic maps, and considering regional flow patterns, the groundwater flow in the vicinity of the SP is inferred to be in a northerly direction. It must be noted that groundwater flow direction can be influenced by factors such as surface topography, underground structures, seasonal fluctuation, soil and bedrock geology, and production wells which were not considered in this interpretation.

5.7 Historical Use Information

Available historical resources were consulted to develop a history of the previous uses of the property to help identify the likelihood of past uses having led to RECs in connection with the property. Copies of the aerial photographs, historical topographic maps, Fire Insurance Maps, and City Directory Report are provided in Appendix D.

5.7.1 Aerial Photographs

The aerial photographs described below were furnished by Envirosite. Copies of the 1940, 1955, 1960, 1965, 1971, 1972, 1974, 1975, 1978, 1981, 1982, 1985, 1989, 1994, 1995, 2002, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, and 2022 aerial photographs are provided in Appendix D.

Date: 1940

Scale: 1" = 1,500'

Description of Subject Property: Large portions of the SP appear to be vacant open space. A paved road (Highway 33) transects from northwest to southeast between sections of the subject property.

Adjoining North: Undeveloped land.

Adjoining East: Undeveloped land.

Adjoining South: What appears to be a combination of undeveloped land and agriculture.

Adjoining West: Undeveloped land.

Adjoining Interior: A small area to the southeast of the intersection of SR 33 and Sutter Avenue (non-subject property) is located near the interior of the subject property and supports what appears to be three above ground tanks. Multiple unpaved roads traverse the SP.

Surrounding Area: Nearly all the surrounding area appears to be undeveloped land, there is one developed area with structures near the current intersection of SR 33 (Lost Hills Road) and Sutter Avenue.

Date: 1955 – 1989

Scale: 1” = 1,500’

Description of Subject Property: A large portion of the subject property appears to be utilized for agriculture; the remainder of the subject property remains undeveloped.

Adjoining North: Undeveloped land as well as land being used for agriculture. Possible rural residential structures are in proximity if not on the subject property itself of the northwest property corner.

Adjoining East: Undeveloped land.

Adjoining South: Undeveloped land as well as land being utilized for agriculture.

Adjoining West: Undeveloped land.

Adjoining Interior: A small area to the southeast of the intersection of SR 33 and Sutter Avenue (non-subject property) is located near the interior of the subject property and supports what appears to be one large above ground tank and support structure.

Surrounding Area: The general area surrounding the SP remains rural, with structures being limited to the area near the intersection of Sutter Avenue and SR 33. Large portions of the surrounding area appear to be used for agriculture.

Date: 1994 - 2022

Scale: 1” = 1,500’

Description of Subject Property: The subject property remains rural with it being a combination of undeveloped and agricultural land use.

Adjoining North: What appears to be a mix of undeveloped land and land being used for agriculture. Possible rural residential structures are in proximity if not on the subject property itself of the northwest property corner.

Adjoining East: East of the south-eastern most corner of the subject property now hosts what appears to be a small development of single-family homes. East of the remainder of the SP persists as undeveloped land.

Adjoining South: What appears to be a mix of undeveloped land and land being used for agriculture.

Adjoining West: West of most of the SP remains undeveloped. Near the north-western most corner of the SP there is what appears to be a small grouping of structures. The nature of these structures use is not ascertainable from aerial imagery.

Adjoining Interior: A small area to the southeast of the intersection of SR 33 and Sutter Avenue (non-subject property) is located near the interior of the subject property and supports what appears to be a single large tank and possible support structure in the 2002 to 2010 and by the 2012 photo to 2022, the tank is no longer present. Beginning in the 2012 photo to the 2022, the natural gas pump station (based on site reconnaissance) is identified within the northwest corner of the rectangular parcel on the south side of Highway 33 opposite where Sutter Avenue terminates into Highway 33.

Surrounding Area: The areas surrounding the SP remain rural, with most of the land being utilized for agriculture. There are now what appears to be developed parcels with structures to the north-west of the SP as well as what appears to be residential dwellings to the south-east of the SP.

5.7.2 Fire Insurance Maps (Sanborn Maps)

The Fire Insurance Maps Report provided by Envirosite did not identify any active coverage for the SP or the surrounding areas.

5.7.3 Recorded Land Title Records

A historical chain-of-title report was not provided by the User of the report and was not obtained by Cameron-Cole as part of the approved scope of services for this project.

5.7.4 Historic USGS Topographic Maps

The historic topographic maps described below were obtained from Envirosite. Copies of the 1930, 1934, 1942, 1950, 1954, 2012, 2015, and 2021 topographic maps are provided in Appendix D.

Date: 1930 - 1950

Scale: 1:31680

Description of Subject Property: What appears to be undeveloped land with one main roadway traversing near the SP in a north-westerly direction.

Adjoining North: Undeveloped land

Adjoining East: Undeveloped land

Adjoining South: Undeveloped land

Adjoining West: Undeveloped land

Adjoining Interior: A small area to the southeast of the intersection of SR 33 and Sutter Avenue (non-subject property) is located near the interior of the subject property and supports what appears to be a small structure and tank. The 1934 and 1950 maps identify this parcel as the Associated Oil Pumping Station.

Surrounding Area: Nearly all the area surrounding the SP is undeveloped, one area near the intersection of SR 33 and Sutter Avenue depicts several structures.

Date: 1954

Scale: 1:24000

Description of Subject Property: All of the SP appears to be undeveloped land. Two roadways traverse the SP, with SR 33 going in a northwesterly to southeasterly direction, and Sutter Avenue going directly north through the SP from its intersection with SR 33. Several other unpaved paths are depicted traversing the SP.

Adjoining North: Undeveloped land.

Adjoining East: Undeveloped land.

Adjoining South: Undeveloped land.

Adjoining West: Undeveloped land.

Adjoining Interior: A small rectangular parcel (non-subject property) is located near the interior of the subject property and supports what appears to be a small structure and tank. The 1954 map labels this parcel as the “Kettleman Station”.

Surrounding Area: Most of the area around the SP appears to be undeveloped land. There exists several roadways around and within the SP including SR 33 and Sutter Avenue. Near the intersection of Sutter Avenue and SR 33 there appears to be a group of structures labeled “Kettleman Station”. Near the North-Western most corner of the SP there appears to be a group of structures labeled “Starkey and Erwin Ranch”.

Date: 2012 – 2021

Scale: 1:24000

Description of Subject Property: The subject property remains undeveloped with no noted structures. There are still two roadways crossing the SP.

Adjoining North: What appears to be undeveloped land. The previously cited Starkey and Erwin Ranch with “oil tanks” are no longer shown on the updated maps.

Adjoining East: Undeveloped land.

Adjoining South: Undeveloped land.

Adjoining West: Undeveloped land.

Adjoining Interior: A small area to the southeast of the intersection of SR 33 and Sutter Avenue (non-subject property) is located near the interior of the subject property. The 2012 through 2021 maps show no tanks or structures and no labeling. Adjoining Interior: A small rectangular parcel (non-subject property) is located near the interior of the subject property and supports what appears to be a single large tank and possible support structure in the 2002 to 2010 and by the 2012 photo to 2022, the tank is no longer present. Beginning in the 2012 photo to the 2022, the

natural gas pump station (based on site reconnaissance) is identified within the northwest corner of the rectangular parcel on the south side of Highway 33 opposite where Sutter Avenue terminates into Highway 33.

Surrounding Area: Most of the area surrounding the SP appears to be undeveloped land. Limited roads are present around and within the SP, including SR 33 and Sutter Avenue within the SP. Roadways are present near the North-Western most corner, including one exiting off SR 33 and traverses through the SP before exiting into an area labeled “Zaporo Chino Canyon”.

5.7.5 Local Street Directories

Historical street directories for the subject property and surrounding property addresses were provided by Envirosite. The subject property addresses are as follows: 46000-48000 South Lost Hills Road, Coalinga, CA 93210.

Subject Property

No results noted for the SP in directories dated 1972, 1978, 1984, 1988, 1993, 1998, 2002, 2006, 2010, 2015, and 2018.

Adjacent Properties

43345 S Lost Hills Road (Northwest of SP)

2015 – NOHEMI RAMIREZ

44966 S Lost Hills Road (Northwest of SP)

2015, 2018 – CRAIG DARTENAY

2006, 2015 – C&K HARVESTING & REPAIR

45315 S Lost Hills Road (Northwest of SP)

2002, 2006 – Rock Acme

2006 – Jaxon Baker

2015, 2018 – AVENAL AGGREGATE & ASPAHULT

45555 S Lost Hills Road (Northwest of SP)

2015, 2018 – RICHARD HEWISTON

45557 S Lost Hills Road (Northwest of SP)

2006 – J Den Hartog

46005 S Lost Hills Road (Northwest of SP)

1989, 1993 – Artesia Ready Mix Concrete Inc

46012 S Lost Hills Road (Northwest of SP)

2015, 2018 – ARMANDO LOPEZ

47922 S Lost Hills Road (Southeast of SP)

2018 – YOLANDA CAMAREMA

47932 S Lost Hills Road (Southeast of SP)

2010 – RAYMOND ARAGON

47940 S Lost Hills Road (Southeast of SP)

2015, 2018 – RAUL CAMARENA

47942 S Lost Hills Road (Southeast of SP)

2015 – GUADALUPE PINEDA

47950 S Lost Hills Road (East of SP)

2018 – SYLVIA RAMIREZ

47960 S Lost Hills Road (Southeast of SP)

2018 – MIGEUL LOPEZ

47998 Lost Hills Road (Southeast of SP)

2018 – MARY PEREZ

Note: There were no results for 42999-46000 S Lost Hills Road in the 1993 and 2006 directories listed.

Note: Additional addresses listed in the city directories report furnished by Envirosite were omitted from this section as additional research determined they were not adjoining to the SP. Further information on these properties is available in the Envirosite City Directories Report, provided in Appendix D.

5.7.6 Building Department Records

Historical use of the subject property was researched using other standard historical sources and was identified as undeveloped; therefore, Building Department records were not requested or reviewed as part of this assessment.

5.7.7 Zoning/Land Use Records

Historical use of the subject property was researched using other standard historical sources and was identified as undeveloped; therefore, historical Zoning/Land Use records were not reviewed as part of this assessment.

5.7.8 Prior Assessment Reports

Cameron-Cole was not provided with any prior assessment reports associated with the subject property.

5.7.9 *Subject Property Historical Use Summary*

Based upon review of the historical materials described in section 5.7 the historical use of the subject property is generally undeveloped or agricultural in nature. Starting in 1940 the SP is undeveloped land with no apparent activity or improvements aside from rudimentary unpaved roadways in various places. Based upon the review of historical aerial photographs agricultural activity began on the SP sometime between 1940 and 1955 as significant agriculture can be seen in photographs dated 1955. This agricultural activity continues intermittently to modern day with agriculture being seen at various points throughout the history of the SP. At the time of Cameron-Cole's site reconnaissance no active agriculture was present but evidence of recent agriculture was observed such as irrigation, empty polymer tanks, and groundwater supply wells.

5.8 Historical Use Information on Adjoining Properties

The following is a summary of adjoining property historical uses based on a review of the historical records reviewed in Section 5.6.

North: Based upon review of the above-described historical material the properties adjoining the SP to the north were undeveloped dating back 1940, with it appearing to be undeveloped land until 1955. From 1955 to the present most of the northern adjoining properties have been utilized for agriculture. With the remainder of the northern adjoining parcels remaining undeveloped to current day. The Starkey and Erwin Ranch site with "oil tanks" was shown located slightly north and northwest of the subject property in the 1954 topographic map.

East: Based upon review of the above-described historical material the properties adjoining the SP to the east were undeveloped land dating back to 1940. The east of the SP remained undeveloped until 1973 when portions of it began to be used for what appears to be agriculture. In 1994 there were what appears to be a small residential development near the south-eastern corner of the SP. This remains the same use as current day.

South: Based upon review of the above-described historical materials the properties adjoining the SP to the south were undeveloped land dating back to 1940. In 1955 much of the southern adjoining properties began to be used for what appears to be agriculture. This remains the use of the southern adjoining properties to current day.

West: Based upon review of the above-described historical materials most of the properties adjoining the SP to the west were undeveloped dating back to 1940. This remains true to current day. Beginning in 1955 there is what appears to be a small grouping of structures near the northwestern corner of the SP, these structures remain present currently.

Interior: The rectangular interior adjoining property has historically supported a tank and pumping station "Associated Oil Pumping Station" and later "Kettleman Station" identified as early as the 1934 topographic map and as recent as the 1954 topographic map.

In accordance with ASTM International E1527-21, 8.3.1, the objective of compiling and analyzing historical property information and developing a history of the previous uses of the subject property, adjoining properties, and surrounding area is to help identify the likelihood of past uses having led to recognized environmental conditions in connection with the subject property. All obvious uses of the subject property must be identified from the present, back to the subject property's first developed use, or back to 1940,

whichever is earlier. The report must describe all identified uses, justify the earliest date identified for the subject property's first developed use, and explain the reason for any gaps in the history of use. This task requires reviewing as many of the standard historical resources in 8.3.4.1 through 8.3.4.8 as are necessary and both reasonably ascertainable and likely to be useful. Data failure occurs when all the standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed and yet the objective has not been met. Data failure is not uncommon in trying to identify historical uses at 5-year intervals back to first use or 1940 (whichever is earlier). If the data failure represents a significant data gap to the Environmental Professional (EP), ASTM International Standard E1527-21 requires documentation of the impact of the data gap on the ability of the EP to identify RECs. No significant historical use information data gaps were encountered specific to the subject property.

6.0 SITE RECONNAISSANCE

6.1 Methodology and Limiting Conditions

The methodology used by the Cameron-Cole representative during the September 22nd, 2023, site reconnaissance consisted of visual observations of readily accessible areas of the subject property to determine the presence or absence of hazardous substance or petroleum product storage areas or spills as indicated by stressed vegetation, soil staining, storage tanks, drums, etc. Parcels 090-030-04S, 090-030-02S, and 090-030-03 were not directly accessible due to locked gates preventing vehicle and pedestrian access. Cameron-Cole does not feel this significantly limited our ability to assess this portion of the SP as all areas were visually accessible from the perimeter or other publicly accessible areas. The undeveloped and unobstructed nature of this portion of the site allowed all parts of these parcels to be visually observed and assessed for hazardous materials, petroleum products, or other environmental concerns.

6.2 General Site Setting

The subject property consists of eight contiguous parcels in Fresno County, California. The SP is approximately 2,385 acres and according to the Fresno Assessor's office fully encompasses parcels with APNs 090-030-04S and 090-030-02S, 090-030-03, and 085-110-13S and includes select portions of parcels with APNs 090-030-06S, 090-040-01, 085-110-12, and 085-110-23S. A majority of the SP at the time of Cameron-Cole's site reconnaissance appears to be undeveloped land or land that has been used for agricultural purposes.

6.2.1 Geologic, Hydrogeologic, and Topographic Conditions

Based on topographic maps, and considering regional flow patterns, the groundwater flow in the vicinity of the SP is inferred to be in a northerly direction. It must be noted that groundwater flow direction can be influenced by factors such as surface topography, underground structures, seasonal fluctuation, soil and bedrock geology, and production wells which were not considered in this interpretation.

6.2.2 General Description of Structures

At the time of our site reconnaissance there were limited structures identified on the subject property. Located on the western boundary of parcel 090-040-01 a small, enclosed area hosting a groundwater well was identified. Along with the well was a small structure supporting electrical infrastructure to power the pump and associated equipment. Observed in the southwestern corner of parcel 085-110-12 was another small structure enclosed in fencing. Visible from the exterior of the fence is what appears to be a propane tank as well as an electricity generator. The exact nature of this structure was not visually observable from the exterior, a locked gate prevented access to the interior of the structure.

6.2.3 Roads

The major thoroughfare State Route 33 (Lost Hills Road) traverses between sections of the SP in a northwesterly to southeasterly orientation. Sutter Avenue crosses between sections of the SP before its terminus at its intersection with Lost Hills Road. Minor unpaved roadways give access to various parts SP off Lost Hills Road and Sutter Avenue.

6.2.4 Potable Water Supply

No potable water supply was identified. Multiple groundwater supply wells were identified both in the records search and visual observation during Cameron-Cole's site reconnaissance. These wells are discussed in further detail in section 6.3.11.

6.2.5 Sewage Disposal System

As the property does not currently host any inhabitable structures, there is no sewage disposal system present on or connected to the SP according to information provided via questionaries.

6.3 Subject Property Observations

6.3.1 Hazardous Substances and Petroleum Products in Connection with Identified Uses

No hazardous substances or petroleum products were identified on the subject property or visually ascertainable parts of adjacent properties during Cameron-Cole's site reconnaissance.

6.3.2 Storage Tanks

At the time of Cameron-Cole's site reconnaissance one polymer storage tank was observed near the western boundary of parcel 090-040-01 near the previously discussed groundwater pumping station. At the time of site reconnaissance, this tank did not have any contents. No evidence of spills, leaks, or other release of any material from this tank was identified.

6.3.3 Odors

Noticeable odors were not identified at the subject property at the time of the property reconnaissance.

6.3.4 Pools of Liquid

No pools of liquid were observed on the subject property during the property reconnaissance.

6.3.5 Drums

At the time of Cameron-Cole's site reconnaissance no drums were identified on the subject property or visually ascertainable areas of adjacent properties.

6.3.6 Pits, Ponds, or Lagoons

There were no pits, ponds, or lagoons noted onsite during the site reconnaissance.

6.3.7 Stained Soil or Pavement

No stained soil or pavement was noted onsite during the site reconnaissance.

6.3.8 Stressed Vegetation

Stressed vegetation was not observed during the site reconnaissance.

6.3.9 Solid Waste

A *de minimis* amount of solid waste was identified on various parts of the SP. The amount of waste observed was consistent with litter commonly present along roadways. None of the waste observed was hazardous or indicative of an environmental concern.

6.3.10 Wastewater

Cameron-Cole did not observe any wastewater on site.

6.3.11 Wells

The government records searched furnished by Envirosite identify five ground water supply wells within the SP boundary (Figure 3). These five wells are located on two parcels of the SP; 090-030-04S and 085-110-13S. The locations of these wells as latitude and longitude according to the GAMA database can be found in the government records report. While none of these wells were visually identified during Cameron-Cole's site reconnaissance, the following information was obtained from the database search as well as other available government records.

Two wells located on parcel 090-030-04S are identified by the GAMA database with unique identifiers 22S16E02A001M and 22S16E01D001M. Records show these wells as being located to the southwest of the junction of South Lost Hills Road and Sutter Avenue (Figure 3). Regarding well -A001M, no information detailing when this well was installed is provided in the government records reviewed, however water quality data is present from a sample taken from this well on 5/02/1956. No information regarding the status of this well or if it has been decommissioned was identified. Similarly, no information regarding the installation date of well -D001M was found. Water quality data was identified from a sample taken on 1/20/1954. No information regarding the status of this well or if it has been decommissioned was identified.

Three groundwater wells were identified on parcel 085-110-13S and are identified by the GAMA database unique identifiers 21S16E35B001M, 21S16E35A001M, 21S16E35H001M. Based upon the locations provided in the database these wells are located northwest of South Lost Hills Road and west of Sutter Avenue (Figure 3). No installation date was identified for well -B001M, however water quality data was found from a sample taken from this well on 3/21/1956. No information regarding the status of this well or if it has been decommissioned was identified. Similarly, no installation date for well -A001M was identified in the government records, water quality data from a sample taken on 4/30/1980 is provided in the government records report. No information regarding the status of this well or if it has been decommissioned was identified. Lastly, no information regarding the installation date of well -H001M was identified in the records reviewed. Water quality data was identified for a sample taken from this well on 9/01/1951. No information regarding the status of this well or if it has been decommissioned was identified in the government records reviewed.

Additional ground water pump stations were identified during site reconnaissance such as near the western boundary of parcel 090-040-01 were not identified in any regulatory database. Additional information regarding the wells identified the databases search provided by Envirosite is available in the government records report provided as Appendix C.

Cameron-Cole reviewed the California Department of Conservation's Well Finder mapping application which identified two oil and gall wells located outside the SP but within the general vicinity. Included in this is a well located approximately 1,825 ft south-west of the SP. Records identify this well as having been drilled on

6/22/1959. Records show this well as having been plugged; however, they do not identify when this well ceased to be used. Also, outside the SP but identified in vicinity is another oil and gas well located 4,595 ft northeast of the SP, records show this well as having been drilled on 9/20/1931, this well is also shown as being plugged but no date is provided. Other information regarding oil and gas wells in the general vicinity of the SP (>1 mile from the SP) was identified in the review of Well Finder, however they have been left out of this discussion due to their distance from the SP.

It is the opinion of the EP that none of these records or findings pose a risk to the environment or human health.

6.3.12 Septic Systems

Septic systems were not observed on the SP at the time of site reconnaissance.

7.0 INTERVIEWS

7.1 Site Owner/Occupants

Mr. James Kreyenhagen indicated he is not aware of any documents pertaining to the subject property history, past remediation and monitoring efforts, and current remediation and monitoring. Reasonable efforts were made to interview Mr. James Anderson and Mr. Ryan Gregg, at the time of this report no response has been received to inquires made by Cameron-Cole, as discussed in section 2.4.2 the lack of these interviews is considered a "data gap" but is not considered "significant".

7.2 Past Owners, Operators, Occupants

Past owners, operators, or occupants were not interviewed for this ESA.

7.3 User

Mr. Martin Nascimento, senior Development Manager for Bay Wa r.e Solar Projects LLC was interviewed via a questionnaire filled out on April 26th, 2023. This questionnaire is attached provided in Appendix B. A summary of user responses can be found in section 4.0.

7.4 State and/or Local Government Records

Cameron-Cole consulted the State of California Department of Toxic Substances Control Envirostor online mapping application on September 27th, 2023 inquiring for records regarding environmental violations, releases, or hazardous materials or petroleum product storage, storage tanks, or other environmental concerns associated with the subject property. No applicable sites or records were identified in Envirostor.

Cameron-Cole consulted the California State Water Boards GeoTracker online mapping application on September 27th, 2023 inquiring for records regarding environmental violations, releases, or hazardous materials or petroleum product storage, storage tanks, or other environmental concerns associated with the subject property. No applicable site or records were identified in GeoTracker.

8.0 FINDINGS AND CONCLUSIONS

The goal of this Phase I ESA is to identify the presence or likely presence of hazardous substances or petroleum products on the subject property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water on the property. The findings of this report are summarized below and may include known or suspected RECs, CRECs, HRECs, VECs, BERs identified during the performance of this Phase I ESA.

It is the opinion of Cameron-Cole that two subsurface petroleum product pipelines which cross beneath the subject property constitute Business Environmental Risks. There were no RECs, CRECs, HRECs, or VECs identified at the subject property at the time of this report.

9.0 DEVIATIONS

There were no contractual excluded elements or deviations from the ASTM International Standard E1527-21.

10.0 REFERENCES

Aerial Photographs

Envirosite – 1940, 1955, 1960, 1965, 1971, 1972, 1974, 1975, 1978, 1981, 1982, 1985, 1989, 1994, 1995, 2002, 2005, 2009, 2010, 2012, 2014, 2016, 2018, 2020, and 2022. Report generated September 23rd, 2023.

American Society of Testing and Materials International (ASTM International) Standard Practice Designation E1527-21.

USGS Topographic Maps

Envirosite – 1930, 1934, 1942, 1950, 1954, 2012, 2015, 2021 Topographic Maps of Avenal, Canoas Creek, and Polvadero Gap, California. Report generated September 20th, 2023.

Standard Environmental Records Search – Completed by Envirosite for the subject property Fresno County, California. Report generated September 20th, 2023.

Fire Insurance Map Search – Completed by Envirosite for the subject property, Fresno County, California. Report generated September 21st, 2023.

City Directory Abstract – Completed by Envirosite for 42999-46000 S Lost Hills Road, Coalinga, California. Report generated September 22nd, 2023.

Interviews:

User Information – Mr. Martin Nascimento, Senior Development Manager, interview conducted via User Questionnaire completed on April 26th, 2023.

James Kreyenhagen – Property Owner, interview conducted via pre-site visit questionnaire.

11.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

The following Cameron-Cole personnel were involved with the site inspection, records search, regulatory review, and drafting of the Phase I Environmental Site Assessment Report for the property located at parcels 090-030-04S, 090-030-02S, 090-030-03, and 085-110-13S as well as select parts of parcels 090-030-06S, 090-040-01, 085-110-12, and 085-110-23S in Fresno County, California.

Prepared by:

Ryan Barry
Environmental Scientist I
10/6/2023

This is to certify that I have reviewed and approve the contents of the Phase I Environmental Site Assessment Report for the property located at parcels 090-030-04S, 090-030-02S, 090-030-03, and 085-110-13S as well as select parts of parcels 090-030-06S, 090-040-01, 085-110-12, and 085-110-23S in Fresno County, California. Certification of the environmental professional is provided in Section 12, and professional qualifications are provided in Appendix F.

Reviewed by:

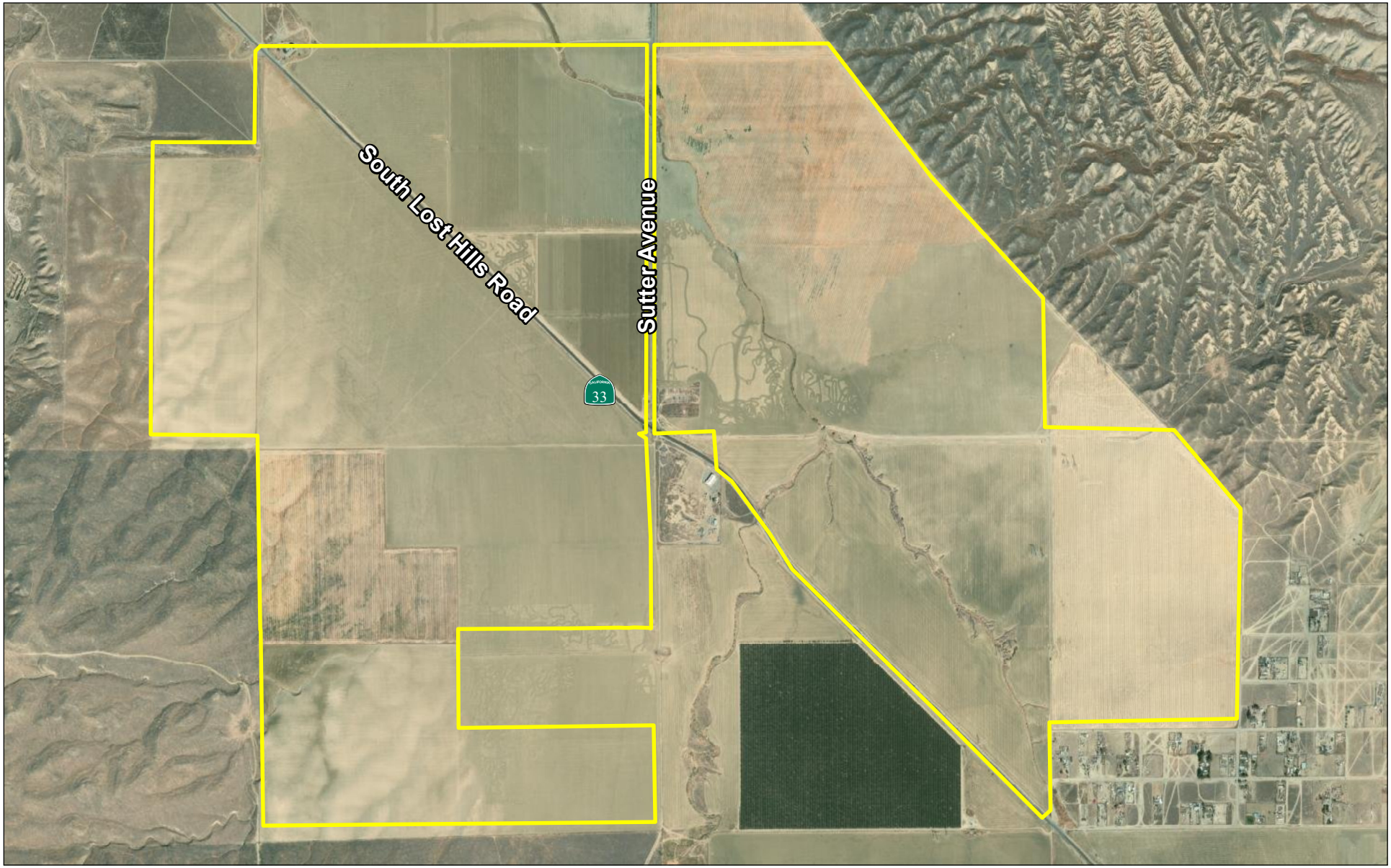
Michael Stephenson
Principal Scientist

12.0 ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 312.10 of 40 CFR 312, and I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Michael Stephenson
Principal Scientist

FIGURES



Source: ESRI Aerial Imagery, BayWa.r.e. Solar Project LLC.

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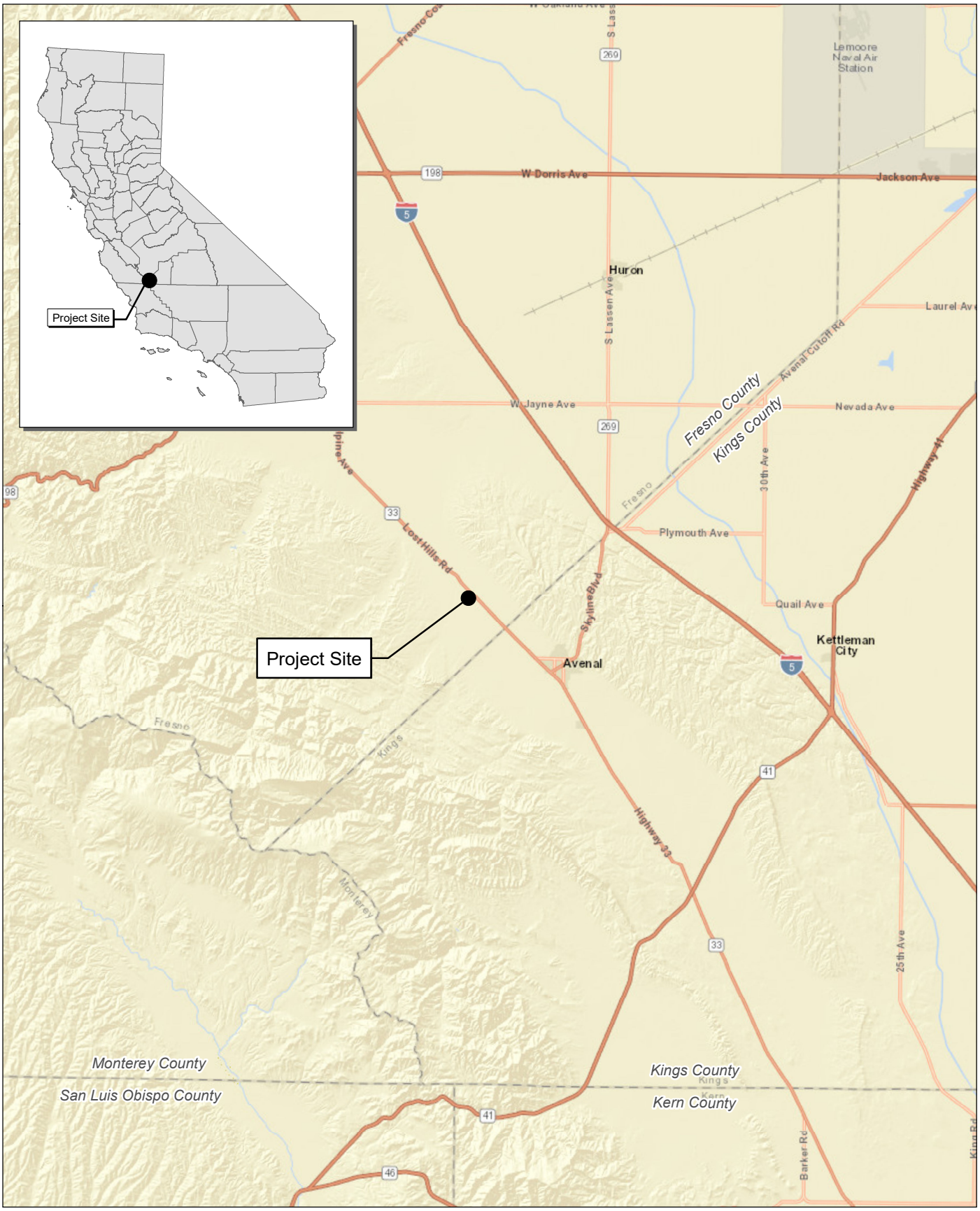
2,000 1,000 0 2,000
Feet

Figure 1
Local Vicinity Map

5852.0001 • 09/2023 | CornucopiaLocalVcinity.mxd

BAYWA.R.E SOLAR PROJECTS, LLC
CORNUCOPIA SOLAR PRJECT
PHASE 1 ESA



Source: Census 2000 Data, The California Spatial Information Library (CaSIL). ESRI World Street Map.

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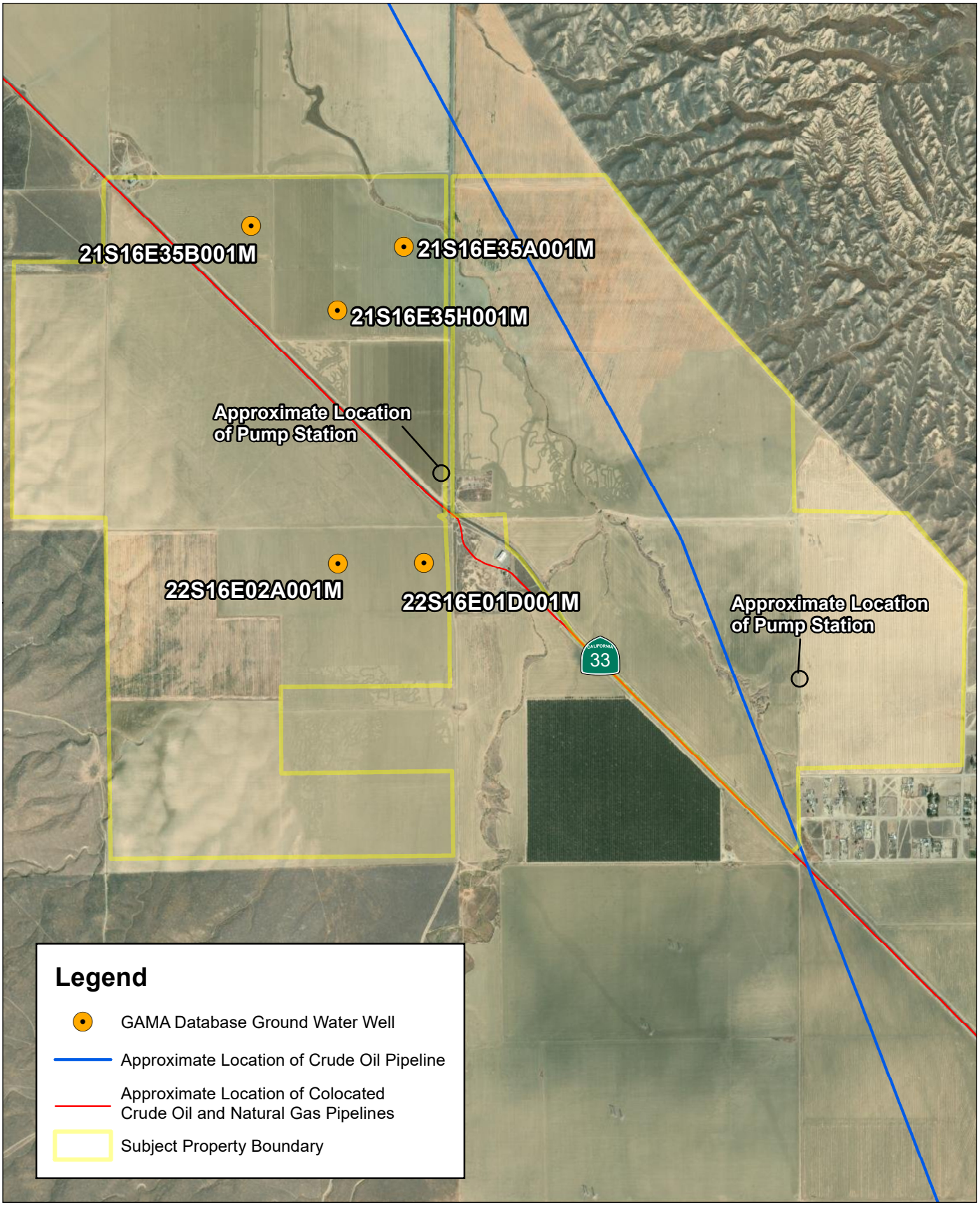
5 2.5 0 5
Miles

Figure 2
Regional Location Map



Source: ESRI Aerial Imagery, CA GAMA Database, NPMS Public Viewer

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3,000 1,500 0 3,000 Feet

Figure 3 Notable Findings

APPENDICES

APPENDIX A

Photograph Log

Photo 1: Looking southwest from the northern most point of the SP along Sutter Avenue.	Photo 2: Looking west into the SP from the northern most border along Sutter Avenue.
Photo 3: Looking east into the SP from the northernmost boundary along Sutter Avenue.	Photo 4: Looking southeast into the SP from the northern most boundary along Sutter Avenue.
Photo 5: Looking northwest along property boundary parallel with Lost Hills Road from the southeastern boundary.	Photo 6: Looking northwest into the SP from the southeastern most corner near lost hills road.

Photo 7: Looking north along the eastern most boundary adjacent to Lost Hills Road.

Photo 8: Eastern most alcove of the SP. Taken from the northwestern corner of adjacent residential development.

Photo 9: Polymer storage tank located on the eastern most section of the SP near a groundwater supply well. At the time of site reconnaissance, the tank was empty.

Photo 10: Groundwater well pump station located on the eastern most section of the SP near the adjacent residential development. At the time of site reconnaissance, the well did not appear to be operating.

Photo 11: Electrical panels located near the groundwater supply well.

Photo 12: Disconnected discharge line from groundwater supply well. At the time of site reconnaissance, the well pump was not operating.

Photo 13: Pole mounted electrical transformer located adjacent to groundwater supply pump station. Transformer appears to be in good condition with no observable leaks or staining.	Photo 14: Facing southwest from the northeastern most corner of the SP.
Photo 15: Small structure located near the central portion of the SP, to the northeast of the intersection of Lost Hills Road and Sutter Avenue.	Photo 16: Irrigation supplies being stored on the SP, To the east of Sutter Avenue and north of Lost Hills Road.
Photo 17: Atmospheric monitoring station location in the central portion of the site to the north of Lost Hills Road and the East of Sutter Avenue.	Photo 18: Unknown piping located in the central portion of the site, north of Lost Hills Road and west of Sutter Avenue.

Photo 19: Groundwater extraction well and pump station located in the central portion of the site north of Lost Hills Road and west of Sutter Avenue.

Photo 20: Facing southeast into the SP from the northwestern most boundary along Lost Hills Road.

Photo 21: Taken from Lost Hills Road facing east into the central portion of the SP.

Photo 22: Locked gate preventing access to the SP south of Lost Hills Road and west of Sutter Avenue.

Photo 23: Facing South along boundary of SP parallel with Sutter Avenue south of Lost Hills Road.

Photo 24: Facing Southwest into the SP from the intersection of Lost Hills Road and Sutter Avenue.

Photo 25: Offsite pumping station located near the intersection of Sutter Avenue and Lost Hills Road.	Photo 26: Signage indicating an underground Gas Pipeline. Located adjacent to the SP near the intersection of Sutter Avenue and Lost Hills Road.
Photo 27: Facing west from the eastern most boundary of the SP near the adjacent residential development.	Photo 28: Facing southwest into the eastern portion of the SP.

APPENDIX B

User Questionnaire

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PHASE I ESA USER'S QUESTIONNAIRE

In order to qualify for protection from land owner liability under CERCLA as an *innocent landowner, bona fide prospective purchaser,* or *contiguous property owner*, ASTM standard practice E1527-21 and the federal AAI rule (40 CFR 312) require that the User of the Phase I ESA report provide certain information (if available) to the Environmental Professional completing the assessment. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Information that is not or cannot be provided to the Environmental Professional may be identified as a "data gap" in the Phase I ESA report.

Property Information.

Cameron-Cole/Client Project #: Property Name: Cornucopia Hybrid

Property Address: Highway 33 near the intersection of Sutter Ave.

City: State: Zip:

Property Owner Name:

Please answer the following questions as completely as possible. Attach additional pages as needed.

1. **Reason for Completion.** Is the reason for performing the Phase I to satisfy one of the requirements for the innocent landowner defense under CERCLA AND/OR to understand potential environmental conditions that could materially impact the operation of the business associated with the parcel of commercial real estate?

   _____ Yes _____X____ No

   Other (indicate if required for property transaction, sale, purchase, exchange, lending requirement, etc). _____

   _____

2. **Environmental Cleanup Liens.** Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

   _____ Yes ____X_____ No

   If yes, describe or attach details of the lien_____

   _____

3. **Activity and Land Use Limitations.** Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

   _____ Yes _____X_____ No

   If yes, describe or attach details of the limitations_____

   _____

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PHASE I ESA USER'S QUESTIONNAIRE

4. **Specialized Knowledge or Experience**. As the User of this ESA, do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property, such that you would have specialized knowledge about chemicals and processes used by this type of business?

   _____ Yes ____X_____ No

   If yes, describe or attach details of your specialized knowledge or experience_____
   _____

5. **Relationship of Purchase Price to Fair Market Value of Property**. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

   _____ Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

   ____X_____ No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

   _____ Not applicable. User is not involved in a purchase of the property.

6. **Commonly Known or Reasonably Ascertainable Information**. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

   Do you know the past uses of the property?
   _____ Yes (describe) _____
   _____
   ___X_____ No

   Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?
   _____ Yes (describe) _____
   _____
   ___X_____ No

   Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?
   _____ Yes (describe) _____
   _____
   ___X_____ No

   Do you know of any environmental cleanups that have taken place at the property?
   _____ Yes (describe) _____
   _____
   ___X_____ No

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PHASE I ESA USER'S QUESTIONNAIRE

7. **The Degree of Obviousness of Contamination.** E1527-21 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?

   _____ Yes (describe) _____
   _____
   ___X_____ No

8. **Availability of Previous Environmental Reports.** Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?

   _____ Yes (please identify and provide copies, if available) _____
   _____
   ___X_____ No

9. **Proceedings Involving the Property.** Are you aware of any proceedings involving the property? For example:

   Are you aware of any pending, threatened or past litigation relevant to hazardous substances or petroleum products in, on or from the property?
   _____ Yes (describe) _____
   _____
   ___X_____ No

   Are you aware of any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on or from the property?
   _____ Yes (describe) _____
   _____
   ___X_____ No

   Any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?
   _____ Yes (describe) _____
   _____
   ___X_____ No

Signature:
_____

Name (printed): _____Martin Nascimento_____

Title: _Sr. Development Manager_____

Date: 04/26/2023_____

APPENDIX C

Government Records Report

Government Records Report | 2023

With Platinum Review

Order Number: 90881

Report Generated: 09/20/2023

Project Name: Cornucopia Solar Project

Project Number: 5852.ES111

Cornucopia Solar
S Lost Hills Rd
Coalinga, CA 93210

with Envirosite Atlas

Contact us at:
(866) 211-2028
envirositecorp.com

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Envirosite Corporation has conducted a search of all reasonably ascertainable records in accordance with EPA's AAI (40 CFR Part 312) requirements and the ASTM E-1527-21 Environmental Site Assessments standard.

SUBJECT PROPERTY INFORMATION:

ADDRESS:

Cornucopia Solar
S Lost Hills Rd
Coalinga, CA 93210

COORDINATES:

Latitude (North):	36.050689 - 36°3'2.5"
Longitude (West):	-120.198223 - -120°11'53.6"
Universal Transverse Mercator:	Zone 10N
UTM X (Meters):	752386.94
UTM Y (Meters):	3993203.90
State Plane Coordinates:	0404 - California Zone 4 (US Survey Feet)
X Coordinate (Feet):	6207457.162 E
Y Coordinate (Feet):	1903778.275 N

ELEVATION:

Elevation:	736 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH SUBJECT PROPERTY:

Subject Property Map: 36120-A2 Avenal, CA
Most Recent Revision: 2015

MAP ID	SITE NAME	ADDRESS	DATABASE(S)	RELATIVE ELEVATION	DIRECTION / DISTANCE
1	N R	37.492127, -121.208297	HIGH FIRE - CA	N/R	W / 0.000 mi., 0 ft.
2	FK 1817	36.086714, -120.188256	FIRE AREAS - CA	N/R	NNE / 0.000 mi., 0 ft.
3	FKU 5788	36.088659, -120.181652	FIRE AREAS - CA	N/R	NNE / 0.123 mi., 652 ft.
4	CAMARENA BROS YARD	47940 LOST HILLS RD	HAZNET - CA, HWG - CA, RCRA_SQG	Higher	SE / 0.175 mi., 922 ft.
5	SUTTER	36.068836, -120.22307	FIRE AREAS - CA	N/R	WNW / 0.219 mi., 115...
6	Central Coast Field Office	36.065326, -120.146731	FEDLAND	Higher	ENE / 0.532 mi., 2810 ft.
7	N R	36.043653, -120.233356	HIGH FIRE - CA	N/R	W / 0.659 mi., 3478 ft.
8	SIERRA PACIFIC MATERIALS AVENAL |...	45315 LOST HILLS ROAD	CALEPA SITES - CA, CIWQS - CA, CUPA_FRESN...	Lower	NW / 0.714 mi., 3769 ft.
9	Central Coast Field Office	36.094131, -120.182414	FEDLAND	N/R	N / 0.993 mi., 5243 ft.

SUBJECT PROPERTY SEARCH RESULTS:

The subject property was not listed in any of the databases searched by Envirosite Corporation.

SEARCH RESULTS:

FEDERAL RCRA GENERATORS LIST

RCRA_SQG: Resource Conservation and Recovery Act listing of licensed small quantity generators **1 SITE FOUND WITHIN .25 MILE**

EQUAL/HIGHER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
4	*CAMARENA BROS YARD*	*47940 LOST HILLS RD*	*SE / 0.175 mi., 922 ft.*	*21*
	- ID: CAR000317016	Status: No Violation/Inspections	Date: N/A	

STATE RCRA GENERATORS LIST

HWG - CA: Hazardous waste generator listing **1 SITE FOUND WITHIN .25 MILE**

EQUAL/HIGHER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
4	*CAMARENA BROS YARD*	*47940 LOST HILLS RD*	*SE / 0.175 mi., 922 ft.*	*21*

OTHER ASCERTAINABLE RECORDS

FEDLAND: Federal Lands from the Protected Areas Database (PAD-US) **2 SITES FOUND WITHIN 1 MILE**

EQUAL/HIGHER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
6	Central Coast Field Office	36.065326, -120.146731	ENE / 0.532 mi., 2810 ft.	*24*
9	Central Coast Field Office	36.094131, -120.182414	N / 0.993 mi., 5243 ft.	*38*

INACTIVE PCS: Inactive Permitted facilities to discharge wastewater **1 SITE FOUND WITHIN 1 MILE**

LOWER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
8	*SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT*	*45315 LOST HILLS ROAD*	*NW / 0.714 mi., 3769 ft.*	*25*

PCS ENF: Permitted facilities to discharge wastewater (Federal equivalent to NPDES) **1 SITE FOUND WITHIN 1 MILE**

LOWER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
8	*SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT*	*45315 LOST HILLS ROAD*	*NW / 0.714 mi., 3769 ft.*	*25*

PCS FACILITY: Permitted facilities to discharge wastewater (Federal equivalent to NPDES) **1 SITE FOUND WITHIN 1 MILE**

LOWER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
8	*SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT*	*45315 LOST HILLS ROAD*	*NW / 0.714 mi., 3769 ft.*	*25*

OTHER ASCERTAINABLE RECORDS *(cont.)*

FIRE AREAS - CA: The multi-agency statewide database of fire perimeters. **3 SITES FOUND WITHIN 1 MILE**

EQUAL/HIGHER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
2	FK 1817	36.086714, -120.188256	NNE / 0.000 mi., 0 ft.	*20*
3	FKU 5788	36.088659, -120.181652	NNE / 0.123 mi., 652 ft.	*20*
5	SUTTER	36.068836, -120.22307	WNW / 0.219 mi., 1155 ft.	*24*

HAZNET - CA: Listing of hazardous waste manifests from when hazardous waste is transported from generators to permitted recycling treatment storage or disposal facilities by registered hazardous waste transporters **1 SITE FOUND WITHIN .25 MILE**

EQUAL/HIGHER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
4	*CAMARENA BROS YARD*	*47940 LOST HILLS RD*	*SE / 0.175 mi., 922 ft.*	*21*

HIGH FIRE - CA: Fire hazard severity zones mapped as areas of significant fire hazards on the basis of fuels terrain weather and other factors **2 SITES FOUND WITHIN 1 MILE**

EQUAL/HIGHER ELEVATION

MAP ID	SITE NAME	SITE ADDRESS	DIRECTION/DISTANCE	PAGE
1	N/R	37.492127, -121.208297	W / 0.000 mi., 0 ft.	*20*
7	N/R	36.043653, -120.233356	W / 0.659 mi., 3478 ft.	*25*

Following sites were unable to be mapped.

SITE NAME:	ADDRESS, CITY, ZIP:	DATABASE(S):
GRANITE ROCK CO	WEST OF HWY 33, COALINGA 93210	CERCLIS NFRAP, SEMS_8R_ARCHIVED SITES

DATABASE(S) WITH NO MAPPED SITES:

FEDERAL RCRA NON-CORRACTS TSD FACILITIES LIST

ARCHIVED RCRA TSDF	Archived Resource Conservation and Recovery Act: Treatment Storage and Disposal Facilities
RCRA_TSDF	Resource Conservation and Recovery Act: Treatment Storage and Disposal Facilities

FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS

AST PBS	ASTs at Bulk Petroleum Terminals
EPA UST	EPA UST Finder database
FEMA UST	FEMA Underground Storage Tanks
HIST INDIAN UST R7	Historical Underground Storage Tanks on Indian Land in EPA Region 7
AST - CA	Aboveground storage tanks
FID UST - CA	Facility Inventory Database
HIST AST - CA	Historical Aboveground Storage Tanks
HIST UST - CA	Historical Underground Storage Tanks
UST - CA	Underground Storage Tanks

FEDERAL CERCLIS LIST

CERCLIS NFRAP	Comprehensive Environmental Response Compensation and Liability Act No Further Remedial Action Planned
CERCLIS-HIST	Comprehensive Environmental Response Compensation and Liability Act
EPA SAA	EPA Superfund Alternative Approach
FEDERAL FACILITY	Federal Facility sites
SEMS_8R_ACTIVE SITES	Sites on SEMS Active Site Inventory
SEMS_8R_ARCHIVED SITES	Sites on SEMS Archived Site Inventory

FEDERAL RCRA CORRACTS FACILITIES LIST

CORRACTS	Hazardous Waste Corrective Action
HIST CORRACTS 2	Historical Hazardous Waste Corrective Action

FEDERAL DELISTED NPL SITE LIST

DELISTED NPL	Delisted National Priority List
DELISTED PROPOSED NPL	Delisted proposed National Priority List
SEMS_DELETED NPL	Sites Deleted from National Priorities List

FEDERAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

EPA LF MOP	EPA Landfill Methane Outreach Project Database

FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS

EPA LUST	EPA LUST
HIST INDIAN LUST R4	Historical Leaking Underground Storage Tanks on Indian Land in EPA Region 4
HIST INDIAN LUST R8	Historical Leaking Underground Storage Tanks on Indian Land in EPA Region 8
LUST REG 1 - CA	Region 1 Leaking Underground Storage Tanks
LUST REG 2 - CA	Region 2 Leaking Underground Storage Tanks
LUST REG 3 - CA	Region 3 Leaking Underground Storage Tanks
LUST REG 4 - CA	Region 4 Leaking Underground Storage Tanks
LUST REG 5 - CA	Region 5 Leaking Underground Storage Tanks
LUST REG 6 - CA	Region 6 Leaking Underground Storage Tanks
LUST REG 7 - CA	Region 7 Leaking Underground Storage Tanks
LUST REG 8 - CA	Region 8 Leaking Underground Storage Tanks
LUST REG 9 - CA	Region 9 Leaking Underground Storage Tanks
SLIC REG 1 - CA	Spills Leaks Investigation & Cleanup Program
SLIC REG 2 - CA	Spills Leaks Investigation & Cleanup Program
SLIC REG 3 - CA	Spills Leaks Investigation & Cleanup Program
SLIC REG 4 - CA	Spills Leaks Investigation & Cleanup Program
SLIC REG 5 - CA	Spills Leaks Investigation & Cleanup Program
SLIC REG 6 - CA	Spills Leaks Investigation & Cleanup Program
SLIC REG 7 - CA	Spills Leaks Investigation & Cleanup Program
SLIC REG 8 - CA	Spills Leaks Investigation & Cleanup Program
SLIC REG 9 - CA	Spills Leaks Investigation & Cleanup Program

FEDERAL ERNS LIST

ERNS	Emergency Response Notification System

FEDERAL INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES

FED E C	Engineering Controls
FED I C	Institutional Controls
RCRA IC_EC	RCRA sites with Institutional and Engineering Controls

FEDERAL RCRA GENERATORS LIST

HIST RCRA_CESQG	Historical Resource Conservation and Recovery Act_Conditionally Exempt Small Quantity Generators
HIST RCRA_LQG	Historical Resource Conservation and Recovery Act_ Large Quantity Generators
HIST RCRA_NONGEN	Historical Resource Conservation and Recovery Act_Non Generators
HIST RCRA_SQG	Historical Resource Conservation and Recovery Act_Small Quantity Generators
RCRA_LQG	Resource Conservation and Recovery Act_ Large Quantity Generators
RCRA_NONGEN	Resource Conservation and Recovery Act_Non Generators
RCRA_VSQG	Resource Conservation and Recovery Act_Very Small Quantity Generator

FEDERAL NPL SITE LIST

NPL	National Priority List
NPL EPA R1 GIS	GIS for EPA Region 1 NPL
NPL EPA R3 GIS	GIS for EPA Region 3 NPL
NPL EPA R6 GIS	GIS for EPA Region 6 NPL
NPL EPA R8 GIS	GIS for EPA Region 8 NPL
NPL EPA R9 GIS	GIS for EPA Region 9 NPL

FEDERAL NPL SITE LIST *(cont.)*

PART NPL	Part National Priority List
PROPOSED NPL	Proposed National Priority List
SEMS_FINAL NPL	Sites included on the Final National Priorities List
SEMS_PROPOSED NPL	Sites Proposed to be Added to the National Priorities List

STATE- AND TRIBAL - EQUIVALENT CERCLIS

ENVIROSTOR - CA	EnviroStor Database
HIST TOXIC PITS - CA	Historical Toxic Pits Cleanup Act
OIL & GAS CLEANUP - CA	SWRCB Oil & Gas Cleanup Sites
SWRCB CLEANUP - CA	SWRCB Cleanup Program
SWRCB NON_CASE - CA	SWRCB Non-Case Sites
TOXIC PITS - CA	Toxic Pits Cleanup Act

STATE- AND TRIBAL - EQUIVALENT NPL

HIST RESPONSE - CA	Historical State Response Sites
RESPONSE - CA	State Response Sites

STATE AND TRIBAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

HIST SWF/LF - CA	Historical Solid Waste Information System
SWF/LF - CA	Solid Waste Information System

STATE AND TRIBAL BROWNFIELD SITES

TRIBAL BROWNFIELDS	Tribal Brownfields

STATE AND TRIBAL VOLUNTARY CLEANUP SITES

VCP - CA	Voluntary Cleanup Program sites

LOCAL BROWNFIELD LISTS

BROWNFIELDS-ACRES	EPA ACRES Brownfields
FED BROWNFIELDS	Federal Brownfields

LOCAL LISTS OF HAZARDOUS WASTE / CONTAMINATED SITES

FED CDL	DOJ Clandestine Drug Labs
US HIST CDL	Historical Clandestine Drug Labs
CDL - CA	Meth and Clandestine Drug Labs
SCH - CA	School Property Evaluation Program

RECORDS OF EMERGENCY RELEASE REPORTS

HMIRS (DOT)	Hazardous Materials Information Reporting Systems
CHMIRS - CA	California Hazardous Material Incident Report System
HIST CHMIRS - CA	California Hazardous Material Incident Report System

LOCAL LAND RECORDS

LIENS 2	CERCLA Lien Information
DEED - CA	Deeds
HIST LIENS - CA	Historical Liens
LIENS - CA	Liens

LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES

ODI	Open Dump Inventory
TRIBAL ODI	Indian Open Dump Inventory Sites
HAULERS - CA	Tire Haulers
SWRCY - CA	Recyclers

OTHER ASCERTAINABLE RECORDS

AFS	Air Facility Systems
ALT FUELING	Alternative Fueling Stations
ARENAS	ARENAS
ARENAS 2	ARENAS (additional)
BRS	Biennial Reporting Systems
CDC HAZDAT	Hazardous Substance Release and Health Effects Information

OTHER ASCERTAINABLE RECORDS *(cont.)*

CHURCHES	CHURCHES
COAL ASH DOE	Coal Ash: Department of Energy
COAL ASH EPA	Coal Ash: Environmental Protection Agency
COAL GAS	Coal Gas Plants
COLLEGES	COLLEGES
COLLEGES 2	COLLEGES 2
CONSENT (DECREES)	Superfund Consent Decree
CORRECTIVE ACTIONS_2020	Wastes - Hazardous Waste - Corrective Action
DAYCARE	DAYCARE
DEBRIS EPA LF	EPA Disaster Debris Landfill Sites
DEBRIS EPA SWRCY	EPA Disaster Debris Recovery Sites
DOD	Department of Defense
DOT OPS	Department of Transportation Office of Pipeline Safety
ECHO	EPA Enforcement and Compliance History Online
ENOI	Electronic Notice of Intent
EPA FUELS	EPA Fuels Registration, Reporting, and Compliance List
EPA OSC	EPA On-Site Coordinator
EPA WATCH	EPA Watch List
FA HWF	Financial Assurance for Hazardous Waste Facilities
FRS	Facility Index Systems
FTTS	FIFRA/TSCA Tracking System
FTTS INSP	FIFRA/TSCA Tracking System: Inspections
FUDS	Formerly Used Defense Sites
GOV MANSIONS	Governors Mansions
HIST AFS	Historical Air Facility Systems
HIST AFS 2	Historical Air Facility Systems
HIST DOD	Department of Defense historical sites
HIST LEAD_SMELTER	Historical Lead Smelter Sites
HIST MLTS	Historical Material Licensing Tracking Systems
HIST PCB TRANS	Historical Polychlorinated Biphenyl (PCB) Facilities
HIST PCS ENF	Historical Enforced Permit Compliance Facilities
HIST PCS FACILITY	Historical Permit Compliance Facilities
HIST SSTS	Historical Section 7 Tracking Systems
HOSPITALS	HOSPITALS
ICIS	Integrated Compliance Information System
LUCIS	Land Use Control Information Systems
LUCIS 2	Land Use Control Information Systems 2
MANIFEST EPA	EPA Hazardous Waste Manifests
MGP	Manufactured Gas Plant Sites
MINE OPERATIONS	Mines list from USGS
MINES	Mines
MINES USGS	Mines list from USGS
MLTS	Material Licensing Tracking Systems
NPL AOC	Areas related to NPL remediation sites
NPL LIENS	National Priority List Liens
NURSING HOMES	NURSING HOMES
OSHA	Occupational Safety & Health Administration
PADS	PCB Activity Database Systems
PCB TRANSFORMER	Polychlorinated Biphenyl (PCB) Waste
PFAS FED SITES	PFAS Federal Sites
PFAS INDUSTRY	PFAS Industry
PFAS MANIFEST	PFAS Manifest
PFAS NPL	PFAS NPL Sites
PFAS PROD	PFAS Production
PFAS SPILLS	PFAS Spill Sites
PFAS TRIS	PFAS TRIS Sites
PFAS UCMR3	PFAS UCMR Samples
PFAS WQP	PFAS Water Quality Portal

OTHER ASCERTAINABLE RECORDS *(cont.)*

PRISONS	PRISONS
PRP	Potentially Responsible Parties
RAATS	RCRA Administrative Action Tracking Systems
RADINFO	Radiation Information Systems
RMP	Risk Management Plans
ROD	Record of Decision
SCHOOLS PRIVATE	SCHOOLS PRIVATE
SCHOOLS PUBLIC	SCHOOLS PUBLIC
SCRD DRYCLEANERS	SCRD Drycleaners
SEMS_SMELTER	Sites on SEMS Potential Smelter Activity
SSTS	Section 7 Tracking Systems
STORMWATER	Storm Water Permits
TOSCA-PLANT	Toxic Substance Control Act: Plants
TRIS	Toxic Release Inventory Systems
UMTRA	Uranium Mill Tailing Sites
VAPOR	EPA Vapor Intrusion
BOND EXPENDITURE PLAN - CA	Bond Expenditure Plan
CALEPA SITES - CA	CalEPA Regulated Sites
CIWQS - CA	California Integrated Water Quality System
CIWQS 2 - CA	California Integrated Water Quality System
CORTESE - CA	The Hazardous Waste and Substances Sites List
CUPA_FRESNO COUNTY - CA	Fresno County Certified Unified Program Agency
DAYCARE - CA	Daycares
DRYCLEANERS - CA	Drycleaners
DRYCLEANERS_ANTELOPE VALLEY - CA	Antelope Valley Drycleaners
DRYCLEANERS_BAY AREA - CA	Bay Area Drycleaners
DRYCLEANERS_FEATHER RIVER - CA	Feather River Drycleaners
DRYCLEANERS_GREAT BASIN UNIFIED - CA	Great Basin Unified Drycleaners
DRYCLEANERS_MOJAVE DESERT - CA	Mojave Desert Drycleaners
DRYCLEANERS_MONTEREY BAY - CA	Monterey Bay Drycleaners
DRYCLEANERS_NORTH COAST UNIFIED - CA	North Coast Unified Drycleaners
DRYCLEANERS_NORTHERN SIERRA - CA	Northern Sierra Drycleaners
DRYCLEANERS_SAN JOAQUIN VALLEY - CA	San Joaquin Valley Drycleaners
DRYCLEANERS_SAN LUIS OBISPO - CA	San Luis Obispo Drycleaners
DRYCLEANERS_SOUTH COAST - CA	South Coast Drycleaners
DRYCLEANERS_YOLO-SOLANO COUNTIES - CA	Yolo and Solano Counties Drycleaners
EMI - CA	Emissions Inventory Data
FA - CA	Financial Assurance
FA 2 - CA	Financial Assurance for Solid Waste Facilities
HIST CORTESE - CA	The Historical Hazardous Waste and Substances Sites List
HIST HAZNET - CA	Historical Hazardous Waste Manifests
HIST HWP - CA	Historical EnviroStor Permitted Facilities
HIST LDS - CA	Historical Land Disposal Sites
HIST MCS - CA	Historical Military Cleanup Sites
HIST NFA - CA	Historical No Further Action Sites
HWM COMMERCIAL FACILITIES - CA	Hazardous Waste Management Commercial Facilities
HWP - CA	EnviroStor Permitted Facilities
HWT - CA	Hazardous Waste Transporters
LDS - CA	Land Disposal Sites
MCS - CA	Military Cleanup Sites
MWMP - CA	Medical Waste Management Program
MWMP 2 - CA	Medical Waste Management Program
NFA - CA	No Further Action Sites
NFE - CA	Unconfirmed contaminated properties
NPDES - CA	State Wastewater and NPDES Permits
PERCHLORATE 2 - CA	Perchlorate contaminted sites
PFAS - CA	PFAS Site Listing

OTHER ASCERTAINABLE RECORDS *(cont.)*

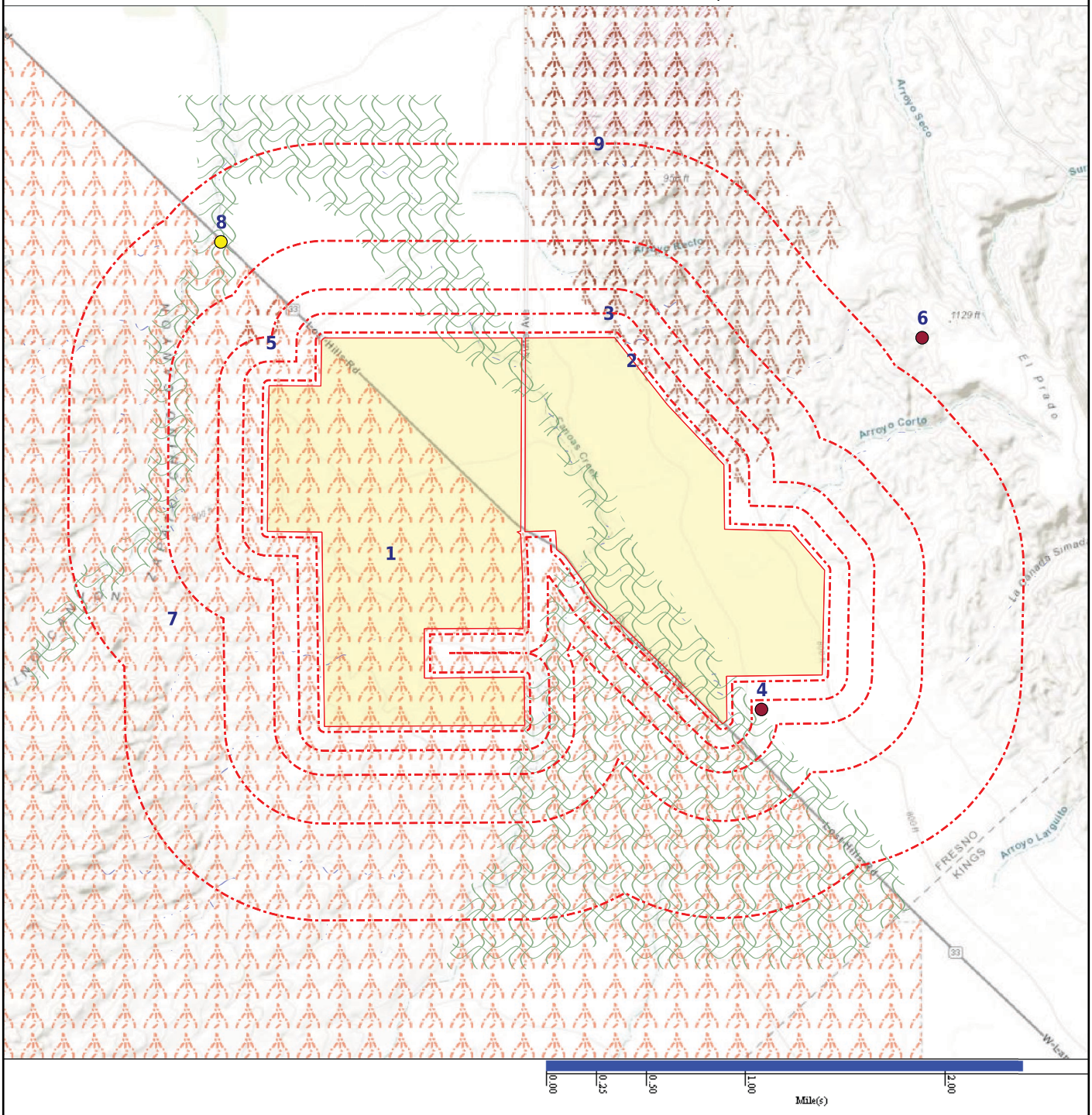
PFAS DOD - CA	PFAS Site Listing
PFAS GAMA - CA	PFAS GAMA Well Sampling
PROPOSITION 65 - CA	Proposition 65 Records
RFR - CA	Regulated Facility Report
SWAT - CA	SWAT Reports Summary Data
WDR - CA	Waste Discharge Requirement Sites
WDS - CA	Waste Discharge System
WILDLANDS - CA	Preserves List
WIP - CA	Well Investigation Program

OTHER

SEISMIC - CA	Seismic Hazards Zonation Program

SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: September 20, 2023



- Subject Property
- Equal/Higher Elevation
- Lower Elevation
- CDC HAZDAT (No Data)
- Department of Defense (No Data)
- DFIRM Floodzone 100
- DFIRM Floodzone 500 (No Data)
- Federal Lands
- FEMA FloodZone 100
- FEMA FloodZone 500 (No Data)
- Fire Areas
- Fire Hazard Zone
- Historical DOD (No Data)
- National Priority List (No Data)
- NWI
- Seismic (No Data)

SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
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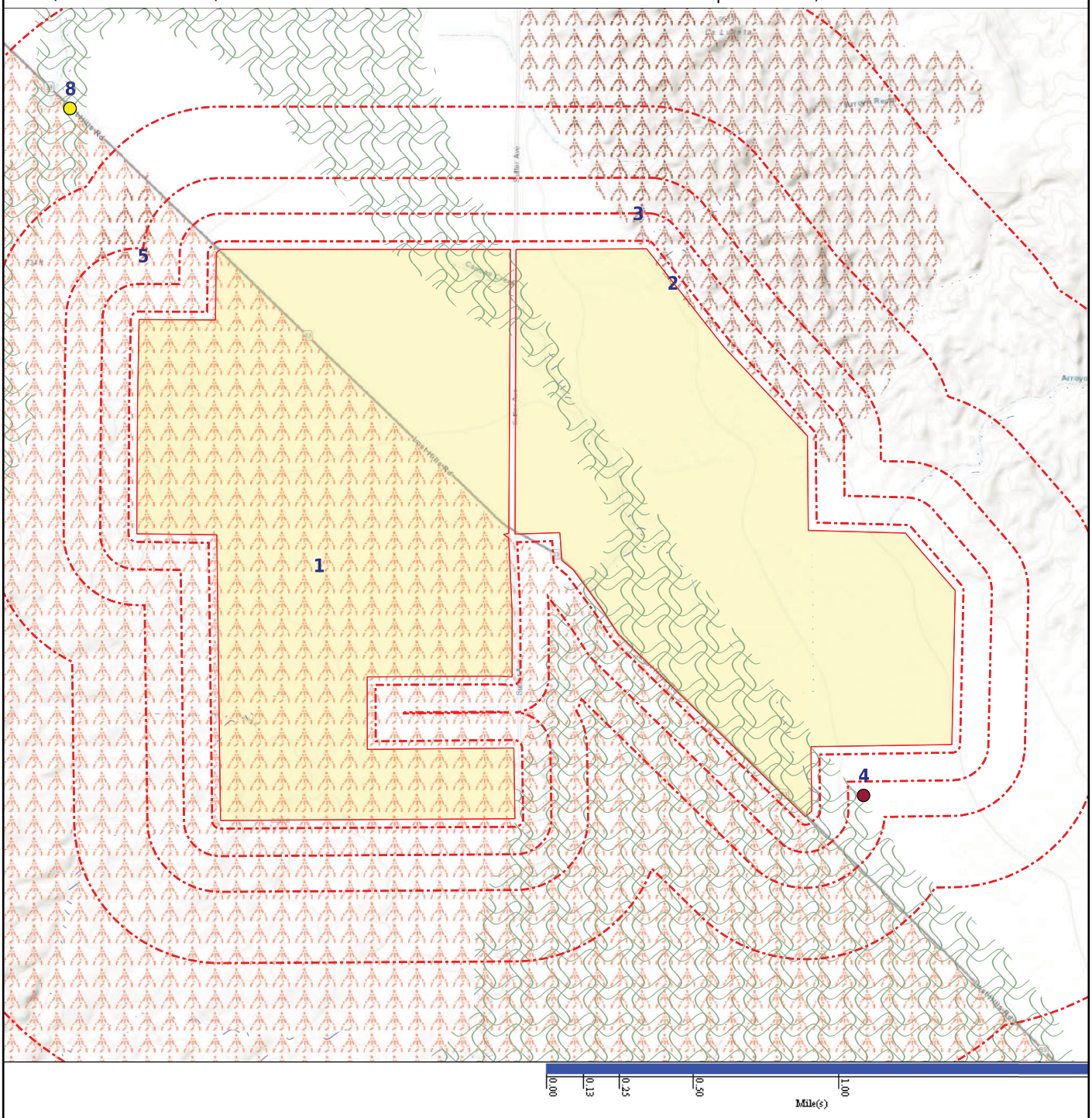


- Subject Property
- Department of Defense (No Data)
- FEMA FloodZone 100
- Historical DOD (No Data)
- Equal/Higher Elevation
- DFIRM Floodzone 100
- FEMA FloodZone 500 (No Data)
- National Priority List (No Data)
- Lower Elevation
- DFIRM Floodzone 500 (No Data)
- Fire Areas
- NWI
- CDC HAZDAT (No Data)
- Federal Lands
- Fire Hazard Zone
- Seismic (No Data)

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (MILES)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	>1	TOTAL MAPPED
FEDERAL RCRA NON-CORRACTS TSD FACILITIES LIST								
ARCHIVED RCRA TSDF		0.500	0	0	0	--	--	0
RCRA_TSDF		0.500	0	0	0	--	--	0
FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS								
AST PBS		0.250	0	0	--	--	--	0
EPA UST		0.250	0	0	--	--	--	0
FEMA UST		0.250	0	0	--	--	--	0
HIST INDIAN UST R7		0.250	0	0	--	--	--	0
AST - CA		0.250	0	0	--	--	--	0
FID UST - CA		0.250	0	0	--	--	--	0
HIST AST - CA		0.250	0	0	--	--	--	0
HIST UST - CA		0.250	0	0	--	--	--	0
UST - CA		0.250	0	0	--	--	--	0
FEDERAL CERCLIS LIST								
CERCLIS NFRAP		0.500	0	0	0	--	--	0
CERCLIS-HIST		0.500	0	0	0	--	--	0
EPA SAA		0.500	0	0	0	--	--	0
FEDERAL FACILITY		1.000	0	0	0	0	--	0
SEMS_8R_ACTIVE SITES		0.500	0	0	0	--	--	0
SEMS_8R_ARCHIVED SITES		0.500	0	0	0	--	--	0
FEDERAL RCRA CORRACTS FACILITIES LIST								
CORRACTS		1.000	0	0	0	0	--	0
HIST CORRACTS 2		1.000	0	0	0	0	--	0
FEDERAL DELISTED NPL SITE LIST								
DELISTED NPL		1.000	0	0	0	0	--	0
DELISTED PROPOSED NPL		1.000	0	0	0	0	--	0
SEMS_DELETED NPL		1.000	0	0	0	0	--	0
FEDERAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS								
EPA LF MOP		0.500	0	0	0	--	--	0
FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS								
EPA LUST		0.500	0	0	0	--	--	0
HIST INDIAN LUST R4		0.500	0	0	0	--	--	0
HIST INDIAN LUST R8		0.500	0	0	0	--	--	0
LUST REG 1 - CA		0.500	0	0	0	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (MILES)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	>1	TOTAL MAPPED
FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS *(cont.)*								
LUST REG 2 - CA		0.500	0	0	0	--	--	0
LUST REG 3 - CA		0.500	0	0	0	--	--	0
LUST REG 4 - CA		0.500	0	0	0	--	--	0
LUST REG 5 - CA		0.500	0	0	0	--	--	0
LUST REG 6 - CA		0.500	0	0	0	--	--	0
LUST REG 7 - CA		0.500	0	0	0	--	--	0
LUST REG 8 - CA		0.500	0	0	0	--	--	0
LUST REG 9 - CA		0.500	0	0	0	--	--	0
SLIC REG 1 - CA		0.500	0	0	0	--	--	0
SLIC REG 2 - CA		0.500	0	0	0	--	--	0
SLIC REG 3 - CA		0.500	0	0	0	--	--	0
SLIC REG 4 - CA		0.500	0	0	0	--	--	0
SLIC REG 5 - CA		0.500	0	0	0	--	--	0
SLIC REG 6 - CA		0.500	0	0	0	--	--	0
SLIC REG 7 - CA		0.500	0	0	0	--	--	0
SLIC REG 8 - CA		0.500	0	0	0	--	--	0
SLIC REG 9 - CA		0.500	0	0	0	--	--	0
FEDERAL ERNS LIST								
ERNS		SP	0	--	--	--	--	0
FEDERAL INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES								
FED E C		0.500	0	0	0	--	--	0
FED I C		0.500	0	0	0	--	--	0
RCRA IC_EC		0.250	0	0	--	--	--	0
FEDERAL RCRA GENERATORS LIST								
HIST RCRA_CESQG		0.250	0	0	--	--	--	0
HIST RCRA_LQG		0.250	0	0	--	--	--	0
HIST RCRA_NONGEN		0.250	0	0	--	--	--	0
HIST RCRA_SQG		0.250	0	0	--	--	--	0
RCRA_LQG		0.250	0	0	--	--	--	0
RCRA_NONGEN		0.250	0	0	--	--	--	0
RCRA_SQG		0.250	0	1	--	--	--	1
RCRA_VSQG		0.250	0	0	--	--	--	0
FEDERAL NPL SITE LIST								
NPL		1.000	0	0	0	0	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (MILES)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	>1	TOTAL MAPPED
FEDERAL NPL SITE LIST *(cont.)*								
NPL EPA R1 GIS		1.000	0	0	0	0	--	0
NPL EPA R3 GIS		1.000	0	0	0	0	--	0
NPL EPA R6 GIS		1.000	0	0	0	0	--	0
NPL EPA R8 GIS		1.000	0	0	0	0	--	0
NPL EPA R9 GIS		1.000	0	0	0	0	--	0
PART NPL		1.000	0	0	0	0	--	0
PROPOSED NPL		1.000	0	0	0	0	--	0
SEMS_FINAL NPL		1.000	0	0	0	0	--	0
SEMS_PROPOSED NPL		1.000	0	0	0	0	--	0
STATE- AND TRIBAL - EQUIVALENT CERCLIS								
ENVIROSTOR - CA		1.000	0	0	0	0	--	0
HIST TOXIC PITS - CA		1.000	0	0	0	0	--	0
OIL & GAS CLEANUP - CA		0.500	0	0	0	--	--	0
SWRCB CLEANUP - CA		0.500	0	0	0	--	--	0
SWRCB NON_CASE - CA		0.500	0	0	0	--	--	0
TOXIC PITS - CA		1.000	0	0	0	0	--	0
STATE- AND TRIBAL - EQUIVALENT NPL								
HIST RESPONSE - CA		1.000	0	0	0	0	--	0
RESPONSE - CA		1.000	0	0	0	0	--	0
STATE AND TRIBAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS								
HIST SWF/LF - CA		0.500	0	0	0	--	--	0
SWF/LF - CA		0.500	0	0	0	--	--	0
STATE RCRA GENERATORS LIST								
HWG - CA		0.250	0	1	--	--	--	1
STATE AND TRIBAL BROWNFIELD SITES								
TRIBAL BROWNFIELDS		0.500	0	0	0	--	--	0
STATE AND TRIBAL VOLUNTARY CLEANUP SITES								
VCP - CA		0.500	0	0	0	--	--	0
LOCAL BROWNFIELD LISTS								
BROWNFIELDS-ACRES		0.500	0	0	0	--	--	0
FED BROWNFIELDS		0.500	0	0	0	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (MILES)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	>1	TOTAL MAPPED
LOCAL LISTS OF HAZARDOUS WASTE / CONTAMINATED SITES								
FED CDL		SP	0	--	--	--	--	0
US HIST CDL		SP	0	--	--	--	--	0
CDL - CA		SP	0	--	--	--	--	0
SCH - CA		0.250	0	0	--	--	--	0
RECORDS OF EMERGENCY RELEASE REPORTS								
HMIRS (DOT)		SP	0	--	--	--	--	0
CHMIRS - CA		SP	0	--	--	--	--	0
HIST CHMIRS - CA		SP	0	--	--	--	--	0
LOCAL LAND RECORDS								
LIENS 2		SP	0	--	--	--	--	0
DEED - CA		0.500	0	0	0	--	--	0
HIST LIENS - CA		SP	0	--	--	--	--	0
LIENS - CA		SP	0	--	--	--	--	0
LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES								
ODI		0.500	0	0	0	--	--	0
TRIBAL ODI		0.500	0	0	0	--	--	0
HAULERS - CA		0.500	0	0	0	--	--	0
SWRCY - CA		0.500	0	0	0	--	--	0
OTHER ASCERTAINABLE RECORDS								
AFS		SP	0	--	--	--	--	0
ALT FUELING		0.250	0	0	--	--	--	0
ARENAS		SP	0	--	--	--	--	0
ARENAS 2		SP	0	--	--	--	--	0
BRS		SP	0	--	--	--	--	0
CDC HAZDAT		1.000	0	0	0	0	--	0
CHURCHES		SP	0	--	--	--	--	0
COAL ASH DOE		0.500	0	0	0	--	--	0
COAL ASH EPA		0.500	0	0	0	--	--	0
COAL GAS		1.000	0	0	0	0	--	0
COLLEGES		SP	0	--	--	--	--	0
COLLEGES 2		SP	0	--	--	--	--	0
CONSENT (DECREES)		1.000	0	0	0	0	--	0
CORRECTIVE ACTIONS_2020		0.500	0	0	0	--	--	0
DAYCARE		SP	0	--	--	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (MILES)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	>1	TOTAL MAPPED
OTHER ASCERTAINABLE RECORDS *(cont.)*								
DEBRIS EPA LF		0.500	0	0	0	--	--	0
DEBRIS EPA SWRCY		0.500	0	0	0	--	--	0
DOD		1.000	0	0	0	0	--	0
DOT OPS		SP	0	--	--	--	--	0
ECHO		SP	0	--	--	--	--	0
ENOI		SP	0	--	--	--	--	0
EPA FUELS		SP	0	--	--	--	--	0
EPA OSC		SP	0	--	--	--	--	0
EPA WATCH		SP	0	--	--	--	--	0
FA HWF		SP	0	--	--	--	--	0
FEDLAND		1.000	0	0	0	2	--	2
FRS		SP	0	--	--	--	--	0
FTTS		SP	0	--	--	--	--	0
FTTS INSP		SP	0	--	--	--	--	0
FUDS		1.000	0	0	0	0	--	0
GOV MANSIONS		SP	0	--	--	--	--	0
HIST AFS		SP	0	--	--	--	--	0
HIST AFS 2		SP	0	--	--	--	--	0
HIST DOD		1.000	0	0	0	0	--	0
HIST LEAD_SMELTER		SP	0	--	--	--	--	0
HIST MLTS		SP	0	--	--	--	--	0
HIST PCB TRANS		SP	0	--	--	--	--	0
HIST PCS ENF		1.000	0	0	0	0	--	0
HIST PCS FACILITY		1.000	0	0	0	0	--	0
HIST SSTS		SP	0	--	--	--	--	0
HOSPITALS		SP	0	--	--	--	--	0
ICIS		SP	0	--	--	--	--	0
INACTIVE PCS		1.000	0	0	0	1	--	1
LUCIS		0.500	0	0	0	--	--	0
LUCIS 2		0.500	0	0	0	--	--	0
MANIFEST EPA		0.250	0	0	--	--	--	0
MGP		1.000	0	0	0	0	--	0
MINE OPERATIONS		0.250	0	0	--	--	--	0
MINES		0.250	0	0	--	--	--	0
MINES USGS		0.250	0	0	--	--	--	0
MLTS		SP	0	--	--	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (MILES)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	>1	TOTAL MAPPED
OTHER ASCERTAINABLE RECORDS *(cont.)*								
NPL AOC		1.000	0	0	0	0	--	0
NPL LIENS		SP	0	--	--	--	--	0
NURSING HOMES		SP	0	--	--	--	--	0
OSHA		SP	0	--	--	--	--	0
PADS		SP	0	--	--	--	--	0
PCB TRANSFORMER		SP	0	--	--	--	--	0
PCS ENF		1.000	0	0	0	1	--	1
PCS FACILITY		1.000	0	0	0	1	--	1
PFAS FED SITES		0.500	0	0	0	--	--	0
PFAS INDUSTRY		0.500	0	0	0	--	--	0
PFAS MANIFEST		0.500	0	0	0	--	--	0
PFAS NPL		0.500	0	0	0	--	--	0
PFAS PROD		0.500	0	0	0	--	--	0
PFAS SPILLS		0.500	0	0	0	--	--	0
PFAS TRIS		0.500	0	0	0	--	--	0
PFAS UCMR3		0.500	0	0	0	--	--	0
PFAS WQP		0.500	0	0	0	--	--	0
PRISONS		SP	0	--	--	--	--	0
PRP		SP	0	--	--	--	--	0
RAATS		SP	0	--	--	--	--	0
RADINFO		SP	0	--	--	--	--	0
RMP		0.500	0	0	0	--	--	0
ROD		1.000	0	0	0	0	--	0
SCHOOLS PRIVATE		SP	0	--	--	--	--	0
SCHOOLS PUBLIC		SP	0	--	--	--	--	0
SCRD DRYCLEANERS		0.250	0	0	--	--	--	0
SEMS_SMELTER		SP	0	--	--	--	--	0
SSTS		SP	0	--	--	--	--	0
STORMWATER		SP	0	--	--	--	--	0
TOSCA-PLANT		SP	0	--	--	--	--	0
TRIS		SP	0	--	--	--	--	0
UMTRA		0.500	0	0	0	--	--	0
VAPOR		0.500	0	0	0	--	--	0
BOND EXPENDITURE PLAN - CA		1.000	0	0	0	0	--	0
CALEPA SITES - CA		0.250	0	0	--	--	--	0
CIWQS - CA		SP	0	--	--	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (MILES)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	>1	TOTAL MAPPED
OTHER ASCERTAINABLE RECORDS *(cont.)*								
CIWQS 2 - CA		SP	0	--	--	--	--	0
CORTESE - CA		0.500	0	0	0	--	--	0
CUPA_FRESNO COUNTY - CA		0.250	0	0	--	--	--	0
DAYCARE - CA		SP	0	--	--	--	--	0
DRYCLEANERS - CA		SP	0	--	--	--	--	0
DRYCLEANERS_ANTELOPE VALLEY - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_BAY AREA - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_FEATHER RIVER - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_GREAT BASIN UNIFIED - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_MOJAVE DESERT - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_MONTEREY BAY - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_NORTH COAST UNIFIED - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_NORTHERN SIERRA - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_SAN JOAQUIN VALLEY - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_SAN LUIS OBISPO - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_SOUTH COAST - CA		0.250	0	0	--	--	--	0
DRYCLEANERS_YOLO-SOLANO COUNTIES - CA		0.250	0	0	--	--	--	0
EMI - CA		SP	0	--	--	--	--	0
FA - CA		SP	0	--	--	--	--	0
FA 2 - CA		SP	0	--	--	--	--	0
FIRE AREAS - CA		1.000	2	1	0	0	--	3
HAZNET - CA		0.250	0	1	--	--	--	1
HIGH FIRE - CA		1.000	1	0	0	1	--	2
HIST CORTESE - CA		0.500	0	0	0	--	--	0
HIST HAZNET - CA		0.250	0	0	--	--	--	0
HIST HWP - CA		1.000	0	0	0	0	--	0
HIST LDS - CA		0.500	0	0	0	--	--	0
HIST MCS - CA		1.000	0	0	0	0	--	0
HIST NFA - CA		0.500	0	0	0	--	--	0

DATABASE	SUBJECT PROPERTY	SEARCH DISTANCE (MILES)	<1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	>1	TOTAL MAPPED
OTHER ASCERTAINABLE RECORDS *(cont.)*								
HWM COMMERCIAL FACILITIES - CA		0.250	0	0	--	--	--	0
HWP - CA		1.000	0	0	0	0	--	0
HWT - CA		0.250	0	0	--	--	--	0
LDS - CA		0.500	0	0	0	--	--	0
MCS - CA		1.000	0	0	0	0	--	0
MWMP - CA		0.250	0	0	--	--	--	0
MWMP 2 - CA		0.250	0	0	--	--	--	0
NFA - CA		0.500	0	0	0	--	--	0
NFE - CA		0.500	0	0	0	--	--	0
NPDES - CA		SP	0	--	--	--	--	0
PERCHLORATE 2 - CA		0.500	0	0	0	--	--	0
PFAS - CA		0.500	0	0	0	--	--	0
PFAS DOD - CA		0.500	0	0	0	--	--	0
PFAS GAMA - CA		0.500	0	0	0	--	--	0
PROPOSITION 65 - CA		1.000	0	0	0	0	--	0
RFR - CA		SP	0	--	--	--	--	0
SWAT - CA		SP	0	--	--	--	--	0
WDR - CA		SP	0	--	--	--	--	0
WDS - CA		SP	0	--	--	--	--	0
WILDLANDS - CA		1.000	0	0	0	0	--	0
WIP - CA		0.250	0	0	--	--	--	0
OTHER								
SEISMIC - CA		1.000	0	0	0	0	--	0

Map Id: 1
Direction: W
Distance: 0.000 mi., 0 ft.
Elevation: N/R
Relative: N/R

Site Name : N/R
37.492127, -121.208297
CA
Database(s) : [HIGH FIRE - CA]

Envirosite ID: 24273807
EPA ID: N/R

HIGH FIRE - CA

State Responsibility Areas :	Yes
Haz Code :	1
Haz Class :	Moderate

Map Id: 2
Direction: NNE
Distance: 0.000 mi., 0 ft.
Elevation: N/R
Relative: N/R

Site Name : FK 1817
36.086714, -120.188256
CA
Database(s) : [FIRE AREAS - CA]

Envirosite ID: 43295718
EPA ID: N/R

FIRE AREAS - CA

Year :	1984
Alarm Date :	1984-03-29
Containment Date :	1984-03-30
Fire Number :	00000000
Fire Name :	FK 1817
Agency :	BLM
Unit ID :	BBD
INC Number :	00000000
Cause :	7
Estimated Area Cosumed Report :	N/R
GIS Acres :	1545.41
Collection Method :	8
Objective :	1
Comments :	N/R
Last Date in Agency List :	2023-07-10

Map Id: 3
Direction: NNE
Distance: 0.123 mi., 652 ft.
Elevation: N/R
Relative: N/R

Site Name : FKU 5788
36.088659, -120.181652
CA
Database(s) : [FIRE AREAS - CA]

Envirosite ID: 43300765
EPA ID: N/R

FIRE AREAS - CA

Year :	1987
Alarm Date :	1987-06-22
Containment Date :	N/R
Fire Number :	00011023
Fire Name :	FKU 5788
Agency :	CDF
Unit ID :	FKU
INC Number :	00005788
Cause :	5

Map Id: 3
Direction: NNE
Distance: 0.123 mi., 652 ft.
Elevation: N/R
Relative: N/R

Site Name : FKU 5788
36.088659, -120.181652
CA

Database(s) : [FIRE AREAS - CA] ***(cont.)***

Envirosite ID: 43300765
EPA ID: N/R

FIRE AREAS - CA ***(cont.)***

Estimated Area Cosumed Report :	N/R
GIS Acres :	938.577
Collection Method :	0
Objective :	1
Comments :	N/R
Last Date in Agency List :	2023-07-10

Map Id: 4
Direction: SE
Distance: 0.175 mi., 922 ft.
Elevation: 768 ft.
Relative: Higher

Site Name : CAMARENA BROS YARD
47940 LOST HILLS RD
COALINGA, CA 93210

Database(s) : [HAZNET - CA, HWG - CA, RCRA_SQG]

Envirosite ID: 53882025
EPA ID: CAR000317016

HAZNET - CA

Facility Name :	CAMARENA BROS YARD
Facility Address :	47940 LOST HILLS RD, COALINGA, CA 93210
County :	FRESNO

Site Details

Generator EPA ID :	CAR000317016
Active :	Active
Category :	FEDERAL
Facility Types :	N/R
Type :	PERMANENT
Contact Name :	N/R
Contact Phone :	N/R
Facility Mailing Address :	47940 LOST HILLS RD, COALINGA, CA 93210
Latitude :	36.03076329
Longitude :	-120.17539146
Agency Hyperlink :	Click here for hyperlink provided by the agency.
Last Date in Agency List :	2021-07-08

HWG - CA

Facility Name :	CAMARENA BROS YARD
Facility Address :	47940 LOST HILLS RD, COALINGA, CA 93210
County :	FRESNO

EPA ID :	CAR000317016
Status :	Inactive
Category :	FEDERAL
Type :	PERMANENT
Facility Type :	N/R
Mailing Address :	47940 LOST HILLS RD, COALINGA, CA 93210
Owner Name :	GUSTAVO CAMARENA
Owner Address :	47940 LOST HILLS RD, COALINGA, CA 93210

Map Id: 4
Direction: SE
Distance: 0.175 mi., 922 ft.
Elevation: 768 ft.
Relative: Higher

Site Name : CAMARENA BROS YARD
47940 LOST HILLS RD
COALINGA, CA 93210

Database(s) : [HAZNET - CA, HWG - CA, RCRA_SQG] ***(cont.)***

Envirosite ID: 53882025
EPA ID: CAR000317016

HWG - CA ***(cont.)***

Operator Name :	GUSTAVO CAMARENA
Operator Address :	47940 LOST HILLS RD, COALINGA, CA 93210
Latitude :	36.030763
Longitude :	-120.175391

RCRA_SQG

Facility Name :	CAMARENA BROS YARD
Facility Address :	47940 LOST HILLS RD, COALINGA, CA 93210
County :	FRESNO
Date Form Received by Agency :	2020-12-07
EPA ID :	CAR000317016
Mailing Address :	47940 LOST HILLS RD, COALINGA, CA 93210
Contact :	GUSTAVO CAMARENA
Contact Address :	47940 LOST HILLS ROAD, COALINGA, CA 93210
Contact Country :	US
Contact Telephone :	559-417-4454
Contact Email :	GUSTAVOCAMARENA559@GMAIL.COM
EPA Region :	09
Land Type :	Private
Source Type :	Notification
Classification :	Small Quantity Generator
Description :	Handlers that generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.
Last Date in Agency List :	2023-08-02

Owner/Operator Summary

Owner/Operator Name :	GUSTAVO CAMARENA
Owner/Operator Address :	47940 LOST HILLS RD, COALINGA, CA 93210
Owner/Operator Country :	US
Owner/Operator Telephone :	559-417-4454
Owner/Operator Email :	GUSTAVOCAMARENA559@GMAIL.COM
Owner/Operator Fax :	N/R
Legal Status :	Private
Owner/Operator Type :	Operator
Owner/Operator Start Date :	2020-12-07
Owner/Operator End Date :	N/R
Owner/Operator Name :	RAUL CAMARENA
Owner/Operator Address :	47940 LOST HILL RD, COALINGA, CA 93210
Owner/Operator Country :	US
Owner/Operator Telephone :	559-401-9445
Owner/Operator Email :	CAMARENABROS559@GMAIL.COM
Owner/Operator Fax :	N/R
Legal Status :	Private
Owner/Operator Type :	Owner

Map Id: 4
Direction: SE
Distance: 0.175 mi., 922 ft.
Elevation: 768 ft.
Relative: Higher

Site Name : CAMARENA BROS YARD
47940 LOST HILLS RD
COALINGA, CA 93210

Database(s) : [HAZNET - CA, HWG - CA, RCRA_SQG] ***(cont.)***

Envirosite ID: 53882025
EPA ID: CAR000317016

RCRA_SQG ***(cont.)***

Owner/Operator Start Date :	2001-03-18
Owner/Operator End Date :	N/R
Owner/Operator Name :	RAUL CAMARENA
Owner/Operator Address :	47940 LOST HILLS RD, COALINGA, CA 93210
Owner/Operator Country :	US
Owner/Operator Telephone :	559-401-9445
Owner/Operator Email :	CAMARENABROS559@GMAIL.COM
Owner/Operator Fax :	N/R
Legal Status :	Private
Owner/Operator Type :	Operator
Owner/Operator Start Date :	2020-12-07
Owner/Operator End Date :	N/R

Handler Activities Summary

U.S. Importer of Hazardous Waste :	N
Mixed Waste (Haz. and Radioactive) :	N/R
Recycler of Hazardous Waste :	Y
Transporter of Hazardous Waste :	N
Treater, Storer or Disposer of HW :	N
Underground Injection Activity :	N
On-site Burner Exemption :	N
Furnace Exemption :	N
Used Oil Fuel Burner :	N
Used Oil Processor :	N
Used Oil Refiner :	N
Used Oil Fuel Marketer to Burner :	N
Used Oil Specification Marketer :	N
Used Oil Transfer Facility :	N
Used Oil Transporter :	N

Hazardous Waste Summary

Waste Code / Name :	261 - Polychlorinated biphenyls and material containing PCB's D001 - IGNITABLE WASTE

Notices of Violations Summary

Regulation Violated :	N

Map Id: 5
Direction: WNW
Distance: 0.219 mi., 1155 ft.
Elevation: N/R
Relative: N/R

Site Name : SUTTER
36.068836, -120.22307
CA

Database(s) : [FIRE AREAS - CA]

Envirosite ID: 43305276
EPA ID: N/R

FIRE AREAS - CA

Year :	2020
Alarm Date :	2020-05-24
Containment Date :	2020-05-24
Fire Number :	N/R
Fire Name :	SUTTER
Agency :	CDF
Unit ID :	FKU
INC Number :	00006911
Cause :	11
Estimated Area Cosumed Report :	N/R
GIS Acres :	26.959
Collection Method :	1
Objective :	1
Comments :	N/R
Last Date in Agency List :	2023-07-10

Map Id: 6
Direction: ENE
Distance: 0.532 mi., 2810 ft.
Elevation: 1073 ft.
Relative: Higher

Site Name : Central Coast Field Office
36.065326, -120.146731
CA

Database(s) : [FEDLAND]

Envirosite ID: 50040201
EPA ID: N/R

FEDLAND

Facility Name :	Central Coast Field Office
Facility Address :	CA
Source Date :	2021-06-11
Category :	Fee
Loc Name :	Central Coast Field Office
Owner Name :	BLM
Local Owner :	N/R
Owner Type :	FED
Manager Type :	FED
Manager Name :	BLM
Local Manager :	BLM
Designation Type :	PUB
Local Designation :	N/R
GIS Acres :	285372
Source Protected Area ID :	N/R
WDPA Site :	0
Public Access :	OA
Access Source :	GAP - Default
GAP Status Date :	2021
GAP Status :	3
GAP Status Source :	GAP - Default
IUCN Category Date :	2021
IUCN Category :	Other Conservation Area
IUCN Category Source :	GAP - Default
Date of Establishment :	N/R

Map Id: 6
Direction: ENE
Distance: 0.532 mi., 2810 ft.
Elevation: 1073 ft.
Relative: Higher

Site Name : Central Coast Field Office
36.065326, -120.146731
CA

Database(s) : [FEDLAND] ***(cont.)***

Envirosite ID: 50040201
EPA ID: N/R

FEDLAND ***(cont.)***

Access Date :	2021
Easement Holder :	N/R
Easement Holder Type :	N/R
Comments :	N/R
Last Date in Agency List :	2023-08-11

Map Id: 7
Direction: W
Distance: 0.659 mi., 3478 ft.
Elevation: N/R
Relative: N/R

Site Name : N/R
36.043653, -120.233356
CA

Database(s) : [HIGH FIRE - CA]

Envirosite ID: 24271519
EPA ID: N/R

HIGH FIRE - CA

State Responsibility Areas :	Yes
Haz Code :	2
Haz Class :	High

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER]

Envirosite ID: 242860
EPA ID: N/R

CALEPA SITES - CA

Facility Name :	ACME PAVING
Facility Address :	45315 LOST HILLS ROAD, COALINGA, 93210-9660
Site ID :	449517
EI ID :	110002426937
EI Description :	US EPA Air Emission Inventory System (EIS)
Latitude :	36.072420
Longitude :	-120.227260
Agency Hyperlink :	Click here for hyperlink provided by the agency.
Last Date in Agency List :	2023-07-21

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

CALEPA SITES - CA ***(cont.)***

Facility Name :	SIERRA PACIFIC MATERIALS AVENAL
Facility Address :	45315 LOST HILLS ROAD, COALINGA, 93210
Site ID :	542435
EI ID :	837976
EI Description :	Industrial Facility Storm Water
Latitude :	36.079630
Longitude :	-120.227120
Agency Hyperlink :	Click here for hyperlink provided by the agency.
Last Date in Agency List :	2023-07-21

CIWQS - CA

Facility Name :	SIERRA PACIFIC MATERIALS AVENAL
Facility Address :	45315 LOST HILLS ROAD, COALINGA, CA 93210
County :	FRESNO
Place ID :	S837976
Agency Name :	SIERRA PACIFIC MATERIALS AVENAL
Last Date in Agency List :	2023-07-14

CUPA_FRESNO COUNTY - CA

Facility Name :	AVENAL AGGREGATE AND ASPHALT
Facility Address :	45315 LOST HILLS RD, COALINGA, 93210

Site Details

Facility ID :	FA0282120
CERS ID :	N/R
SWIS Number :	N/R
APN :	08511026S
Cross Street :	N/R
Last Date in Agency List :	2021-10-04

Description

DESCRIPTION :	WASTE TIRE FACILITY
Facility Name :	SIERRA PACIFIC MATERIALS, INC
Facility Address :	45315 LOST HILLS RD, COALINGA, 93210

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

CUPA_FRESNO COUNTY - CA ***(cont.)***

Site Details

Facility ID :	FA0282120
CERS ID :	N/R
SWIS Number :	N/R
APN :	08511026S
Cross Street :	N/R
Last Date in Agency List :	2023-07-19

Description

DESCRIPTION :	WASTE TIRE FACILITY

DOCKET

Facility Name :	SIERRA PACIFIC MATERIALS AVENAL
Facility Address :	45315 LOST HILLS ROAD, COALINGA, CA 93210

Site Activity Details

Enforcement Action Case Number :	CA-ZIEA430359
Activity ID :	3601539857
Enforcement Action Name :	SIERRA PACIFIC MATERIALS AVENAL
Last Date in Agency List :	2018-12-17
Final Ordr Iss/Final Order Enter Date:	N/R
Complaint/Proposed Order Actual Date:	N/R
Final Order Issued Actual Date :	N/R
Final Order Name :	N/R

Complaint Summary

Respondent/Defendant Name :	N/R
Named in Complaint :	N/R
Named in Final Order :	N/R
SEP Category :	N/R
SEP Description :	N/R
Regional Docket Number :	N/R

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

DOCKET ***(cont.)***

Standard Industrial Classification (SIC) Summary

Registry ID :	110070094768
Primary SIC :	2951 - ASPHALT PAVING MIXTURES AND BLOCKS
Primary NAICS :	N/R
Settlement FRS ICIS Facility :	N/R - N/R
Pollutants (SRS) :	N/R
Admin EA Closed Actual Date :	2018-08-29
Enforcement Action Name :	N/R
Enforcement Action Resolution :	N/R
Violation Types :	N/R
Case Law Sections :	CWA OTHER - Violations not covered elsewhere

Violation Penalties and Compliance Summary

Compliance Action Cost :	N/R
EPA Penalty Assessed Amount :	N/R
Cost Recovery Required :	N/R
Cost of SEP :	N/R
Cost of Complying Actions :	N/R

ECHO

Facility Name :	SIERRA PACIFIC MATERIALS AVENAL
Facility Address :	45315 LOST HILLS ROAD, COALINGA, CA 93210
County :	N/R
Last Inspection Date :	N/R
Registry ID :	110070094768
FIPS Code :	06019
EPA Region :	09
Inspection Count :	0
Last Inspection Days :	N/R
Informal Count :	1
Last Informal Action Date :	2018-08-29
Formal Action Count :	0
Last Formal Action Date :	N/R
Total Penalties :	0

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

ECHO ***(cont.)***

Penalty Count :	N/R
Last Penalty Date :	N/R
Last Penalty Amount :	N/R
QTRS IN NC :	8
Programs IN SNC :	0
Current Compliance Status :	No Violation Identified
Three-Year Compliance Status :	VVVVVVVV___
Collection Method :	N/R
Reference Point :	N/R
Accuracy Meters :	17531
Derived Tribes :	N/R
Derived HUC :	18030012
Derived WBD :	180300120504
Derived STCTY FIPS :	06019
Derived Zip :	93210
Derived CD113 :	21
Derived CB2010 :	060190079021404
MYRTK Universe :	NNN
NPDES IDs :	CAZ459189
CWA Permit Types :	Minor
CWA Compliance Tracking :	On
CWA NAICS :	N/R
CWA SICS :	2951
CWA Inspection Count :	N/R
CWA Last Inspection Days :	N/R
CWA Informal Count :	1
CWA Formal Action Count :	N/R
CWA Last Formal Action Date :	N/R
CWA Penalties :	N/R
CWA Last Penalty Date :	N/R
CWA Last Penalty Amount :	N/R
CWA Quarters IN NC :	9
CWA Current Compliance Status :	No Violation Identified
CWA Current SNC Flag :	N
CWA 13 Quarters Compliance Status :	VVVVVVVVV___
CWA 13 Quarters Effluent Exceedances:	N/R
CWA Three-Year QNCR Codes :	N/R
DFR URL :	Click here for hyperlink provided by the agency.
Facility SIC :	2951
Facility NAICS :	N/R
Facility Last Inspection EPA Date :	N/R
Facility Last Inspection State Date :	N/R
Facility Last Formal Act EPA Date :	N/R
Facility Last Formal Act State Date :	N/R
Facility Last Informal Act EPA Date :	N/R
Facility Last Informal Act State Date:	2018-08-29
Facility Federal Agency :	N/R
TRI Reporter :	N/R
Facility Imp Water Flag :	N/R

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

ECHO ***(cont.)***

Current SNC Flag :	N
Indian County Flag :	N
Federal Flag :	N/R
US Mexico Border Flag :	N
Chesapeak Bay Flag :	N/R
AIR Flag :	N
NPDES Flag :	Y
SDWIS Flag :	N
RCRA Flag :	N
TRI Flag :	N
GHG Flag :	N
Major Flag :	N/R
Active Flag :	Y
NAA Flag :	Y
Latitude :	36.07963
Longitude :	-120.22712
Last Date in Agency List :	2023-07-21

FRS

Facility Name :	ACME PAVING
Facility Address :	45315 LOST HILLS ROAD, COALINGA, CA 93210-9660
County :	FRESNO

Site Details

Registry ID :	110002426937
FRS Facility URL :	Click here for hyperlink provided by the agency.
Last Date in Agency List :	2023-09-12

Source Description

Source Description :

The Emission Inventory System (EIS) maintains an inventory of large stationary sources and voluntarily-reported smaller sources of air point pollution emitters. It contains information about facility sites and their physical location, emission units, emission processes, release points, control approaches, and regulations. Facility inventory data are kept separate from the emissions data and have stable identifiers to improve continuity from year to year and to help identify duplicate or missing facilities.

FRS Environmental Interest

Source and System ID :	EIS - 10711

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

FRS ***(cont.)***

Facility Name : JAXON ENTERPRISES DBA AVENAL AGGREGATE & ASPHALT
Facility Address : 45315 LOST HILLS ROAD, COALINGA, CA 93210
County : N/R

Site Details
Registry ID : 110070316156
FRS Facility URL : Click here for hyperlink provided by the agency.
Last Date in Agency List : 2023-09-12

Source Description
Source Description : OSHA-OIS

FRS Environmental Interest
Source and System ID : OSHA-OIS - 314452111
OSHA-OIS - 317134674

Facility Name : PAPICH CONSTRUCTION COMPANY, INC.
Facility Address : 45315 LOST HILLS RD, COALINGA, CA 93210
County : N/R

Site Details
Registry ID : 110070287966
FRS Facility URL : Click here for hyperlink provided by the agency.
Last Date in Agency List : 2023-09-12

Source Description
Source Description : OSHA-OIS

FRS Environmental Interest
Source and System ID : OSHA-OIS - 340581156
OSHA-OIS - 342685724

Facility Name : SIERRA PACIFIC MATERIALS AVENAL
Facility Address : 45315 LOST HILLS ROAD, COALINGA, CA 93210
County : N/R

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

FRS ***(cont.)***

Site Details

Registry ID :	110070094768
FRS Facility URL :	Click here for hyperlink provided by the agency.
Last Date in Agency List :	2023-09-12

Source Description

Source Description :

The NPDES module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

FRS Environmental Interest

Source and System ID :	ICIS - CAZ459189

HAZNET - CA

Facility Name :	ACME PAVING CO INC
Facility Address :	45315 LOST HILLS RD, COALINGA, CA 93210
County :	FRESNO

Site Details

Generator EPA ID :	CAL000248112
Active :	Inactive
Category :	STATE
Facility Types :	N/R
Type :	PERMANENT
Contact Name :	N/R
Contact Phone :	N/R
Facility Mailing Address :	10045 9 1/8 AVE, HANFORD, CA 93230
Latitude :	36.07913158
Longitude :	-120.23574599
Agency Hyperlink :	Click here for hyperlink provided by the agency.
Last Date in Agency List :	2021-07-08

Facility Name :	AVENAL AGGREGATE & ASPHALT
Facility Address :	45315 LOST HILLS RD, COALINGA, CA 93210
County :	FRESNO

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

HAZNET - CA ***(cont.)***

Site Details

Generator EPA ID :	CAL000276022
Active :	Inactive
Category :	STATE
Facility Types :	N/R
Type :	PERMANENT
Contact Name :	N/R
Contact Phone :	N/R
Facility Mailing Address :	1643 TAHOE CT, REDDING, CA 960030000
Latitude :	36.07913158
Longitude :	-120.23574599
Agency Hyperlink :	Click here for hyperlink provided by the agency.
Last Date in Agency List :	2021-07-08

Waste Generator Details

State Waste :	2008: 223 - Unspecified oil-containing waste, 0.93825 tons to CAD982446882

HWG - CA

Facility Name :	ACME PAVING CO INC
Facility Address :	45315 LOST HILLS RD, COALINGA, CA 93210
County :	FRESNO
EPA ID :	CAL000248112
Status :	Inactive
Category :	STATE
Type :	PERMANENT
Facility Type :	N/R
Mailing Address :	10045 9 1/8 AVE, HANFORD, CA 93230
Owner Name :	ACME PAVING CO INC
Owner Address :	10045 9 1/8 AVE, HANFORD, CA 93230
Operator Name :	PAULINE WELSH/OFF MGR
Operator Address :	10045 9 1/8 AVE, HANFORD, CA 93230
Latitude :	36.101042
Longitude :	-120.275875
Facility Name :	AVENAL AGGREGATE & ASPHALT
Facility Address :	45315 LOST HILLS RD, COALINGA, CA 93210
County :	FRESNO
EPA ID :	CAL000276022
Status :	Inactive
Category :	STATE

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

HWG - CA ***(cont.)***

Type :	PERMANENT
Facility Type :	N/R
Mailing Address :	1643 TAHOE CT, REDDING, CA 960030000
Owner Name :	JAXON ENTERPRISES
Owner Address :	1643 TAHOE CT, REDDING, CA 960030000
Operator Name :	ROBERT FORBES
Operator Address :	PO BOX 994248, REDDING, CA 96099
Latitude :	36.101042
Longitude :	-120.275875

ICIS

Facility Name :	SIERRA PACIFIC MATERIALS AVENAL
Facility Address :	45315 LOST HILLS ROAD, COALINGA, CA 93210

Site Details

NPDES ID :	CAZ459189
ICIS Facility Interest ID :	3600732862
Facility UIN :	110070094768
Facility Type Code :	Privately Owned Facility
Impaired Waters :	N/R
Latitude :	36.07963
Longitude :	-120.22712
Last Date in Agency List :	2023-07-06

Facility SIC

SIC Code :	2951
SIC Description :	Asphalt Paving Mixtures And Blocks

INACTIVE PCS

Issue Date :	2015-08-05
Original Issue Date :	2015-08-05
Effective Date :	2015-08-05
Expiration Date :	2020-06-30
Retirement Date :	N/R
Termination Date :	N/R
Issuing Agency :	CA Waterboards
Agency Type :	State
Activity ID :	3601112238
External Permit Number :	CAZ459189
Facility Type Indicator :	NON-POTW
Permit Type :	General Permit Covered Facility-NPDES)
Major Minor Status :	N
Permit Status :	Expired

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

INACTIVE PCS ***(cont.)***

Total Design Flow Number :	N/R
Actual Average Flow Number :	N/R
State Water Body :	N/R
State Water Body Name :	N/R
Permit Name :	Sierra Pacific Materials Avenal
Permit Comp Status :	Y
RNC Tracking :	Y
Master External Permit Number :	CAS000001
TMDL Interface :	N/R
EDMR Authorization :	N
Pretreatment Indicator :	N/R
Last Date in Agency List :	2023-07-07

NPDES - CA

Facility Name :	Sierra Pacific Materials Avenal
Facility Address :	45315 Lost Hills Road, Coalinga, 93210
County :	Fresno
Effective Date :	2015-08-05
Adoption Date :	N/R
Expiration Date :	N/R
Termination Date :	N/R
Order Number :	97-03-DWQ
NPDES Number :	CAS000001
WDID :	5F10I025888
RM Status :	Active
Reg Meas ID :	459189
Reg Meas Type :	Enrollee
Program :	Industrial
Facility Place ID :	N/R
Region Code :	5F
Discharger ID :	0
Discharger :	Sierra Pacific Materials Avenal
Discharger Address :	398 Sunrise Terrace, Arroyo Grande, California 93420
Last Date in Agency List :	2023-06-13

PCS ENF

Site Details

NPDES ID :	CAZ459189
Last Date in Agency List :	2023-07-06

Formal Enforcement Actions

Settlement Entered Date :	N/R
ENF Identifier :	N/R

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

PCS ENF ***(cont.)***

Activity ID :	N/R
Activity Type :	N/R
ENF Type :	N/R
Agency :	N/R
Fed Penalty Assessed Amount :	N/R
State Local Penalty Amount :	N/R

Informal Enforcement Actions

Achieved Date :	2018-08-29
Registry ID :	110070094768
ENF Identifier :	CA-ZIEA430359
Activity ID :	3601539857
Activity Type :	Administrative - Informal
ENF Type :	Notice of Noncompliance Issued
Agency :	State

PCS FACILITY

Issue Date :	2015-08-05
Original Issue Date :	2015-08-05
Effective Date :	2015-08-05
Expiration Date :	2020-06-30
Retirement Date :	N/R
Termination Date :	N/R
Issuing Agency :	CA Waterboards
Agency Type :	State
Activity ID :	3601112238
External Permit Number :	CAZ459189
Facility Type Indicator :	NON-POTW
Permit Type :	General Permit Covered Facility-NPDES)
Major Minor Status :	N
Permit Status :	Effective
Total Design Flow Number :	N/R
Actual Average Flow Number :	N/R
State Water Body :	N/R
State Water Body Name :	N/R
Permit Name :	Sierra Pacific Materials Avenal
Permit Comp Status :	Y
RNC Tracking :	Y
Master External Permit Number :	CAS000001
TMDL Interface :	N/R
EDMR Authorization :	N
Pretreatment Indicator :	N/R
Last Date in Agency List :	2020-02-11

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

RFR - CA

Facility Name :	Sierra Pacific Materials Avenal
Facility Address :	45315 Lost Hills Road, Coalinga, CA 93210
County :	Fresno
Effective Date :	2015-08-05
Adoption Date :	N/R
Termination Date :	N/R
Expiration/Review Date :	N/R
NPDES Number :	CAS000001
Order Number :	2014-0057-DWQ
WDID :	5F10I025888
SIC/NAICS :	2951
Program :	INDSTW
Regulatory Measure Status :	Active
Regulatory Measure Type :	Storm water industrial
Place/Project Type :	Industrial - Asphalt Paving Mixtures and Blocks
Region :	5F
Design Flow :	N/R
Major/Minor :	N/R
Complexity :	N/R
TTWQ :	N/R
Number of Enforcement Actions within Five Years:	1
Number of Violations within Five Years:	1
Agency :	Sierra Pacific Materials Avenal
Agency Address :	398 Sunrise Terrace 398 Sunrise Terrace, Arroyo Grande, CA 93420
Latitude :	36.07963
Longitude :	-120.22712
Last Date in Agency List :	2023-07-07

STORMWATER

Facility Name :	SIERRA PACIFIC MATERIALS AVENAL
Facility Address :	45315 LOST HILLS ROAD, COALINGA, CA 93210
NPDES ID :	CAZ459189
Permittee Name :	Sierra Pacific Materials Avenal
Permit Status :	Expired
Permit Issuing Name :	State
Issued Date :	2015-08-05
Effective Date :	2015-08-05
Termination Date :	N/R
Expiration Date :	2020-06-30
EPA Region :	09
SIC Code :	2951
NAICS Code :	N/R
EJ Indexes Above 80th Percentile :	Y

Map Id: 8
Direction: NW
Distance: 0.714 mi., 3769 ft.
Elevation: 659 ft.
Relative: Lower

Site Name : SIERRA PACIFIC MATERIALS AVENAL | ACME PAVING CO INC | AVENAL AGGREGATE & ASPHALT
45315 LOST HILLS ROAD
COALINGA | Coalinga, CA

Database(s) : [CALEPA SITES - CA, CIWQS - CA, CUPA_FRESNO COUNTY - CA, DOCKET, ECHO, FRS, HAZNET - CA, HWG - CA, ICIS, INACTIVE PCS, NPDES - CA, PCS ENF, PCS FACILITY, RFR - CA, STORMWATER] ***(cont.)***

Envirosite ID: 242860
EPA ID: N/R

STORMWATER ***(cont.)***

Significant Noncompliance Status :	N/R
Quarters with Noncompliance :	9
Industrial Stormwater Formal Enforcement Actions:	N/R
Facility Map Flag :	N/R
DRF URL :	Click here for hyperlink provided by the agency.
Latitude :	36.07963
Longitude :	-120.22712
Last Date in Agency List :	2023-07-12

Map Id: 9
Direction: N
Distance: 0.993 mi., 5243 ft.
Elevation: N/R
Relative: N/R

Site Name : Central Coast Field Office
36.094131, -120.182414
CA

Database(s) : [FEDLAND]

Envirosite ID: 50006528
EPA ID: N/R

FEDLAND

Facility Name :	Central Coast Field Office
Facility Address :	CA
Source Date :	2021-06-11
Category :	Fee
Loc Name :	Central Coast Field Office
Owner Name :	BLM
Local Owner :	N/R
Owner Type :	FED
Manager Type :	FED
Manager Name :	BLM
Local Manager :	BLM
Designation Type :	PUB
Local Designation :	N/R
GIS Acres :	285372
Source Protected Area ID :	N/R
WDPA Site :	0
Public Access :	OA
Access Source :	GAP - Default
GAP Status Date :	2021
GAP Status :	3
GAP Status Source :	GAP - Default
IUCN Category Date :	2021
IUCN Category :	Other Conservation Area

Map Id: 9
Direction: N
Distance: 0.993 mi., 5243 ft.
Elevation: N/R
Relative: N/R

Site Name : Central Coast Field Office
36.094131, -120.182414
CA

Database(s) : [FEDLAND] ***(cont.)***

Envirosite ID: 50006528
EPA ID: N/R

FEDLAND ***(cont.)***

IUCN Category Source :	GAP - Default
Date of Establishment :	N/R
Access Date :	2021
Easement Holder :	N/R
Easement Holder Type :	N/R
Comments :	N/R
Last Date in Agency List :	2023-08-11

ENVIROSITE ID	NAME	ADDRESS	CITY	ZIP	DATABASE(S)
41464671	GRANITE ROCK CO	WEST OF HWY 33	COALINGA	93210	CERCLIS NFRAP, SEMS...

FEDERAL RCRA NON-CORRACTS TSD FACILITIES LIST

ARCHIVED RCRA TSDF: Resource Conservation and Recovery Act hazardous waste transportation storage disposal and treatment facilities

Agency Version Date: 06/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/28/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 09/01/2023

RCRA_TSDF: Resource Conservation and Recovery Act hazardous waste transportation storage disposal and treatment facilities

Agency Version Date: 06/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/28/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 09/01/2023

FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS

AST PBS: Bulk petroleum terminals with a total bulk storage capacity of 50,000 barrels or more.

Agency Version Date: 05/01/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/20/2023
Agency: Department of Homeland Security
Agency Contact: 202-853-5361
Most Recent Contact: 08/24/2023

EPA UST: Facilities listed in the EPA UST Finder database

Agency Version Date: 07/11/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/06/2023
Agency: EPA
Agency Contact: (202) 566-1667
Most Recent Contact: 07/11/2023

FEMA UST: FEMA underground storage tank listing

Agency Version Date: 06/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/28/2023
Agency: FEMA
Agency Contact: 202-212-5283
Most Recent Contact: 09/01/2023

HIST INDIAN UST R7: Historical Underground Storage Tanks on Indian Land in EPA Region 7

Agency Version Date: 08/10/2021
Agency Update Frequency: Quarterly
Planned Next Contact: 10/17/2023
Agency: U.S. Environmental Protection Agency Region 7
Agency Contact: 855-246-3642
Most Recent Contact: 07/21/2023

AST - CA: Listing of tank facilities that are subject to the California Aboveground Petroleum Storage Act

Agency Version Date: 06/08/2023
Agency Update Frequency: No update
Planned Next Contact: 11/29/2023
Agency: California Environmental Protection Agency Unified Program Section
Agency Contact: 916-327-5092
Most Recent Contact: 09/04/2023

FID UST - CA: The State Water Resource Control Board's Facility Inventory Database underground storage tank locations listing

Agency Version Date: 05/12/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/02/2023
Agency: California Environmental Protection Agency
Agency Contact: 916-341-5791
Most Recent Contact: 08/08/2023

HIST AST - CA: Historical listing of tank facilities that are subject to the California Aboveground Petroleum Storage Act

Agency Version Date: 07/19/2019
Agency Update Frequency: Quarterly
Planned Next Contact: 12/04/2023
Agency: California Environmental Protection Agency Unified Program Section
Agency Contact: 916-327-5092
Most Recent Contact: 09/07/2023

FEDERAL, STATE, AND TRIBAL REGISTERED STORAGE TANK LISTS (cont.)

HIST UST - CA: Historical UST listing

Agency Version Date: 12/23/2021
Agency Update Frequency: Varies
Planned Next Contact: 11/20/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 08/24/2023

UST - CA: Listing of active underground storage tank facilities

Agency Version Date: 05/12/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/02/2023
Agency: CA Gov geotracker state water resources control board
Agency Contact: N/R
Most Recent Contact: 08/08/2023

FEDERAL CERCLIS LIST

CERCLIS NFRAP: The CERCLIS sites with No Further Remedial Action Planned from the CERCLIS program database. The Environmental Protection Agency decommissioned the CERCLIS data in 2014. The last update was November 12, 2013.

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 07/07/2023

CERCLIS-HIST: The CERCLIS program database contains information on the assessment and remediation of federal hazardous waste sites. The Environmental Protection Agency decommissioned the CERCLIS data in 2014. The last update was November 12, 2013.

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 07/07/2023

EPA SAA: Listing of Sites with Superfund Alternative Approach Agreements.

Agency Version Date: 07/10/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/04/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 07/10/2023

FEDERAL FACILITY: Sites where Federal Facilities Restoration and Reuse Office (FFRRO) arranged cleanup for Base Closure and Property Transfer at Federal Facilities

Agency Version Date: 07/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8712
Most Recent Contact: 07/07/2023

SEMS_8R_ACTIVE SITES: The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted. NPL sites include latitude and longitude information. For non-NPL sites, a brief site status is provided.

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

SEMS_8R_ARCHIVED SITES: The Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

FEDERAL RCRA CORRACTS FACILITIES LIST

CORRACTS: List of facilities where Resource Conservation and Recovery Act Corrective Action Program used to investigate and remediate hazardous releases

Agency Version Date: 06/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/28/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 202-566-1667
Most Recent Contact: 09/01/2023

HIST CORRACTS 2: List of facilities where Resource Conservation and Recovery Act Corrective Action Program used to investigate and remediate hazardous releases that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/25/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 202-566-1667
Most Recent Contact: 08/01/2023

FEDERAL DELISTED NPL SITE LIST

DELISTED NPL: National Priority List of sites that were delisted and no longer require action

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

DELISTED PROPOSED NPL: Sites that have been delisted from the proposed National Priority List

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

SEMS_DELETED NPL: All Deleted National Priority List Sties

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

FEDERAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

EPA LF MOP: Sites in the EPA Landfill Methane Outreach Program

Agency Version Date: 06/06/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/27/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 08/31/2023

FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS

EPA LUST: Releases listed in the EPA UST Finder database

Agency Version Date: 07/11/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/06/2023
Agency: EPA
Agency Contact: (202) 566-1667
Most Recent Contact: 07/11/2023

HIST INDIAN LUST R4: Historical Leaking Underground Storage Tanks on Indian Land in EPA Region 4

Agency Version Date: 08/23/2021
Agency Update Frequency: Quarterly
Planned Next Contact: 10/17/2023
Agency: U.S. Environmental Protection Agency Region 4
Agency Contact: 855-246-3642
Most Recent Contact: 07/21/2023

FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS (cont.)

HIST INDIAN LUST R8: Historical Leaking Underground Storage Tanks on Indian Land in EPA Region 8

Agency Version Date: 08/16/2021
Agency Update Frequency: Quarterly
Planned Next Contact: 10/09/2023
Agency: U.S. Environmental Protection Agency Region 8
Agency Contact: 855-246-3642
Most Recent Contact: 07/13/2023

LUST REG 1 - CA: Leaking underground storage tanks in Region 1: Del Norte Glenn Humboldt Lake Marin Mendocino Modoc Siskiyou Sonoma andTrinity counties.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

LUST REG 2 - CA: Leaking underground storage tanks in Region 2: Alameda Contra Costa San Francisco Santa Clara (north of Morgan Hill) San Mateo Marin Sonoma Napa Solano counties

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

LUST REG 3 - CA: Leaking underground storage tanks in Region 3: Santa Clara (south of Morgan Hill) San Mateo (southern part) Santa Cruz SanBenito Monterey Kern (some parts) San Luis Obispo Santa Barbara Ventura(northern part) counties

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

LUST REG 4 - CA: Leaking underground storage tanks in Region 4: Los Angeles Ventura counties (Small parts of Kern and Santa Barbara counties).

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

LUST REG 5 - CA: Leaking underground storage tanks in Region 5: Modoc Shasta Lassen Plumas Butte Glen Colusa Lake Sutter Yuba Sierra Nevada Placer Yolo Napa (Northeast) Solano (West) Sacramento El Dorado Amador Calaveras San Joaquin Contra Costa (East) Stanislaus Toulumne Merced Mariposa Madera Kings Fresno Tulare Kern (Very small portions of San Benito and SanLuis Obispo) counties

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

LUST REG 6 - CA: Leaking underground storage tanks in Region 6: Modoc (East) Lassen (East side and Eagle Lake) Sierra Nevada Placer El Dorado Alpine Mono Inyo Kern (East) San Bernardino Los Angeles (Northeast corner) counties

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

LUST REG 7 - CA: Leaking underground storage tanks in Region 7: Imperial San Bernardino Riverside and San Diego counties.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS (cont.)

LUST REG 8 - CA: Leaking underground storage tanks in Region 8: Orange Riverside San Bernardino counties.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

LUST REG 9 - CA: Leaking underground storage tanks in Region 9: San Diego Imperial Riverside counties.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SLIC REG 1 - CA: List of Region 1 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SLIC REG 2 - CA: List of Region 2 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SLIC REG 3 - CA: List of Region 3 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SLIC REG 4 - CA: List of Region 4 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SLIC REG 5 - CA: List of Region 5 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SLIC REG 6 - CA: List of Region 6 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database that is no longer in current agency list.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SLIC REG 7 - CA: List of Region 7 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SLIC REG 8 - CA: List of Region 8 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

FEDERAL, STATE, AND TRIBAL LEAKING STORAGE TANK LISTS (cont.)

SLIC REG 9 - CA: List of Region 9 sites from GeoTracker Site Cleanup Program (formerly known as SLIC) database that is no longer in current agency list.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

FEDERAL ERNS LIST

ERNS: Emergency Response Notification System records of reported spills

Agency Version Date: 07/03/2023
Agency Update Frequency: Annually
Planned Next Contact: 09/27/2023
Agency: National Response Center United States Coast Guard
Agency Contact: N/R
Most Recent Contact: 07/03/2023

FEDERAL INSTITUTIONAL CONTROLS / ENGINEERING CONTROLS REGISTRIES

FED E C: Federal listing of remediation sites with engineering controls

Agency Version Date: 07/31/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/25/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 07/31/2023

FED I C: Federal listing of remediation sites with institutional controls

Agency Version Date: 07/31/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/25/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 07/31/2023

RCRA IC_EC: Sites with institutional or engineering controls related to Resource Conservation and Recovery Act

Agency Version Date: 07/13/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/09/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 07/13/2023

FEDERAL RCRA GENERATORS LIST

HIST RCRA_CESQG: List of Resource Conservation and Recovery Act licensed conditionally exempt small quantity generators that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/25/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 08/01/2023

HIST RCRA_LQG: List of Resource Conservation and Recovery Act licensed large quantity generators that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/26/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 08/01/2023

HIST RCRA_NONGEN: List of Resource Conservation and Recovery Act licensed non-generators that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/25/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 08/01/2023

FEDERAL RCRA GENERATORS LIST (cont.)

HIST RCRA_SQG: List of Resource Conservation and Recovery Act licensed small quantity generators that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/25/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 08/01/2023

RCRA_LQG: Resource Conservation and Recovery Act listing of licensed large quantity generators

Agency Version Date: 06/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/28/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 09/01/2023

RCRA_NONGEN: Resource Conservation and Recovery Act listing of licensed non-generators

Agency Version Date: 06/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/28/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 09/01/2023

RCRA_SQG: Resource Conservation and Recovery Act listing of licensed small quantity generators

Agency Version Date: 06/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/28/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 09/01/2023

RCRA_VSQG: Resource Conservation and Recovery Act listing of licensed very small quantity generators.

Agency Version Date: 06/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/28/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 215-814-2469
Most Recent Contact: 09/01/2023

FEDERAL NPL SITE LIST

NPL: List of priority contaminated sites among identified releases or threatened releases of hazardous substances pollutants or contaminants nationally

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

NPL EPA R1 GIS: Geospatial data for the Environmental Protection Agency Region 1 National Priority List subject to environmental regulation

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 202-566-2132
Most Recent Contact: 07/07/2023

NPL EPA R3 GIS: Geospatial data for the Environmental Protection Agency Region 3 National Priority List subject to environmental regulation

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 202-566-2132
Most Recent Contact: 07/07/2023

NPL EPA R6 GIS: Geospatial data for the Environmental Protection Agency Region 6 National Priority List subject to environmental regulation

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 202-566-2132
Most Recent Contact: 07/07/2023

FEDERAL NPL SITE LIST (cont.)

NPL EPA R8 GIS: Geospatial data for the Environmental Protection Agency Region 8 National Priority List subject to environmental regulation

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 202-566-2132
Most Recent Contact: 07/07/2023

NPL EPA R9 GIS: Geospatial data for the Environmental Protection Agency Region 9 National Priority List subject to environmental regulation

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 202-566-2132
Most Recent Contact: 07/07/2023

PART NPL: Sites that are a part of an National Priority List site referred to as the parent site

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

PROPOSED NPL: Sites that have been proposed for the National Priority List

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

SEMS_FINAL NPL: All Included National Priority List Sites

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

SEMS_PROPOSED NPL: All Proposed National Priority List Sites

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

STATE- AND TRIBAL - EQUIVALENT CERCLIS

ENVIROSTOR - CA: Department of Toxic Substances Controls

Agency Version Date: 06/01/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/22/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-327-1077
Most Recent Contact: 08/28/2023

HIST TOXIC PITS - CA: Listing of Toxic Pit Cleanup Act sites that are no longer in current agency list.

Agency Version Date: 10/12/2018
Agency Update Frequency: Quarterly
Planned Next Contact: 12/07/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5810
Most Recent Contact: 09/12/2023

OIL & GAS CLEANUP - CA: List of SWRCB Oil & Gas Cleanup Sites from GeoTracker Site Cleanup Program database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: California Regional Water Quality Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

STATE- AND TRIBAL - EQUIVALENT CERCLIS (cont.)

SWRCB CLEANUP - CA: List of SWRCB Cleanups from Geotracker including CAF, Sampling Points, and Projects.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: California Regional Water Quality Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

SWRCB NON_CASE - CA: List of SWRCB Non-Case sites from GeoTracker Site Cleanup Program database.

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: California Regional Water Quality Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

TOXIC PITS - CA: Listing of Toxic Pit Cleanup Act sites

Agency Version Date: 06/16/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/07/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5810
Most Recent Contact: 09/12/2023

STATE- AND TRIBAL - EQUIVALENT NPL

HIST RESPONSE - CA: List of state response sites with confirmed releases and potential high risk that are no longer in current agency list.

Agency Version Date: 10/17/2017
Agency Update Frequency: Annually
Planned Next Contact: 10/17/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-327-1077
Most Recent Contact: 07/21/2023

RESPONSE - CA: State response sites with confirmed releases and potential high risk

Agency Version Date: 06/01/2023
Agency Update Frequency: Annually
Planned Next Contact: 11/22/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-327-1077
Most Recent Contact: 08/28/2023

STATE AND TRIBAL LANDFILL AND/OR SOLID WASTE DISPOSAL SITE LISTS

HIST SWF/LF - CA: List of Solid Waste Information System's solid waste facilities and landfills that is no longer in current agency list.

Agency Version Date: 03/05/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/13/2023
Agency: Department of Resources Recycling and Recovery
Agency Contact: 916-341-6066
Most Recent Contact: 07/19/2023

SWF/LF - CA: Solid Waste Information System's facility listing of solid waste facilities and landfills

Agency Version Date: 08/16/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/10/2023
Agency: Department of Resources Recycling and Recovery
Agency Contact: 916-341-6066
Most Recent Contact: 08/16/2023

STATE RCRA GENERATORS LIST

HWG - CA: Hazardous waste generator listing

Agency Version Date: 05/25/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/15/2023
Agency: Department of Toxic Substances Control
Agency Contact: N/R
Most Recent Contact: 08/21/2023

STATE AND TRIBAL BROWNFIELD SITES

TRIBAL BROWNFIELDS: Tribal brownfield remediation site listing

Agency Version Date: 02/10/2017
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 11/16/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 08/22/2023

STATE AND TRIBAL VOLUNTARY CLEANUP SITES

VCP - CA: Voluntary Cleanup Program remediation sites listing

Agency Version Date: 06/01/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/22/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 08/28/2023

LOCAL BROWNFIELD LISTS

BROWNFIELDS-ACRES: EPA Brownfields Assessment, Cleanup and Redevelopment Exchange System.

Agency Version Date: 05/22/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/13/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 08/17/2023

FED BROWNFIELDS: Federal brownfield remediation sites

Agency Version Date: 04/06/2023
Agency Update Frequency: Semi Annually
Planned Next Contact: 09/28/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 07/03/2023

LOCAL LISTS OF HAZARDOUS WASTE / CONTAMINATED SITES

FED CDL: The U.S. Department of Justice listing of clandestine drug lab locations

Agency Version Date: 06/22/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/13/2023
Agency: U.S. Department of Justice
Agency Contact: 202-307-7610
Most Recent Contact: 09/18/2023

US HIST CDL: The U.S. Department of Justice historical listing of clandestine drug lab locations

Agency Version Date: 08/05/2019
Agency Update Frequency: Quarterly
Planned Next Contact: 10/19/2023
Agency: U.S. Department of Justice
Agency Contact: 202-307-7610
Most Recent Contact: 07/25/2023

CDL - CA: Listing of Meth and clandestine drug labs maintained by the Department of Toxic Substances Control

Agency Version Date: 12/22/2022
Agency Update Frequency: Varies
Planned Next Contact: 12/01/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 09/06/2023

SCH - CA: Listing of possible hazardous material contamination sites on existing school properties

Agency Version Date: 07/03/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/28/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 07/03/2023

RECORDS OF EMERGENCY RELEASE REPORTS

HMIRS (DOT): Hazardous Material spills reported by the Department of Transportation

Agency Version Date: 05/30/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/20/2023
Agency: U.S. Department of Transportation
Agency Contact: (202) 366-4996
Most Recent Contact: 08/24/2023

CHMIRS - CA: California Hazardous Material Incident Reporting System's reported accidental hazardous material incidents releases or spills

Agency Version Date: 06/19/2023
Agency Update Frequency: Varies
Planned Next Contact: 12/08/2023
Agency: California Emergency Management Agency
Agency Contact: 916-845-8275
Most Recent Contact: 09/13/2023

HIST CHMIRS - CA: California Hazardous Material Incident Reporting System's reported accidental hazardous material incidents releases or spills

Agency Version Date: 04/06/2017
Agency Update Frequency: Quarterly
Planned Next Contact: 10/13/2023
Agency: California Emergency Management Agency
Agency Contact: 916-845-8275
Most Recent Contact: 07/19/2023

LOCAL LAND RECORDS

LIENS 2: Comprehensive Environmental Response Compensation and Liability Act sites with liens

Agency Version Date: 05/11/2017
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 11/17/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 08/23/2023

DEED - CA: The Department of Toxic Substances Control's listing of property locations with Deed restrictions

Agency Version Date: 07/06/2023
Agency Update Frequency: Semi Annually
Planned Next Contact: 10/02/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-341-5791
Most Recent Contact: 07/06/2023

HIST LIENS - CA: The Department of Toxic Substances Control's listing of property locations with environmental liens that is no longer in current agency list.

Agency Version Date: 12/04/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/10/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 07/14/2023

LIENS - CA: The Department of Toxic Substances Control's listing of property locations with environmental liens

Agency Version Date: 05/22/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/10/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 08/16/2023

LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES

ODI: Open dump inventory sites

Agency Version Date: 10/03/2017
Agency Update Frequency: No Update
Planned Next Contact: 10/16/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 07/20/2023

TRIBAL ODI: Indian land open dump inventory for all regions

Agency Version Date: 05/05/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/26/2023
Agency: Indian Health Service
Agency Contact: 301-443-3593
Most Recent Contact: 08/01/2023

LOCAL LISTS OF LANDFILL / SOLID WASTE DISPOSAL SITES (cont.)

HAULERS - CA: Waste Tire Manifest Program Hauler Registration listing

Agency Version Date: 06/05/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/24/2023

Agency: California Department of Resources Recycling and Recovery (CalRecycle)
Agency Contact: 916-341-6066
Most Recent Contact: 08/30/2023

SWRCY - CA: Listing of facilities which perform recycled material processing activities

Agency Version Date: 04/27/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/20/2023

Agency: California Department of Resources Recycling and Recovery (CalRecycle)
Agency Contact: 916-341-6066
Most Recent Contact: 07/24/2023

OTHER ASCERTAINABLE RECORDS

AFS: Air Facility Systems Quarterly Extract

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023

Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 07/07/2023

ALT FUELING: Alternative Fueling Stations by fuel type.

Agency Version Date: 06/06/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/27/2023

Agency: U.S. Department of Energy
Agency Contact: N/R
Most Recent Contact: 08/31/2023

ARENAS: List of Arenas and Sport Venues

Agency Version Date: 04/28/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/20/2023

Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 07/25/2023

ARENAS 2: List of Convention Centers and Fairgrounds

Agency Version Date: 07/24/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/18/2023

Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 07/24/2023

BRS: Reporting of hazardous waste generation and management from large quantity generators

Agency Version Date: 06/07/2023
Agency Update Frequency: Biennial
Planned Next Contact: 11/28/2023

Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 09/01/2023

CDC HAZDAT: The Agency for Toxic Substances and Disease Registry's Hazardous Substance Release/Health Effects Database.

Agency Version Date: 07/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/03/2023

Agency: Agency for Toxic Substances and Disease Registry
Agency Contact: 770-488-6399
Most Recent Contact: 07/07/2023

CHURCHES: List of places of worship

Agency Version Date: 05/01/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/24/2023

Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 07/28/2023

OTHER ASCERTAINABLE RECORDS (cont.)

COAL ASH DOE: List of existing and planned generators with 1 megawatt or greater of combined capacity that are utilizing coal ash impoundments.

Agency Version Date: 12/01/2022
Agency Update Frequency: Varies
Planned Next Contact: 11/15/2023
Agency: Department of Energy
Agency Contact: (202) 586-8800
Most Recent Contact: 08/21/2023

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

Agency Version Date: 02/18/2021
Agency Update Frequency: Varies
Planned Next Contact: 10/09/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 07/13/2023

COAL GAS: Manufactured Gas Plant locations

Agency Version Date: 06/13/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/04/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 09/07/2023

COLLEGES: List of major Universities & Colleges

Agency Version Date: 06/28/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/22/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 06/28/2023

COLLEGES 2: List of Universities & Colleges

Agency Version Date: 07/03/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/28/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 07/03/2023

CONSENT (DECREES): Legal decisions regarding responsibility for Superfund locations

Agency Version Date: 07/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/03/2023
Agency: Environmental Protection Agency
Agency Contact: (800) 424-9346
Most Recent Contact: 07/07/2023

CORRECTIVE ACTIONS_2020: In 2009 the EPA created the 2020 Corrective Action Baseline list of contaminated or potentially contaminated sites with a cleanup goal to complete 95% by the year 2020. The names on the list indicate the facility owners who may or may not have caused the contamination.

Agency Version Date: 12/21/2018
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 09/22/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 06/28/2023

DAYCARE: List of Daycare facilities

Agency Version Date: 06/27/2023
Agency Update Frequency: Varies
Planned Next Contact: 12/18/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 09/21/2023

DEBRIS EPA LF: EPA list of designated landfill facilities for the safe disposal of disaster debris.

Agency Version Date: 06/22/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/13/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 09/18/2023

OTHER ASCERTAINABLE RECORDS (cont.)

DEBRIS EPA SWRCY: EPA list of facilities for the safe recovery, recycling, and disposal of disaster debris.

Agency Version Date: 06/22/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/13/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 09/18/2023

DOD: Department of Defense sites from the Protected Areas Database (PAD-US)

Agency Version Date: 07/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/03/2023
Agency: United States Geologic Survey (USGS)
Agency Contact: 1-888-275-8747
Most Recent Contact: 07/07/2023

DOT OPS: Incident Data Report

Agency Version Date: 04/27/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/20/2023
Agency: U.S. Department of Transportation
Agency Contact: (202) 366-4996
Most Recent Contact: 07/24/2023

ECHO: ECHO is EPA Enforcement and Compliance History Online website to search for facilities in your community to assess their compliance with environmental regulations related to CAA, CWA, RCRA, & SDWA.

Agency Version Date: 06/02/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/23/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 202-566-1667
Most Recent Contact: 08/29/2023

ENOI: The Electronic Notice of Intent (eNOI) database contains construction sites and industrial facilities that submit permit requests to EPA for Construction General Permits (CGP) and Multi-Sector General Permits (MSGP).

Agency Version Date: 03/19/2021
Agency Update Frequency: Quarterly
Planned Next Contact: 11/08/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/14/2023

EPA FUELS: List of companies and facilities registered to participate in EPA Fuel Programs under Title 40 CFR Part 80.

Agency Version Date: 07/13/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/09/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: (202) 564-2307
Most Recent Contact: 07/13/2023

EPA OSC: Listing of oil spills and hazardous substance release sites requiring EPA On-Site Coordinators.

Agency Version Date: 05/26/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/16/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: (202) 564-2307
Most Recent Contact: 08/22/2023

EPA WATCH: The EPA Watch List was used to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. EPA maintained the lists from 2011 - 2013.

Agency Version Date: 02/09/2018
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 11/16/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: (202) 564-2307
Most Recent Contact: 08/22/2023

FA HWF: Hazardous Waste Facilities with Financial Assurance

Agency Version Date: 06/16/2023
Agency Update Frequency: Varies
Planned Next Contact: 12/07/2023
Agency: Environmental Protection Agency
Agency Contact: (800) 424-9346
Most Recent Contact: 09/12/2023

OTHER ASCERTAINABLE RECORDS (cont.)

FEDLAND: Federal Lands from the Protected Areas Database (PAD-US)

Agency Version Date: 07/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/03/2023
Agency: United States Geologic Survey (USGS)
Agency Contact: 1-888-275-8747
Most Recent Contact: 07/07/2023

FRS: Facility Registry Systems

Agency Version Date: 07/17/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/11/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 07/17/2023

FTTS: Tracking of administrative and enforcement activities related to FIFRA/TSCA

Agency Version Date: 04/06/2013
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 12/01/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 564-2280
Most Recent Contact: 09/05/2023

FTTS INSP: Tracking of inspections related to FIFRA/TSCA

Agency Version Date: 05/08/2017
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 11/23/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 564-2280
Most Recent Contact: 08/29/2023

FUDS: Defense sites that require cleanup

Agency Version Date: 07/18/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/12/2023
Agency: US Army Corps of Engineering
Agency Contact: (202) 761-0011
Most Recent Contact: 07/18/2023

GOV MANSIONS: List of Governors Mansions

Agency Version Date: 04/27/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/20/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 07/24/2023

HIST AFS: List of Air Facility Systems Quarterly Extract that are no longer in current agency list.

Agency Version Date: 06/19/2019
Agency Update Frequency: Quarterly
Planned Next Contact: 11/16/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/22/2023

HIST AFS 2: List of Air Facility Systems Quarterly Extract that are no longer in current agency list.

Agency Version Date: 11/26/2018
Agency Update Frequency: Quarterly
Planned Next Contact: 12/15/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 09/20/2023

HIST DOD: Department of Defense historical sites

Agency Version Date: 07/07/2023
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 10/03/2023
Agency: Environmental Protection Agency
Agency Contact: (800) 424-9346
Most Recent Contact: 07/07/2023

HIST LEAD_SMELTER: List of former lead smelter sites that is no longer in current agency list.

Agency Version Date: 12/12/2018
Agency Update Frequency: Annually
Planned Next Contact: 12/01/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 09/05/2023

OTHER ASCERTAINABLE RECORDS (cont.)

HIST MLTS: List of sites in possession/use of radioactive materials regulated by NRC that is no longer in current agency list.

Agency Version Date: 07/13/2016
Agency Update Frequency: Annually
Planned Next Contact: 12/11/2023
Agency: Nuclear Regulatory Commission
Agency Contact: (800) 397-4209
Most Recent Contact: 09/14/2023

HIST PCB TRANS: List of PCB Disposal Facilities that are no longer in current agency list.

Agency Version Date: 01/18/2018
Agency Update Frequency: No Update
Planned Next Contact: 10/04/2023
Agency: Environmental Protection Agency
Agency Contact: (703) 308-8404
Most Recent Contact: 07/10/2023

HIST PCS ENF: List of permitted facilities to discharge wastewater (Federal equivalent to NPDES) that are no longer in current agency list.

Agency Version Date: 12/08/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/18/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 564-6582
Most Recent Contact: 07/24/2023

HIST PCS FACILITY: List of Permitted facilities to discharge wastewater (Federal equivalent to NPDES) that are no longer in current agency list.

Agency Version Date: 12/18/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/18/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 564-6582
Most Recent Contact: 07/24/2023

HIST SSTS: List of tracking of facilities who produce pesticides and their quantity that are no longer in current agency list.

Agency Version Date: 02/13/2019
Agency Update Frequency: Annually
Planned Next Contact: 10/06/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 07/12/2023

HOSPITALS: List of major Hospitals

Agency Version Date: 06/28/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/22/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 06/28/2023

ICIS: Comprised of all Federal Administrative and Judicial enforcement information [intended to replace PCS] by tracking enforcement and compliance information (also contains what used to be known as FFTS)

Agency Version Date: 06/06/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/27/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/31/2023

INACTIVE PCS: Inactive Permitted facilities to discharge wastewater

Agency Version Date: 06/06/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/27/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 564-6582
Most Recent Contact: 08/31/2023

LUCIS: Land Use Control Information Systems

Agency Version Date: 03/08/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/24/2023
Agency: Department of the Navy: BRAC PMO
Agency Contact: (619) 532-0900
Most Recent Contact: 08/30/2023

OTHER ASCERTAINABLE RECORDS (cont.)

LUCIS 2: Land Use Control Information Systems

Agency Version Date: 01/17/2018
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 10/05/2023
Agency: Department of the Navy: BRAC PMO
Agency Contact: (619) 532-0900
Most Recent Contact: 07/11/2023

MANIFEST EPA: EPA Hazardous Waste Electronic Manifest System (e-Manifest)

Agency Version Date: 04/21/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/12/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 07/18/2023

MGP: Locations of all Manufactured Gas Plants

Agency Version Date: 07/24/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/19/2023
Agency: Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 07/24/2023

MINE OPERATIONS: Mine plants and operations for commodities monitored by the National Minerals Information Center of the USGS

Agency Version Date: 04/25/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/16/2023
Agency: USGS Mineral Resources Program
Agency Contact: (703) 648-5953
Most Recent Contact: 07/20/2023

MINES: Mines Master Index Files

Agency Version Date: 06/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/28/2023
Agency: Department of Labor
Agency Contact: (202) 693-9400
Most Recent Contact: 09/01/2023

MINES USGS: Listing of all active mines and mineral plants in 2003

Agency Version Date: 04/25/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/16/2023
Agency: USGS Mineral Resources Program
Agency Contact: (703) 648-5953
Most Recent Contact: 07/20/2023

MLTS: Sites in possession/use of radioactive materials regulated by NRC

Agency Version Date: 07/03/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/27/2023
Agency: Nuclear Regulatory Commission
Agency Contact: (800) 397-4209
Most Recent Contact: 07/03/2023

NPL AOC: Areas of Concern related to NPL remediation sites

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 07/07/2023

NPL LIENS: National Priority List of sites with Liens

Agency Version Date: 07/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

NURSING HOMES: List of Nursing Homes

Agency Version Date: 06/27/2023
Agency Update Frequency: Varies
Planned Next Contact: 12/18/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 09/21/2023

OTHER ASCERTAINABLE RECORDS (cont.)

OSHA: OSHA's listing of inspections violations and fatality information

Agency Version Date: 06/05/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/24/2023
Agency: Occupational Safety & Health Administration
Agency Contact: 800-321-6742
Most Recent Contact: 08/30/2023

PADS: Listing of generators transporters commercial store/ brokers and disposers of PCB

Agency Version Date: 07/06/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/02/2023
Agency: Environmental Protection Agency
Agency Contact: (703) 308-8404
Most Recent Contact: 07/06/2023

PCB TRANSFORMER: Disposal and Storage of Polychlorinated Biphenyl (PCB) Waste

Agency Version Date: 07/20/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/16/2023
Agency: Environmental Protection Agency
Agency Contact: (703) 308-8404
Most Recent Contact: 07/20/2023

PCS ENF: Permitted facilities to discharge wastewater (Federal equivalent to NPDES)

Agency Version Date: 06/06/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/27/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 564-6582
Most Recent Contact: 08/31/2023

PCS FACILITY: Permitted facilities to discharge wastewater (Federal equivalent to NPDES)

Agency Version Date: 06/06/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/27/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 564-6582
Most Recent Contact: 08/31/2023

PFAS FED SITES: PFAS Detection on Federal Facilities

Agency Version Date: 08/01/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/26/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 08/01/2023

PFAS INDUSTRY: List of Industries potentially handling PFAS

Agency Version Date: 05/05/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/26/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 08/01/2023

PFAS MANIFEST: PFAS Transfer Manifest

Agency Version Date: 05/05/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/26/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 08/01/2023

PFAS NPL: List of NPL sites with PFAS or PFOA contamination

Agency Version Date: 06/20/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/11/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 09/14/2023

PFAS PROD: PFAS Production Sites

Agency Version Date: 05/05/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/26/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 08/01/2023

OTHER ASCERTAINABLE RECORDS (cont.)

PFAS SPILLS: List of PFAS Spill Sites

Agency Version Date: 05/05/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/26/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 08/01/2023

PFAS TRIS: List of TRIS sites where PFAS or PFOA are used/manufactured/ treated/ transported/released.

Agency Version Date: 06/06/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/27/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/31/2023

PFAS UCMR3: List of PWS wells sampled for Unregulated Contaminant Monitoring Rule (UCMR)

Agency Version Date: 06/02/2022
Agency Update Frequency: Quarterly
Planned Next Contact: 11/08/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 08/14/2023

PFAS WQP: List of PFAS from Water Quality Portal

Agency Version Date: 08/01/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/26/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: N/R
Most Recent Contact: 08/01/2023

PRISONS: List of Prison facilities

Agency Version Date: 05/23/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/13/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 08/17/2023

PRP: A listing of verified Potentially Responsible Parties at CERCLIS sites

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 800-424-9346
Most Recent Contact: 07/07/2023

RAATS: Listing of major violators with enforcement actions issued under RCRA. Includes administrative and civil actions filed by the EPA. This dataset is no longer maintained.

Agency Version Date: 09/23/2019
Agency Update Frequency: Varies
Planned Next Contact: 12/18/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 09/21/2023

RADINFO: EPA regulated facilities with radiation and radioactive materials

Agency Version Date: 08/01/2019
Agency Update Frequency: Varies
Planned Next Contact: 12/06/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 09/11/2023

RMP: Facilities producing/handling/ process/ distribute/ store specific chemicals report plans required by the Clean Air Act

Agency Version Date: 04/01/2022
Agency Update Frequency: Monthly
Planned Next Contact: 12/05/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 564-2534
Most Recent Contact: 09/08/2023

ROD: Permanent remedy at an NPL site

Agency Version Date: 07/07/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/03/2023
Agency: Environmental Protection Agency
Agency Contact: (800) 424-9346
Most Recent Contact: 07/07/2023

OTHER ASCERTAINABLE RECORDS (cont.)

SCHOOLS PRIVATE: List of Private Schools

Agency Version Date: 06/28/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/22/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 06/28/2023

SCHOOLS PUBLIC: List of Public Schools

Agency Version Date: 06/28/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/22/2023
Agency: DHS Homeland Infrastructure Foundation
Agency Contact: N/R
Most Recent Contact: 06/28/2023

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners

Agency Version Date: 05/11/2023
Agency Update Frequency: No Update
Planned Next Contact: 11/03/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/09/2023

SEMS_SMELTER: This report includes sites that have smelting-related, or potentially smelting-related, indicators in the SEMS database. The report includes information on the site location as well as contaminants of concern.

Agency Version Date: 07/07/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/03/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 703-603-8867
Most Recent Contact: 07/07/2023

SSTS: Tracking of facilities who produce pesticides and their quantity

Agency Version Date: 05/18/2023
Agency Update Frequency: Annually
Planned Next Contact: 11/09/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/15/2023

STORMWATER: Permitted storm water sites

Agency Version Date: 05/30/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/20/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/24/2023

TOSCA-PLANT: Plants controlled by the Toxic Substance Control Act

Agency Version Date: 05/26/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/16/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/22/2023

TRIS: Information regarding toxic chemicals that are being used/manufactured/ treated/ transported/released into the environment

Agency Version Date: 07/14/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/27/2023
Agency: Environmental Protection Agency
Agency Contact: (202) 566-1667
Most Recent Contact: 08/31/2023

UMTRA: Uranium Recovery Sites

Agency Version Date: 06/21/2022
Agency Update Frequency: Varies
Planned Next Contact: 11/27/2023
Agency: United States Nuclear Regulatory Commission
Agency Contact: (301) 415-8200
Most Recent Contact: 08/31/2023

OTHER ASCERTAINABLE RECORDS (cont.)

VAPOR: EPA Vapor Intrusion Database

Agency Version Date: 03/19/2021
Agency Update Frequency: Varies
Planned Next Contact: 11/09/2023
Agency: U.S. Environmental Protection Agency
Agency Contact: 855-246-3642
Most Recent Contact: 08/15/2023

BOND EXPENDITURE PLAN - CA: Hazardous Substance Cleanup Bond Act of 1984 Article 7.5 of Health and Safety Code 25385 listing of orphan sites

Agency Version Date: 06/01/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/22/2023
Agency: Department of Toxic Substance Control
Agency Contact: 916-322-2861
Most Recent Contact: 08/28/2023

CALEPA SITES - CA: CalEPA Regulated Sites from the Certified Unified Program Agencies (CUPA).

Agency Version Date: 06/08/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/28/2023
Agency: California Environmental Protection Agency Unified Program Section
Agency Contact: 916-327-5092
Most Recent Contact: 09/01/2023

CIWQS - CA: California Integrated Water Quality System database facilities listing which includes owner information, violations, inspections, and other regulatory matters

Agency Version Date: 05/26/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/16/2023
Agency: CA State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 08/22/2023

CIWQS 2 - CA: California Integrated Water Quality System database facilities listing which includer owner information violations inspections and other regulatory matters

Agency Version Date: 06/16/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/07/2023
Agency: CA State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 09/12/2023

CORTESE - CA: Compliance document used in providing information about the location of hazardous material release sites utilized by the state local agencies and developers

Agency Version Date: 09/12/2022
Agency Update Frequency: Quarterly
Planned Next Contact: 09/25/2023
Agency: Department of Toxic Substance Control
Agency Contact: 916-322-2861
Most Recent Contact: 06/01/2023

CUPA_FRESNO COUNTY - CA: Listing of the Fresno County Certified Unified Program Agency's hazardous material program sites

Agency Version Date: 06/06/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/27/2023
Agency: Fresno County Department of Public Health
Agency Contact: 559-600-3271
Most Recent Contact: 08/31/2023

DAYCARE - CA: List of daycare locations

Agency Version Date: 06/27/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/18/2023
Agency: California Department of Social Services
Agency Contact: 916-651-6040
Most Recent Contact: 09/21/2023

DRYCLEANERS - CA: Listing of drycleaning facilities

Agency Version Date: 09/09/2014
Agency Update Frequency: Quarterly
Planned Next Contact: 11/20/2023
Agency: California EPA Air Resources Board
Agency Contact: 916-324-3013
Most Recent Contact: 08/24/2023

OTHER ASCERTAINABLE RECORDS (cont.)

DRYCLEANERS_ANTELOPE VALLEY - CA: Listing of drycleaning facilities in Antelope Valley

Agency Version Date: 07/19/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/13/2023
Agency: Antelope Valley AQMD
Agency Contact: 661-723-8070
Most Recent Contact: 07/19/2023

DRYCLEANERS_BAY AREA - CA: Listing of drycleaning facilities in Bay Area

Agency Version Date: 05/29/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/17/2023
Agency: Bay Area AQMD
Agency Contact: 415-749-4784
Most Recent Contact: 08/23/2023

DRYCLEANERS_FEATHER RIVER - CA: Listing of drycleaning facilities in Feather River

Agency Version Date: 09/24/2021
Agency Update Frequency: Varies
Planned Next Contact: 11/17/2023
Agency: Feather River AQMD
Agency Contact: 530-634-7659 ext. 205
Most Recent Contact: 08/23/2023

DRYCLEANERS_GREAT BASIN UNIFIED - CA: Listing of drycleaning facilities in the Great Basin Unified region

Agency Version Date: 09/09/2014
Agency Update Frequency: Varies
Planned Next Contact: 11/28/2023
Agency: Great Basin Unified APCD
Agency Contact: 760-872-8211 ext. 228
Most Recent Contact: 09/01/2023

DRYCLEANERS_MOJAVE DESERT - CA: Listing of drycleaning facilities in the Mojave Desert region

Agency Version Date: 07/19/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/13/2023
Agency: Mojave Desert AQMD
Agency Contact: 661-723-8070
Most Recent Contact: 07/19/2023

DRYCLEANERS_MONTEREY BAY - CA: Listing of drycleaning facilities in the Monterey Bay region

Agency Version Date: 05/18/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/08/2023
Agency: Monterey Bay Unified APCD
Agency Contact: 831-647-9418 ext.240
Most Recent Contact: 08/14/2023

DRYCLEANERS_NORTH COAST UNIFIED - CA: Listing of drycleaning facilities in the North Coast region

Agency Version Date: 06/14/2023
Agency Update Frequency: Varies
Planned Next Contact: 12/05/2023
Agency: North Coast Unified AQMD
Agency Contact: 707-443-3093 ext. 111
Most Recent Contact: 09/08/2023

DRYCLEANERS_NORTHERN SIERRA - CA: Listing of drycleaning facilities in the Northern Sierra region

Agency Version Date: 09/08/2014
Agency Update Frequency: No Update
Planned Next Contact: 10/31/2023
Agency: Northern Sierra AQMD
Agency Contact: 530-274-9360 ext. 106
Most Recent Contact: 08/04/2023

DRYCLEANERS_SAN JOAQUIN VALLEY - CA: Listing of drycleaning facilities in the San Joaquin Valley

Agency Version Date: 07/12/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/06/2023
Agency: San Joaquin Valley APCD
Agency Contact: 559-230-5936
Most Recent Contact: 07/12/2023

DRYCLEANERS_SAN LUIS OBISPO - CA: Listing of drycleaning facilities in the San Luis Obispo region

Agency Version Date: 04/27/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/20/2023
Agency: San Luis Obispo County APCD
Agency Contact: 805-781-5912
Most Recent Contact: 07/24/2023

OTHER ASCERTAINABLE RECORDS (cont.)

DRYCLEANERS_SOUTH COAST - CA: Listing of drycleaning facilities in the South Coast region

Agency Version Date: 05/02/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/19/2023
Agency: South Coast AQMD
Agency Contact: 909-396-2000
Most Recent Contact: 07/25/2023

DRYCLEANERS_YOLO-SOLANO COUNTIES - CA: Listing of drycleaning facilities in Yolo and Solano Counties

Agency Version Date: 05/01/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/20/2023
Agency: Yolo-Solano AQMD
Agency Contact: 530-757-3664
Most Recent Contact: 07/26/2023

EMI - CA: An estimation of air pollution for a listing of air permitted facilities

Agency Version Date: 05/19/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/09/2023
Agency: California Air Resources Board
Agency Contact: 916-327-6251
Most Recent Contact: 08/15/2023

FA - CA: Listing of the Department of Toxic Substance Control's Financial Assurance report sites and facilities

Agency Version Date: 07/03/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/27/2023
Agency: Department of Toxic Substance Control
Agency Contact: 916-322-2861
Most Recent Contact: 07/03/2023

FA 2 - CA: Financial Assurance Information for solid waste facilities

Agency Version Date: 06/23/2023
Agency Update Frequency: Varies
Planned Next Contact: 12/14/2023
Agency: Department of Environment & Natural Resources
Agency Contact: 916-341-6066
Most Recent Contact: 09/19/2023

FIRE AREAS - CA: The multi-agency statewide database of fire perimeters.

Agency Version Date: 06/15/2023
Agency Update Frequency: No Update
Planned Next Contact: 12/06/2023
Agency: California Department of Forestry and Fire Protection
Agency Contact: 916-445-4302
Most Recent Contact: 09/11/2023

HAZNET - CA: Listing of hazardous waste manifests from when hazardous waste is transported from generators to permitted recycling treatment storage or disposal facilities by registered hazardous waste transporters

Agency Version Date: 04/05/2021
Agency Update Frequency: Annually
Planned Next Contact: 11/20/2023
Agency: California Environmental Protection Agency
Agency Contact: 916-341-5791
Most Recent Contact: 08/24/2023

HIGH FIRE - CA: Fire hazard severity zones mapped as areas of significant fire hazards on the basis of fuels terrain weather and other factors

Agency Version Date: 08/10/2023
Agency Update Frequency: No update
Planned Next Contact: 11/06/2023
Agency: California Department of Forestry and Fire Protection
Agency Contact: 916-445-4302
Most Recent Contact: 08/10/2023

HIST CORTESE - CA: The historical compliance document used in providing information about the location of hazardous material release sites utilized by the state local agencies and developers

Agency Version Date: 07/13/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/09/2023
Agency: Department of Toxic Substance Control
Agency Contact: 916-322-2861
Most Recent Contact: 07/13/2023

OTHER ASCERTAINABLE RECORDS (cont.)

HIST HAZNET - CA: List of hazardous waste manifests from when hazardous waste is transported from generators to permitted recycling treatment storage or disposal facilities by registered hazardous waste transporters that are no longer in current agency list.

Agency Version Date: 10/10/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/18/2023
Agency: California Environmental Protection Agency
Agency Contact: 916-341-5791
Most Recent Contact: 07/24/2023

HIST HWP - CA: List of the Department of Toxic Substance Control's hazardous waste transporters and corrective action that are no longer in current agency list.

Agency Version Date: 01/18/2019
Agency Update Frequency: Annually
Planned Next Contact: 09/25/2023
Agency: Department of Toxic Substance Control
Agency Contact: 916-322-2861
Most Recent Contact: 06/29/2023

HIST LDS - CA: List of areas of land on or in which hazardous waste is placed or the largest area in which there is significant likelihood of mixing hazardous waste constituents in the same area that are no longer in current agency list.

Agency Version Date: 05/20/2018
Agency Update Frequency: Annually
Planned Next Contact: 10/24/2023
Agency: State Water Qualilty Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/28/2023

HIST MCS - CA: List of the State Water Resources Control Boards investigation and remediation of water quality issues at military facilities that is no longer in current agency list.

Agency Version Date: 09/24/2018
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 11/16/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 08/22/2023

HIST NFA - CA: Historical No further action cleanup sites listing

Agency Version Date: 02/21/2019
Agency Update Frequency: Quarterly
Planned Next Contact: 10/13/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 07/19/2023

HWM COMMERCIAL FACILITIES - CA: Listing of all commercial hazardous waste permitted off-site transfer recycling treatment storage and disposal facilities

Agency Version Date: 06/27/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/21/2023
Agency: Department of Toxic Substance Control
Agency Contact: 916-322-5308
Most Recent Contact: 06/27/2023

HWP - CA: Facility listing of the Department of Toxic Substance Control's hazardous waste transporters and corrective action

Agency Version Date: 07/06/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/02/2023
Agency: Department of Toxic Substance Control
Agency Contact: 916-322-2861
Most Recent Contact: 07/06/2023

HWT - CA: Listing of registered hazardous waste transporters

Agency Version Date: 07/13/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/09/2023
Agency: Department of Toxic Substance Control
Agency Contact: 916-322-2861
Most Recent Contact: 07/13/2023

LDS - CA: List of Land Disposal Cleanup Sites from Geotracker

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

OTHER ASCERTAINABLE RECORDS (cont.)

MCS - CA: List of Military Cleanup Sites from Geotracker

Agency Version Date: 07/04/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/28/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5791
Most Recent Contact: 07/04/2023

MWMP - CA: Listing of treatment and transfer stations that properly handle and dispose of medical waste that are permitted and inspected by the Medical Waste Management Program

Agency Version Date: 07/10/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/04/2023
Agency: California-Health Human Services Department of Public Health
Agency Contact: 916-449-5661
Most Recent Contact: 07/10/2023

MWMP 2 - CA: Listing of facilities that generate permitted medical waste and are inspected by the Medical Waste Management Program

Agency Version Date: 01/13/2022
Agency Update Frequency: Quarterly
Planned Next Contact: 09/22/2023
Agency: California-Health Human Services Department of Public Health
Agency Contact: 916-449-5661
Most Recent Contact: 06/28/2023

NFA - CA: No further action cleanup sites listing

Agency Version Date: 06/01/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/22/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 08/28/2023

NFE - CA: Unconfirmed contaminated properties listing

Agency Version Date: 06/01/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/22/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 08/28/2023

NPDES - CA: Listing of facilities with wastewater and NPDES permits including stormwater

Agency Version Date: 04/28/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 10/19/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5810
Most Recent Contact: 07/25/2023

PERCHLORATE 2 - CA: Listing of contaminated sites where the primary known chemical is perchlorate

Agency Version Date: 05/30/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/20/2023
Agency: Department of Toxic Substances Control
Agency Contact: 916-322-2861
Most Recent Contact: 08/24/2023

PFAS - CA: List of PFAS sites and areas of interest

Agency Version Date: 06/15/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/07/2023
Agency: California State Water Resources Control Board
Agency Contact: N/R
Most Recent Contact: 09/11/2023

PFAS DOD - CA: List of DoD facilities conducting PFAS investigations

Agency Version Date: 06/15/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/07/2023
Agency: California State Water Resources Control Board
Agency Contact: N/R
Most Recent Contact: 09/11/2023

OTHER ASCERTAINABLE RECORDS (cont.)

PFAS GAMA - CA: PFOS & PFAS GAMA Well Sampling program

Agency Version Date: 06/12/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 12/01/2023
Agency: California State Water Resources Control Board
Agency Contact: N/R
Most Recent Contact: 09/06/2023

PROPOSITION 65 - CA: Listing of Proposition 65 enforcement reporting notice sites in accordance with "The Safe Drinking Water and Toxic Enforcement Act of 1986"

Agency Version Date: 05/11/2023
Agency Update Frequency: No update
Planned Next Contact: 11/01/2023
Agency: State of California Department of JusticeOffice of the Attorney General
Agency Contact: 510-873-6321
Most Recent Contact: 08/07/2023

RFR - CA: State Water Resources Control Board Regulated Facility Report database listing which includes program agency type and their permit status

Agency Version Date: 05/15/2023
Agency Update Frequency: Varies
Planned Next Contact: 11/03/2023
Agency: CA State Water Resources Control Board
Agency Contact: 916-341-5810
Most Recent Contact: 08/09/2023

SWAT - CA: The SWAT Reports Summary Data and the Waste Management Unit Database were published by State Water Resources Control Board staff and the Regional Water Quality Control Boards for tracking and inventory of waste management units.

Agency Version Date: 08/08/2015
Agency Update Frequency: No Longer Maintained
Planned Next Contact: 10/19/2023
Agency: Department of Ecology
Agency Contact: 916-322-2861
Most Recent Contact: 07/25/2023

WDR - CA: List of Waste Discharge Requirement Sites.

Agency Version Date: 05/30/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 11/20/2023
Agency: State Water Resources Control Board
Agency Contact: N/R
Most Recent Contact: 08/24/2023

WDS - CA: Listing of waste discharge system reporting facilities

Agency Version Date: 06/28/2023
Agency Update Frequency: Quarterly
Planned Next Contact: 09/22/2023
Agency: State Water Resources Control Board
Agency Contact: 916-341-5810
Most Recent Contact: 06/28/2023

WILDLANDS - CA: The Wildlands Conservancy listing of preserves in California

Agency Version Date: 04/27/2023
Agency Update Frequency: Varies
Planned Next Contact: 10/20/2023
Agency: The Wildlands Conservancy
Agency Contact: 909-797-8507
Most Recent Contact: 07/24/2023

WIP - CA: Listing of Well Investigation Program cases in the San Gabriel and San Fernando Valley area

Agency Version Date: 07/01/2009
Agency Update Frequency: Varies
Planned Next Contact: 10/10/2023
Agency: Los Angeles Water Quality Control Board
Agency Contact: 916-341-5810
Most Recent Contact: 07/14/2023

OTHER

SEISMIC - CA: Earthquake Zones of Required Investigation. Shows the location of both Seismic Hazard Zones and Earthquake Fault Zones

Agency Version Date: 06/28/2023
Agency Update Frequency: Varies
Planned Next Contact: 09/22/2023

Agency: State of California Department of Conservation
Agency Contact: 916-324-7299
Most Recent Contact: 06/28/2023

SUBJECT PROPERTY ADDRESS:

Cornucopia Solar
S Lost Hills Rd
Coalinga, CA 93210

SUBJECT PROPERTY COORDINATES:

Latitude(North):	36.050689 - 36°3'2.5"
Longitude(West):	-120.198223 - -120°11'53.6"
Universal Transverse Mercator:	Zone 10N
UTM X (Meters):	752386.94
UTM Y (Meters):	3993203.90
State Plane Coordinates:	0404 - California Zone 4 (US Survey Feet)
X Coordinate (Feet):	6207457.162 E
Y Coordinate (Feet):	1903778.275 N

ELEVATION:

Elevation:	736 ft. above sea level

USGS TOPOGRAPHIC MAP:

Subject Property Map:	36120-A2 Avenal, CA
Most Recent Revision:	2015

GEOHYDROLOGY DATA:

SUBJECT PROPERTY TOPOGRAPHY:

Topographic Gradient: North

DFIRM FLOOD ZONE:

	DFIRM Flood
Subject Property County:	Electronic Data:
FRESNO	Yes - refer to the PROPERTY PROXIMITY MAP and AREA MAP
Flood Plain Panel at Subject Property:	06031C0390C (Eff. date 6/16/2009) 06031C0395C (Eff. date 6/16/2009) 06019C3425H (Eff. date 2/18/2009)
Additional Panels in search area:	No available data

FEMA FLOOD ZONE:

	FEMA Flood
Subject Property County:	Electronic Data:
FRESNO	Yes - refer to the PROPERTY PROXIMITY MAP and AREA MAP
Flood Plain Panel at Subject Property:	0650291725B 0650291800B
Additional Panels in search area:	No available data

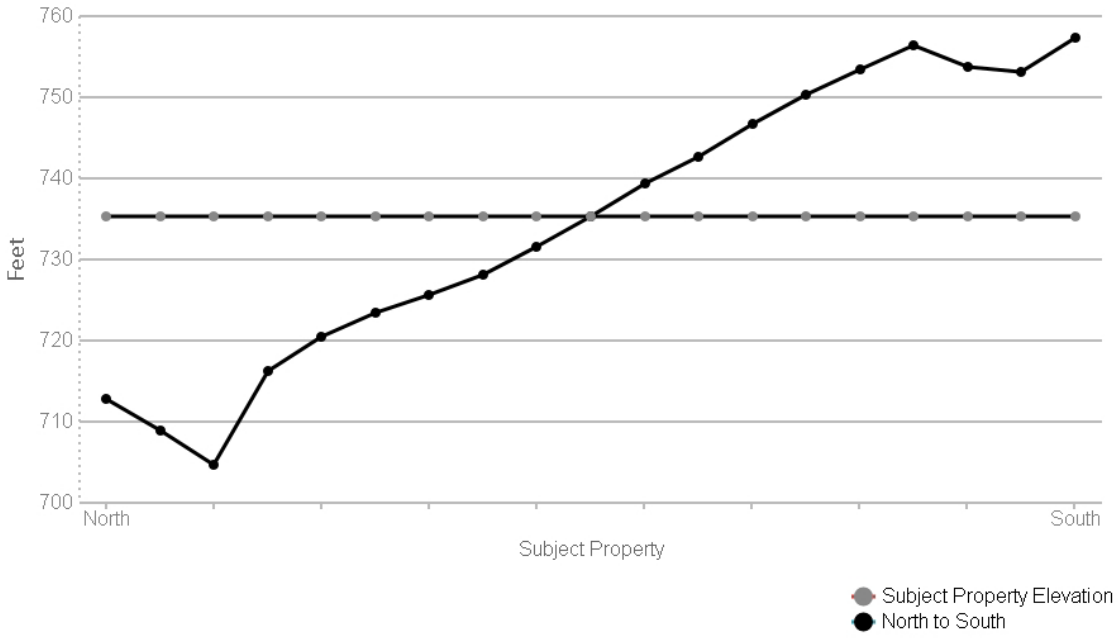
NATIONAL WETLAND INVENTORY:

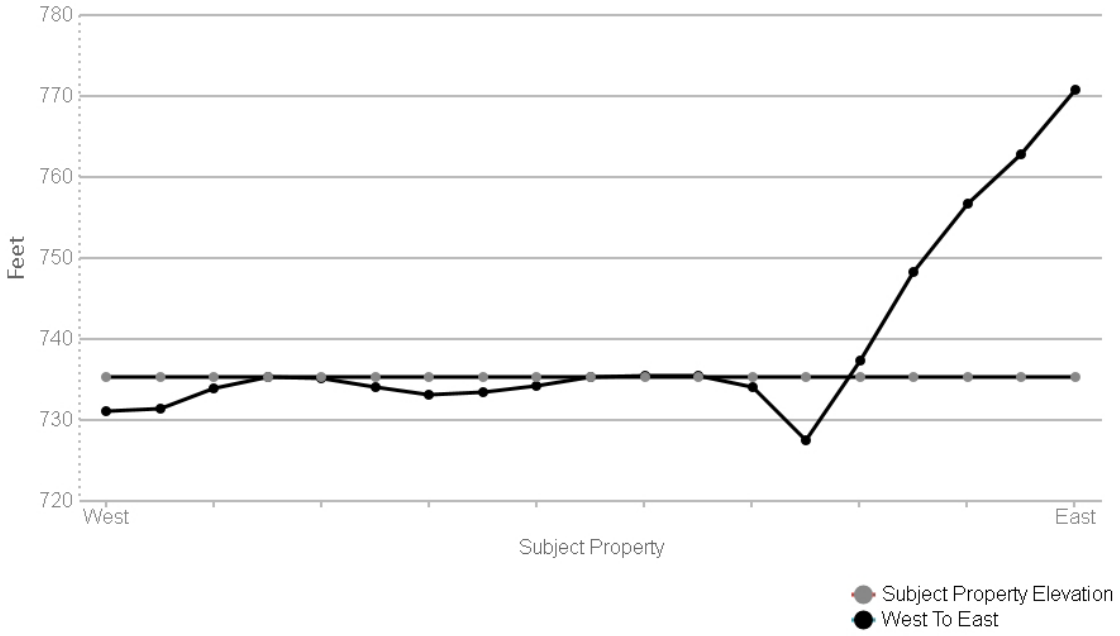
	NWI Electronic
NWI Quad at Subject Property:	Data Coverage:
Avenal	Yes - refer to the Geological Findings Map

LITHOSTRATIGRAPHIC INFORMATION:

ROCK STRATIGRAPHIC UNIT:		GEOLOGIC AGE IDENTIFICATION
Era:	Cenozoic	Category: 8 Tpc Pliocene continental
System:	Tertiary	
Series:	Pliocene continental	
Code:	Tpc	

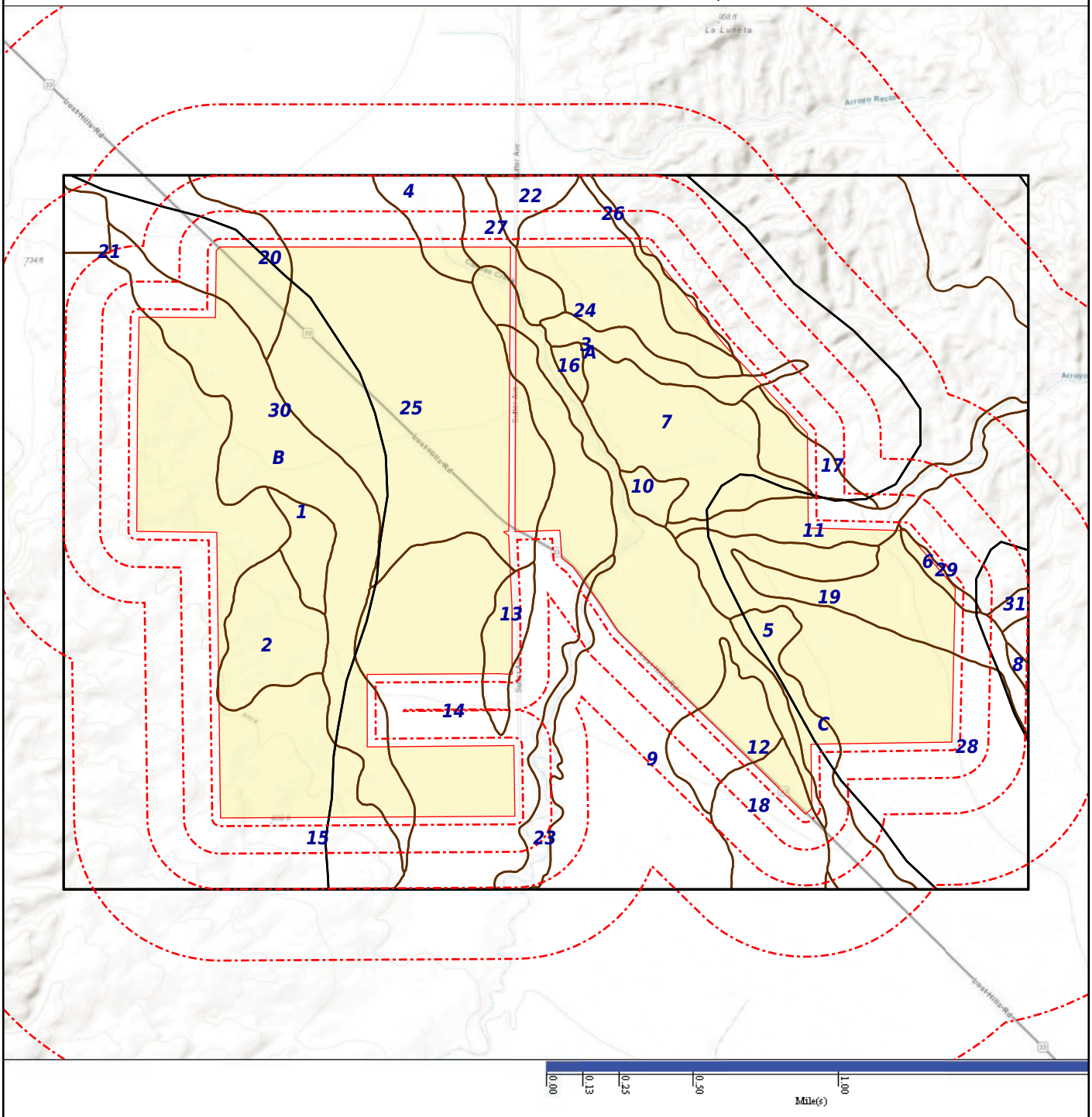
SURROUNDING ELEVATION PROFILES:





SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: September 20, 2023



SOIL COMPOSITION IN GENERAL AREA OF SUBJECT PROPERTY:

Agency source: Soil Conservation Service, US Department of Agriculture

SOIL MAP ID 1	SSURGO
USDA Soil Name	Guijarral,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-8	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	6.6-8.4
2	8-15	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
3	15-30	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
4	30-61	Sandy loam	Reference: This is a classification of soil material for highway	Reference: This is a classification of soil material designed for	14-42	7.9-9

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	30-61	Sandy loam	and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-9
5	61-91	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-9
6	91-152	Loamy sand	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-145	7.9-9

SOIL MAP ID 2 **SSURGO**

USDA Soil Name	Milham,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-15	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-7.8
2	15-41	Sandy clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-7.8
3	41-79	Sandy clay loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-8.4
4	79-152	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil	14-42	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	79-152	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-8.4

SOIL MAP ID 3 **SSURGO**

USDA Soil Name	Excelsior,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	1
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
2	18-58	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
3	58-183	Sandy loam	Silt-Clay materials (more than 35%	Reference: This is a classification of soil	4-42	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
3	58-183	Sandy loam	passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-42	7.9-8.4

SOIL MAP ID 4 **SSURGO**

USDA Soil Name	Excelsior,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	1
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
2	18-58	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
3	58-183	Sandy loam	Silt-Clay materials	Reference: This is a	4-42	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
3	58-183	Sandy loam	(more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-42	7.9-8.4

SOIL MAP ID 5 **SSURGO**

USDA Soil Name	Yribarren,Taxadjunct
USDA Soil Texture	Clay loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-23	Clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
2	23-41	Silty clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and	1.4-4	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	23-41	Silty clay loam	Transportation Officials, 1984.	the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
3	41-79	Silty clay	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	0.42-1.4	7.9-8.4
4	79-130	Silt loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
5	130-152	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
5	130-152	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	test D 2487, in ASTM, 1984).	4-14	7.9-8.4

SOIL MAP ID 6 **SSURGO**

USDA Soil Name	Guijarral,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-8	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	6.6-8.4
2	8-15	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM	14-42	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	8-15	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	test D 2487, in ASTM, 1984).	14-42	7.4-8.4
3	15-30	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
4	30-61	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-9
5	61-91	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-9
6	91-152	Loamy sand	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size	14-145	7.9-9

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
6	91-152	Loamy sand	of State Highway and Transportation Officials, 1984.	distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-145	7.9-9

SOIL MAP ID 7 **SSURGO**

USDA Soil Name	Panoche,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	B
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4
2	18-41	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
3	41-69	Loam	Silt-Clay materials (more than 35%	FINE-GRAINED SOILS, Silts and clays (liquid	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
3	41-69	Loam	passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
4	69-109	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
5	109-145	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
6	145-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM	4-14	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
6	145-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	test D 2487, in ASTM, 1984).	4-14	7.4-8.4

SOIL MAP ID 8 **SSURGO**

USDA Soil Name	Guijarral,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-8	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	6.6-8.4
2	8-15	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
3	15-30	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
4	30-61	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-9
5	61-91	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-9
6	91-152	Loamy sand	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-145	7.9-9

SOIL MAP ID 9	SSURGO
USDA Soil Name	Cerini,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-13	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	6.6-8.4
2	13-64	Clay loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4
3	64-89	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM	1.4-4	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
3	64-89	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	test D 2487, in ASTM, 1984).	1.4-4	7.4-8.4
4	89-200	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4

SOIL MAP ID 10 **SSURGO**

USDA Soil Name	Yribarren,Taxadjunct
USDA Soil Texture	Clay loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-23	Clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size	1.4-4	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-23	Clay loam	M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
2	23-41	Silty clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
3	41-79	Silty clay	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	0.42-1.4	7.9-8.4
4	79-130	Silt loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
5	130-152	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4

SOIL MAP ID 11 **SSURGO**

USDA Soil Name	Excelsior,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	1
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
2	18-58	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil	14-42	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	18-58	Sandy loam	Transportation Officials, 1984.	material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
3	58-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-42	7.9-8.4

SOIL MAP ID 12 **SSURGO**

USDA Soil Name	Excelsior,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	1
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
2	18-58	Sandy loam	Silt-Clay materials (more than 35%	Reference: This is a classification of soil	14-42	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	18-58	Sandy loam	passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
3	58-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-42	7.9-8.4

SOIL MAP ID 13 **SSURGO**

USDA Soil Name	Excelsior,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	1
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
2	18-58	Sandy loam	Silt-Clay materials	Reference: This is a	14-42	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	18-58	Sandy loam	(more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
3	58-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-42	7.9-8.4

SOIL MAP ID 14 **SSURGO**

USDA Soil Name	Cerini,Series
USDA Soil Texture	Clay loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-13	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in	4-14	6.6-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-13	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	6.6-8.4
2	13-64	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4
3	64-89	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-8.4
4	89-157	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and	4-14	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	89-157	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4

SOIL MAP ID 15 **SSURGO**

USDA Soil Name	Milham,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-15	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-7.8
2	15-41	Sandy clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and	1.4-4	7.4-7.8

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	15-41	Sandy clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-7.8
3	41-79	Sandy clay loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-8.4
4	79-152	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-8.4

SOIL MAP ID 16	SSURGO
USDA Soil Name	Yribarren,Taxadjunct
USDA Soil Texture	Clay loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-23	Clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
2	23-41	Silty clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
3	41-79	Silty clay	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	0.42-1.4	7.9-8.4
4	79-130	Silt loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	79-130	Silt loam	of State Highway and Transportation Officials, 1984.	mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
5	130-152	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4

SOIL MAP ID 17 **SSURGO**

USDA Soil Name	Panoche,Series
USDA Soil Texture	Loam
Hydrologic Soil Group	B
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in	4-14	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4
2	18-41	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
3	41-69	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
4	69-109	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	69-109	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
5	109-145	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
6	145-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4

SOIL MAP ID 18	SSURGO
USDA Soil Name	Panoche,Series
USDA Soil Texture	Clay loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	0.1-1	7.4-8.4
2	18-41	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1-10	7.9-8.4
3	41-69	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1-10	7.9-8.4
4	69-109	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75	1-10	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	69-109	Loam	Transportation Officials, 1984.	mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1-10	7.9-8.4
5	109-145	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1-10	7.9-8.4
6	145-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1-10	7.4-8.4

SOIL MAP ID 19	**SSURGO**
USDA Soil Name	Panoche,Series
USDA Soil Texture	Loam
Hydrologic Soil Group	B
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4
2	18-41	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
3	41-69	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
4	69-109	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	69-109	Loam	Transportation Officials, 1984.	mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
5	109-145	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
6	145-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4

SOIL MAP ID 20	SSURGO
USDA Soil Name	Cerini,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-13	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	6.6-8.4
2	13-64	Clay loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4
3	64-89	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-8.4
4	89-200	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75	4-14	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	89-200	Sandy loam	Transportation Officials, 1984.	mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4

SOIL MAP ID 21 **SSURGO**

USDA Soil Name	Pits,Miscellaneous area
USDA Soil Texture	Not Reported
Hydrologic Soil Group	Not Reported
Soil Drainage Class	Not Reported
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Not Reported

SOIL MAP ID 22 **SSURGO**

USDA Soil Name	Cerini,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-13	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	6.6-8.4
2	13-64	Clay loam	Reference: This is a	FINE-GRAINED SOILS,	4-14	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	13-64	Clay loam	classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4
3	64-89	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-8.4
4	89-200	Sandy loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4

SOIL MAP ID 23	SSURGO
USDA Soil Name	Excelsior,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	B
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
2	18-58	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
3	58-135	Silt loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
4	135-183	Loamy sand	Reference: This is a classification of soil material for highway and airfield	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand. Reference: This is a classification of	42-141	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	135-183	Loamy sand	construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	42-141	7.9-8.4

SOIL MAP ID 24 **SSURGO**

USDA Soil Name	Panoche,Series
USDA Soil Texture	Loam
Hydrologic Soil Group	B
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4
2	18-41	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	18-41	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
3	41-69	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
4	69-109	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
5	109-145	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
5	109-145	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
6	145-183	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.4-8.4

SOIL MAP ID 25 **SSURGO**

USDA Soil Name	Ciervo,Series
USDA Soil Texture	Clay
Hydrologic Soil Group	C
Soil Drainage Class	Moderately well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-43	Clay	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil	1.4-4	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-43	Clay	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
2	43-69	Clay	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	0.42-1.4	7.9-8.4
3	69-104	Silty clay	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	0.42-1.4	7.9-8.4
4	104-152	Clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in	0.42-1.4	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
4	104-152	Clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	organic matter (ASTM test D 2487, in ASTM, 1984).	0.42-1.4	7.9-8.4

SOIL MAP ID 26 **SSURGO**

USDA Soil Name	Guijarral,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	A
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-8	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	6.6-8.4
2	8-15	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM,	14-42	7.4-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	8-15	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	1984).	14-42	7.4-8.4
3	15-30	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-8.4
4	30-61	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-9
5	61-91	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-9
6	91-152	Loamy sand	Reference: This is a classification of soil material for highway and airfield construction (Procedure	Reference: This is a classification of soil material designed for general construction purposes. It is dependent	14-145	7.9-9

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
6	91-152	Loamy sand	M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-145	7.9-9

SOIL MAP ID 27 **SSURGO**

USDA Soil Name	Yribarren,Taxadjunct
USDA Soil Texture	Clay loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-23	Clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
2	23-41	Silty clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM	1.4-4	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	23-41	Silty clay loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	test D 2487, in ASTM, 1984).	1.4-4	7.9-8.4
3	41-79	Silty clay	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is 50% or more), Fat Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	0.42-1.4	7.9-8.4
4	79-130	Silt loam	Silt-Clay materials (more than 35% passing No. 200), clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4
5	130-152	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials,	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and	4-14	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
5	130-152	Clay loam	1984.	the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4-14	7.9-8.4

SOIL MAP ID 28 **SSURGO**

USDA Soil Name	Panoche,Series
USDA Soil Texture	Loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-18	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1-10	7.9-8.4
2	18-61	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil	1-10	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
2	18-61	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1-10	7.9-8.4
3	61-152	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	0.1-1	7.9-8.4

SOIL MAP ID 29 **SSURGO**

USDA Soil Name	Milham,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-15	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials,	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and	14-42	7.4-7.8

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-15	Sandy loam	1984.	the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.4-7.8
2	15-41	Sandy clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-7.8
3	41-79	Sandy clay loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4	7.4-8.4
4	79-152	Sandy loam	Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	14-42	7.9-8.4

SOIL MAP ID 30	SSURGO
USDA Soil Name	Milham,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-10	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4.2-14.1	7.4-8.4
2	10-25	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4.2-14.1	7.4-8.4
3	25-56	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM	4.2-14.1	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
3	25-56	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	test D 2487, in ASTM, 1984).	4.2-14.1	7.9-8.4
4	56-124	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4.2	7.9-8.4
5	124-152	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4.2-14.1	7.9-9

SOIL MAP ID 31	SSURGO
USDA Soil Name	Milham,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	Moderate

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-10	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4.2-14.1	7.4-8.4
2	10-25	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4.2-14.1	7.4-8.4
3	25-56	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM	4.2-14.1	7.9-8.4

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
3	25-56	Loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	test D 2487, in ASTM, 1984).	4.2-14.1	7.9-8.4
4	56-124	Clay loam	Silt-Clay materials (more than 35% passing No. 200) clayey soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	FINE-GRAINED SOILS, Silts and clays (liquid limit is less than 50%), Lean Clay. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	1.4-4.2	7.9-8.4
5	124-152	Sandy loam	Silt-Clay materials (more than 35% passing NO. 200), silty soils. Reference: This is a classification of soil material for highway and airfield construction (Procedure M 145-73 in Am. Assoc. of State Highway and Transportation Officials, 1984.	COARSE-GRAINED SOILS, Sands, sands with fines, Clayey Sand. Reference: This is a classification of soil material designed for general construction purposes. It is dependent on the particle size distribution of the <75 mm, the liquid limit, and the plasticity index and on whether the soil material is high in organic matter (ASTM test D 2487, in ASTM, 1984).	4.2-14.1	7.9-9

SOIL MAP ID A	STATSGO
USDA Soil Name	Panoche,Series
USDA Soil Texture	Clay loam
Hydrologic Soil Group	B
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-7	Clay loam	No data	No data	4.2343-14.1143	7.4-8.4
2	7-40	No data	No data	No data	4.2343-14.1143	7.9-8.4
3	40-60	No data	No data	No data	4.2343-14.1143	7.9-8.4
4	60-70	Sandy loam	No data	No data	4.2343-14.1143	7.9-8.4

SOIL MAP ID B	STATSGO
USDA Soil Name	Polvadero,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-12	Sandy loam	No data	No data	4.2343-14.1143	7.4-8.4
2	12-52	No data	No data	No data	0.4234-1.4114	7.8-9.6
3	52-60	No data	No data	No data	1.4114-4.2343	7.8-9.6

SOIL MAP ID C	STATSGO
USDA Soil Name	Polvadero,Series
USDA Soil Texture	Sandy loam
Hydrologic Soil Group	C
Soil Drainage Class	Well drained
Hydric Classification	0
Corrosion Potential - Uncoated Steel	High

Layer	Depth (inches)	Soil Texture	AASHTO Group	Unified Soil Description	Saturated Hydraulic Conductivity micro m/sec	Soil Reaction pH
1	0-12	Sandy loam	No data	No data	4.2343-14.1143	7.4-8.4
2	12-52	No data	No data	No data	0.4234-1.4114	7.8-9.6
3	52-60	No data	No data	No data	1.4114-4.2343	7.8-9.6

WATER AGENCY DATA:

WATER AGENCY SEARCH DISTANCES:

DATABASE:	SEARCH DISTANCE (MILES):
NWIS	1.000
OIL & GAS WELLS - CA	0.000
PWS	1.000
WELLS - GAMA - CA	0.000

DISTANCE TO NEAREST:	DISTANCE:
NWIS	0.652 mi / 3443 ft
OIL & GAS WELLS - CA	N/A
PWS	N/A
WELLS - GAMA - CA	0.000 mi / 0 ft

FEDERAL WATER AGENCY DATA SUMMARY:

MAP ID:	WELL ID:	LOCATION FROM SP:
33	11225130	1/2 - 1 Mile WNW

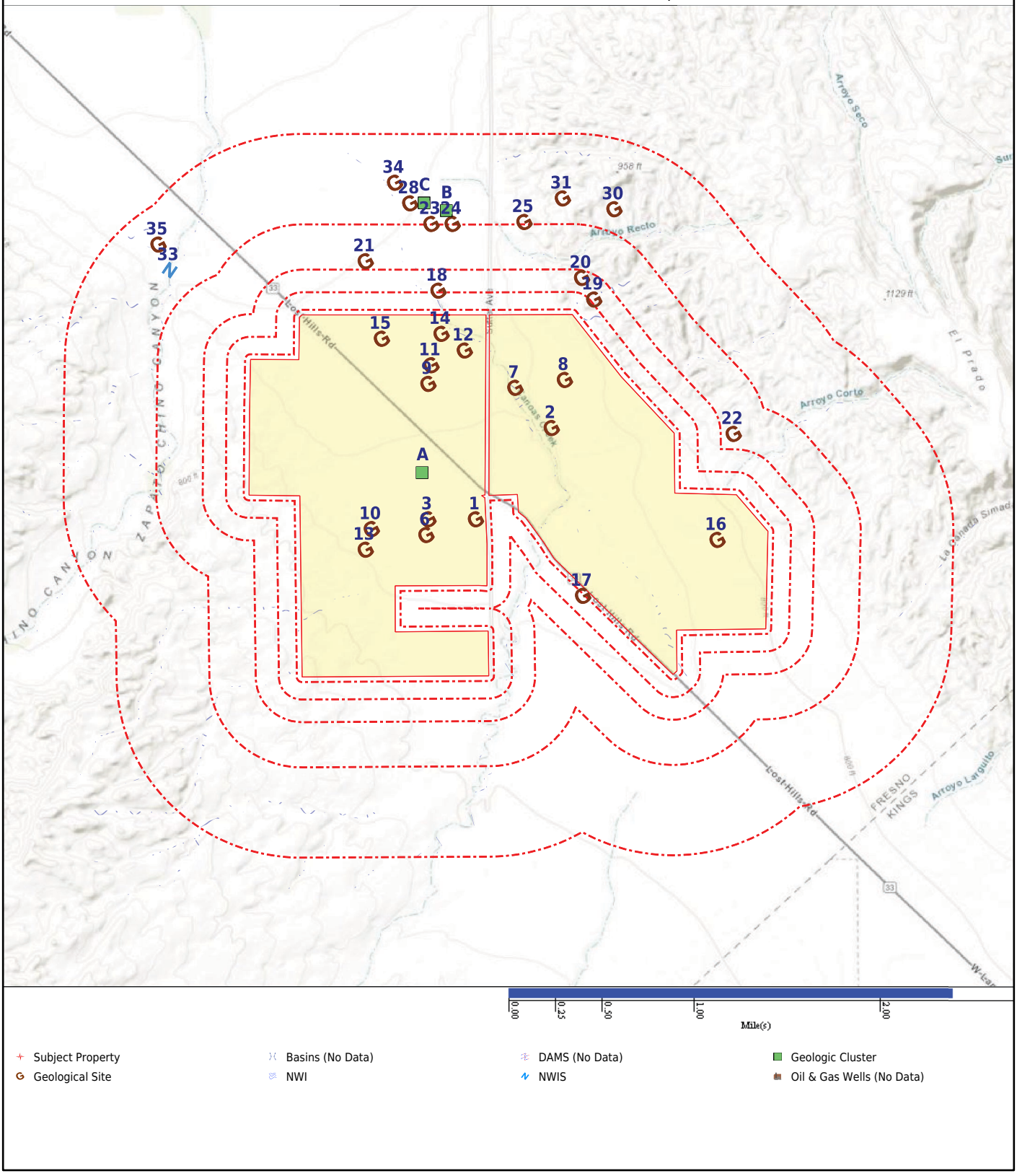
Note: PWS System location is not always the same as well location.

STATE/LOCAL WATER AGENCY DATA SUMMARY:

MAP ID:	WELL ID:	LOCATION FROM SP:
1	22S16E01D001M	< 1/8 Mile WSW
3	22S16E02A001M	< 1/8 Mile WSW
9	21S16E35H001M	< 1/8 Mile NW
12	21S16E35A001M	< 1/8 Mile NNW
15	21S16E35B001M	< 1/8 Mile NW

SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: September 20, 2023



Map Id: 1
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 740 ft.
Relative: Higher

Site Name : 22S16E01D001M
36.0487, -120.2016
CA

Database(s) : [WELLS - GAMA - CA]

Envirosite ID: 10016409
EPA ID: N/R

WELLS - GAMA - CA

Well Details

Well ID :	22S16E01D001M
Well Type :	WATER SUPPLY, OTHER
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Source :	Department of Water Resources
Data Source :	WDL
Source Name :	22S16E01D001M
Other Names :	N/R
Latitude :	36.0487
Longitude :	-120.2016
Last Date in Agency List :	2023-08-08

GM Chemicals

Samp Collection Date :	1954-01-20
Chemical :	PH (pH) 7.7 PH UNITS
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1954-01-20
Chemical :	SO4 (Sulfate) 806 MG/L
CAS Number :	N/R
Reporting Limit :	1
Samp Collection Date :	1954-01-20
Chemical :	F (Fluoride) .6 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1954-01-20
Chemical :	CL (Chloride) 38 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1954-01-20
Chemical :	ALKCACO3 (Alkalinity as CaCO3) 110 MG/L
CAS Number :	N/R
Reporting Limit :	1
Samp Collection Date :	1954-01-20
Chemical :	NO3N (Nitrate as N) 3.6 MG/L
CAS Number :	N/R
Reporting Limit :	.02
Samp Collection Date :	1954-01-20
Chemical :	MG (Magnesium) 78 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Map Id: 1
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 740 ft.
Relative: Higher

Site Name : 22S16E01D001M
36.0487, -120.2016
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016409
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date :	1954-01-20
Chemical :	K (Potassium) 4.5 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Samp Collection Date :	1954-01-20
Chemical :	B (Boron) .36 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Source Details

Datum :	N/R
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Latitude :	36.0487
Longitude :	120.2016

Source Chemicals

Samp Collection Date-Time :	1954-01-20
Chemical :	pH 7.7 pH Units
Analytical Method :	UnkH pH
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1954-01-20
Chemical :	Dissolved Sulfate 806 mg/L
Analytical Method :	UnkH Sulfate
Reporting Limit :	1
Lab Note :	N/R

Samp Collection Date-Time :	1954-01-20
Chemical :	Dissolved Fluoride .6 mg/L
Analytical Method :	UnkH Fluoride
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1954-01-20
Chemical :	Dissolved Chloride 38 mg/L
Analytical Method :	UnkH Chloride
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1954-01-20
Chemical :	Total Alkalinity 110 mg/L as CaCO3
Analytical Method :	UnkH Alkalinity
Reporting Limit :	1
Lab Note :	N/R

Map Id: 1
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 740 ft.
Relative: Higher

Site Name : 22S16E01D001M
36.0487, -120.2016
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016409
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date-Time :	1954-01-20
Chemical :	Dissolved Nitrate 16 mg/L
Analytical Method :	UnkH Nitrate
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1954-01-20
Chemical :	Dissolved Magnesium 78 mg/L
Analytical Method :	UnkH Magnesium
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1954-01-20
Chemical :	Dissolved Potassium 4.5 mg/L
Analytical Method :	UnkH Potassium
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1954-01-20
Chemical :	Dissolved Boron .36 mg/L
Analytical Method :	UnkH Boron
Reporting Limit :	.1
Lab Note :	N/R

Map Id: 2
Direction: NE
Distance: 0.000 mi., 0 ft.
Elevation: 722 ft.
Relative: Lower

Site Name : N/R
36.056, -120.1941667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 8535661
EPA ID: N/R

EPICENTERS

Updated Date :	2015-06-30
Time :	22:48:47
ID Number :	nc72473196
Status :	N/R
Type :	earthquake
Depth :	16.54
Magnitude :	1.36
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	40
Gap :	111
DMIN :	0.06868
RMS :	0.11
Net :	nc

Map Id: 2
Direction: NE
Distance: 0.000 mi., 0 ft.
Elevation: 722 ft.
Relative: Lower

Site Name : N/R
36.056, -120.1941667
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 8535661
EPA ID: N/R

EPICENTERS ***(cont.)***

Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.056
Longitude :	-120.1941667
Last Date in Agency List :	2015-07-13

Map Id: 3
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 741 ft.
Relative: Higher

Site Name : 22S16E02A001M
36.0487, -120.2061
CA

Database(s) : [WELLS - GAMA - CA]

Envirosite ID: 10016501
EPA ID: N/R

WELLS - GAMA - CA

Well Details

Well ID :	22S16E02A001M
Well Type :	WATER SUPPLY, OTHER
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Source :	Department of Water Resources
Data Source :	WDL
Source Name :	22S16E02A001M
Other Names :	N/R
Latitude :	36.0487
Longitude :	-120.2061
Last Date in Agency List :	2023-08-08

GM Chemicals

Samp Collection Date :	1956-05-02
Chemical :	F (Fluoride) .3 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1956-05-02
Chemical :	PH (pH) 7.7 PH UNITS
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1956-05-02
Chemical :	SO4 (Sulfate) 560 MG/L
CAS Number :	N/R
Reporting Limit :	1

Map Id: 3
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 741 ft.
Relative: Higher

Site Name : 22S16E02A001M
36.0487, -120.2061
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016501
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date :	1956-05-02
Chemical :	ALKCACO3 (Alkalinity as CaCO3) 135 MG/L
CAS Number :	N/R
Reporting Limit :	1
Samp Collection Date :	1956-05-02
Chemical :	MG (Magnesium) 56 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1956-05-02
Chemical :	B (Boron) .47 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1956-05-02
Chemical :	K (Potassium) 3.6 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1956-05-02
Chemical :	NO3N (Nitrate as N) 3.6 MG/L
CAS Number :	N/R
Reporting Limit :	.02
Samp Collection Date :	1956-05-02
Chemical :	CL (Chloride) 38 MG/L
CAS Number :	N/R
Reporting Limit :	1

Source Details

Datum :	N/R
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Latitude :	36.0487
Longitude :	120.2061

Source Chemicals

Samp Collection Date-Time :	1956-05-02
Chemical :	Dissolved Fluoride .3 mg/L
Analytical Method :	UnkMod Fluoride
Reporting Limit :	.1
Lab Note :	N/R
Samp Collection Date-Time :	1956-05-02
Chemical :	pH 7.7 pH Units

Map Id: 3
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 741 ft.
Relative: Higher

Site Name : 22S16E02A001M
36.0487, -120.2061
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016501
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Analytical Method :	EPA 150.1
Reporting Limit :	.1
Lab Note :	N/R
Samp Collection Date-Time :	1956-05-02
Chemical :	Dissolved Sulfate 560 mg/L
Analytical Method :	UnkMod Sulfate
Reporting Limit :	1
Lab Note :	N/R
Samp Collection Date-Time :	1956-05-02
Chemical :	Total Alkalinity 135 mg/L as CaCO3
Analytical Method :	UnkMod Alkalinity
Reporting Limit :	1
Lab Note :	N/R
Samp Collection Date-Time :	1956-05-02
Chemical :	Dissolved Magnesium 56 mg/L
Analytical Method :	UnkMod Magnesium
Reporting Limit :	.1
Lab Note :	N/R
Samp Collection Date-Time :	1956-05-02
Chemical :	Dissolved Boron .47 mg/L
Analytical Method :	UnkH Boron
Reporting Limit :	.1
Lab Note :	N/R
Samp Collection Date-Time :	1956-05-02
Chemical :	Dissolved Potassium 3.6 mg/L
Analytical Method :	UnkMod Potassium
Reporting Limit :	.1
Lab Note :	N/R
Samp Collection Date-Time :	1956-05-02
Chemical :	Dissolved Nitrate 16 mg/L
Analytical Method :	UnkMod Nitrate
Reporting Limit :	.1
Lab Note :	N/R
Samp Collection Date-Time :	1956-05-02
Chemical :	Dissolved Chloride 38 mg/L
Analytical Method :	UnkMod Chloride
Reporting Limit :	1
Lab Note :	N/R

Map Id: A4
Direction: WNW
Distance: 0.000 mi., 0 ft.
Elevation: 729 ft.
Relative: Lower

Site Name : N/R
36.0525, -120.2063333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36740820
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-19
Time :	10:55:06
ID Number :	nc72365911
Status :	N/R
Type :	earthquake
Depth :	3.88
Magnitude :	1.35
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	18
Gap :	243
DMIN :	0.07882
RMS :	0.09
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0525
Longitude :	-120.2063333
Last Date in Agency List :	2015-01-14

Map Id: A5
Direction: WNW
Distance: 0.000 mi., 0 ft.
Elevation: 729 ft.
Relative: Lower

Site Name : N/R
36.0526667, -120.2066667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36799747
EPA ID: N/R

EPICENTERS

Updated Date :	2015-06-30
Time :	22:52:41
ID Number :	nc72473206
Status :	N/R
Type :	earthquake
Depth :	15.4
Magnitude :	1.53
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	44
Gap :	112
DMIN :	0.07907
RMS :	0.08
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0526667

Map Id: A5
Direction: WNW
Distance: 0.000 mi., 0 ft.
Elevation: 729 ft.
Relative: Lower

Site Name : N/R
36.0526667, -120.2066667
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 36799747
EPA ID: N/R

EPICENTERS ***(cont.)***

Longitude :	-120.2066667
Last Date in Agency List :	2015-07-13

Map Id: 6
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 745 ft.
Relative: Higher

Site Name : N/R
36.0473333, -120.2063333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36770346
EPA ID: N/R

EPICENTERS

Updated Date :	2015-07-01
Time :	22:59:00
ID Number :	nc72473216
Status :	N/R
Type :	earthquake
Depth :	13.16
Magnitude :	1.41
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	30
Gap :	150
DMIN :	0.07954
RMS :	0.11
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0473333
Longitude :	-120.2063333
Last Date in Agency List :	2015-07-13

Map Id: 7
Direction: N
Distance: 0.000 mi., 0 ft.
Elevation: 709 ft.
Relative: Lower

Site Name : N/R
36.059166, -120.19767
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36726410
EPA ID: N/R

EPICENTERS

Updated Date :	2018-04-06
Time :	17:51:23
ID Number :	nc72996141

Map Id: 7
Direction: N
Distance: 0.000 mi., 0 ft.
Elevation: 709 ft.
Relative: Lower

Site Name : N/R
36.059166, -120.19767
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 36726410
EPA ID: N/R

EPICENTERS ***(cont.)***

Status :	automatic
Type :	earthquake
Depth :	9.34
Magnitude :	2.51
Magnitude Type :	Duration (Md)
Magnitude Error :	0.23
Magnitude NST :	27
Magnitude Source :	nc
NST :	43
Gap :	72
DMIN :	0.171
RMS :	0.1
Net :	nc
Horizontal Error :	0.35
Depth Error :	0.71
Location Source :	nc
Latitude :	36.059166
Longitude :	-120.19767
Last Date in Agency List :	2018-04-13

Map Id: 8
Direction: NNE
Distance: 0.000 mi., 0 ft.
Elevation: 736 ft.
Relative: Lower

Site Name : N/R
36.0598333, -120.193
CA

Database(s) : [EPICENTERS]

Envirosite ID: 7276122
EPA ID: N/R

EPICENTERS

Updated Date :	2015-06-30
Time :	22:49:56
ID Number :	nc72473201
Status :	N/R
Type :	earthquake
Depth :	17.89
Magnitude :	1.42
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	38
Gap :	115
DMIN :	0.06756
RMS :	0.09
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0598333
Longitude :	-120.193
Last Date in Agency List :	2015-07-13

Map Id: 9
Direction: NW
Distance: 0.000 mi., 0 ft.
Elevation: 711 ft.
Relative: Lower

Site Name : 21S16E35H001M
36.0595, -120.2061
CA

Database(s) : [WELLS - GAMA - CA]

Envirosite ID: 10016091
EPA ID: N/R

WELLS - GAMA - CA

Well Details

Well ID :	21S16E35H001M
Well Type :	WATER SUPPLY, OTHER
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Source :	Department of Water Resources
Data Source :	WDL
Source Name :	21S16E35H001M
Other Names :	N/R
Latitude :	36.0595
Longitude :	-120.2061
Last Date in Agency List :	2023-08-08

GM Chemicals

Samp Collection Date :	1951-09-01
Chemical :	CL (Chloride) 38 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1951-09-01
Chemical :	PH (pH) 8.9 PH UNITS
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1951-09-01
Chemical :	ALKCACO3 (Alkalinity as CaCO3) 127 MG/L
CAS Number :	N/R
Reporting Limit :	1
Samp Collection Date :	1951-09-01
Chemical :	K (Potassium) 4 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1951-09-01
Chemical :	F (Fluoride) 0 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1951-09-01
Chemical :	NO3N (Nitrate as N) .75 MG/L
CAS Number :	N/R
Reporting Limit :	.02
Samp Collection Date :	1951-09-01
Chemical :	B (Boron) .77 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Map Id: 9
Direction: NW
Distance: 0.000 mi., 0 ft.
Elevation: 711 ft.
Relative: Lower

Site Name : 21S16E35H001M
36.0595, -120.2061
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016091
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date :	1951-09-01
Chemical :	MG (Magnesium) 53 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Samp Collection Date :	1951-09-01
Chemical :	SO4 (Sulfate) 646 MG/L
CAS Number :	N/R
Reporting Limit :	1

Source Details

Datum :	N/R
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Latitude :	36.0595
Longitude :	120.2061

Source Chemicals

Samp Collection Date-Time :	1951-09-01
Chemical :	Dissolved Chloride 38 mg/L
Analytical Method :	UnkH Chloride
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1951-09-01
Chemical :	pH 8.9 pH Units
Analytical Method :	UnkH pH
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1951-09-01
Chemical :	Total Alkalinity 127 mg/L as CaCO3
Analytical Method :	UnkH Alkalinity
Reporting Limit :	1
Lab Note :	N/R

Samp Collection Date-Time :	1951-09-01
Chemical :	Dissolved Potassium 4 mg/L
Analytical Method :	UnkH Potassium
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1951-09-01
Chemical :	Dissolved Fluoride 0 mg/L
Analytical Method :	UnkH Fluoride
Reporting Limit :	.1
Lab Note :	N/R

Map Id: 9
Direction: NW
Distance: 0.000 mi., 0 ft.
Elevation: 711 ft.
Relative: Lower

Site Name : 21S16E35H001M
36.0595, -120.2061
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016091
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date-Time :	1951-09-01
Chemical :	Dissolved Nitrate 3.3 mg/L
Analytical Method :	UnkH Nitrate
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1951-09-01
Chemical :	Dissolved Boron .77 mg/L
Analytical Method :	UnkH Boron
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1951-09-01
Chemical :	Dissolved Magnesium 53 mg/L
Analytical Method :	UnkH Magnesium
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1951-09-01
Chemical :	Dissolved Sulfate 646 mg/L
Analytical Method :	UnkH Sulfate
Reporting Limit :	1
Lab Note :	N/R

Map Id: 10
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 748 ft.
Relative: Higher

Site Name : N/R
36.0478333, -120.2115
CA

Database(s) : [EPICENTERS]

Envirosite ID: 8535762
EPA ID: N/R

EPICENTERS

Updated Date :	2015-07-01
Time :	22:57:52
ID Number :	nc72473211
Status :	N/R
Type :	earthquake
Depth :	13.08
Magnitude :	1.18
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	25
Gap :	178
DMIN :	0.08359
RMS :	0.09
Net :	nc

Map Id: 10
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 748 ft.
Relative: Higher

Site Name : N/R
36.0478333, -120.2115
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 8535762
EPA ID: N/R

EPICENTERS ***(cont.)***

Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0478333
Longitude :	-120.2115
Last Date in Agency List :	2015-07-13

Map Id: 11
Direction: NW
Distance: 0.000 mi., 0 ft.
Elevation: 707 ft.
Relative: Lower

Site Name : N/R
36.061, -120.2058333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36765424
EPA ID: N/R

EPICENTERS

Updated Date :	2014-10-11
Time :	11:17:21
ID Number :	nc72319756
Status :	N/R
Type :	earthquake
Depth :	10.46
Magnitude :	1.42
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	34
Gap :	164
DMIN :	0.07795
RMS :	0.09
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.061
Longitude :	-120.2058333
Last Date in Agency List :	2014-10-14

Map Id: 12
Direction: NNW
Distance: 0.000 mi., 0 ft.
Elevation: 708 ft.
Relative: Lower

Site Name : 21S16E35A001M
36.0622, -120.2026
CA

Database(s) : [WELLS - GAMA - CA]

Envirosite ID: 10016238
EPA ID: N/R

WELLS - GAMA - CA

Well Details

Well ID :	21S16E35A001M
Well Type :	WATER SUPPLY, OTHER
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Source :	Department of Water Resources
Data Source :	WDL
Source Name :	21S16E35A001M
Other Names :	N/R
Latitude :	36.0622
Longitude :	-120.2026
Last Date in Agency List :	2023-08-08

GM Chemicals

Details for this site have been truncated due to the large number of available details for this site within this dataset. For the complete details for this site, contact your Envirosite account representative for a complimentary site report containing all of the details available.

Samp Collection Date :	1980-04-30
Chemical :	ALKCACO3 (Alkalinity as CaCO3) 103 MG/L
CAS Number :	N/R
Reporting Limit :	1

Samp Collection Date :	1980-04-30
Chemical :	K (Potassium) 2.9 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Samp Collection Date :	1980-04-30
Chemical :	MG (Magnesium) 42 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Samp Collection Date :	1980-04-30
Chemical :	TDS (Total Dissolved Solids) 1080 MG/L
CAS Number :	N/R
Reporting Limit :	1

Samp Collection Date :	1980-04-30
Chemical :	SO4 (Sulfate) 583 MG/L
CAS Number :	N/R
Reporting Limit :	1

Samp Collection Date :	1980-04-30
Chemical :	B (Boron) .6 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Map Id: 12
Direction: NNW
Distance: 0.000 mi., 0 ft.
Elevation: 708 ft.
Relative: Lower

Site Name : 21S16E35A001M
36.0622, -120.2026
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016238
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date :	1980-04-30
Chemical :	PH (pH) 8.1 PH UNITS
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1980-04-30
Chemical :	CL (Chloride) 37 MG/L
CAS Number :	N/R
Reporting Limit :	1
Samp Collection Date :	1974-08-01
Chemical :	K (Potassium) 2.6 MG/L
CAS Number :	N/R
Reporting Limit :	.1
Samp Collection Date :	1974-08-01
Chemical :	ALKCACO3 (Alkalinity as CaCO3) 98 MG/L
CAS Number :	N/R
Reporting Limit :	1

Source Details

Datum :	N/R
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Latitude :	36.0622
Longitude :	120.2026

Source Chemicals

Samp Collection Date-Time :	1980-04-30
Chemical :	Total Alkalinity 103 mg/L as CaCO3
Analytical Method :	EPA 310.1
Reporting Limit :	1
Lab Note :	N/R
Samp Collection Date-Time :	1980-04-30
Chemical :	Dissolved Potassium 2.9 mg/L
Analytical Method :	EPA 258.1
Reporting Limit :	.1
Lab Note :	N/R
Samp Collection Date-Time :	1980-04-30
Chemical :	Dissolved Magnesium 42 mg/L
Analytical Method :	EPA 242.1
Reporting Limit :	.1
Lab Note :	N/R

Map Id: 12
Direction: NNW
Distance: 0.000 mi., 0 ft.
Elevation: 708 ft.
Relative: Lower

Site Name : 21S16E35A001M
36.0622, -120.2026
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016238
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date-Time :	1980-04-30
Chemical :	Total Dissolved Solids 1080 mg/L at 180 °C
Analytical Method :	EPA 160.1
Reporting Limit :	1
Lab Note :	N/R

Samp Collection Date-Time :	1980-04-30
Chemical :	Dissolved Sulfate 583 mg/L
Analytical Method :	EPA 375.3
Reporting Limit :	1
Lab Note :	N/R

Samp Collection Date-Time :	1980-04-30
Chemical :	Dissolved Boron .6 mg/L
Analytical Method :	Std Method 4500-B, C
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1980-04-30
Chemical :	pH 8.1 pH Units
Analytical Method :	EPA 150.1
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1980-04-30
Chemical :	Dissolved Chloride 37 mg/L
Analytical Method :	EPA 325.2
Reporting Limit :	1
Lab Note :	N/R

Samp Collection Date-Time :	1974-08-01
Chemical :	Dissolved Potassium 2.6 mg/L
Analytical Method :	EPA 258.1
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1974-08-01
Chemical :	Total Alkalinity 98 mg/L as CaCO3
Analytical Method :	EPA 310.1
Reporting Limit :	1
Lab Note :	N/R

Map Id: 13
Direction: WSW
Distance: 0.000 mi., 0 ft.
Elevation: 758 ft.
Relative: Higher

Site Name : N/R
36.0461667, -120.2121667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36789212
EPA ID: N/R

EPICENTERS

Updated Date :	2015-07-01
Time :	22:58:15
ID Number :	nc71094084
Status :	N/R
Type :	earthquake
Depth :	12.37
Magnitude :	1.02
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	16
Gap :	147
DMIN :	0.0844
RMS :	0.09
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0461667
Longitude :	-120.2121667
Last Date in Agency List :	2015-07-13

Map Id: 14
Direction: NNW
Distance: 0.000 mi., 0 ft.
Elevation: 703 ft.
Relative: Lower

Site Name : N/R
36.0635, -120.2048333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 7275782
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-19
Time :	10:55:46
ID Number :	nc72365916
Status :	N/R
Type :	earthquake
Depth :	9.86
Magnitude :	1.34
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	24
Gap :	91
DMIN :	0.07717
RMS :	0.1
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0635

Map Id: 14
Direction: NNW
Distance: 0.000 mi., 0 ft.
Elevation: 703 ft.
Relative: Lower

Site Name : N/R
36.0635, -120.2048333
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 7275782
EPA ID: N/R

EPICENTERS ***(cont.)***

Longitude :	-120.2048333
Last Date in Agency List :	2015-01-14

Map Id: 15
Direction: NW
Distance: 0.000 mi., 0 ft.
Elevation: 697 ft.
Relative: Lower

Site Name : 21S16E35B001M
36.0631, -120.2106
CA

Database(s) : [WELLS - GAMA - CA]

Envirosite ID: 10016090
EPA ID: N/R

WELLS - GAMA - CA

Well Details

Well ID :	21S16E35B001M
Well Type :	WATER SUPPLY, OTHER
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Source :	Department of Water Resources
Data Source :	WDL
Source Name :	21S16E35B001M
Other Names :	N/R
Latitude :	36.0631
Longitude :	-120.2106
Last Date in Agency List :	2023-08-08

GM Chemicals

Samp Collection Date :	1956-03-21
Chemical :	F (Fluoride) .4 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Samp Collection Date :	1956-03-21
Chemical :	ALKCACO3 (Alkalinity as CaCO3) 116 MG/L
CAS Number :	N/R
Reporting Limit :	1

Samp Collection Date :	1956-03-21
Chemical :	PH (pH) 7.8 PH UNITS
CAS Number :	N/R
Reporting Limit :	.1

Samp Collection Date :	1956-03-21
Chemical :	B (Boron) .52 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Map Id: 15
Direction: NW
Distance: 0.000 mi., 0 ft.
Elevation: 697 ft.
Relative: Lower

Site Name : 21S16E35B001M
36.0631, -120.2106
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016090
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date :	1956-03-21
Chemical :	NO3N (Nitrate as N) 1.4 MG/L
CAS Number :	N/R
Reporting Limit :	.02

Samp Collection Date :	1956-03-21
Chemical :	MG (Magnesium) 54 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Samp Collection Date :	1956-03-21
Chemical :	K (Potassium) 3.6 MG/L
CAS Number :	N/R
Reporting Limit :	.1

Samp Collection Date :	1956-03-21
Chemical :	SO4 (Sulfate) 625 MG/L
CAS Number :	N/R
Reporting Limit :	1

Samp Collection Date :	1956-03-21
Chemical :	CL (Chloride) 34 MG/L
CAS Number :	N/R
Reporting Limit :	1

Source Details

Datum :	N/R
Well Depth (Ft.) :	N/R
Top of Screen (Ft.) :	N/R
Screen Length (Ft.) :	N/R
Latitude :	36.0631
Longitude :	120.2106

Source Chemicals

Samp Collection Date-Time :	1956-03-21
Chemical :	Dissolved Fluoride .4 mg/L
Analytical Method :	UnkMod Fluoride
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1956-03-21
Chemical :	Total Alkalinity 116 mg/L as CaCO3
Analytical Method :	UnkMod Alkalinity
Reporting Limit :	1
Lab Note :	N/R

Map Id: 15
Direction: NW
Distance: 0.000 mi., 0 ft.
Elevation: 697 ft.
Relative: Lower

Site Name : 21S16E35B001M
36.0631, -120.2106
CA

Database(s) : [WELLS - GAMA - CA] ***(cont.)***

Envirosite ID: 10016090
EPA ID: N/R

WELLS - GAMA - CA ***(cont.)***

Samp Collection Date-Time :	1956-03-21
Chemical :	pH 7.8 pH Units
Analytical Method :	EPA 150.1
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1956-03-21
Chemical :	Dissolved Boron .52 mg/L
Analytical Method :	UnkH Boron
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1956-03-21
Chemical :	Dissolved Nitrate 6.1 mg/L
Analytical Method :	UnkMod Nitrate
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1956-03-21
Chemical :	Dissolved Magnesium 54 mg/L
Analytical Method :	UnkMod Magnesium
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1956-03-21
Chemical :	Dissolved Potassium 3.6 mg/L
Analytical Method :	UnkMod Potassium
Reporting Limit :	.1
Lab Note :	N/R

Samp Collection Date-Time :	1956-03-21
Chemical :	Dissolved Sulfate 625 mg/L
Analytical Method :	UnkMod Sulfate
Reporting Limit :	1
Lab Note :	N/R

Samp Collection Date-Time :	1956-03-21
Chemical :	Dissolved Chloride 34 mg/L
Analytical Method :	UnkMod Chloride
Reporting Limit :	1
Lab Note :	N/R

Map Id: 16
Direction: E
Distance: 0.000 mi., 0 ft.
Elevation: 786 ft.
Relative: Higher

Site Name : N/R
36.047, -120.1783333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 8535140
EPA ID: N/R

EPICENTERS

Updated Date :	2015-06-22
Time :	13:16:32
ID Number :	nc72470441
Status :	N/R
Type :	earthquake
Depth :	14.13
Magnitude :	1.34
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	31
Gap :	147
DMIN :	0.0574
RMS :	0.07
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.047
Longitude :	-120.1783333
Last Date in Agency List :	2015-07-13

Map Id: 17
Direction: SE
Distance: 0.048 mi., 256 ft.
Elevation: 751 ft.
Relative: Higher

Site Name : N/R
36.0425, -120.1911667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 41447405
EPA ID: N/R

EPICENTERS

Updated Date :	2021-04-28
Time :	21:16:53
ID Number :	nc73554015
Status :	reviewed
Type :	earthquake
Depth :	8.66
Magnitude :	2.51
Magnitude Type :	Duration (Md)
Magnitude Error :	0.166
Magnitude NST :	84
Magnitude Source :	nc
NST :	42
Gap :	143
DMIN :	0.08751
RMS :	0.11
Net :	nc
Horizontal Error :	0.2
Depth Error :	0.35
Location Source :	nc
Latitude :	36.0425

Map Id: 17
Direction: SE
Distance: 0.048 mi., 256 ft.
Elevation: 751 ft.
Relative: Higher

Site Name : N/R
36.0425, -120.1911667
CA
Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 41447405
EPA ID: N/R

EPICENTERS ***(cont.)***

Longitude :	-120.1911667
Last Date in Agency List :	2021-06-07

Map Id: 18
Direction: NNW
Distance: 0.125 mi., 661 ft.
Elevation: 691 ft.
Relative: Lower

Site Name : N/R
36.067, -120.2051667
CA
Database(s) : [EPICENTERS]

Envirosite ID: 8535882
EPA ID: N/R

EPICENTERS

Updated Date :	2015-06-16
Time :	18:59:09
ID Number :	nc72466651
Status :	N/R
Type :	earthquake
Depth :	9.79
Magnitude :	1.48
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	40
Gap :	120
DMIN :	0.07763
RMS :	0.07
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.067
Longitude :	-120.2051667
Last Date in Agency List :	2015-07-13

Map Id: 19
Direction: NNE
Distance: 0.131 mi., 694 ft.
Elevation: 821 ft.
Relative: Higher

Site Name : N/R
36.0663333, -120.1901667
CA
Database(s) : [EPICENTERS]

Envirosite ID: 36780510
EPA ID: N/R

EPICENTERS

Updated Date :	2015-07-01
Time :	22:58:46
ID Number :	nc71094089

Map Id: 19
Direction: NNE
Distance: 0.131 mi., 694 ft.
Elevation: 821 ft.
Relative: Higher

Site Name : N/R
36.0663333, -120.1901667
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 36780510
EPA ID: N/R

EPICENTERS ***(cont.)***

Status :	N/R
Type :	earthquake
Depth :	18.91
Magnitude :	1.24
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	14
Gap :	195
DMIN :	0.06546
RMS :	0.07
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0663333
Longitude :	-120.1901667
Last Date in Agency List :	2015-07-13

Map Id: 20
Direction: NNE
Distance: 0.197 mi., 1038 ft.
Elevation: 802 ft.
Relative: Higher

Site Name : N/R
36.068, -120.1913333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36744962
EPA ID: N/R

EPICENTERS

Updated Date :	2019-09-30
Time :	23:06:59
ID Number :	nc73276645
Status :	reviewed
Type :	earthquake
Depth :	11.89
Magnitude :	2.56
Magnitude Type :	Duration (Md)
Magnitude Error :	0.204
Magnitude NST :	53
Magnitude Source :	nc
NST :	55
Gap :	126
DMIN :	0.181
RMS :	0.09
Net :	nc
Horizontal Error :	0.26
Depth Error :	0.73
Location Source :	nc
Latitude :	36.068
Longitude :	-120.1913333
Last Date in Agency List :	2019-10-25

Map Id: 21
Direction: NW
Distance: 0.286 mi., 1511 ft.
Elevation: 682 ft.
Relative: Lower

Site Name : N/R
36.0693333, -120.2121667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36745115
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-12
Time :	01:31:48
ID Number :	nc72362901
Status :	N/R
Type :	earthquake
Depth :	8.4
Magnitude :	1.04
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	17
Gap :	173
DMIN :	0.08349
RMS :	0.07
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0693333
Longitude :	-120.2121667
Last Date in Agency List :	2015-01-14

Map Id: 22
Direction: ENE
Distance: 0.313 mi., 1651 ft.
Elevation: 862 ft.
Relative: Higher

Site Name : N/R
36.0555, -120.1766667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 8535406
EPA ID: N/R

EPICENTERS

Updated Date :	2015-06-02
Time :	01:39:40
ID Number :	nc72459136
Status :	N/R
Type :	earthquake
Depth :	14.82
Magnitude :	1.36
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	24
Gap :	159
DMIN :	0.0546
RMS :	0.07
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0555

Map Id: 22
Direction: ENE
Distance: 0.313 mi., 1651 ft.
Elevation: 862 ft.
Relative: Higher

Site Name : N/R
36.0555, -120.1766667
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 8535406
EPA ID: N/R

EPICENTERS ***(cont.)***

Longitude :	-120.1766667
Last Date in Agency List :	2015-07-13

Map Id: 23
Direction: NNW
Distance: 0.493 mi., 2606 ft.
Elevation: 687 ft.
Relative: Lower

Site Name : N/R
36.0723333, -120.2058333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36807423
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-12
Time :	01:54:18
ID Number :	nc72362916
Status :	N/R
Type :	earthquake
Depth :	10.98
Magnitude :	2.3
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	53
Gap :	98
DMIN :	0.07875
RMS :	0.07
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0723333
Longitude :	-120.2058333
Last Date in Agency List :	2015-01-14

Map Id: 24
Direction: NNW
Distance: 0.494 mi., 2606 ft.
Elevation: 697 ft.
Relative: Lower

Site Name : N/R
36.0723333, -120.2038333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36727801
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-16
Time :	22:43:50
ID Number :	nc72364341

Map Id: 24
Direction: NNW
Distance: 0.494 mi., 2606 ft.
Elevation: 697 ft.
Relative: Lower

Site Name : N/R
36.0723333, -120.2038333
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 36727801
EPA ID: N/R

EPICENTERS ***(cont.)***

Status :	N/R
Type :	earthquake
Depth :	10.78
Magnitude :	2.41
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	55
Gap :	99
DMIN :	0.07715
RMS :	0.09
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0723333
Longitude :	-120.2038333
Last Date in Agency List :	2015-01-14

Map Id: 25
Direction: N
Distance: 0.504 mi., 2663 ft.
Elevation: 761 ft.
Relative: Higher

Site Name : N/R
36.0725, -120.1968333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36721686
EPA ID: N/R

EPICENTERS

Updated Date :	2018-11-28
Time :	16:00:51
ID Number :	nc73116431
Status :	reviewed
Type :	earthquake
Depth :	10.69
Magnitude :	2.5
Magnitude Type :	Duration (Md)
Magnitude Error :	0.161
Magnitude NST :	65
Magnitude Source :	nc
NST :	60
Gap :	86
DMIN :	0.07157
RMS :	0.07
Net :	nc
Horizontal Error :	0.23
Depth Error :	0.37
Location Source :	nc
Latitude :	36.0725
Longitude :	-120.1968333
Last Date in Agency List :	2019-01-18

Map Id: B26
Direction: NNW
Distance: 0.563 mi., 2971 ft.
Elevation: 692 ft.
Relative: Lower

Site Name : N/R
36.0733333, -120.2045
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36821212
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-12
Time :	02:32:32
ID Number :	nc72362936
Status :	N/R
Type :	earthquake
Depth :	10.81
Magnitude :	2.4
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	59
Gap :	131
DMIN :	0.07784
RMS :	0.08
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0733333
Longitude :	-120.2045
Last Date in Agency List :	2015-01-14

Map Id: B27
Direction: NNW
Distance: 0.597 mi., 3154 ft.
Elevation: 695 ft.
Relative: Lower

Site Name : N/R
36.0738333, -120.2038333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36797608
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-16
Time :	23:28:13
ID Number :	nc72364346
Status :	N/R
Type :	earthquake
Depth :	11.09
Magnitude :	2.46
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	53
Gap :	100
DMIN :	0.07738
RMS :	0.09
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0738333

Map Id: B27
Direction: NNW
Distance: 0.597 mi., 3154 ft.
Elevation: 695 ft.
Relative: Lower

Site Name : N/R
36.0738333, -120.2038333
CA
Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 36797608
EPA ID: N/R

EPICENTERS ***(cont.)***

Longitude :	-120.2038333
Last Date in Agency List :	2015-01-14

Map Id: 28
Direction: NNW
Distance: 0.609 mi., 3214 ft.
Elevation: 679 ft.
Relative: Lower

Site Name : N/R
36.074, -120.2078333
CA
Database(s) : [EPICENTERS]

Envirosite ID: 36744030
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-12
Time :	01:38:41
ID Number :	nc72362906
Status :	N/R
Type :	earthquake
Depth :	10.95
Magnitude :	2.17
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	47
Gap :	99
DMIN :	0.08061
RMS :	0.08
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.074
Longitude :	-120.2078333
Last Date in Agency List :	2015-01-14

Map Id: C29
Direction: NNW
Distance: 0.609 mi., 3214 ft.
Elevation: 682 ft.
Relative: Lower

Site Name : N/R
36.074, -120.2065
CA
Database(s) : [EPICENTERS]

Envirosite ID: 36731005
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-18
Time :	23:30:52
ID Number :	nc72362851

Map Id: C29
Direction: NNW
Distance: 0.609 mi., 3214 ft.
Elevation: 682 ft.
Relative: Lower

Site Name : N/R
36.074, -120.2065
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 36731005
EPA ID: N/R

EPICENTERS ***(cont.)***

Status :	N/R
Type :	earthquake
Depth :	10.82
Magnitude :	1.55
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	40
Gap :	131
DMIN :	0.07954
RMS :	0.08
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.074
Longitude :	-120.2065
Last Date in Agency List :	2015-01-14

Map Id: 30
Direction: NNE
Distance: 0.612 mi., 3234 ft.
Elevation: 850 ft.
Relative: Higher

Site Name : N/R
36.0735, -120.1881667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36718757
EPA ID: N/R

EPICENTERS

Updated Date :	2018-12-03
Time :	13:07:12
ID Number :	nc73116386
Status :	reviewed
Type :	earthquake
Depth :	10.8
Magnitude :	4
Magnitude Type :	Moment (mw)
Magnitude Error :	N/R
Magnitude NST :	5
Magnitude Source :	nc
NST :	92
Gap :	51
DMIN :	0.06483
RMS :	0.11
Net :	nc
Horizontal Error :	0.18
Depth Error :	0.32
Location Source :	nc
Latitude :	36.0735
Longitude :	-120.1881667
Last Date in Agency List :	2019-01-18

Map Id: 31
Direction: NNE
Distance: 0.630 mi., 3327 ft.
Elevation: 831 ft.
Relative: Higher

Site Name : N/R
36.0743333, -120.1931667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36805044
EPA ID: N/R

EPICENTERS

Updated Date :	2018-11-28
Time :	17:29:57
ID Number :	nc73116451
Status :	reviewed
Type :	earthquake
Depth :	10.83
Magnitude :	2.87
Magnitude Type :	Duration (Md)
Magnitude Error :	0.147
Magnitude NST :	90
Magnitude Source :	nc
NST :	63
Gap :	54
DMIN :	0.06897
RMS :	0.08
Net :	nc
Horizontal Error :	0.2
Depth Error :	0.38
Location Source :	nc
Latitude :	36.0743333
Longitude :	-120.1931667
Last Date in Agency List :	2019-01-18

Map Id: C32
Direction: NNW
Distance: 0.643 mi., 3397 ft.
Elevation: 682 ft.
Relative: Lower

Site Name : N/R
36.0745, -120.2061667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 7277110
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-11
Time :	02:42:31
ID Number :	nc72362946
Status :	N/R
Type :	earthquake
Depth :	11
Magnitude :	2.42
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	53
Gap :	99
DMIN :	0.07936
RMS :	0.08
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0745

Map Id: C32
Direction: NNW
Distance: 0.643 mi., 3397 ft.
Elevation: 682 ft.
Relative: Lower

Site Name : N/R
36.0745, -120.2061667
CA

Database(s) : [EPICENTERS] ***(cont.)***

Envirosite ID: 7277110
EPA ID: N/R

EPICENTERS ***(cont.)***

Longitude :	-120.2061667
Last Date in Agency List :	2015-01-14

Map Id: 33
Direction: WNW
Distance: 0.652 mi., 3444 ft.
Elevation: 669 ft.
Relative: Lower

Site Name : 11225130
36.068567, -120.230976
CA

Database(s) : [NWIS]

Envirosite ID: 9126847
EPA ID: N/R

NWIS

Site Identification Number :	11225130
Site Type :	Stream
Station Name :	ZAPATO CHINO C NR AVENAL CA
Agency :	U.S. Geological Survey
District :	N/R
State :	CA
County :	Fresno County
Country :	USA
Land Net Location :	N/R
Name of Location Map :	N/R
Scale of Location Map :	N/R
Altitude of Gage/Land Surface :	N/R
Method Altitude Determined :	N/R
Altitude Accuracy :	N/R
Altitude Datum :	N/R
Hydrologic Unit :	Tulare Lake Bed
Drainage Basin :	N/R
Topographic Setting :	N/R
Flags for the Type of Data Collected:	NNNNNNNNNNNNNNNNNNNNNNNNNNNNNI
Flags for Instruments at Site :	NNNNNNNNNNNNNNNNNNNNNNNNNNNNN
Date of First Construction :	N/R
Date Site Established or Inventoried:	N/R
Drainage Area :	44.5
Contributing Drainage Area :	N/R
Data Reliability :	N/R
Data-Other GW Files :	NNNNNNNN
National Aquifer :	N/R
Local Aquifer :	N/R
Local Aquifer Type :	N/R
Well Depth :	N/R
Hole Depth :	N/R
Source of Depth Data :	N/R
Project Number :	N/R
Real-Time Data Flag :	0
Peak-Streamflow Data Begin Date :	1962-02-09
Peak-Streamflow Data End Date :	1970-03-04
Peak-Streamflow Data Count :	9
Water-Quality Data Begin Date :	N/R
Water-Quality Data End Date :	N/R
Water-Quality Data Count :	0

Map Id: 33
Direction: WNW
Distance: 0.652 mi., 3444 ft.
Elevation: 669 ft.
Relative: Lower

Site Name : 11225130
36.068567, -120.230976
CA

Database(s) : [NWIS] ***(cont.)***

Envirosite ID: 9126847
EPA ID: N/R

NWIS ***(cont.)***

Field Water-Level Measurements Begin Date:	N/R
Field Water-level Measurements End Date:	N/R
Field Water-Level Measurements Count:	0
Site-Visit Data Begin Date :	N/R
Site-Visit Data End Date :	N/R
Site-Visit Data Count :	0
Latitude :	36.068567
Longitude :	-120.230976
Last Date in Agency List :	2023-06-12

Map Id: 34
Direction: NNW
Distance: 0.724 mi., 3822 ft.
Elevation: 672 ft.
Relative: Lower

Site Name : N/R
36.0756667, -120.2093333
CA

Database(s) : [EPICENTERS]

Envirosite ID: 36822335
EPA ID: N/R

EPICENTERS

Updated Date :	2014-12-08
Time :	00:45:15
ID Number :	nc72360701
Status :	N/R
Type :	earthquake
Depth :	9.45
Magnitude :	1.58
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	31
Gap :	138
DMIN :	0.08209
RMS :	0.09
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0756667
Longitude :	-120.2093333
Last Date in Agency List :	2015-01-14

Map Id: 35
Direction: WNW
Distance: 0.805 mi., 4253 ft.
Elevation: 668 ft.
Relative: Lower

Site Name : N/R
36.0706667, -120.2321667
CA

Database(s) : [EPICENTERS]

Envirosite ID: 8531879
EPA ID: N/R

EPICENTERS

Updated Date :	2015-06-22
Time :	14:15:31
ID Number :	nc72469411
Status :	N/R
Type :	earthquake
Depth :	15.09
Magnitude :	2.09
Magnitude Type :	Duration (Md)
Magnitude Error :	N/R
Magnitude NST :	N/R
Magnitude Source :	N/R
NST :	51
Gap :	187
DMIN :	0.09974
RMS :	0.07
Net :	nc
Horizontal Error :	N/R
Depth Error :	N/R
Location Source :	N/R
Latitude :	36.0706667
Longitude :	-120.2321667
Last Date in Agency List :	2015-07-13

RADON DATA:

STATE SOURCE: CA

Radon Test Results:

Zip:	Total Sites:	Cnt >=4 pCi/L:	Pct >= 4 pCi/L:	Max Result (pCi/L):
93210	15	0	0	3.6

FEDERAL AREA RADON INFORMATION FOR: 93210

NUMBER OF SAMPLE SITES: 1

Area:	Average Activity:	% <4 pCi/L:	% 4-20 pCi/L:	% >20 pCi/L:
first floor	1.1 pCi/L	100%	0%	0%

FEDERAL EPA RADON ZONE FOR FRESNO COUNTY: Zone = 2

Note: Zone 1 indoor average level > 4 pCI/L

: Zone 2 indoor average level > = 2 pCI/L and <= 4 pCI/L

: Zone 3 indoor average < 2 pCI/L

HIST PWS ENF
Historical Public Water Supply locations with Enforcement Violations
Environmental Protection Agency
(800) 426-4791
List of Safe Drinking Water Information Systems (SDWIS) with enforcement violations that are no longer in current agency list.

NWIS
National Water Information Systems
United States Geological Society
(703) 648-5953
Information on all water resources for the United States. This database contains all current and historical data for the nation.

PWS
Public Water Supply
Environmental Protection Agency
(800) 426-4791
Safe drinking water information Systems

PWS ENF
Public Water Supply locations with Enforcement Violations
Environmental Protection Agency
(800) 426-4791
Safe drinking water information Systems with enforcememnt violations

WELLS - GAMA - CA
California Groundwater Ambient Monitoring Assessment
State Water Resources Control Board
916-341-5791
Brings together datasets from California state agencies including: Public Health Water Resources and Pesticide Regulation as well as from the US Geological Survey Lawrence Livermore National Laboratory and the Water Boards. It shows results for untreated raw water in different types of wells for naturally-occurring and man-made chemicals.

FLOOD Q3
Flood data
Environmental Protection Agency
(202) 566-1667
Q3 Flood Data

HYDROLOGIC UNIT
Hydrologic Unit Maps
USGS
The United States Geological Survey created a hierarchical system of hydrologic units originally called regions, sub-regions, accounting units, and cataloging units. Each unit was assigned a unique Hydrologic Unit Code (HUC). As first implemented the system had 21 regions, 221 subregions, 378 accounting units, and 2,264 cataloging units. Over time the system was changed and expanded. As of 2010 there are six levels in the hierarchy, represented by hydrologic unit codes from 2 to 12 digits long, called regions, subregions, basins, subbasins, watersheds, and subwatersheds. The table below describes the system's hydrologic unit levels and their characteristics, along with example names and codes.

WETLANDS NWI
National Wetland Inventory
U.S. Fish and Wildlife Service
(703) 358-2171
Wetland Inventory for the United States

SSURGO
Detailed Soil Data Map
Natural Resources Conservation Service: U.S. Department of Agriculture
(202) 690-4985
Detailed Soil Data Map

STATSGO & MUI
General Soil Data Map
Natural Resources Conservation Service: U.S. Department of Agriculture
(202) 690-4985
General Soil Data Map

USGS GEOLOGIC AGE
USGS Digital Data Series DDS
Natural Resources Conservation Service: U.S. Department of Agriculture
(202) 690-4985
USGS Digital Data Series DDS: Geologic Age and Rock Stratigraphic Unit

DAMS - CA
California Dam Inundation Maps
Department of Water Resources
916-845-8275
Dam inundation maps show the maximum extent of damage of a flood wave from a dam failure

OIL & GAS WELLS - CA
Oil and Gas Well Data
State of California Department of Conservation
916-327-1042
Oil and gas well locations and detail for all 6 districts

RADON
National Radon Database
U.S. Environmental Protection Agency
215-814-2469
A study of the EPA/State Residential Radon Survey and the National Residential Radon Survey.

RADON - CA
Radon tested locations in California
California Department of Health Services
(916) 449-5674
A table of long term and short term indoor radon measurments

RADON EPA
RADON EPA
U.S. Environmental Protection Agency
215-814-2469
EPA list of Radon zones

AIRPORT FACILITIES
Airport landing facilities
Federal Aviation Administration
(866) 835-5322
Airport landing facilities

BASINS
Better Assessment Science Integrating point & Non-point Sources
U.S. Environmental Protection Agency
855-246-3642
Integrated geographical information system national watershed data and environmental assessment known as Better Assessment Science Integrating point & Non-point Sources

DIGITAL OBSTACLE
Obstacles of interest to aviation users
Federal Aviation Administration
855-379-6518
The Digital Obstacle File describes all known obstacles of interest to aviation users in the U.S. with limited coverage of the Pacific the Caribbean Canada and Mexico. The obstacles are assigned unique numerical identifiers; accuracy codes and listed in order of ascending latitude within each state or area by FAA Region.

EPICENTERS
National Geographical Data Center
National Geographical Data Center
303-497-6826
List of recent and historic earthquakes and information.

FLOOD DFIRM
National Flood Hazard Layer Database
Federal Emergency Management Agency
The National Flood Hazard Layer Database (NFHL) is a computer database that contains the flood hazard map information from FEMAs Flood Map Modernization program. These map data are from Digital Flood Insurance Rate Map (DFIRM) databases and Letters of Map Revision.

APPENDIX D

Historical Research Documentation

Historical Aerial Photo Report | 2023

Order Number: 90881
Report Generated: 09/23/2023

Project Name: Cornucopia Solar Project
Project Number: 5852.ES111

Cornucopia Solar
S Lost Hills Rd
Coalinga, CA, 93210

Contact us at:
(866) 211-2028
envirositecorp.com

Historical Aerial Photo Report 2023

Envirosite's Historical Aerial Photo Report is designed to assist in evaluating a subject property resulting from past activities. Envirosite's Historical Aerial Photo Report includes a search of available historical aerial photographs, dating back to the 1930s, or earliest available photographs.

ENVIROSITE SEARCHED SOURCES

SUBJECT PROPERTY:

Cornucopia Solar
S Lost Hills Rd
Coalinga, CA, 93210

YEAR:	***SCALE:***	***SOURCE:***
1940	1" = 1,500'	U.S.G.S
1955	1" = 1,500'	U.S.G.S
1960	1" = 1,500'	U.S.G.S
1965	1" = 1,500'	U.S.D.A
1971	1" = 1,500'	U.S.G.S
1972	1" = 1,500'	U.S.G.S
1974	1" = 1,500'	U.S.G.S
1975	1" = 1,500'	U.S.G.S
1978	1" = 1,500'	U.S.G.S
1981	1" = 1,500'	NHAP
1982	1" = 1,500'	U.S.G.S
1985	1" = 1,500'	U.S.G.S
1989	1" = 1,500'	NAPP
1994	1" = 1,500'	DOQ
1995	1" = 1,500'	U.S.G.S
2002	1" = 1,500'	NAPP
2005	1" = 1,500'	NAIP
2009	1" = 1,500'	NAIP
2010	1" = 1,500'	NAIP
2012	1" = 1,500'	NAIP
2014	1" = 1,500'	NAIP
2016	1" = 1,500'	NAIP
2018	1" = 1,500'	NAIP
2020	1" = 1,500'	NAIP
2022	1" = 1,500'	NAIP

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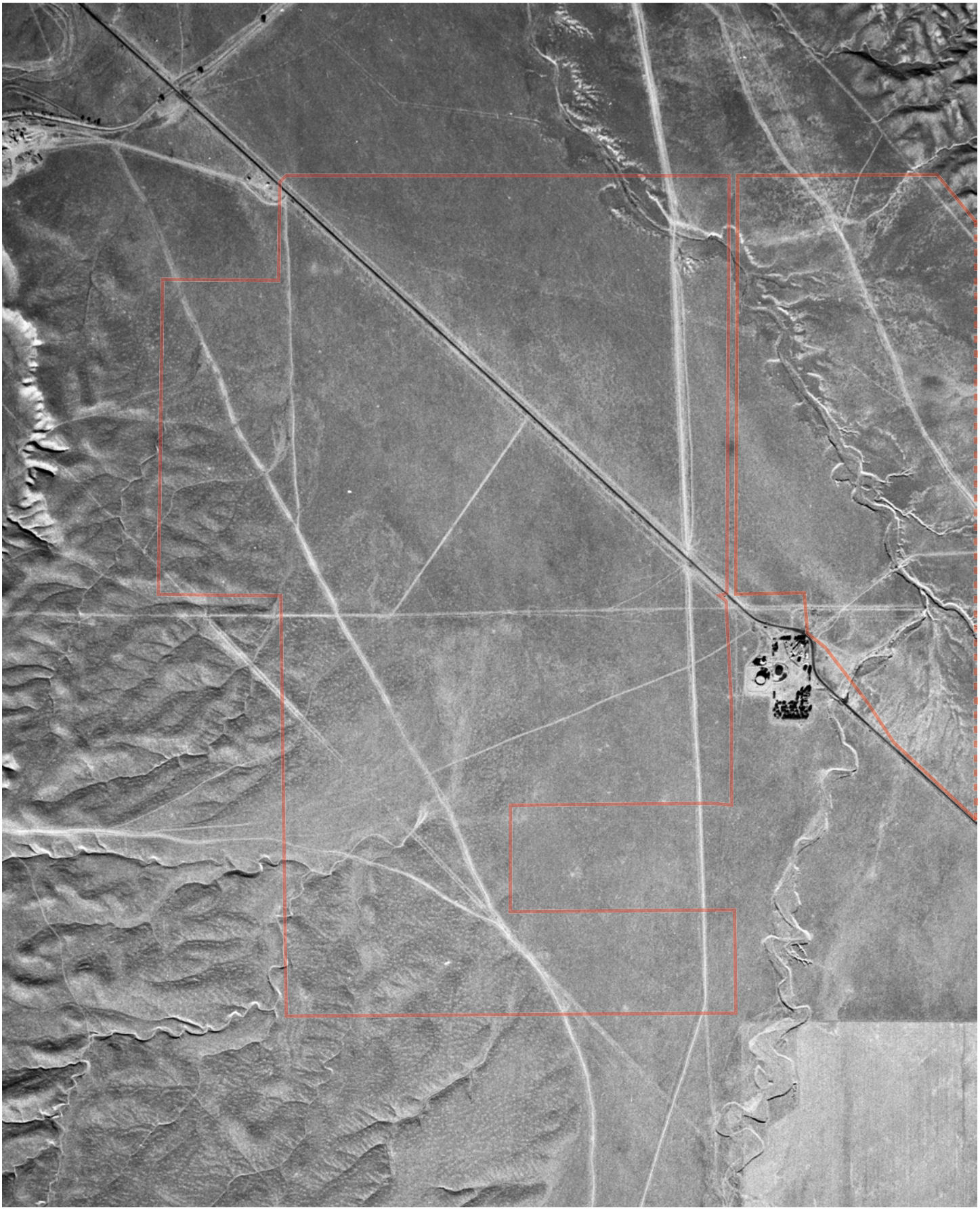
FLIGHT YEAR:
1940

West Portion

N
W E
S

Scale: 1" = 1,500'

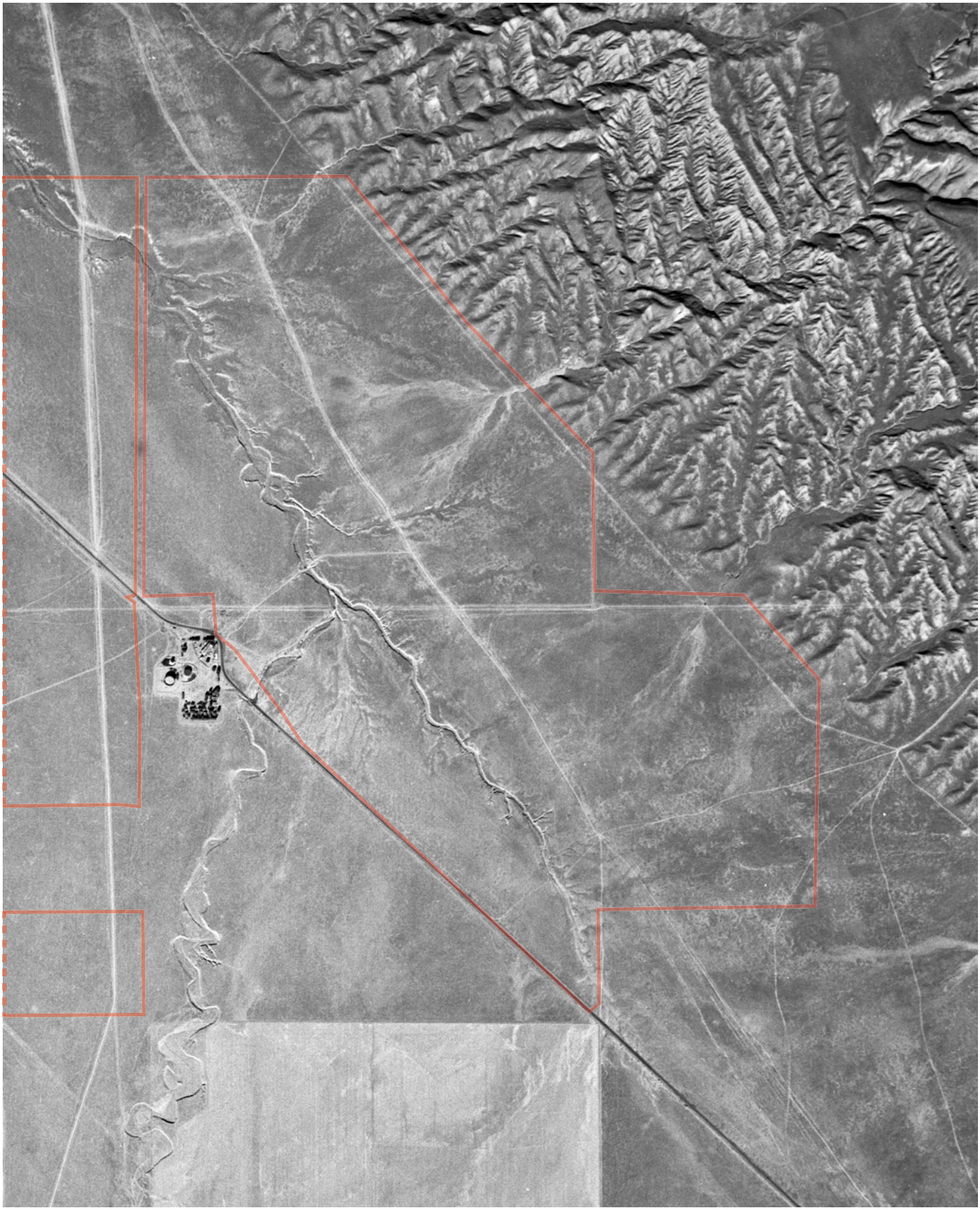


FLIGHT YEAR:
1940

East Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
1955

West Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
1955

East Portion

N
W E
S

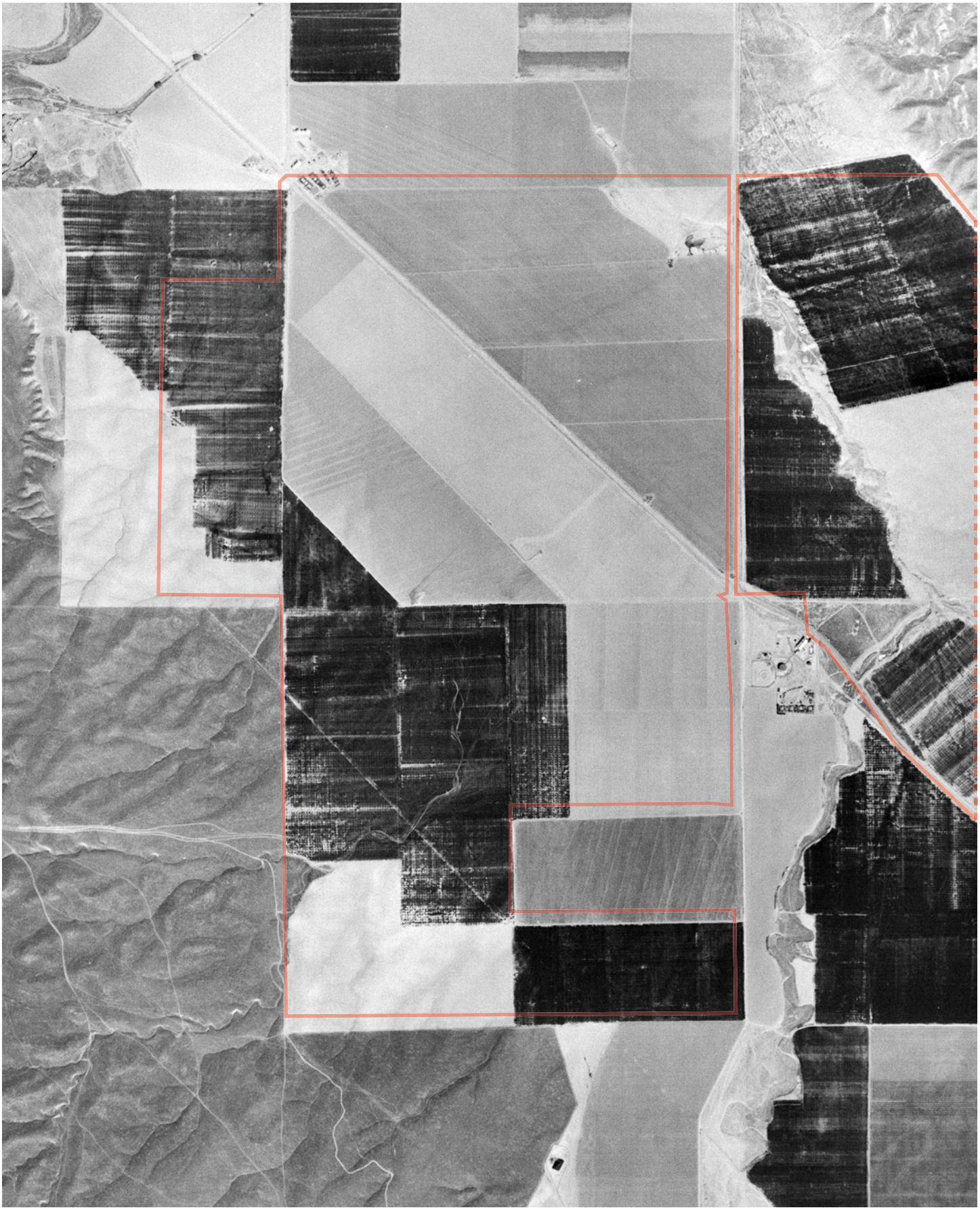
Scale: 1" = 1,500'

FLIGHT YEAR:
1960

West Portion

N
W E
S

Scale: 1" = 1,500'

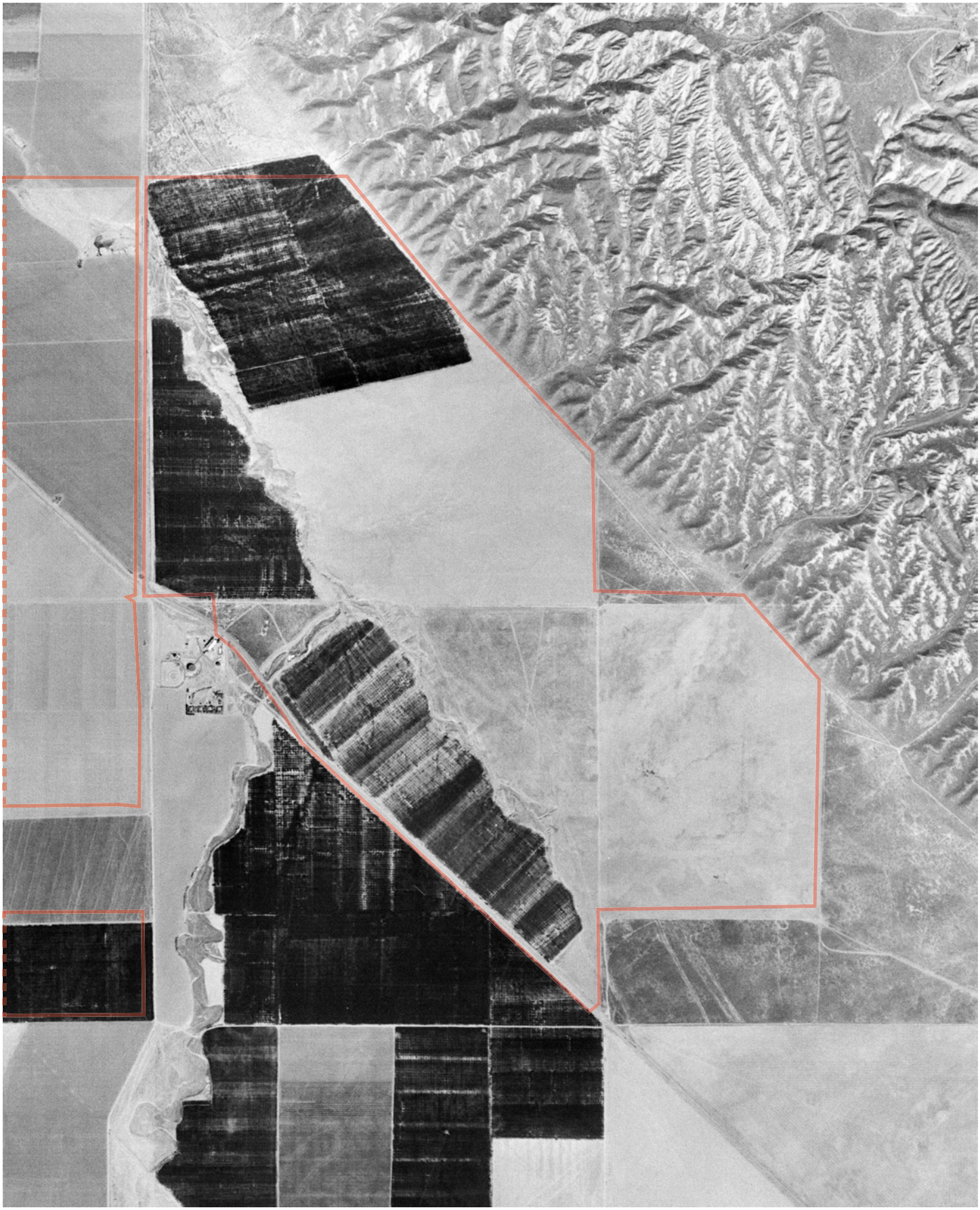


FLIGHT YEAR:
1960

East Portion

N
W E
S

Scale: 1" = 1,500'

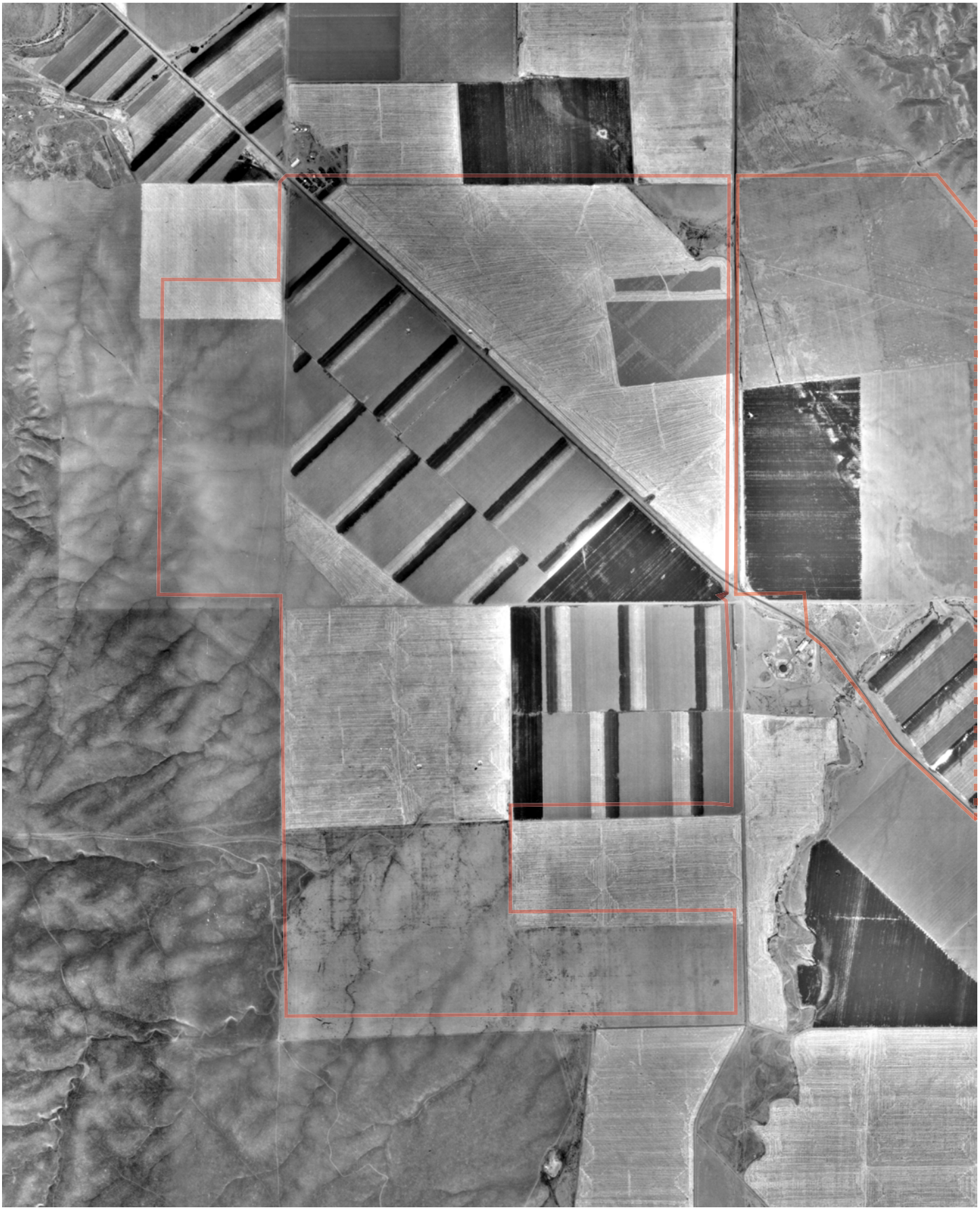


FLIGHT YEAR:
1965

West Portion

N
W E
S

Scale: 1" = 1,500'

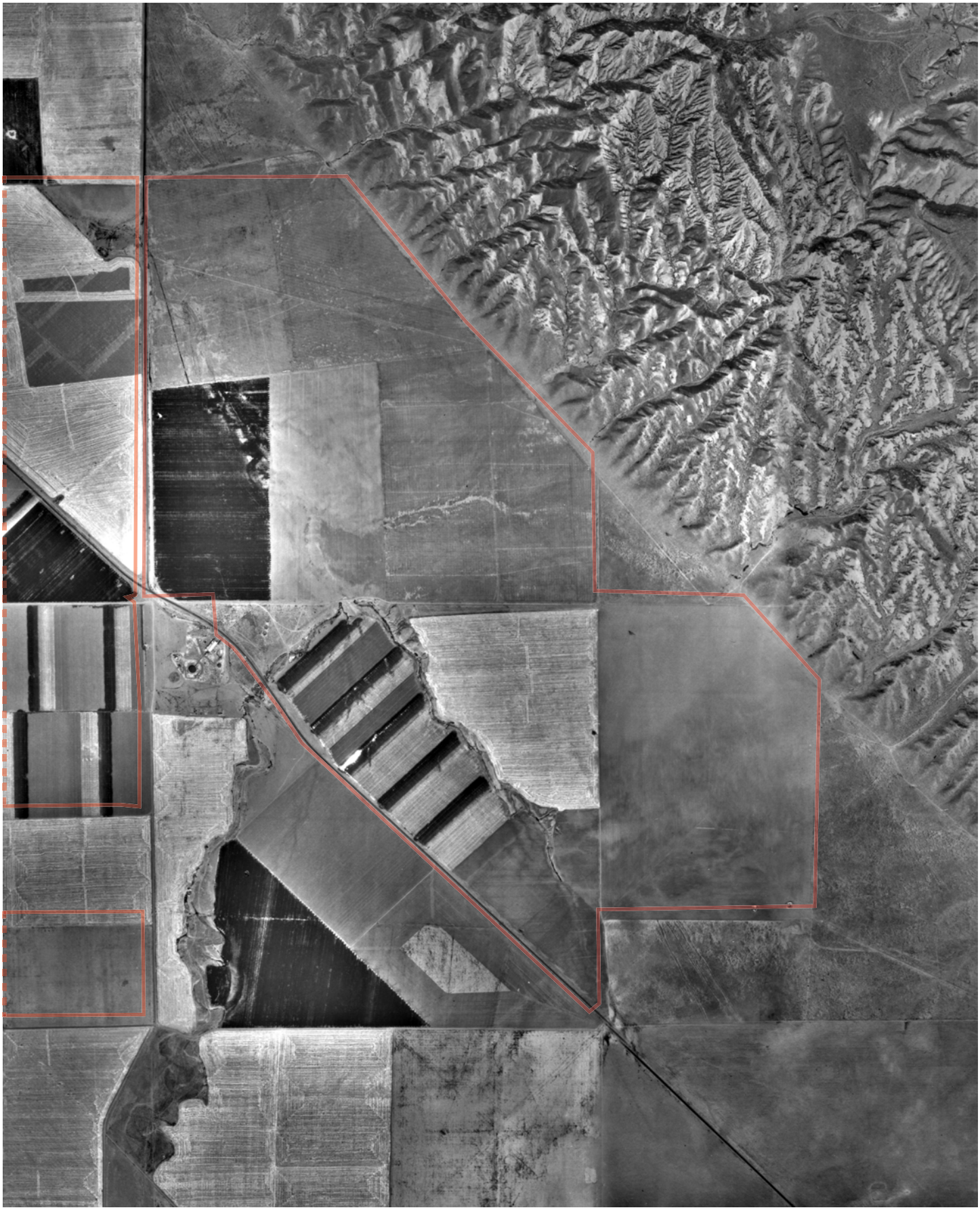


FLIGHT YEAR:
1965

East Portion

N
W E
S

Scale: 1" = 1,500'

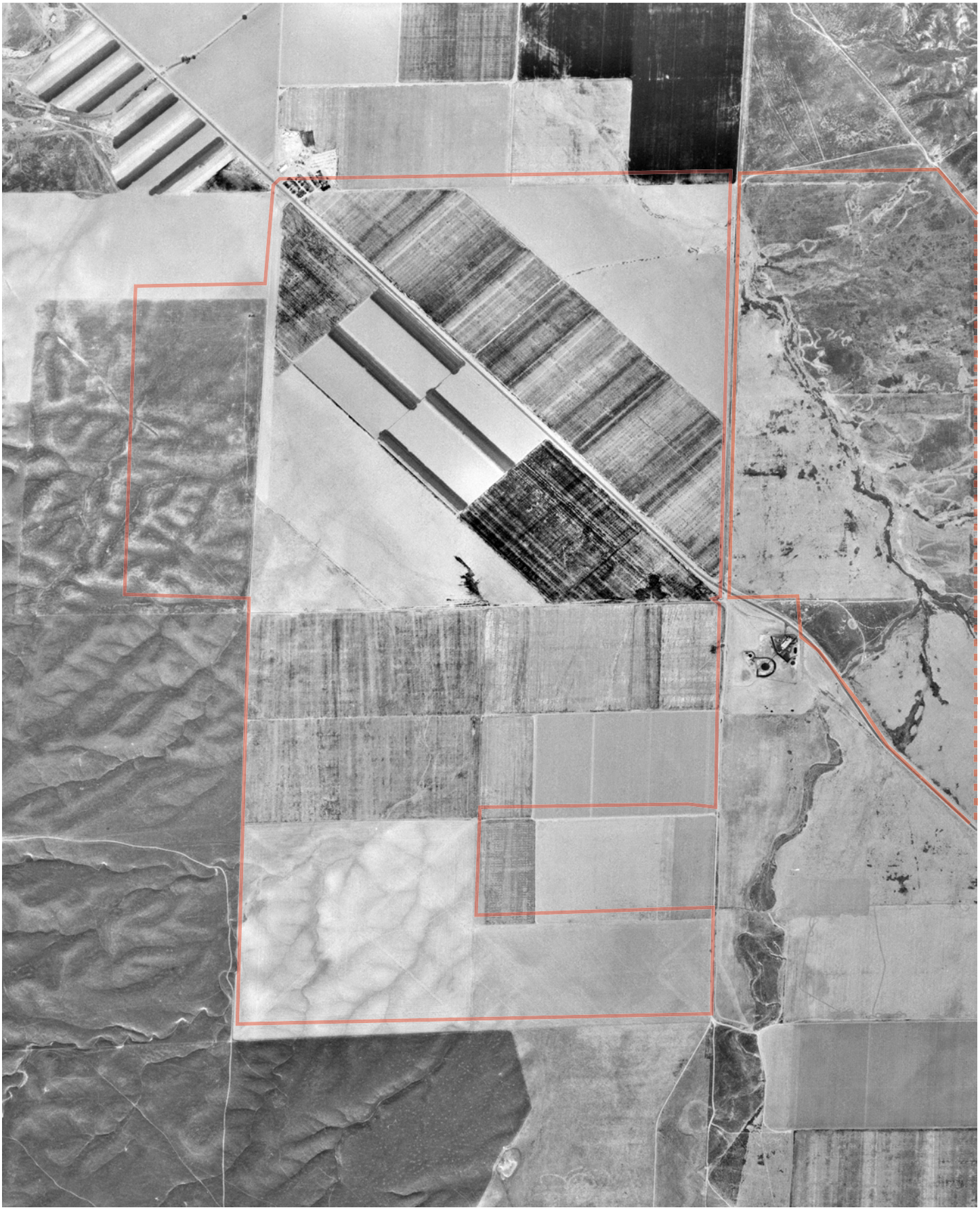


FLIGHT YEAR:
1971

West Portion

N
W E
S

Scale: 1" = 1,500'

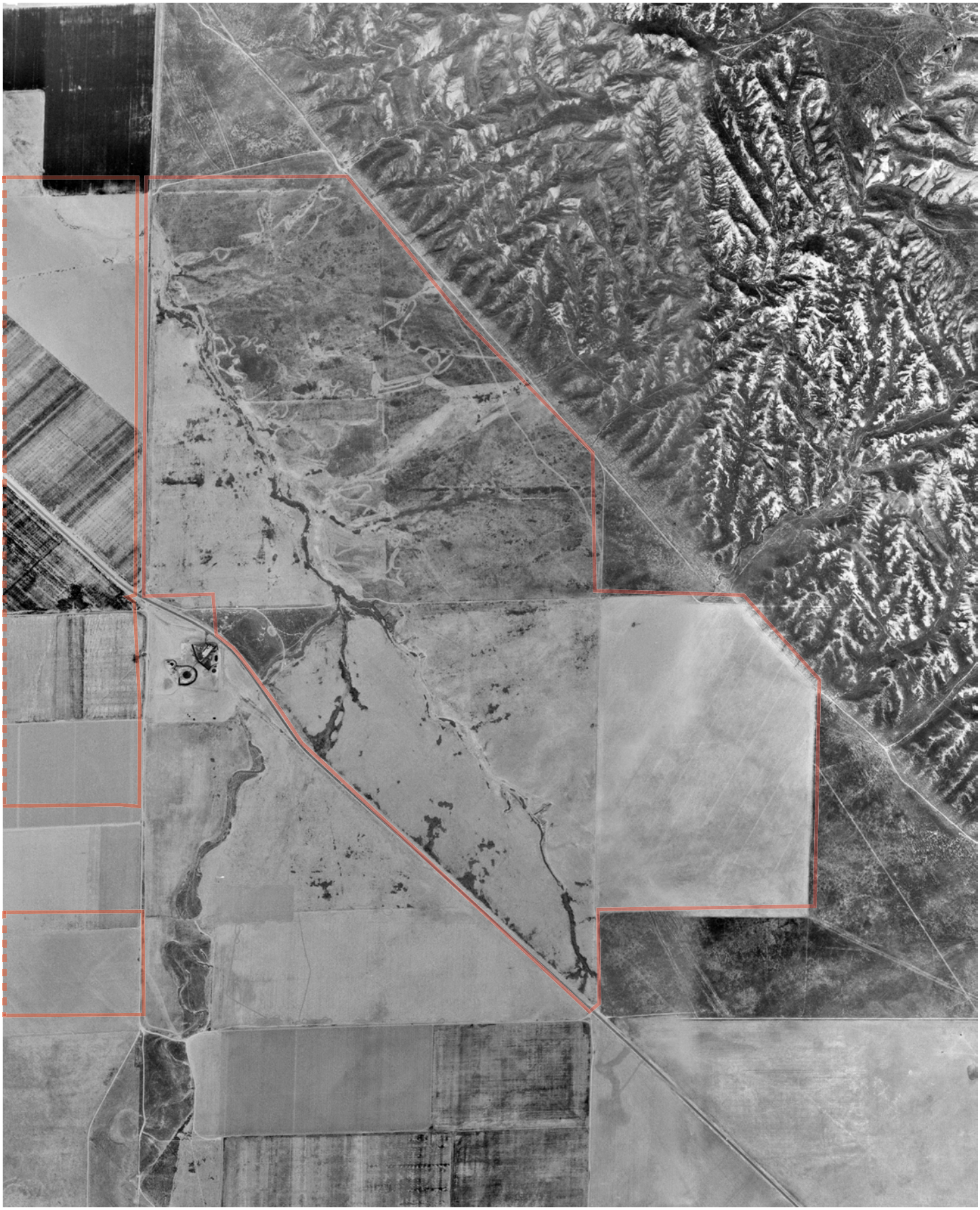


FLIGHT YEAR:
1971

East Portion

N
W E
S

Scale: 1" = 1,500'

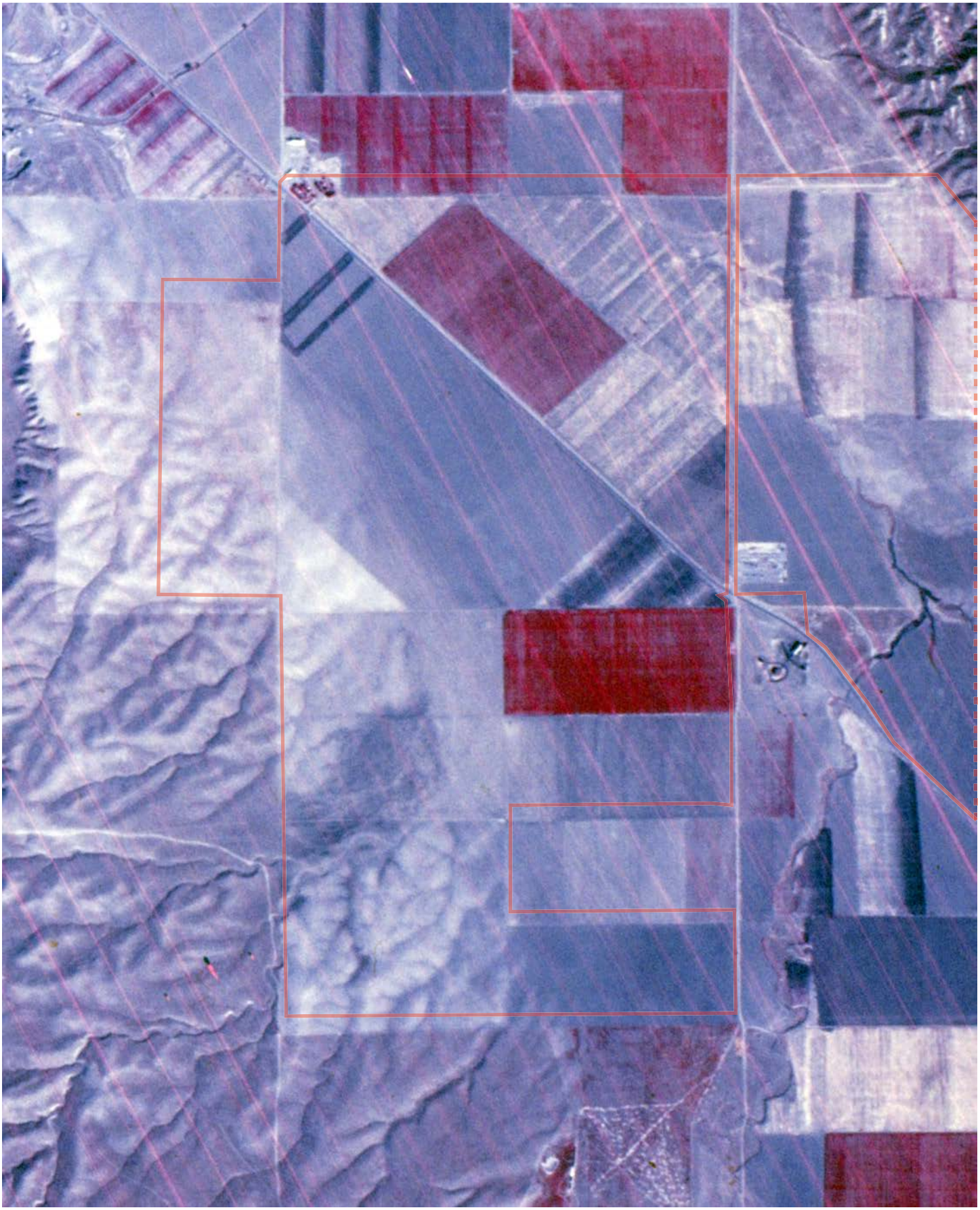


FLIGHT YEAR:
1972

West Portion

N
W E
S

Scale: 1" = 1,500'

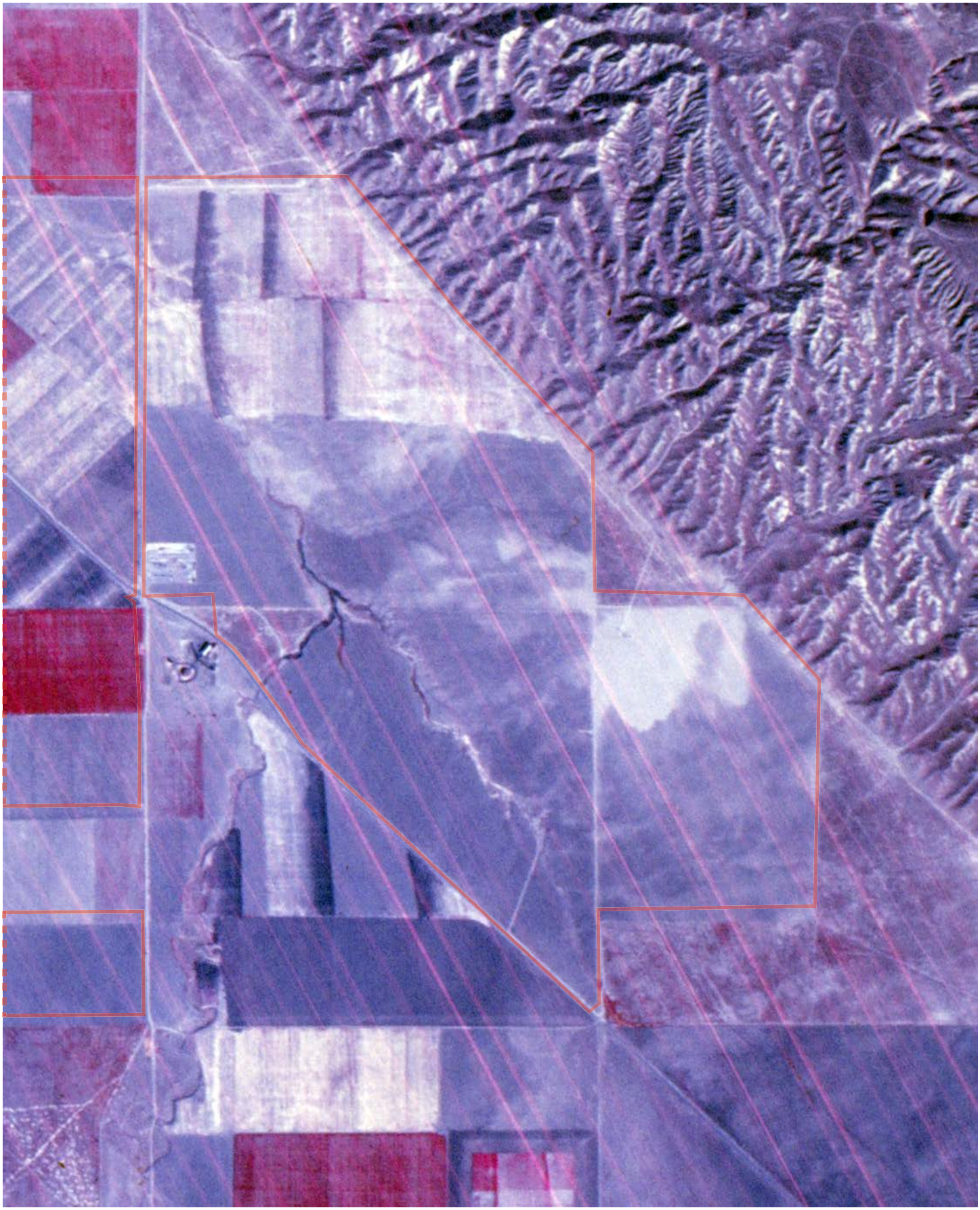


FLIGHT YEAR:
1972

East Portion

N
W E
S

Scale: 1" = 1,500'

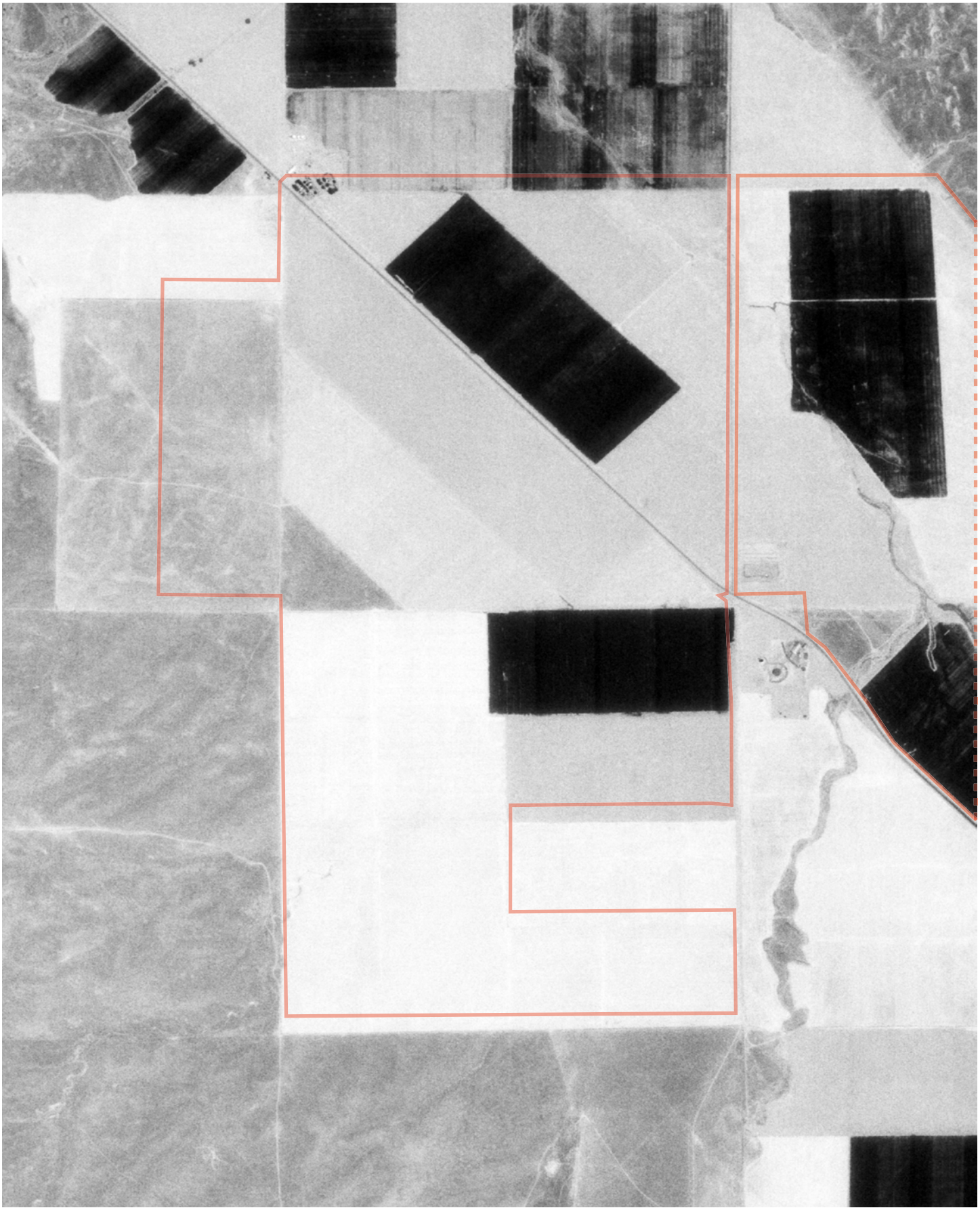


FLIGHT YEAR:
1974

West Portion

N
W E
S

Scale: 1" = 1,500'

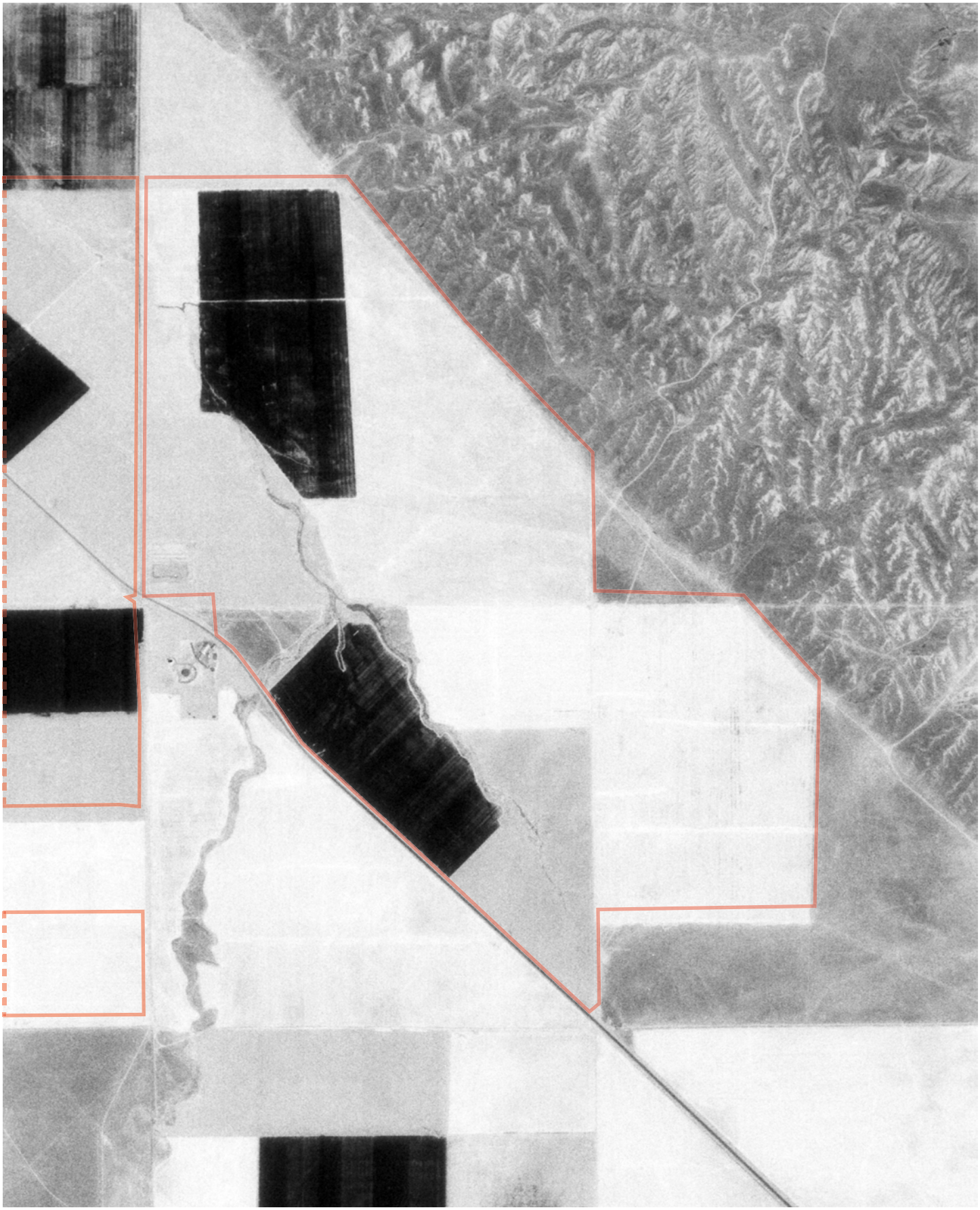


FLIGHT YEAR:
1974

East Portion

N
W E
S

Scale: 1" = 1,500'

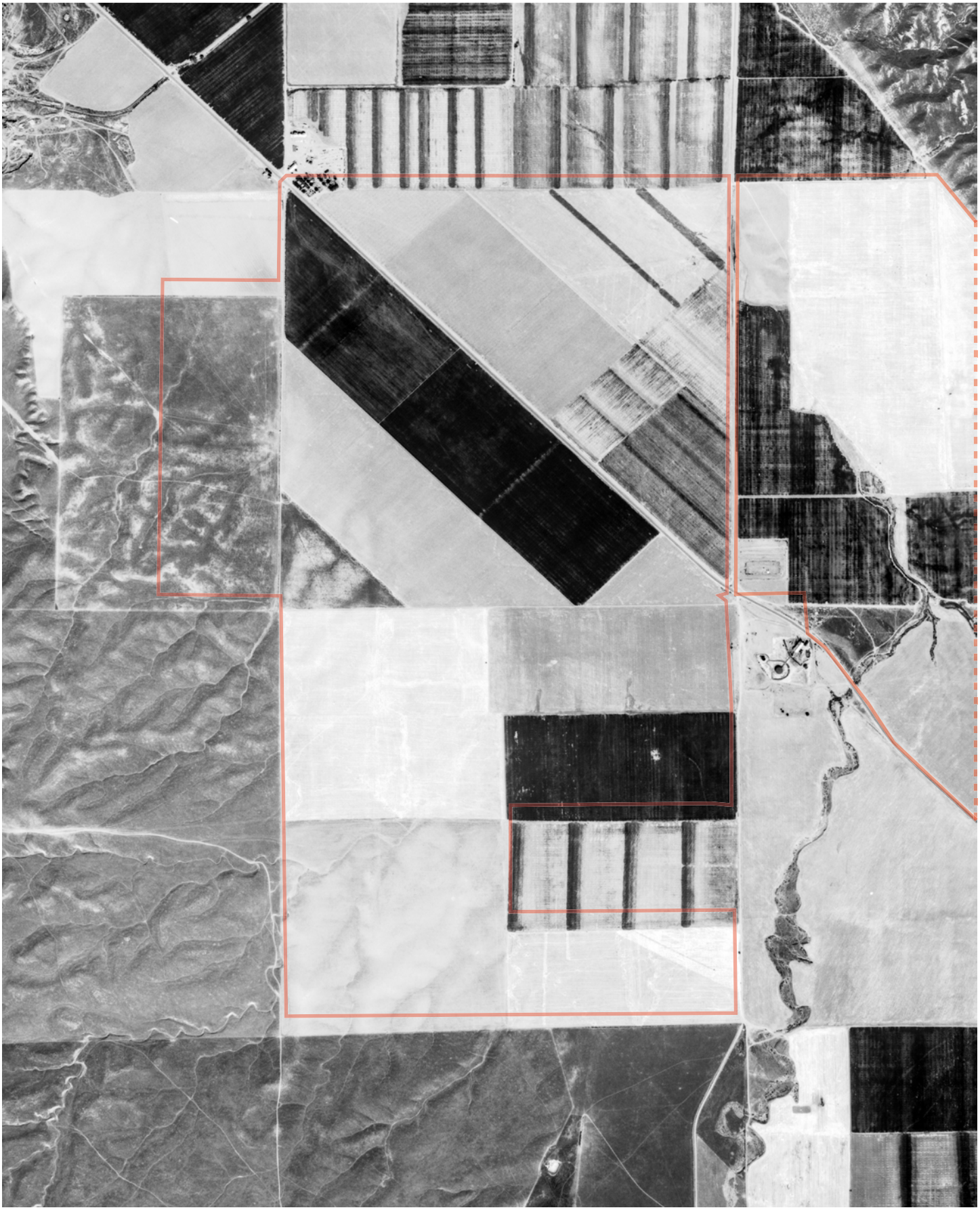


FLIGHT YEAR:
1975

West Portion

N
W E
S

Scale: 1" = 1,500'

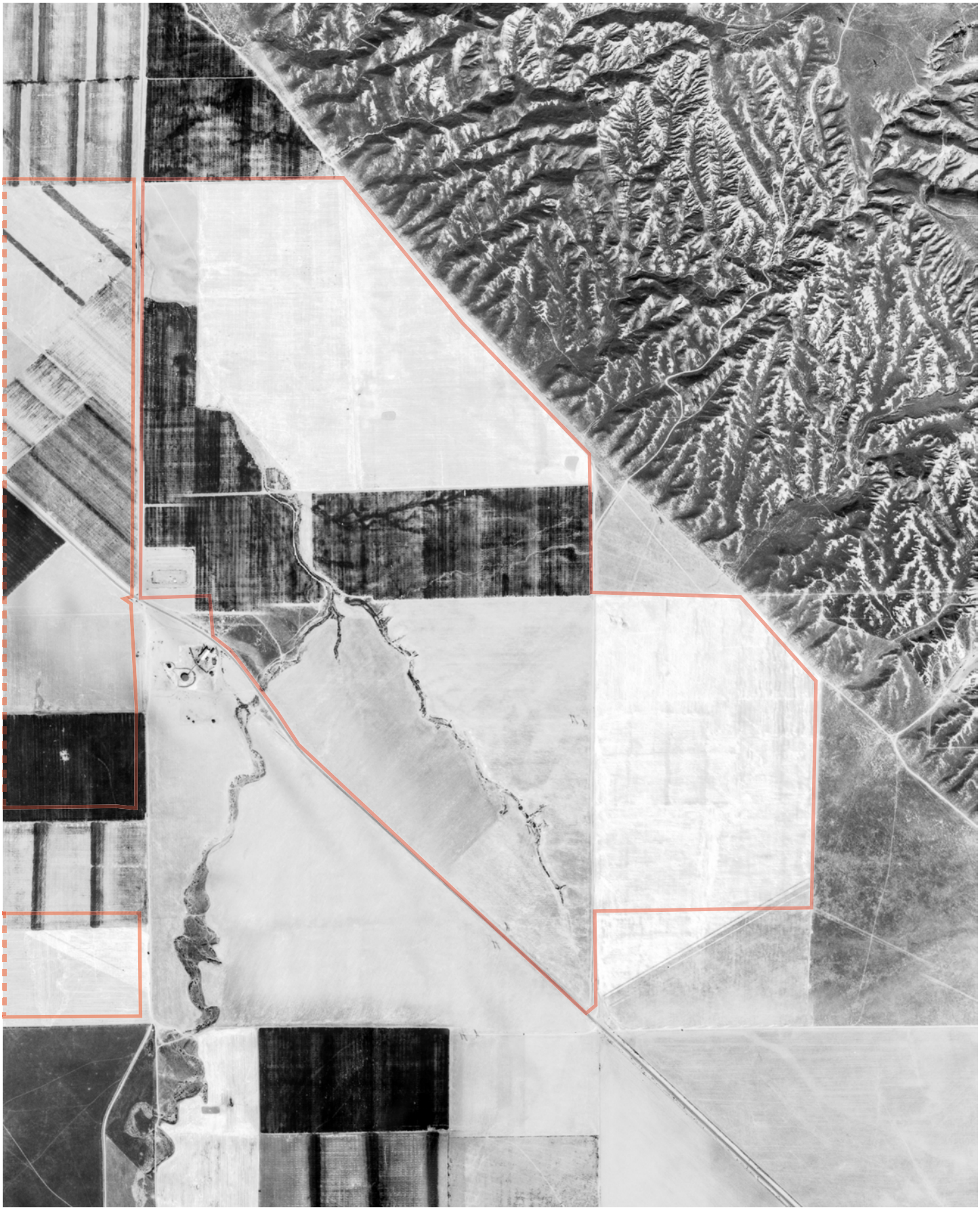


FLIGHT YEAR:
1975

East Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
1978

West Portion

N
W E
S

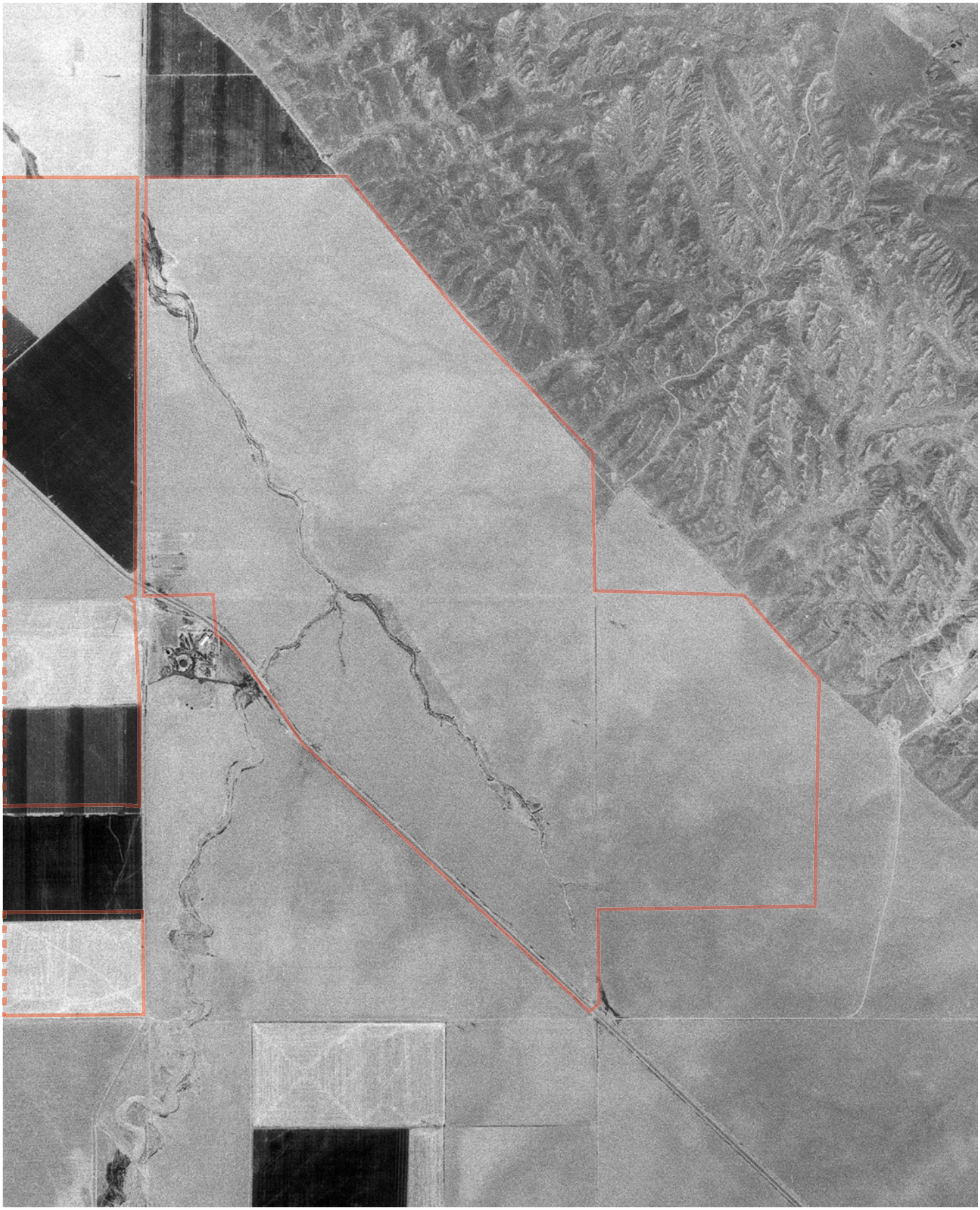
Scale: 1" = 1,500'

FLIGHT YEAR:
1978

East Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
1981

West Portion

N
W E
S

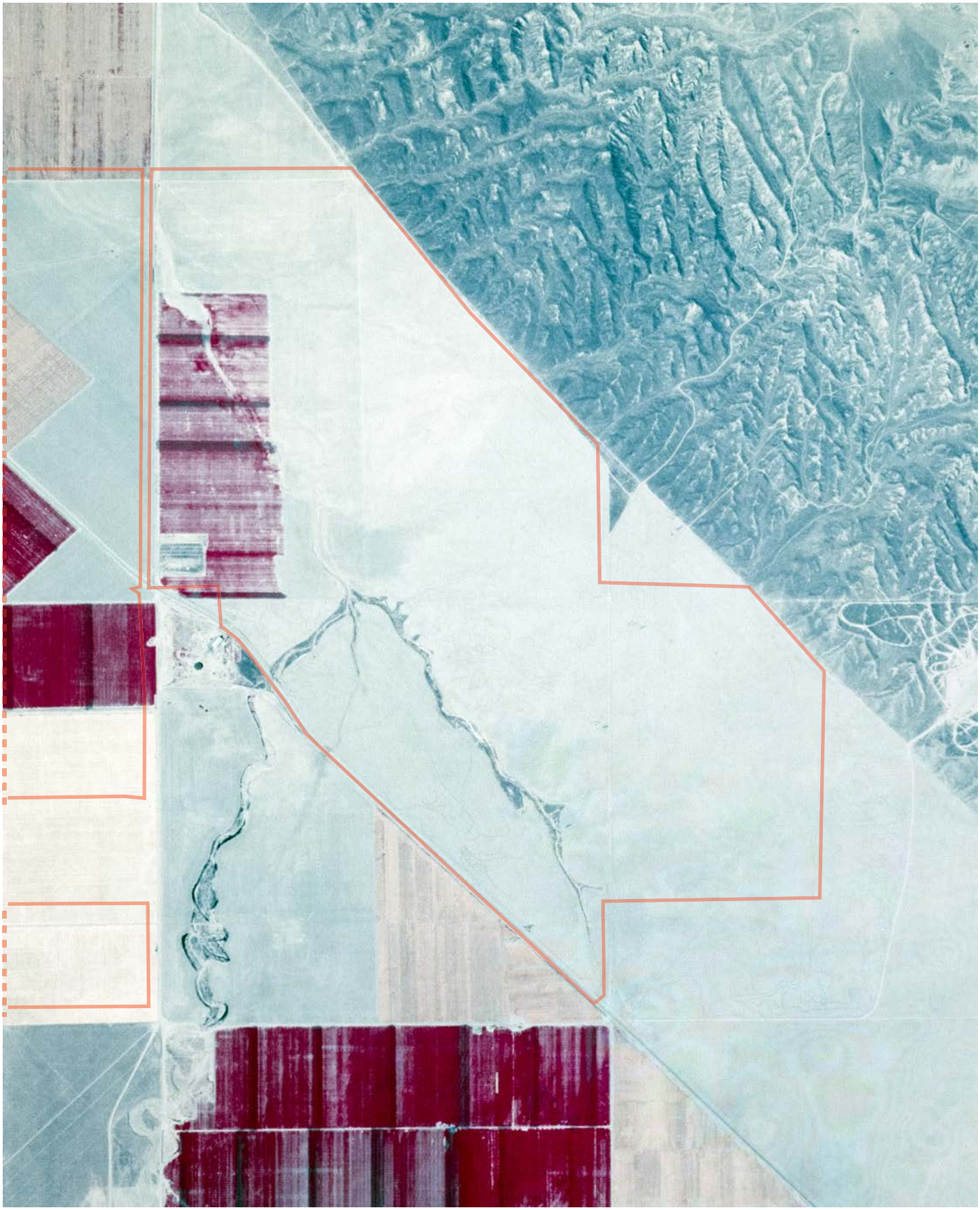
Scale: 1" = 1,500'

FLIGHT YEAR:
1981

East Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
1982

West Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
1982

East Portion

N
W E
S

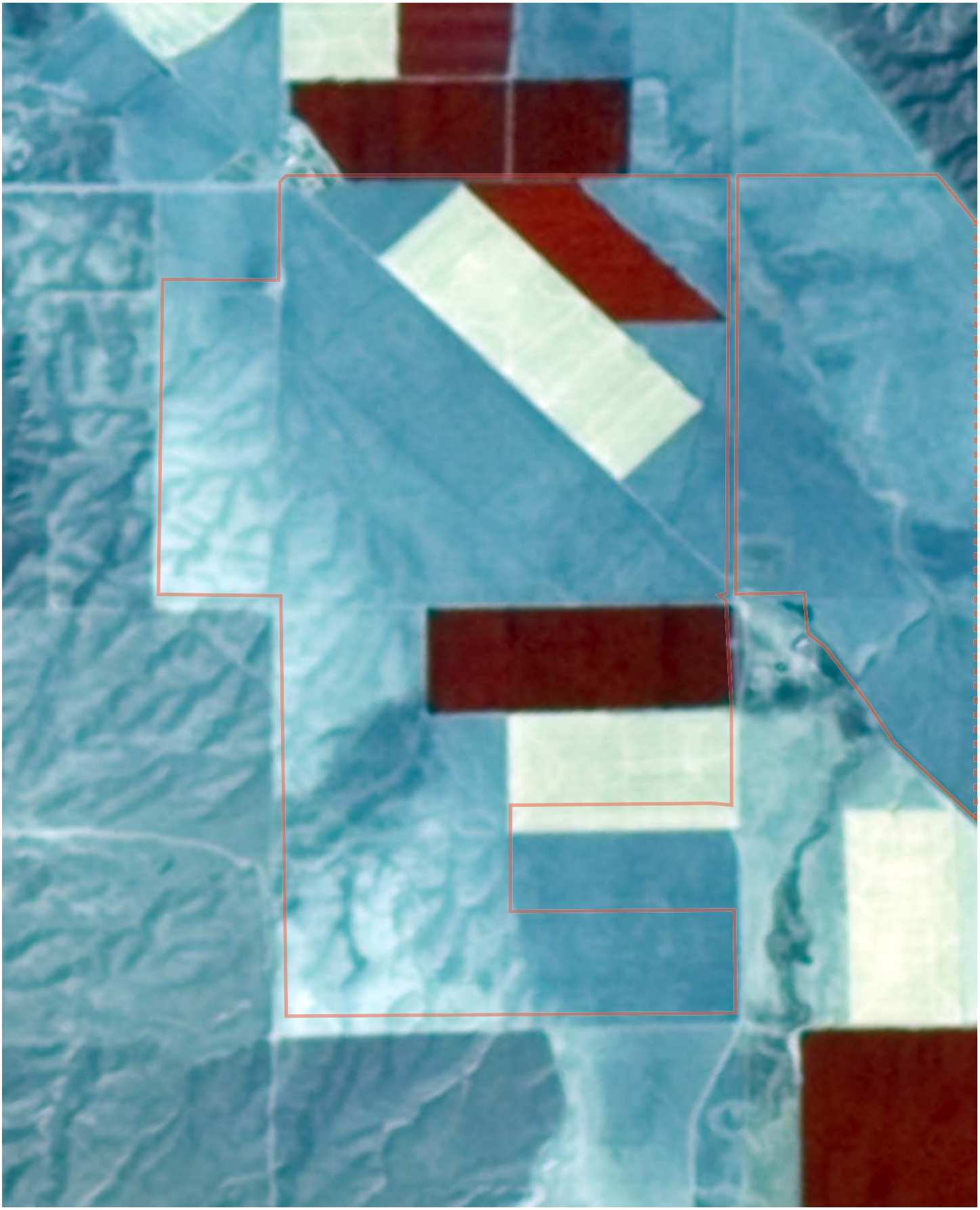
Scale: 1" = 1,500'

FLIGHT YEAR:
1985

West Portion

N
W E
S

Scale: 1" = 1,500'

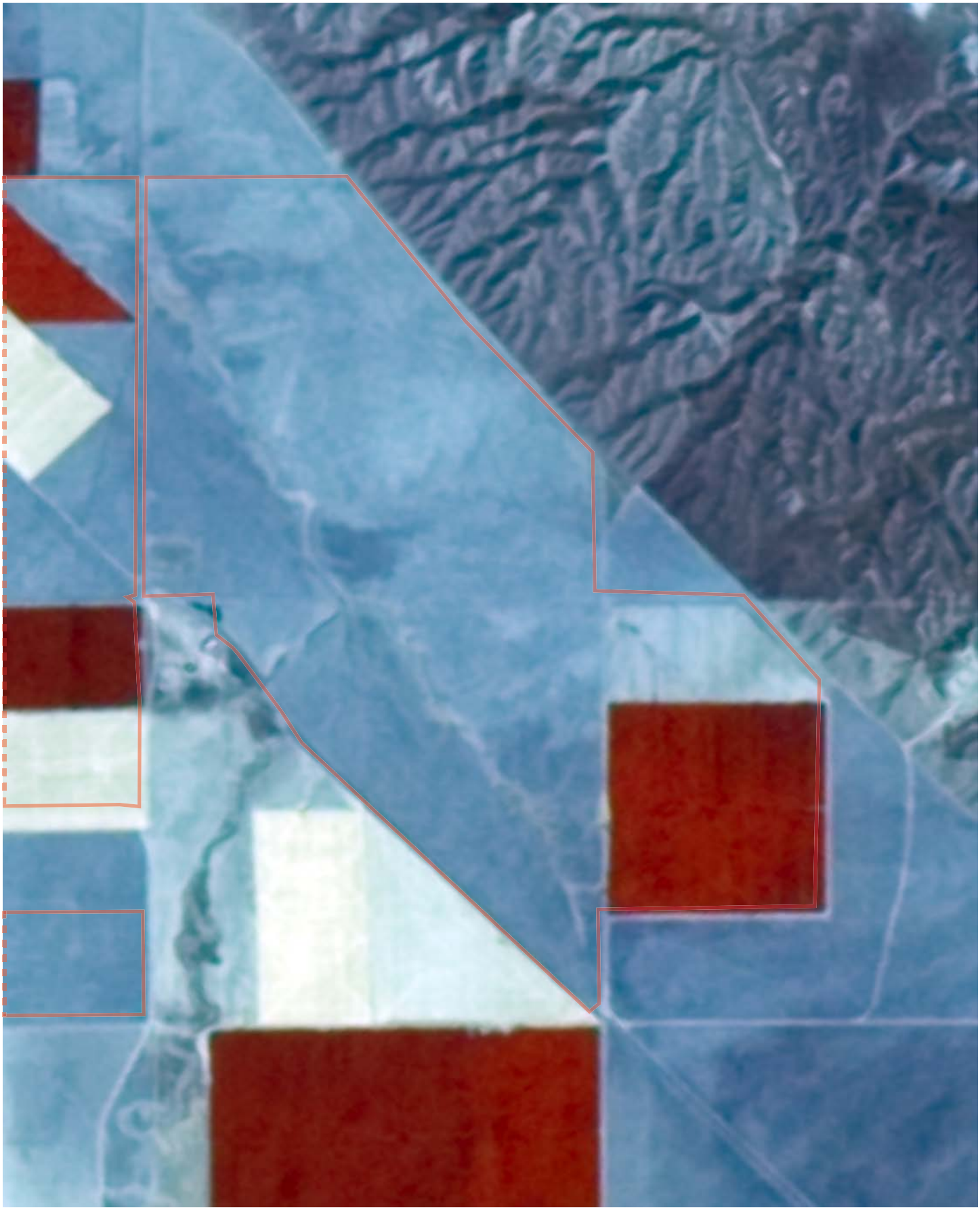


FLIGHT YEAR:
1985

East Portion

N
W E
S

Scale: 1" = 1,500'

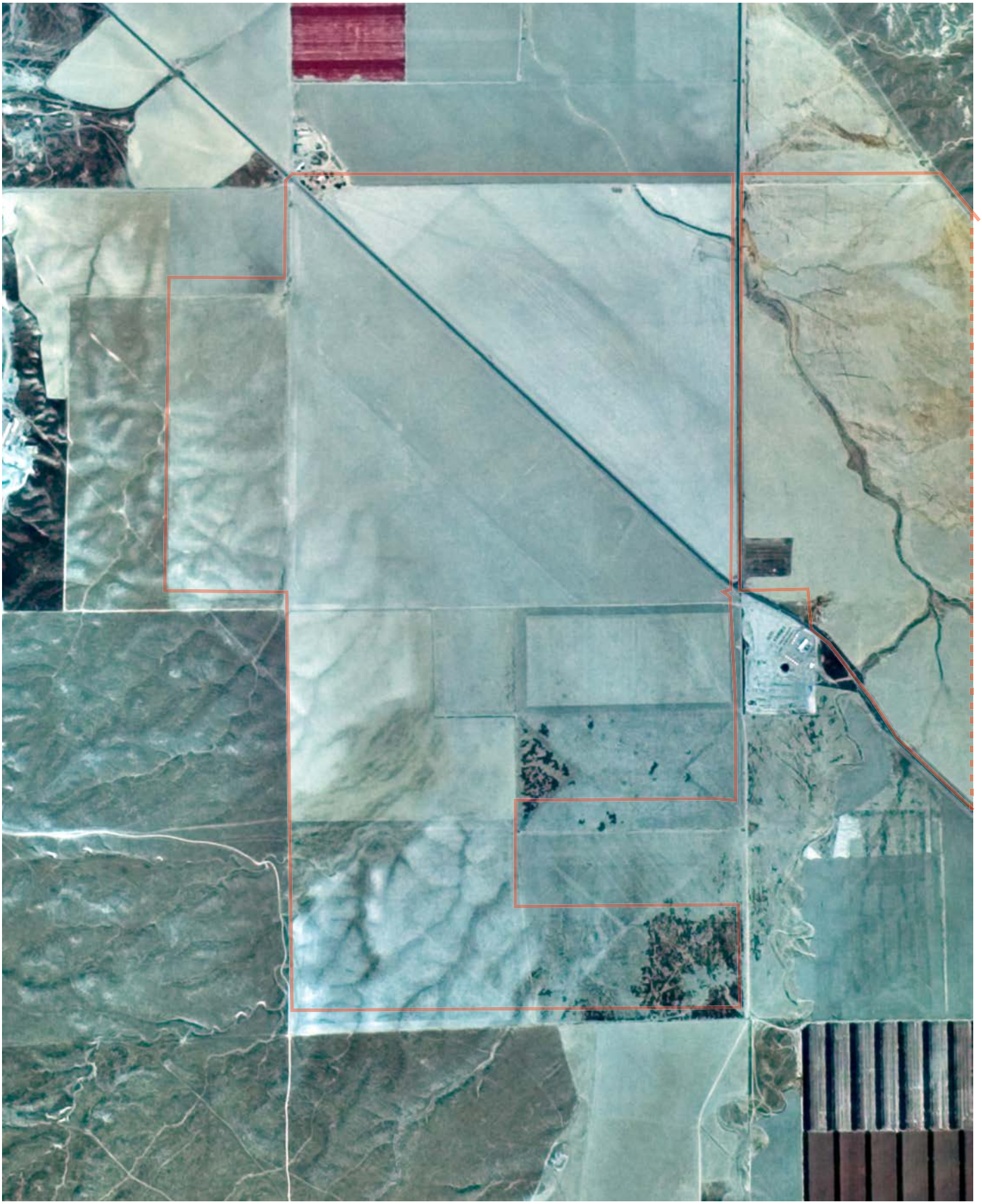


FLIGHT YEAR:
1989

West Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
1989

East Portion

N
W E
S

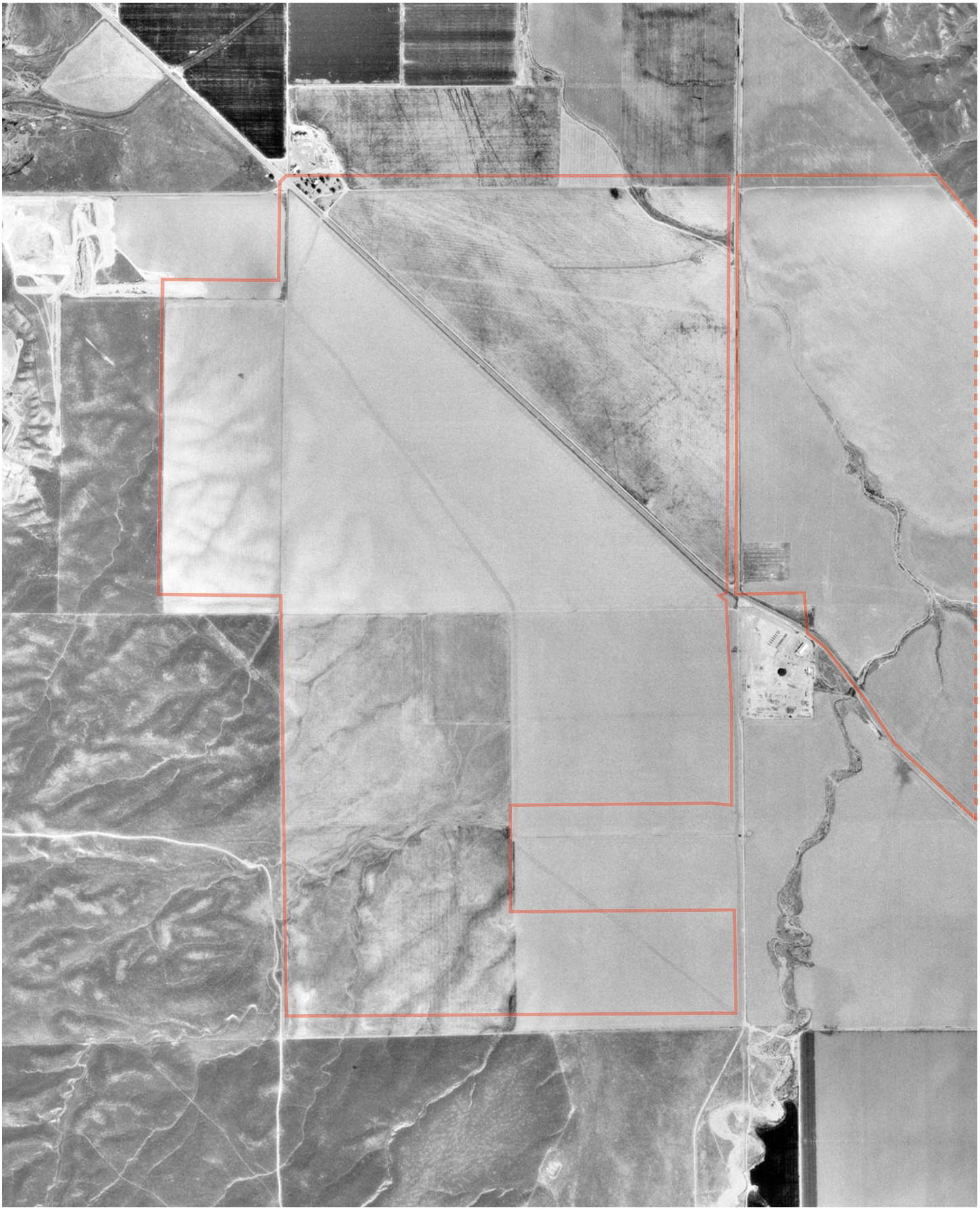
Scale: 1" = 1,500'

FLIGHT YEAR:
1994

West Portion

N
W E
S

Scale: 1" = 1,500'

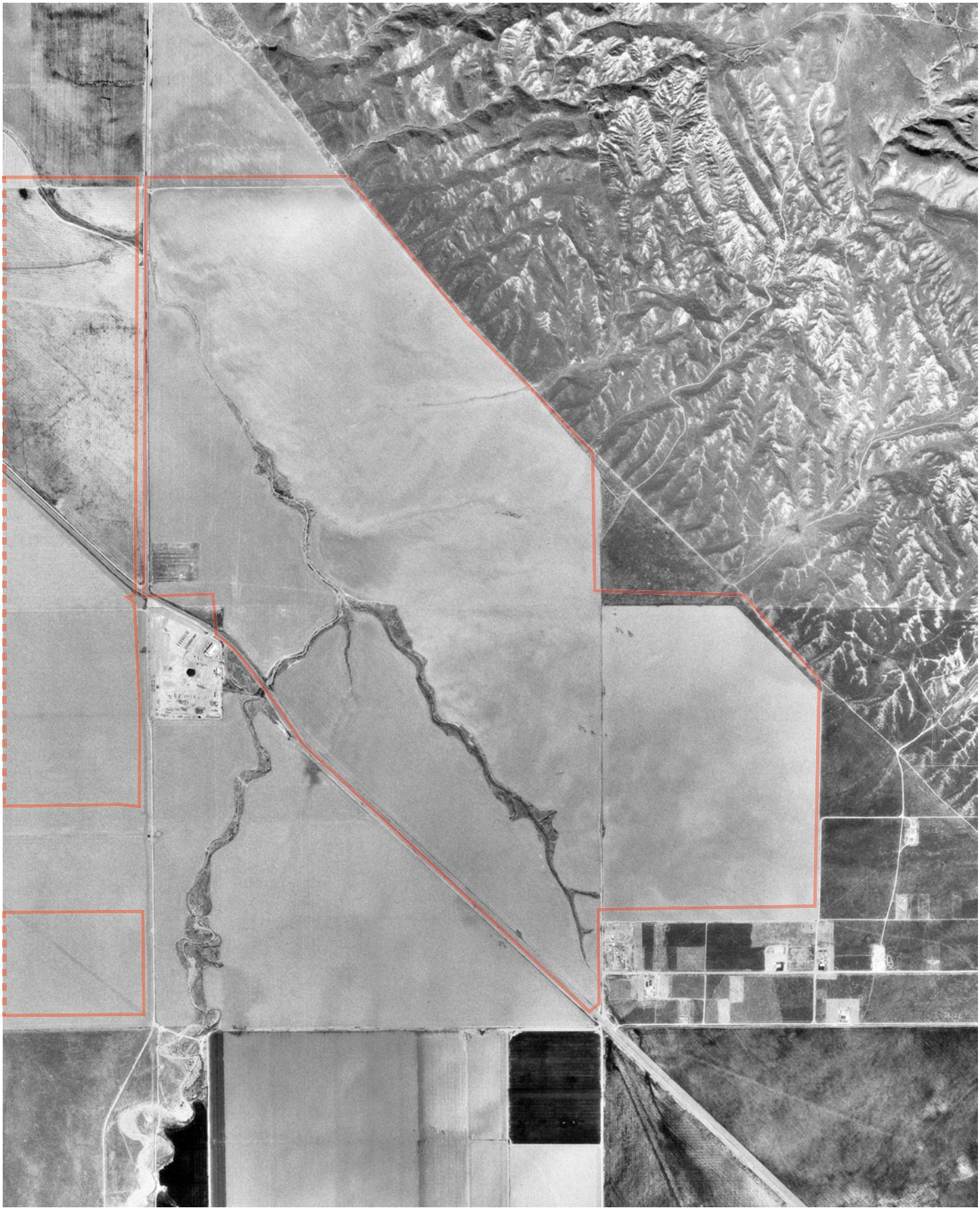


FLIGHT YEAR:
1994

East Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
1995

West Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
1995

East Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
2002

West Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
2002

East Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
2005

West Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
2005

East Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
2009

West Portion

N
W E
S

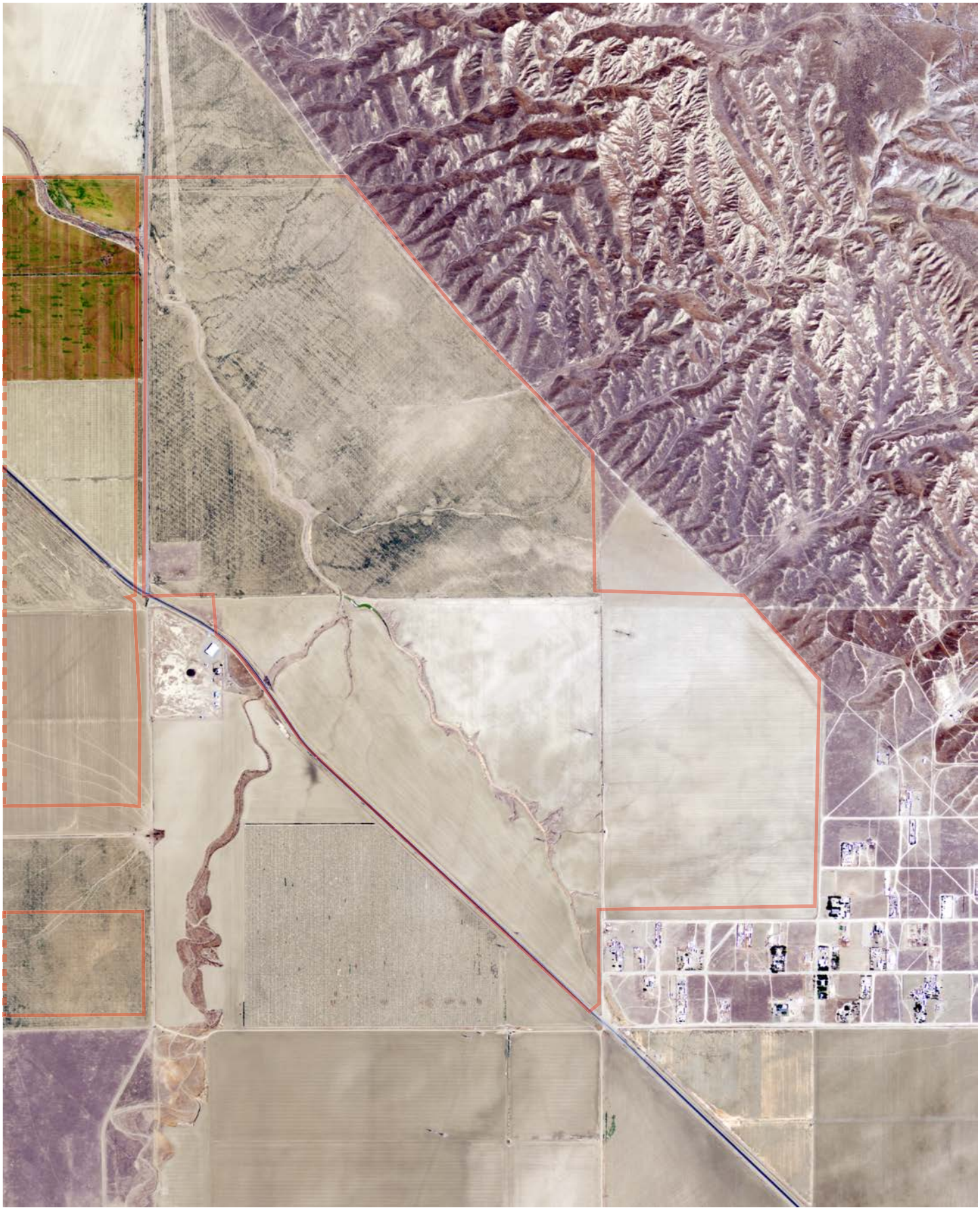
Scale: 1" = 1,500'

FLIGHT YEAR:
2009

East Portion

N
W E
S

Scale: 1" = 1,500'

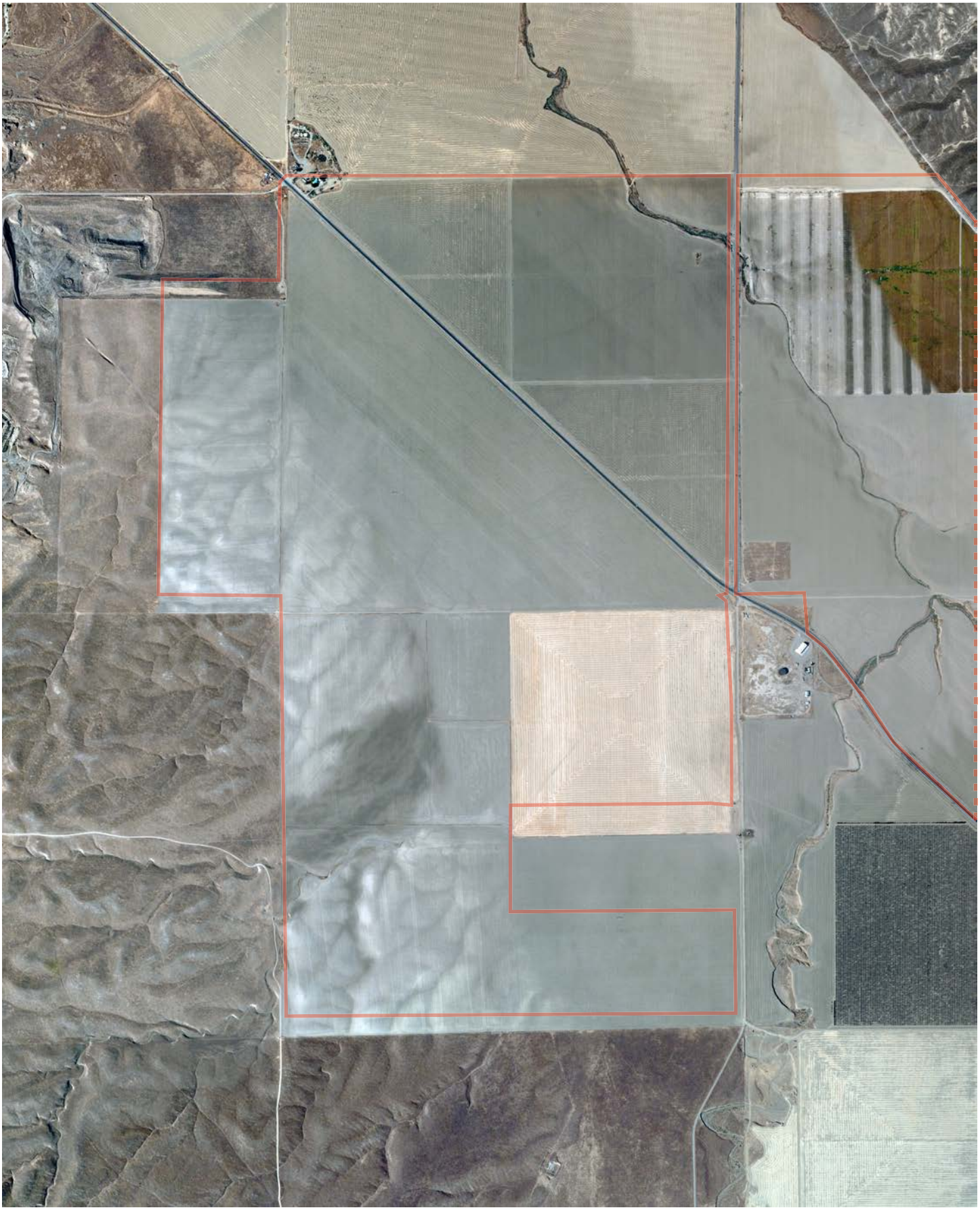


FLIGHT YEAR:
2010

West Portion

N
W E
S

Scale: 1" = 1,500'

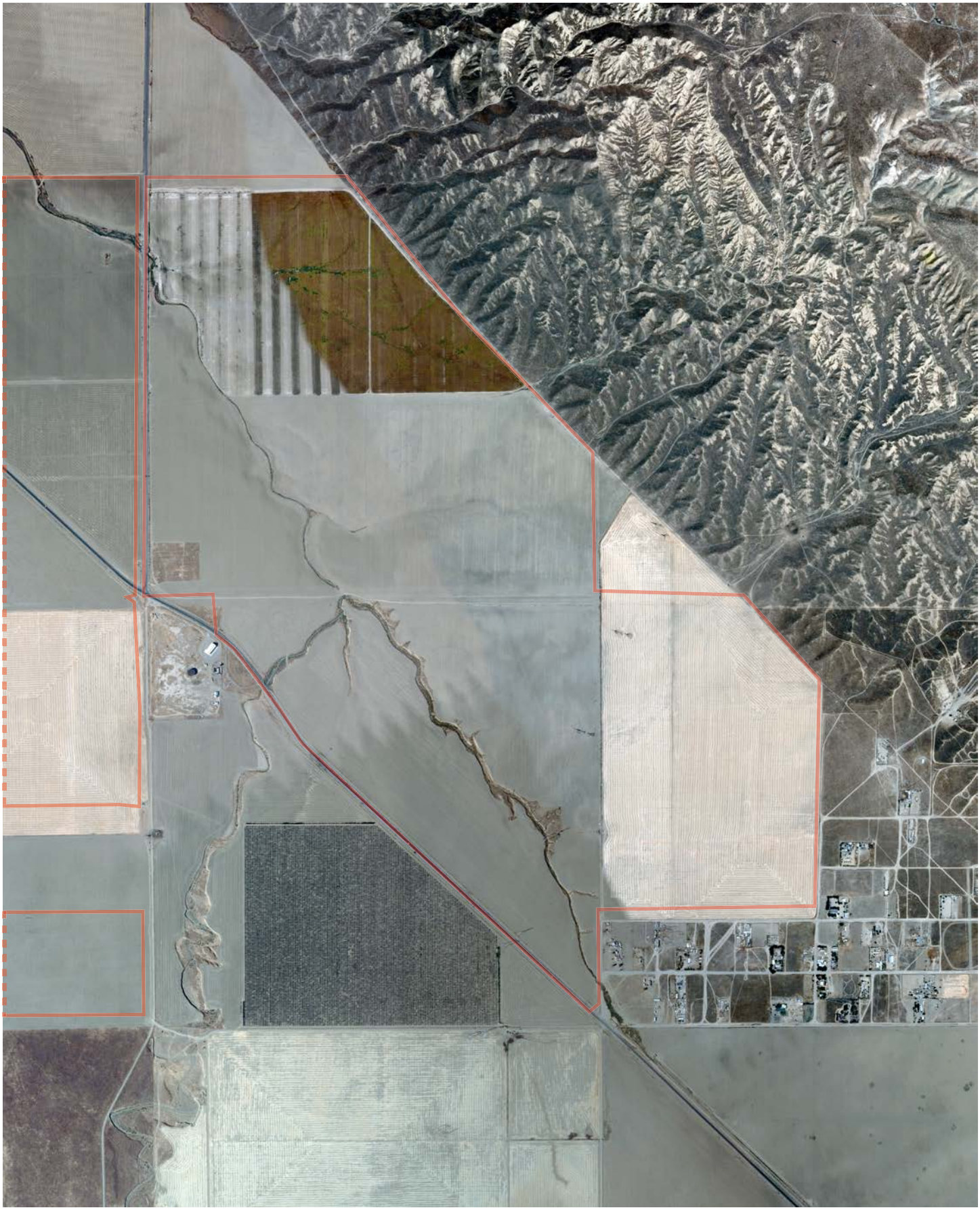


FLIGHT YEAR:
2010

East Portion

N
W E
S

Scale: 1" = 1,500'

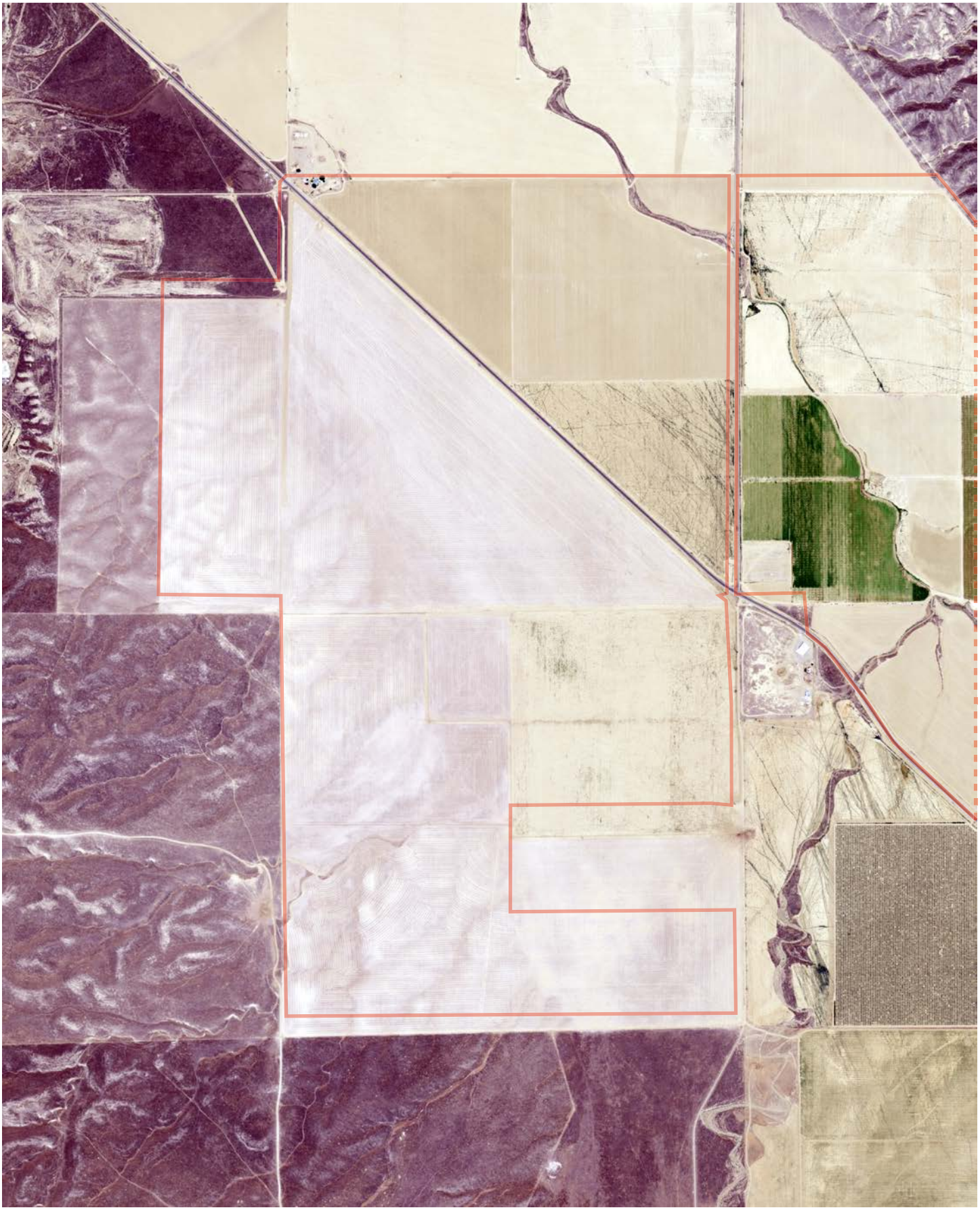


FLIGHT YEAR:
2012

West Portion

N
W E
S

Scale: 1" = 1,500'

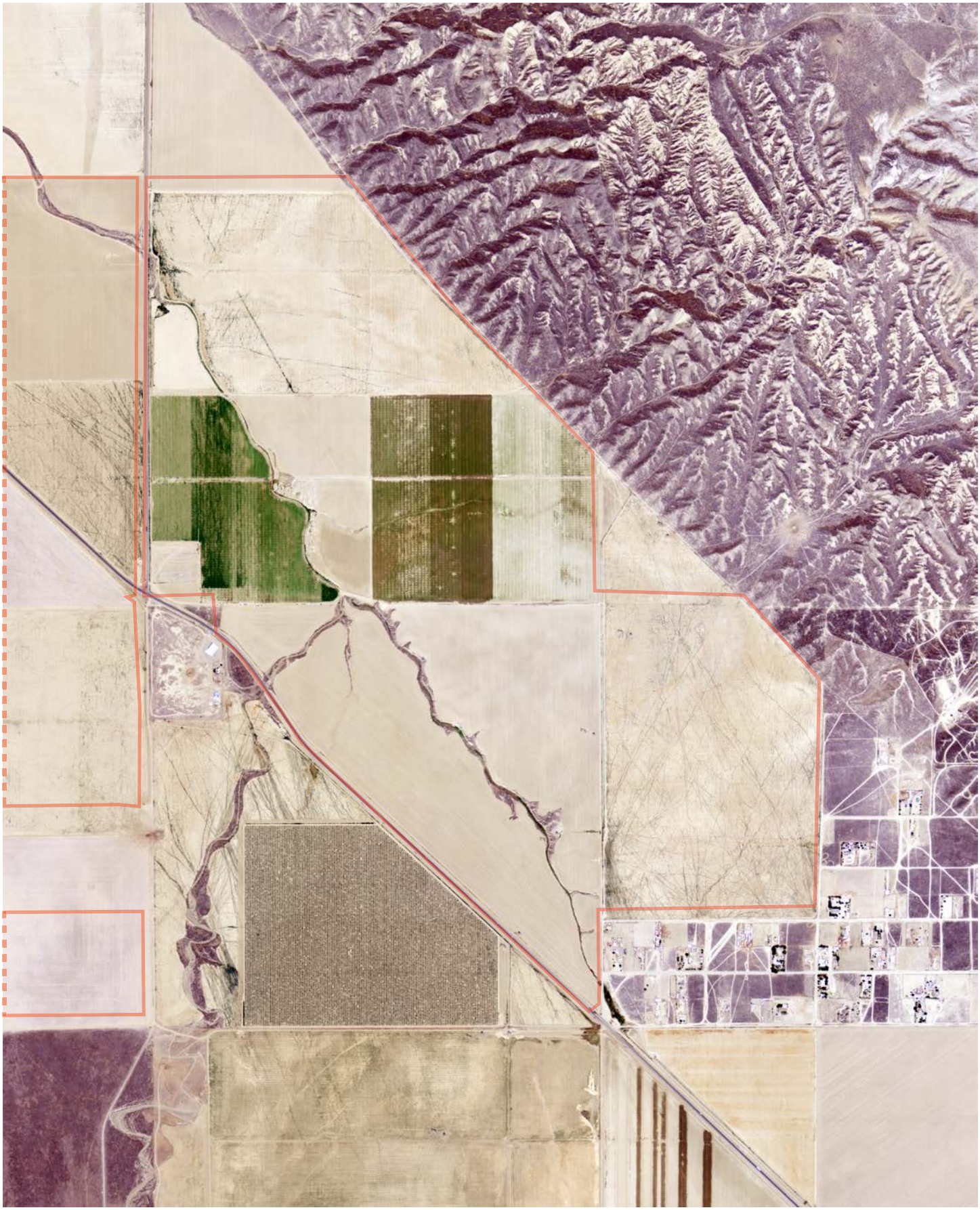


FLIGHT YEAR:
2012

East Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
2014

West Portion

N
W E
S

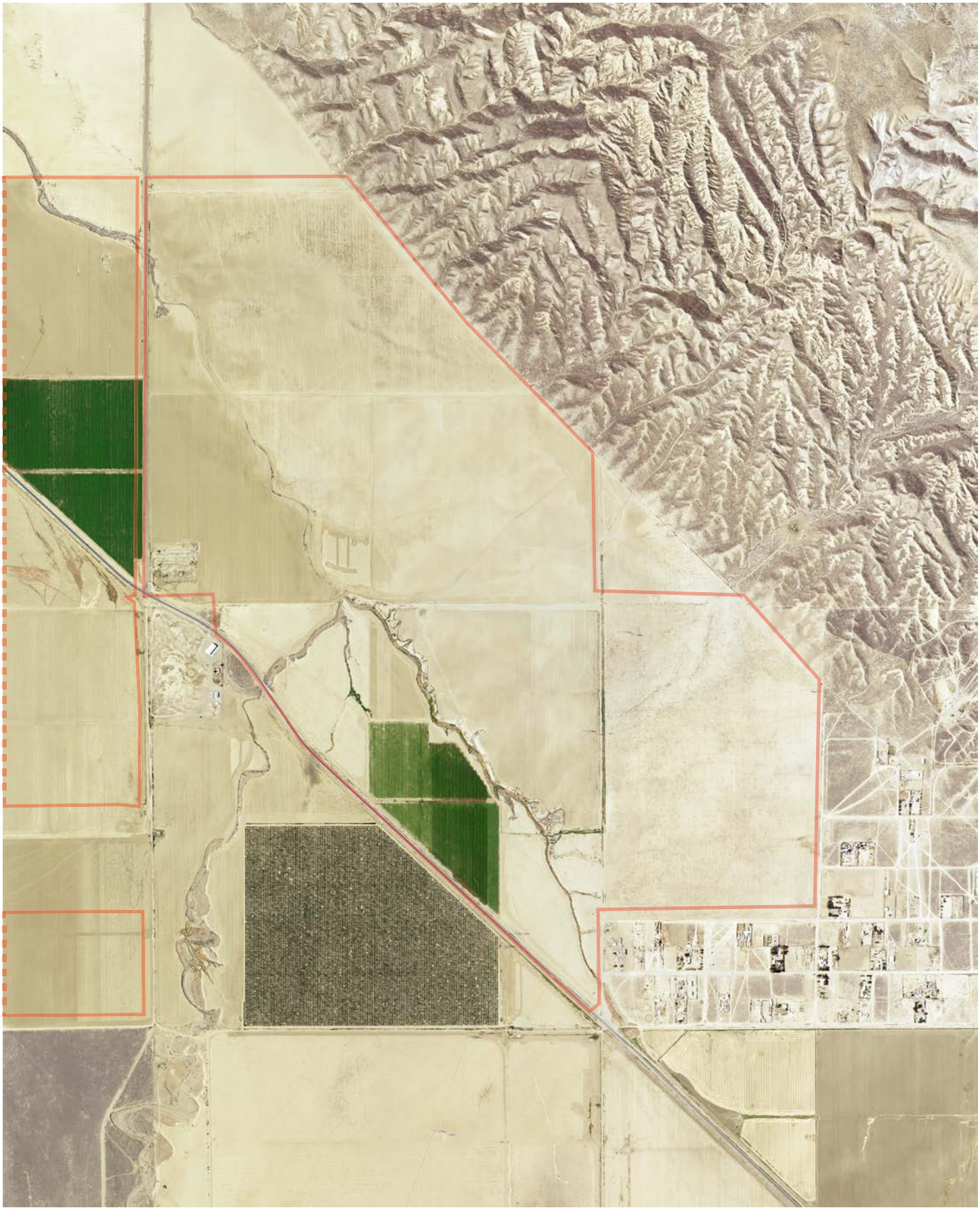
Scale: 1" = 1,500'

FLIGHT YEAR:
2014

East Portion

N
W E
S

Scale: 1" = 1,500'

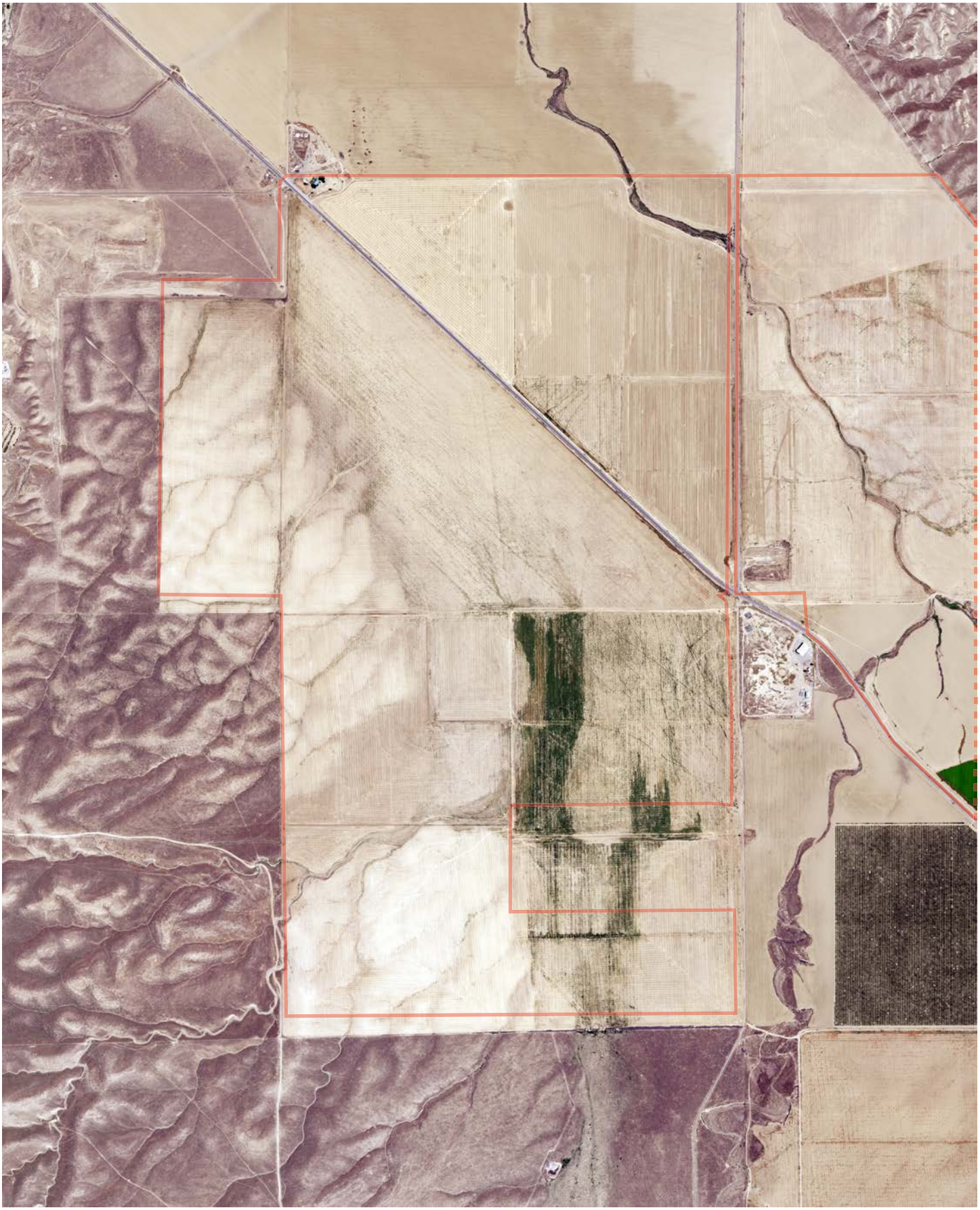


FLIGHT YEAR:
2016

West Portion

N
W E
S

Scale: 1" = 1,500'

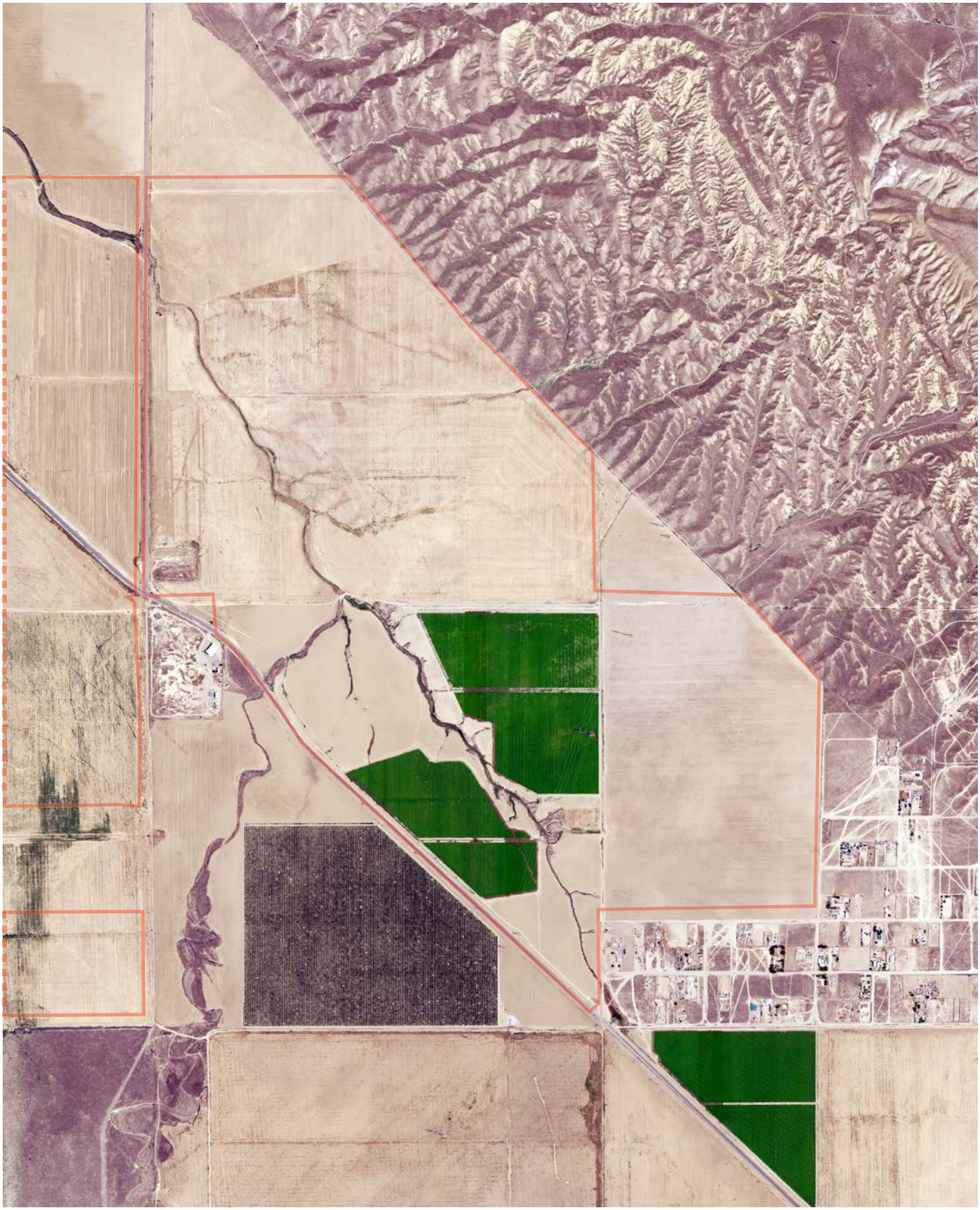


FLIGHT YEAR:
2016

East Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
2018

West Portion

N
W E
S

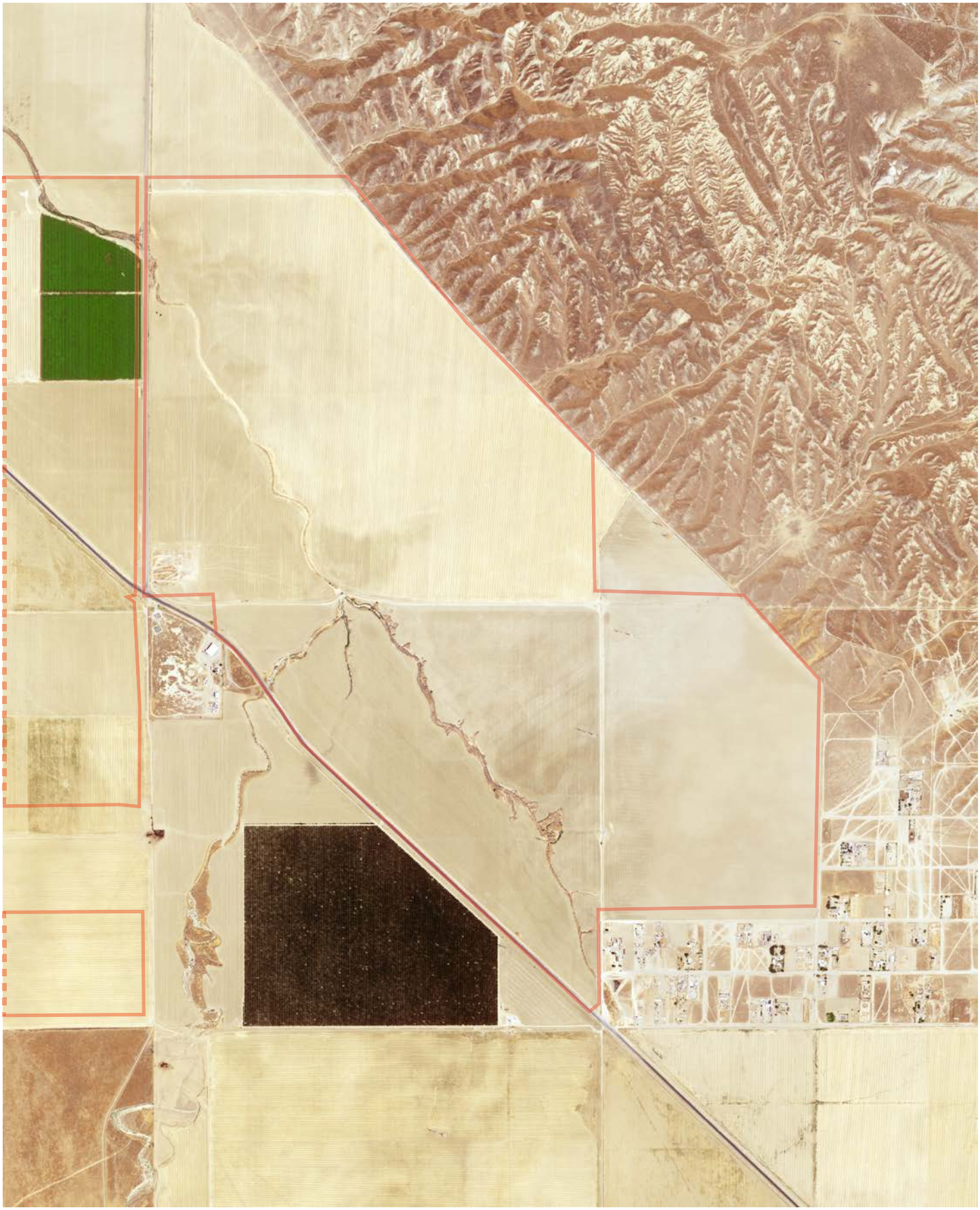
Scale: 1" = 1,500'

FLIGHT YEAR:
2018

East Portion

N
W E
S

Scale: 1" = 1,500'



FLIGHT YEAR:
2020

West Portion

N
W E
S

Scale: 1" = 1,500'

FLIGHT YEAR:
2020

East Portion

N
W E
S

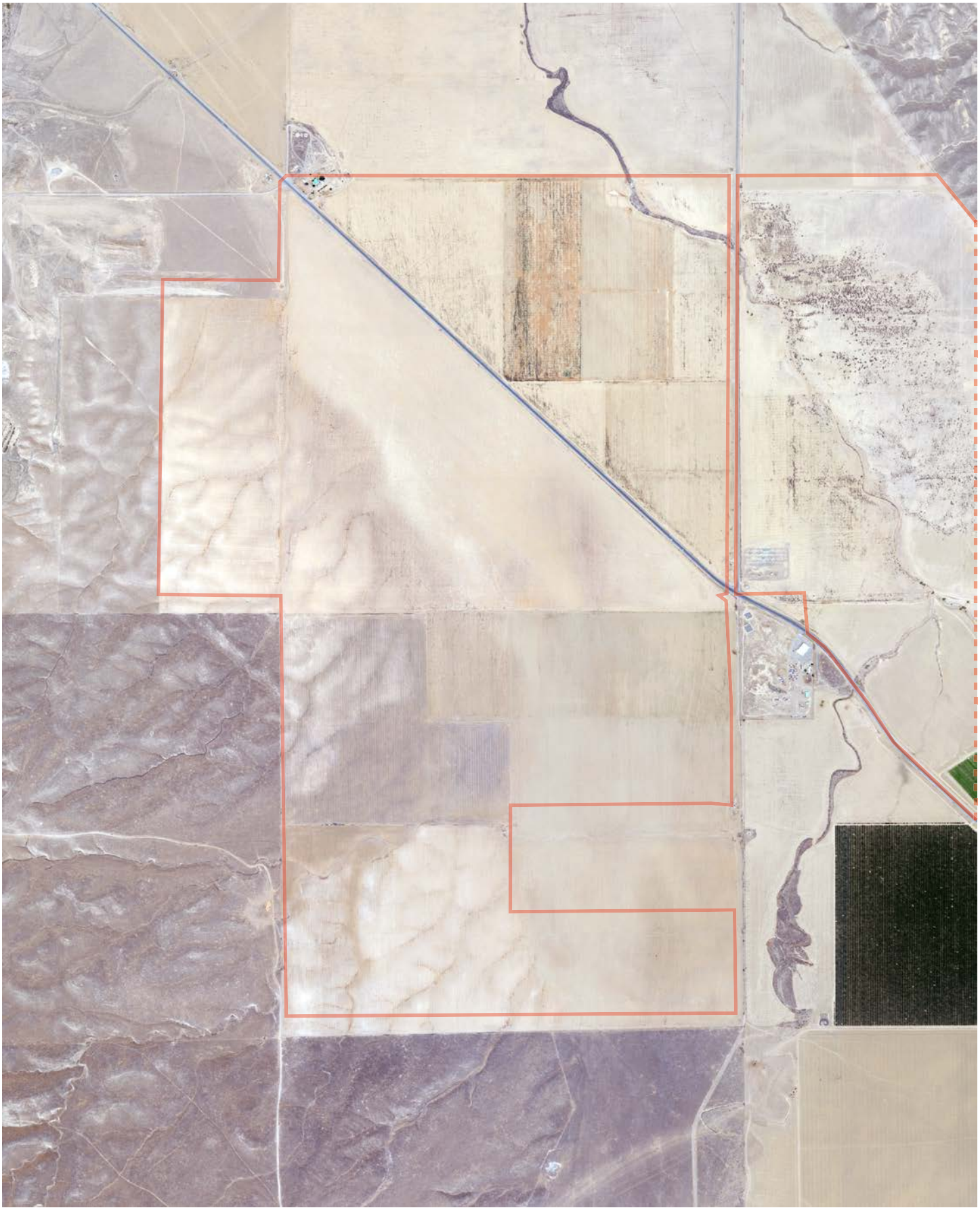
Scale: 1" = 1,500'

FLIGHT YEAR:
2022

West Portion

N
W E
S

Scale: 1" = 1,500'

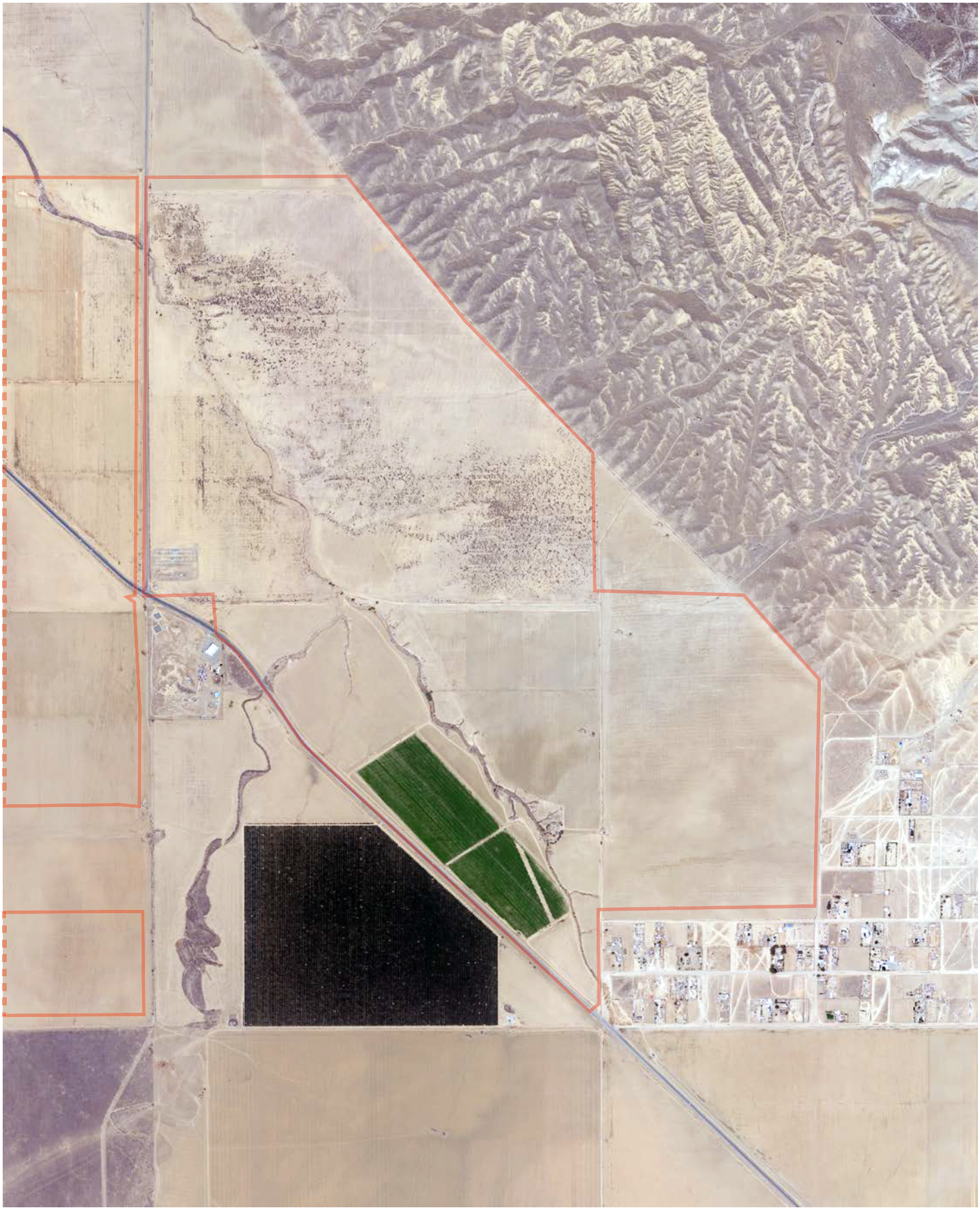


FLIGHT YEAR:
2022

East Portion

N
W E
S

Scale: 1" = 1,500'



Historical Topographic Map Report | 2023

Order Number: 90881

Report Generated: 09/20/2023

Project Name: Cornucopia Solar Project

Project Number: 5852.ES111

Cornucopia Solar
S Lost Hills Rd
Coalinga, CA 93210

Contact us at:
(866) 211-2028
envirositecorp.com

Envirosite's Historical Topographic Map Report is designed to assist in evaluating a subject property resulting from past activities. Envirosite's Historical Topographic Map Report includes a search of USGS historical topographic maps, dating back to the early 1900s.

TOPOGRAPHIC MAPS FOUND:

	Map Name:	Year:	Revision Year:	Scale:
1.	Canoas Creek	1930	N/R	1 : 31680
2.	Canoas Creek	1934	N/R	1 : 31680
3.	Polvadero Gap	1942	N/R	1 : 62500
4.	Canoas Creek	1950	N/R	1 : 24000
5.	Avenal	1954	N/R	1 : 24000
6.	Avenal	1954	1971	1 : 24000
7.	Avenal	2012	N/R	1 : 24000
8.	Avenal	2015	N/R	1 : 24000
9.	Avenal	2021	N/R	1 : 24000

The USGS 7.5 minute series includes scales 1:24,000 / 1:25,000 / 1:31,680. The USGS 15 minute series includes scales 1:48,000 / 1:62,500 / 1:63,360. The USGS 30x60 minute series scale is 1:100,000.

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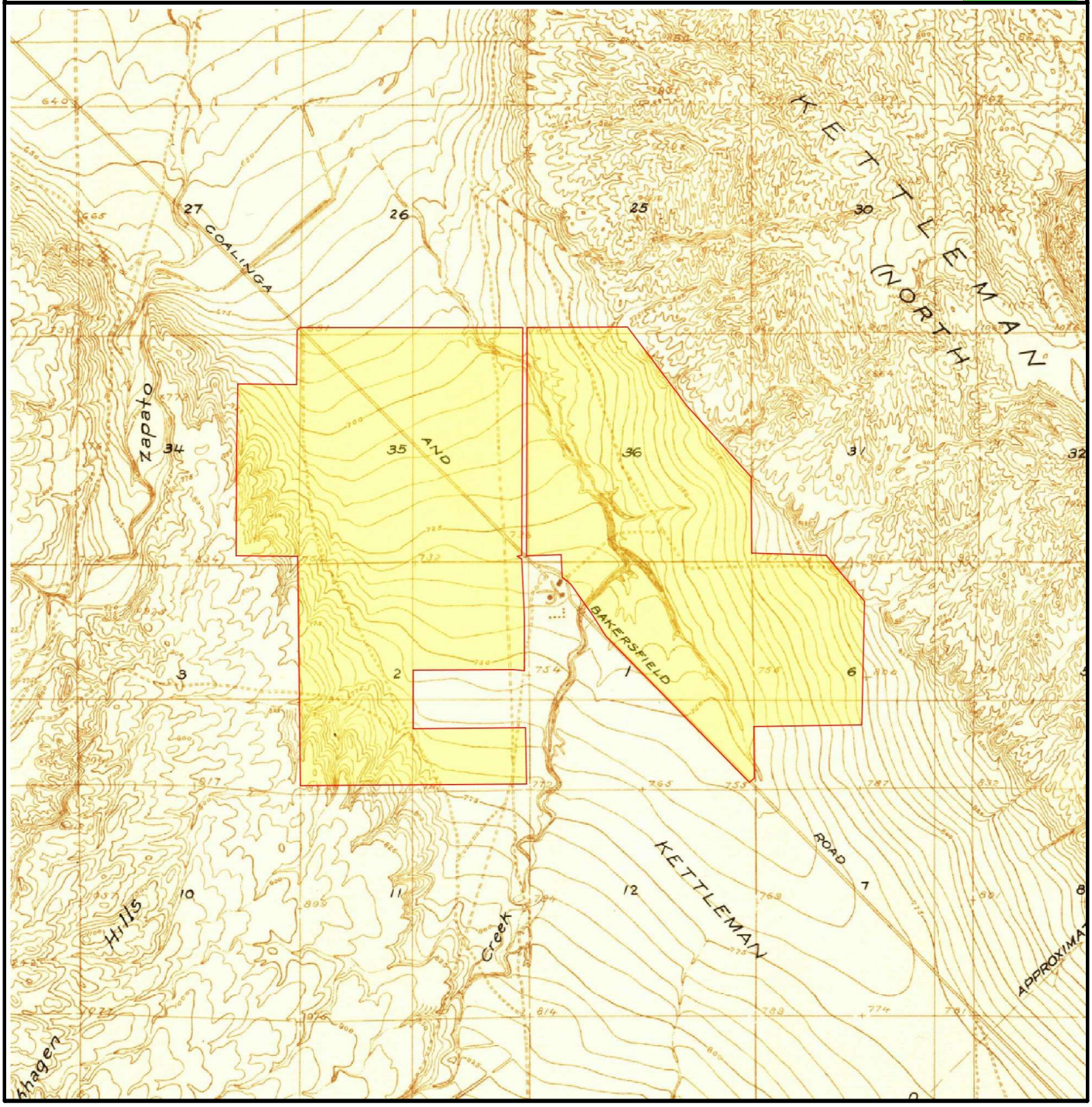
SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Canoas Creek	MAP YEAR:	1930	REVISION YEAR:	N/R
SCALE:	1 : 31680	Part	1		

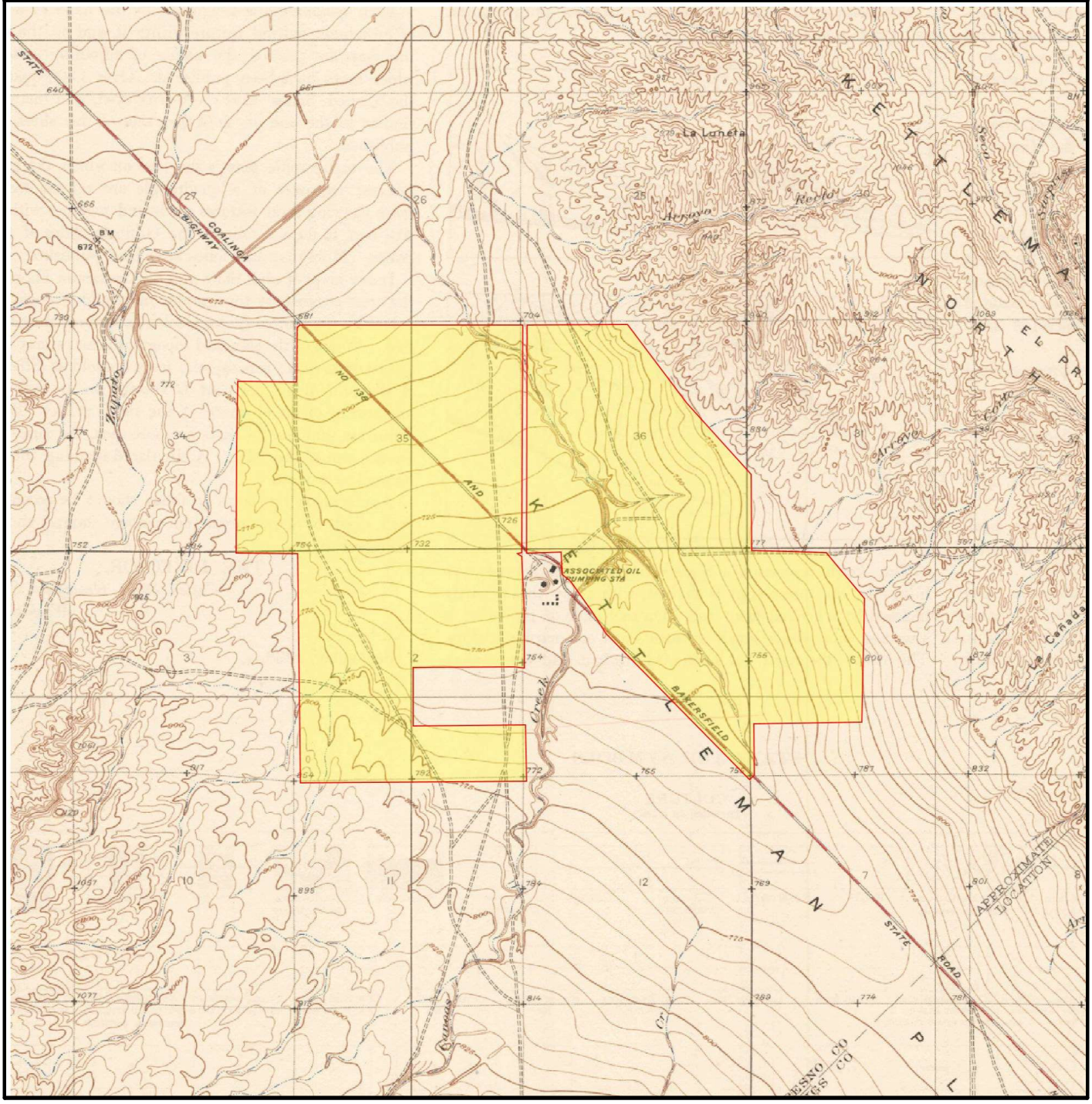


SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Canoas Creek	MAP YEAR:	1934	REVISION YEAR:	N/R
SCALE:	1 : 31680	Part	1		

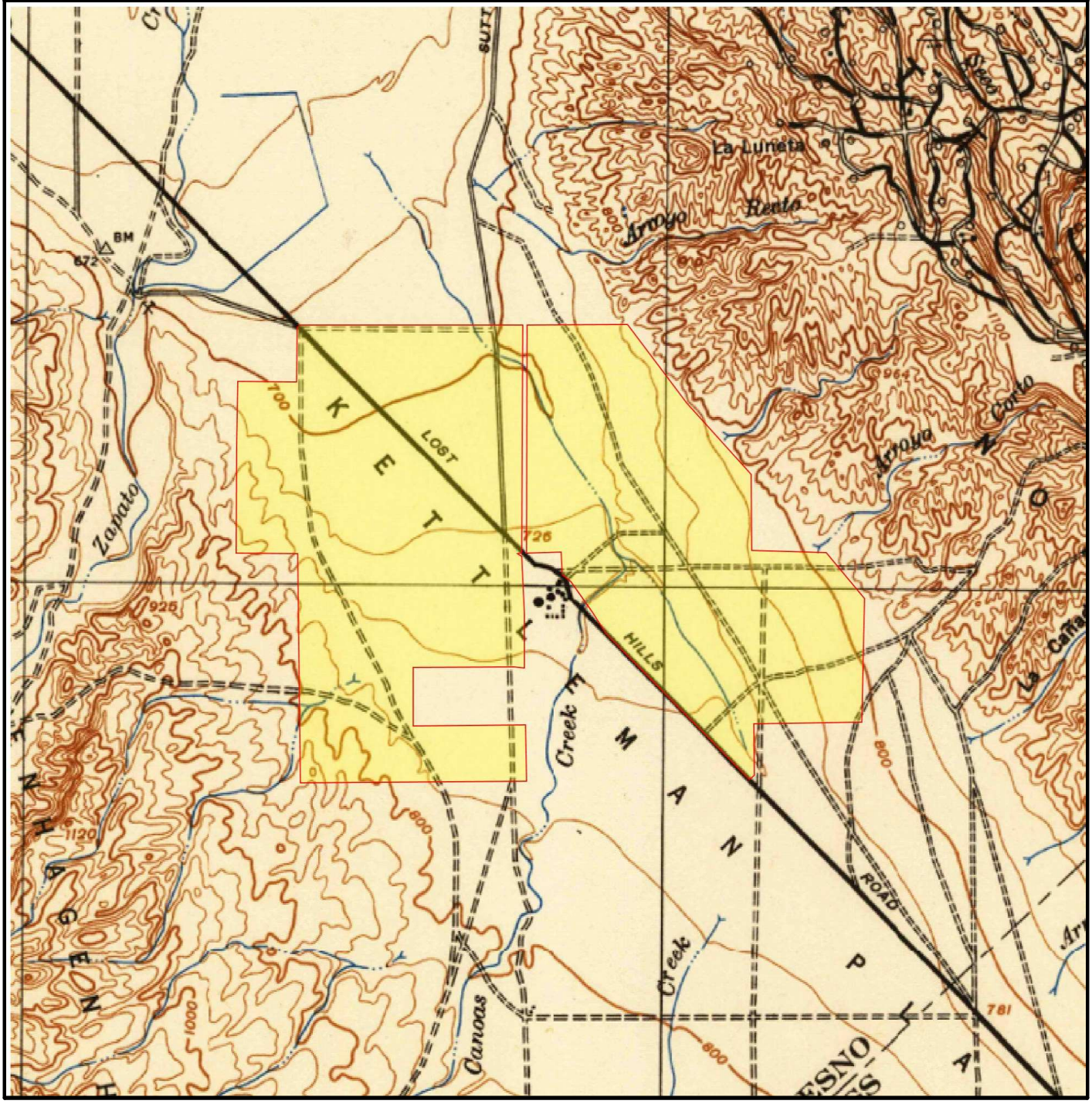


SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Polvadero Gap	MAP YEAR:	1942	REVISION YEAR:	N/R
SCALE:	1 : 62500	Part	1		

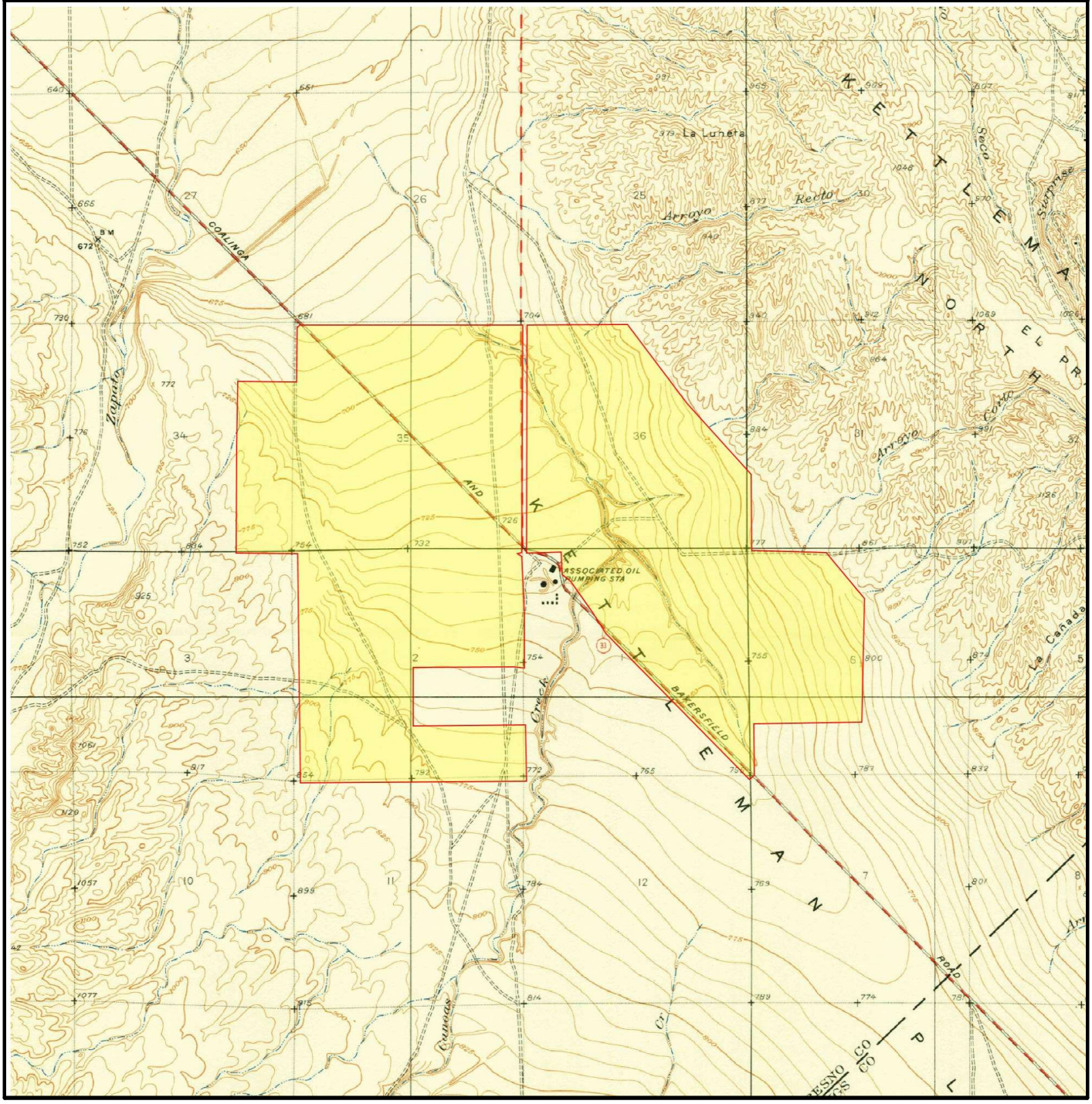


SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Canoas Creek	MAP YEAR:	1950	REVISION YEAR:	N/R
SCALE:	1 : 24000	Part	1		

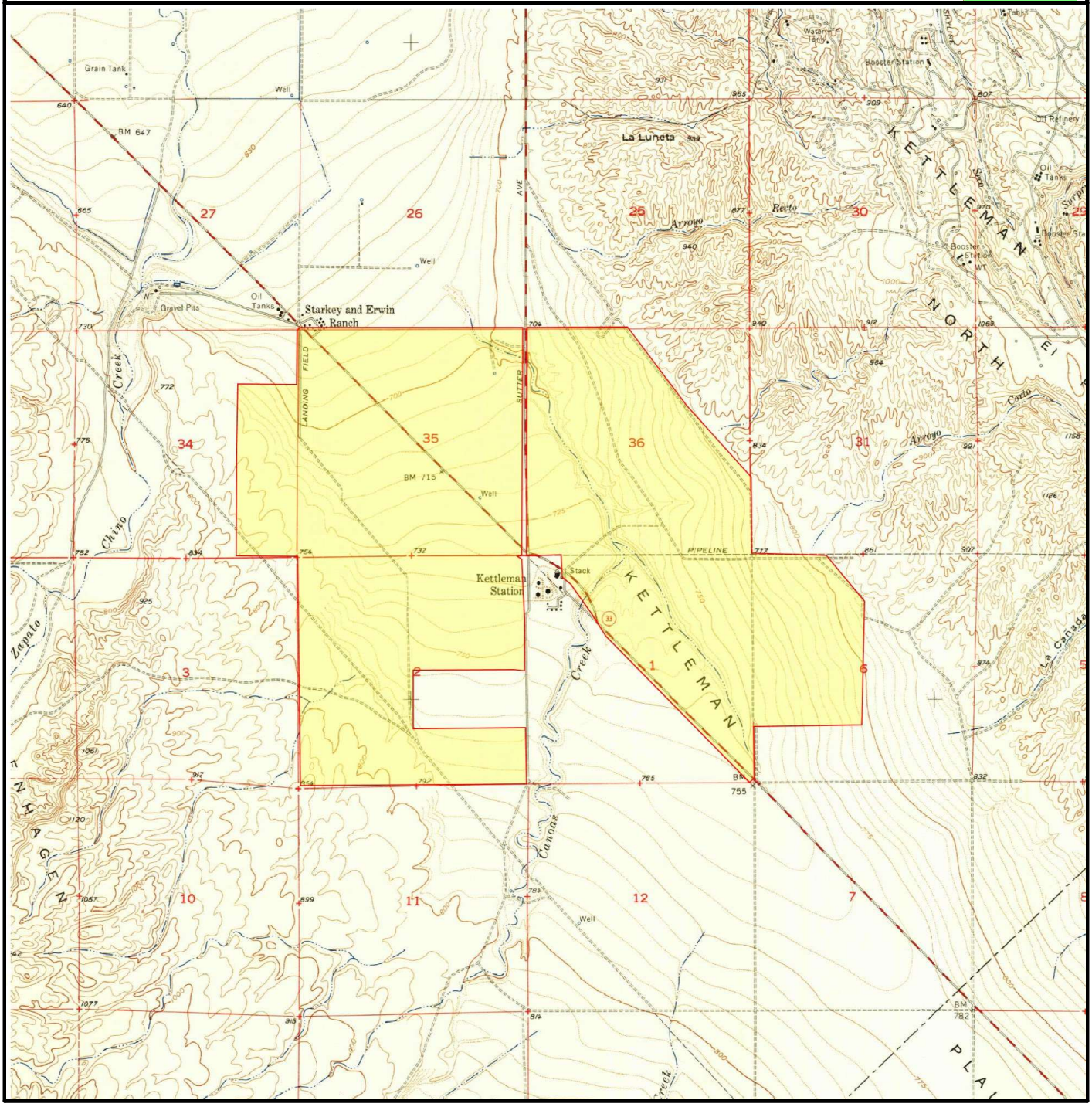


SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Avenal	MAP YEAR:	1954	REVISION YEAR:	N/R
SCALE:	1 : 24000	Part	1		

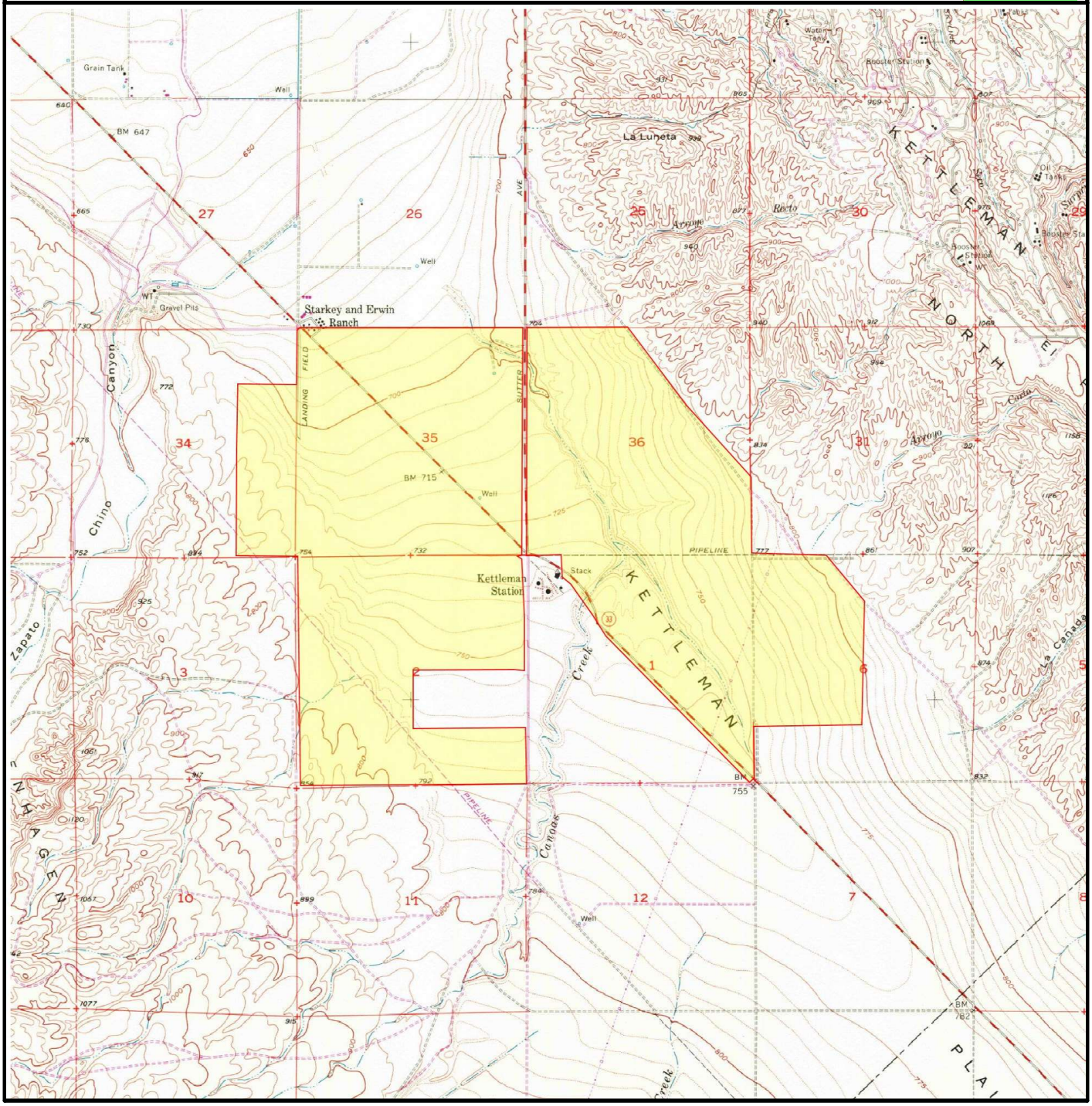


SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Avenal	MAP YEAR:	1954	REVISION YEAR:	1971
SCALE:	1 : 24000	Part	1		

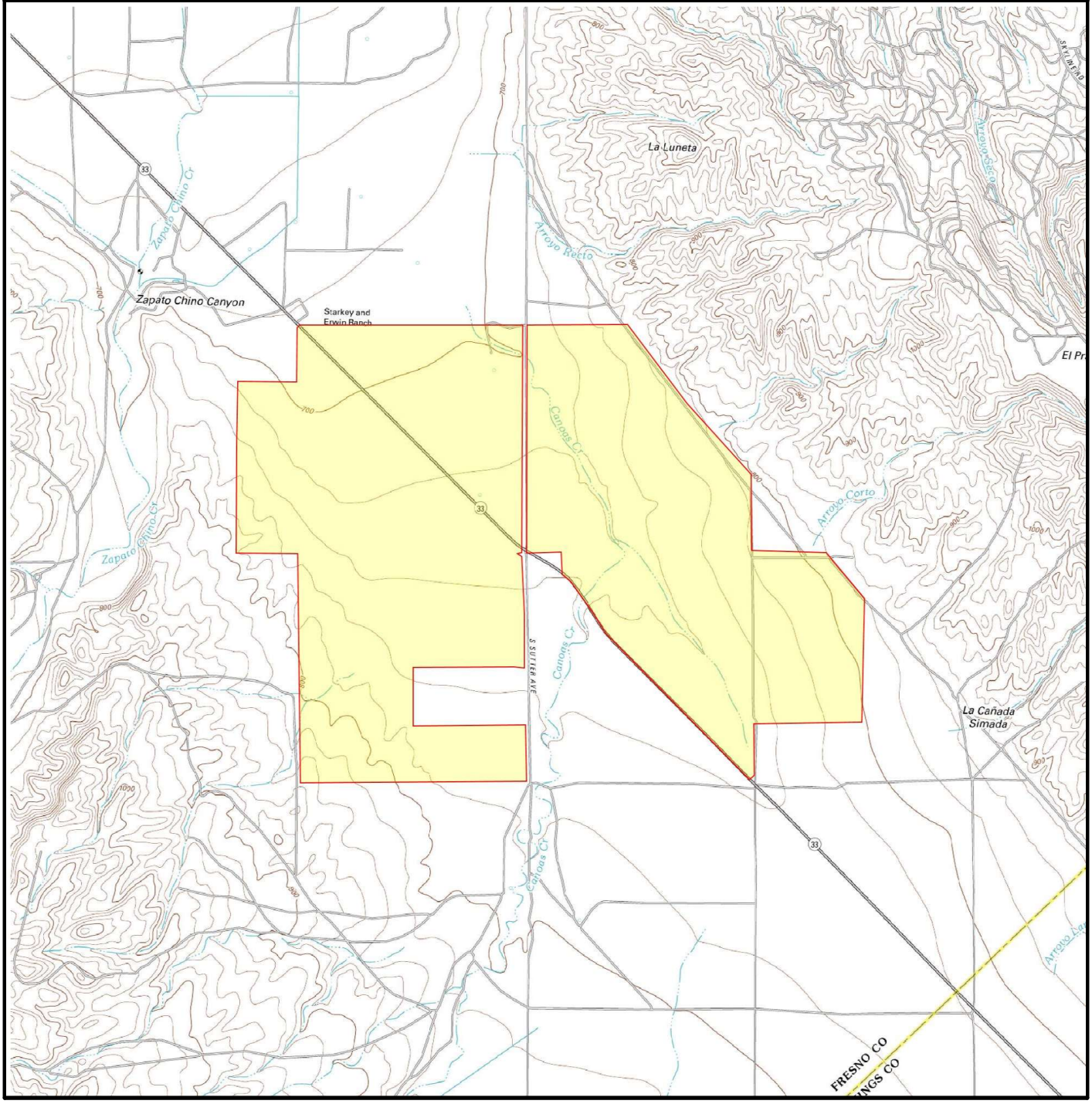


SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Avenal	MAP YEAR:	2012	REVISION YEAR:	N/R
SCALE:	1 : 24000	Part	1		

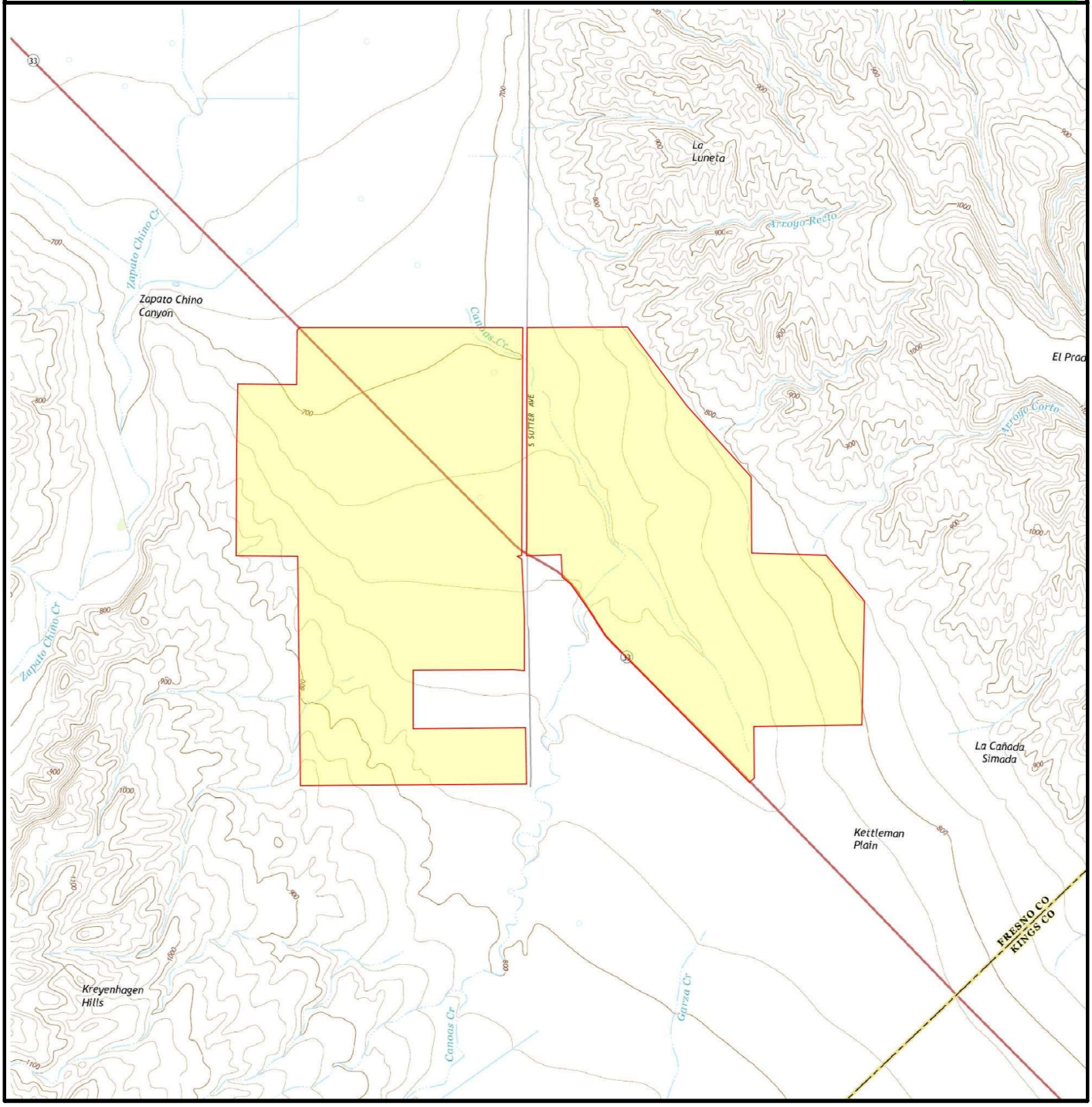


SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Avenal	MAP YEAR:	2015	REVISION YEAR:	N/R
SCALE:	1 : 24000	Part	1		

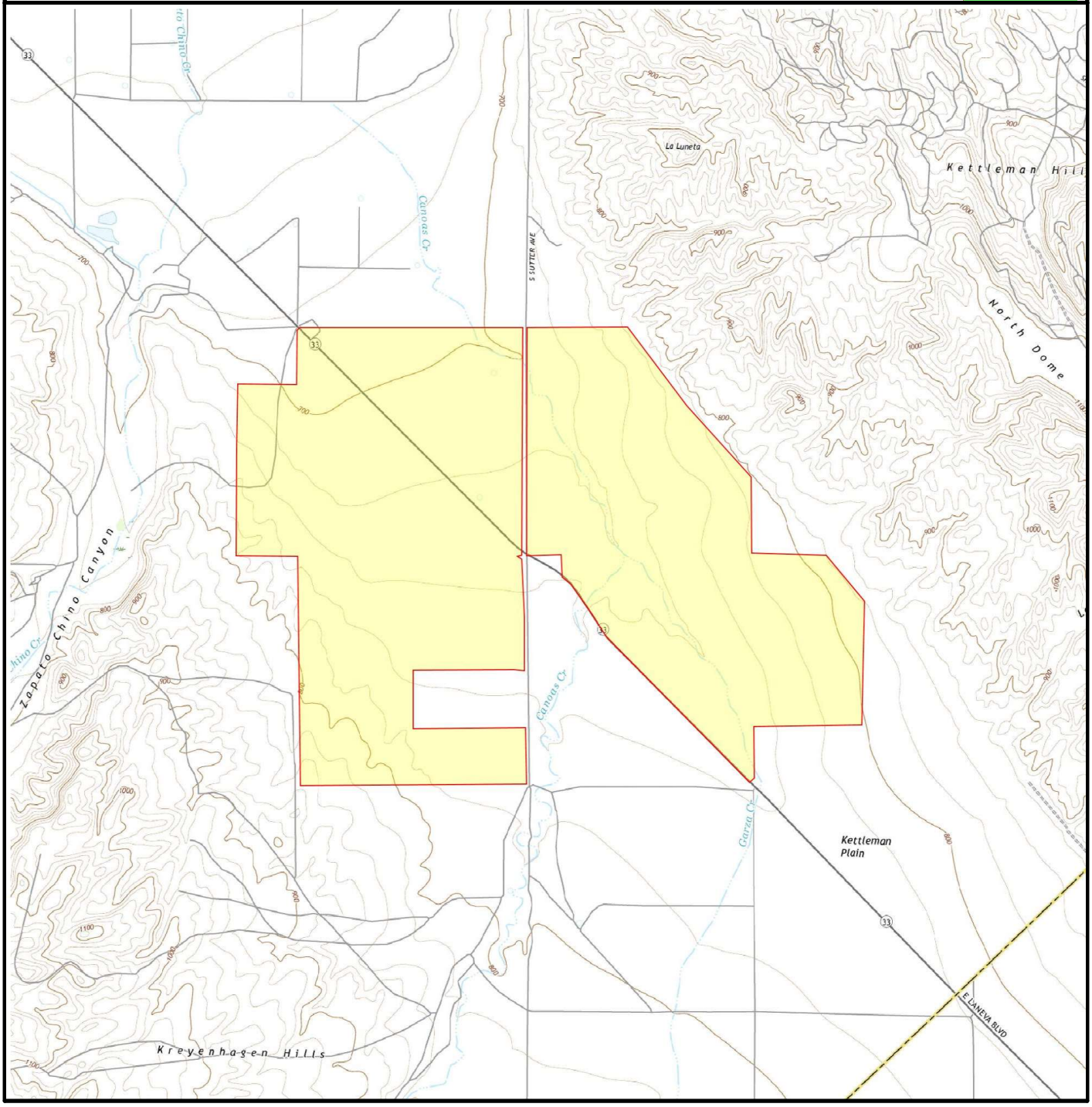


SUBJECT NAME: Cornucopia Solar
ADDRESS: S Lost Hills Rd, Coalinga, CA, 93210
LAT/LONG: 36.050689 / -120.198223

PREPARED FOR: Cameron-Cole - Alameda
ORDER #: 90881
REPORT DATE: 09/20/2023

SUBJECT QUAD:

MAP NAME:	Avenal	MAP YEAR:	2021	REVISION YEAR:	N/R
SCALE:	1 : 24000	Part	1		



City Directory Report | 2023

Order Number: 90881

Report Generated: September 22, 2023

Cornucopia Solar

42999 - 46000 S Lost Hills Rd
Coalinga, CA 93210

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56 Broome Corporate Parkway
Conklin, NY 13748

Toll Free: 866-211-2028
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Prepared for Envirosite Corporation By:

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City Directory Report

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RESEARCH SUMMARY:

The following research sources were consulted in the preparation of this report:

SOURCE:	***YEAR:***
Property Archives	2018, 2015, 2010, 2006, 2002, 1998, 1993
Central San Joaquin Fresno Criss Cross Directory	1988, 1984, 1978, 1972

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This report was prepared by Property Archives, LLC for Envirosite Corporation

Property Archives

SUBJECT PROPERTY:

42999 - 46000 S Lost Hills Rd , Coalinga, CA 93210

ADJOINING PROPERTIES:

39999 - 45000 S Sutter Ave, Coalinga, CA

42999-46000

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2018 42999-46000

CRAIG DARTENAY	44966 LOST HILLS RD
AVENAL AGGREGATE & ASPHALT	45315 LOST HILLS RD
RICHARD HEWITSON	45555 LOST HILLS RD
ARMANDO LOPEZ	46012 LOST HILLS RD
YOLANDA CAMARENA	47922 LOST HILLS RD
RAUL CAMARENA	47940 LOST HILLS RD
SYLVIA RAMIREZ	47950 LOST HILLS RD
MIGUEL LOPEZ	47960 LOST HILLS RD
MARY PEREZ	47998 LOST HILLS RD

2015 42999-46000

NOHEMI RAMIREZ	43345 LOST HILLS RD
CRAIG DARTENAY	44966 LOST HILLS RD
KAREN DARTENAY	44966 LOST HILLS RD
C & K HARVESTING & REPAIR	44966 LOST HILLS RD
AVENAL AGGREGATE & ASPHALT	45315 LOST HILLS RD
RICHARD HEWITSON	45555 LOST HILLS RD
ARMANDO LOPEZ	46012 LOST HILLS RD
RAUL CAMARENA	47940 LOST HILLS RD
GUADALUPE PINEDA	47942 LOST HILLS RD

2010 42999-46000

CRAIG DARTENAY	44966 LOST HILLS RD
C & K HARVESTING & REPAIR	44966 LOST HILLS RD
RAYMOND ARAGON	47932 LOST HILLS RD

2006 42999-46000

C & K HARVESTING & REPAIR	44966 LOST HILLS RD
Rock Acme	45315 S Lost Hills Rd
Jaxon Baker	45315 LOST HILLS RD
J Den Hartog	45557 Lost Hills Rd

2002 42999-46000

HARTOG JOHN DEN	S LOST HILLS RD
Acme Paving CO	45315 Lost Hills Rd
Acme Rock	45315 Lost Hills Rd

1998 42999-46000

Rock Acme	45315 S Lost Hills Rd
J Den Hartog	45557 Lost Hills Rd
Artesia Ready Mix Concrete Inc	46005 Lost Hills Rd

1993: 42999-46000

No results

SOURCE: Central San Joaquin Fresno Criss Cross Directory
STREET: 42999-46000
YEAR: 1988
INFO: NO S LOST HILLS RD
LOST HILLS RD LISTINGS ONLY

45315* ACME PAVING CO ROCK
45557 DENHARTOG John
46005*SHEPPA READY MIX
NO# DENHARTOG Ted W

SOURCE: Central San Joaquin Fresno Criss Cross Directory
STREET: 42999-46000
YEAR: 1984
INFO: 44966 DECKER TIM
45557 DENHARTOG John
NO# DENHARTOG TED W

SOURCE: Central San Joaquin Fresno Criss Cross Directory
STREET: 42999-46000
YEAR: 1978
INFO: Address Not Listed (42999-46000)

NO# DENHARTOG TED W

SOURCE: Central San Joaquin Fresno Criss Cross Directory
STREET: 42999-46000
YEAR: 1972
INFO: Address Not Listed (42999-46000)

NO# RODRIGUEZ BENITO

2018: **S Sutter Ave, Coalinga, CA**

No results

2015: **S Sutter Ave, Coalinga, CA**

No results

2010: **S Sutter Ave, Coalinga, CA**

No results

2006: **S Sutter Ave, Coalinga, CA**

No results

2002: **S Sutter Ave, Coalinga, CA**

Lonsom Dove Golf Course	41605 Sutter Ave

1998: **S Sutter Ave, Coalinga, CA**

Polvadero Community Golf Course	41605 Sutter Ave

1993: **S Sutter Ave, Coalinga, CA**

HUDSON CHARLES S	41605 SUTTER AVE

SOURCE: Central San Joaquin Fresno Criss Cross Directory
STREET: S Sutter Ave, Coalinga, CA
YEAR: 1988
INFO: NO S SUTTER AVE-
SUTTER AVE LISTINGS ONLY

41605 * POLVADERO CNTRY CLB

SOURCE: Central San Joaquin Fresno Criss Cross Directory
STREET: S Sutter Ave, Coalinga, CA
YEAR: 1984
INFO: Address Not Listed (39999-45000)

NO# POLVADERO CNTRY CLB

SOURCE: Central San Joaquin Fresno Criss Cross Directory
STREET: S Sutter Ave, Coalinga, CA
YEAR: 1978
INFO: Address Not Listed (39999-45000)

NO# POLVADERO CNTRY CLB
NO# WEETH FARMS

SOURCE: Central San Joaquin Fresno Criss Cross Directory
STREET: S Sutter Ave, Coalinga, CA
YEAR: 1972
INFO: Address Not Listed (39999-45000)

NO# BERNAL RAYMOND
NO# HORN RAY
NO#* POLVADERO CNTRY CLB
NO# WEETH E&SON

Fire Insurance Maps No Coverage Statement

Site Location
Cornucopia Solar
S Lost Hills Rd
Coalinga, CA

Requested by
Envirosite Corporation
2 Corporate Drive
Shelton, CT

HIG Project #
2077343
Client Project #
90881
Date Created
09/21/2023

Historical Information Gatherers

FIM+ Maps

The HIG Historical Map Collection and the United States Library of Congress Map Collection were searched for fire insurance maps (FIMs), real estate atlases and similar maps for the site location and adjoining properties. No FIMs or similar maps were identified for the site location and/or adjoining properties.

HIG Research Summary

Site Location
Cornucopia Solar
S Lost Hills Rd
Coalinga, CA

Requested by
Envirosite Corporation
2 Corporate Drive
Shelton, CT

HIG Project #
2077343
Client Project #
90881
Date Created
09/21/2023

Historical Information Gatherers

This Research Summary identifies the products and services provided by Historical Information Gatherers, Inc. (HIG) for the above referenced site location. All products are provided as PDFs unless otherwise noted.

FIM+ Maps

The HIG Historical Map Collection and the United States Library of Congress Map Collection were searched for fire insurance maps (FIMs), real estate atlases and similar maps for the site location and adjoining properties. No FIMs or similar maps were identified for the site location and/or adjoining properties.

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APPENDIX E

Interview Documentation

Interview with User

Date: April 26th, 2023

Name: Mr. Martin Nascimento

Title: Senior Development Manager

Interviewed by: Ryan Barry, Cameron-Cole, LLC

Mr. Nascimento was interviewed via a User Questionnaire completed on April 26th, 2023. Mr. Nascimento indicated that he was unaware of chemicals, hazardous substances, or petroleum products that are present on the property. Mr. Nascimento indicated that he was not aware of any AULs, such as engineering controls, land use restrictions, and institutional controls that have been filed or recorded on the subject property.

A summary of the responses is provided in Section 4.0, and a copy of the completed User Questionnaire is provided in Appendix B.

APPENDIX F

Professional Qualifications

Ryan Barry, Environmental Scientist I

Ryan Barry has one year of professional experience in environmental field sampling, groundwater testing, water level contouring, and environmental due diligence. He has collected surface and subsurface soil samples, as well as groundwater samples from monitoring wells, and conducted well tests. Mr. Barry has prepared Phase I ESAs under direct supervision of individuals meeting the definition of an environmental profession for various properties including but not limited to residential, industrial, commercial, and agricultural. Additionally, Mr. Barry is well versed in topographic mapping and the use of geographic information systems (GIS) for analysis of various environmental topics. He has assisted in analyzing data, developing presentations, and preparing draft reports with tables, charts, and graphs.

Education:

- Bachelor of Science, Environmental Science and Management, California Polytechnic State University - Humboldt, Arcata, CA, 2021
- ASTM E1527 Phase 1 Environmental Site Assessment for Commercial Real Estate Course

Certifications:

- 40-hour Hazardous Waste Operations and Emergency Response Training

Michael Stephenson, Principal Scientist – Western Region Manager

Michael Stephenson, MBA, ERM, has more than 28 years of project management, site assessment, and remediation experience gained from working on various projects, including large and complex industrial developments, for both private and municipal clients. Mr. Stephenson's expertise includes risk management, environmental liability estimation, database management, and statistical data analysis. He has conducted human health and ecological risk assessments, Remedial Investigations/Feasibility Studies, soil and groundwater characterizations; provided technical support for site closures; and managed several soil and groundwater remediation, monitoring, and investigation for projects involving human health and ecologically based risk analyses.

Education:

- Master of Business Administration, Saint Mary's College of California, Moraga, CA, 2002
- Bachelor of Arts, Environmental Studies, University of California, Santa Barbara, CA, 1994

Certifications:

- Environmental Risk Manager, Environmental Risk Strategies Institute, 2007
- 40-hour and 8-hour 29 CFR 1910.120 Training, Department of Labor
- 8-hour 29 CFR 1910.120 Supervisor Training, Department of Labor

Appendix J

Water Supply Assessment and Update

Cornucopia Hybrid Project

Water Supply Assessment

prepared for

BayWa r.e. Solar Projects, LLC
18575 Jamboree Road, Suite 850
Irvine, California 92612

prepared by

Rincon Consultants, Inc.
7080 North Whitney Avenue, Suite 101
Fresno, California 93720

June 2024

RINCON CONSULTANTS, INC. SINCE 1994

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1 Introduction

In 2001, California adopted Senate Bill (SB) 610, which amended California Water Code to require detailed analysis of water supply availability and reliability for certain types of development projects that are subject to the California Environmental Quality Act (CEQA) and would use groundwater to meet some or all of the project's water needs. The primary purpose of SB 610 is to improve the linkage between the physical availability of water and land use planning decisions involving projects that meet one or more thresholds to meet the definition of "project" under SB 610.

Proposals that qualify as a "project" under SB 610 are required to produce a Water Supply Assessment (WSA), which analyzes the project's proposed water supply source(s) to inform consideration of water supply availability and reliability over a 20-year planning horizon, and with consideration to varying climatic (drought) scenarios including normal water year conditions, single-dry conditions, and multiple dry-year conditions. The purpose of a WSA is to facilitate greater communication between water providers and local planning agencies, ensuring that land use decisions for large development projects are fully informed as to whether sufficient water supplies are available to meet project demands. A WSA does not address CEQA thresholds of significance or provide CEQA impact analyses; however, WSAs are used to inform analysis provided in CEQA documents, and are attached to the respective CEQA document.

This WSA has been prepared for the Cornucopia Hybrid Project (proposed project), proposed by Cornucopia Hybrid, LLC (Cornucopia), to inform decisions about the availability of water to support the project needs in the decades to come after implementation. The analysis provided herein is informed by existing data to the extent of publicly available information, with assumptions developed as necessary to sufficiently characterize existing resources and to support the identification of well-informed conclusions and recommendations. This WSA has been prepared to meet all requirements of California Water Code as amended by SB 610.

2 Project Overview

2.1 Project Location

The project site is situated between the City of Coalinga (Fresno County) and the City of Avenal (Kings County) at the base of the eastern slope of the Diablo Range. The project site is bifurcated north to south by State Route (SR) 33 (South Lost Hills Road) and east to west by Sutter Avenue. Interstate 5 (I-5) is located approximately four miles east of the project site. I-5 and SR-33 provide regional access to the project site, while SR-33 and Sutter Avenue provide local access. Figure 1 portrays the regional location of the proposed project.

The project site is within portions of eight parcels associated with Assessor's Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12, and 085-110-13S. The project site is located within Township 21 South, Range 16 East, Sections 34, 35, and 36, Township 22 South, Range 16 East, Sections 1, 2, and Range 17 East, Section 6 of the Avenal, California United States Geological Survey (USGS) 7.5-minute Topographic Quadrangle Map.

Land Use Classifications

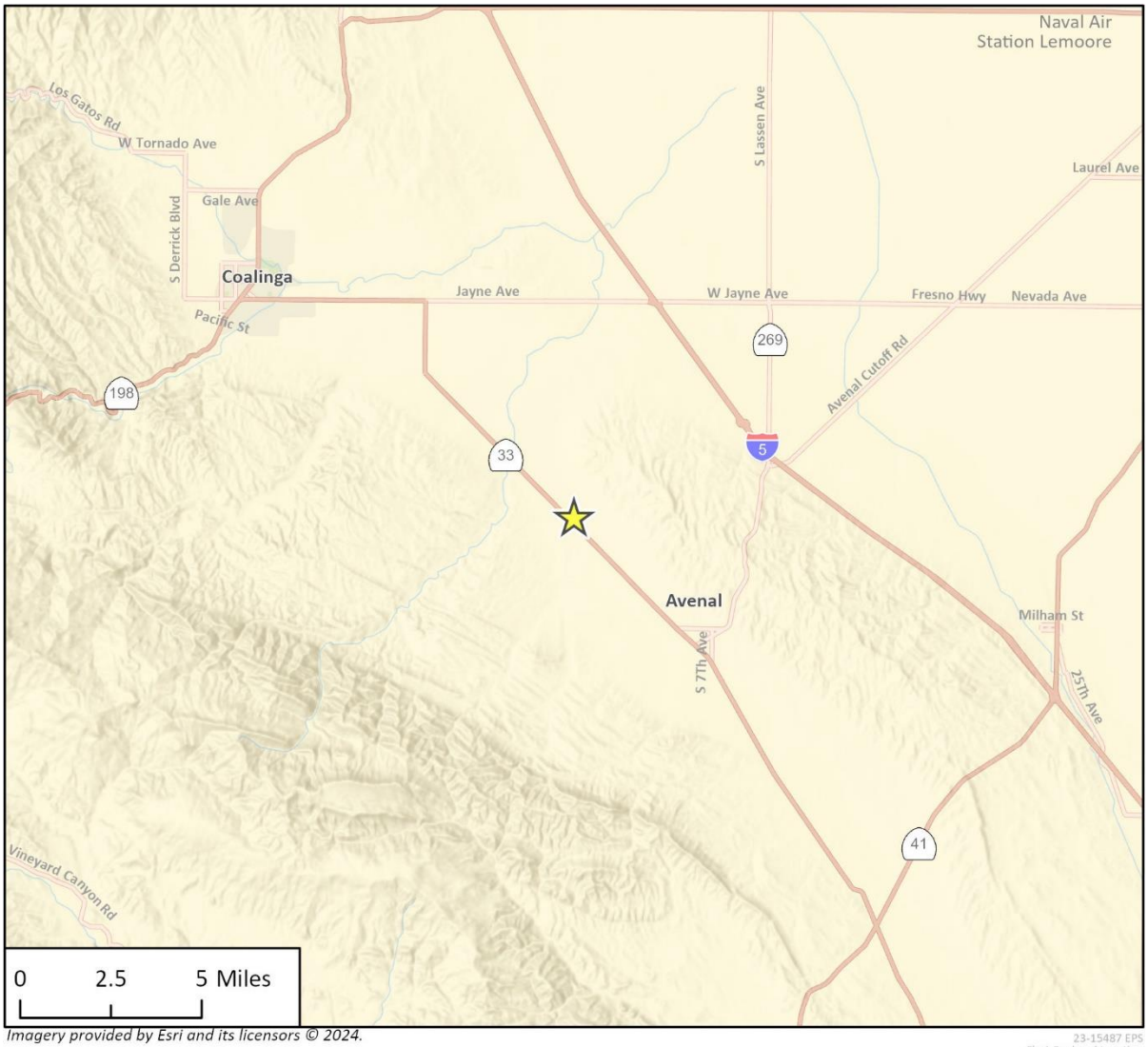
Land use classification data sourced from the Department of Water Resources (DWR) 2018 *LandIQ Land Use Survey* indicate that approximately half of the project site's development area is classified as "Grains and Hay Crop" (Pleasant Valley GSA et al. 2022, pg. 2-13). The Grains and Hay Crop classification applies to the portions of the development area located north of SR-33 and east of Sutter Avenue, as well as the southwestern portion of the development area, located east and south of SR-33. The remainder of the site's development areas is Unclassified (Pleasant Valley GSA et al. 2022, pg. 2-13).

Water for Existing Land Uses

As stated above, approximately half of the project site's development area is currently classified as "Grains and Hay Crops." The Groundwater Sustainability Plan (GSP) for the local groundwater basin (See Section 4, *Pleasant Valley Subbasin*) assumes that field crops and grains use flood/furrow or sprinkler irrigation, versus dry farming (Pleasant Valley GSA et al. 2022, pg. 3-84); i.e. they receive applied water. The Pleasant Valley GSP states that on average, approximately 24,610 acre-feet per year (AFY) of water is applied for agricultural crops is used across the Subbasin (Pleasant Valley GSA et al. 2022, pg. 3-84). Land use data presented in the Pleasant Valey GSP indicate that across the Subbasin, approximately 17,707 acres are classified as land uses that receive applied water for agricultural crops, which include: Field Crops (242 acres); Grain and Hay Crops (6,429 acres); Pistachios (9,583 acres); Truck, Nursery, and Berry Crops (1,201 acres); and Young Perennials (252 acres) (Pleasant Valley GSA et al. 2022, pg. 2-9). Therefore, on average across the Subbasin, approximately 1.39 AFY/acre of water is applied for agricultural crop land use classifications.

Applying the average applied water rate of 1.39 AFY/year to the 809 acres classified as Grains and Hay Crops within the project's development area indicates that the GSP accounts for approximately 1,124 AFY of water to be applied within the project's development area, under current land use classifications supporting irrigation. Section 5, *Conclusions,* provides discussion of how land use classifications inform water supply availability projections for the proposed project.

Figure 1 Regional Location



2.2 Project Description

The Cornucopia Hybrid Project (proposed project) site is located in unincorporated western Fresno County and includes approximately 2,446 acres. The proposed development would occur on a 1,618-acre portion of the overall site. The applicant, Cornucopia Hybrid, LLC (Cornucopia), proposes to construct a new utility-scale, hybrid solar energy and battery storage project involving 300-megawatt (MW) of solar energy generation consisting of approximately 686,880 solar modules rated at 585 watts (W) and a 300-MW alternating current (MWac) battery energy storage system. The project also includes two prefabricated structures, one of which would serve as the operation and maintenance (O&M) structure, with the other used for control services.

Figure 2 shows the project site boundary and the locations of two wells that may be used to serve the proposed project. These wells produce water from the underlying Pleasant Valley Subbasin of the San Joaquin Valley Groundwater Basin (SJVGB). For the purposes of this WSA, it is assumed that all water for the project would be produced from the Pleasant Valley Subbasin, and the analysis provided in this WSA therefore only applies for project water supply produced from the Pleasant Valley Subbasin.

Please see Section 4, *Pleasant Valley Subbasin*, for discussion of the project's water supply source, including figures portraying the extent and characteristics of the Pleasant Valley Subbasin.

2.3 Water Demands

For the purposes of this WSA, water demands for the project have been estimated based upon existing project design information and conservative assumptions developed to provide an analysis that accounts for all potential water needs of the project. Table 1, below, provides an overview of the estimated water demands for the proposed project, which are detailed under respective headings following the table.

Table 1 Overview of Proposed Project Water Demands

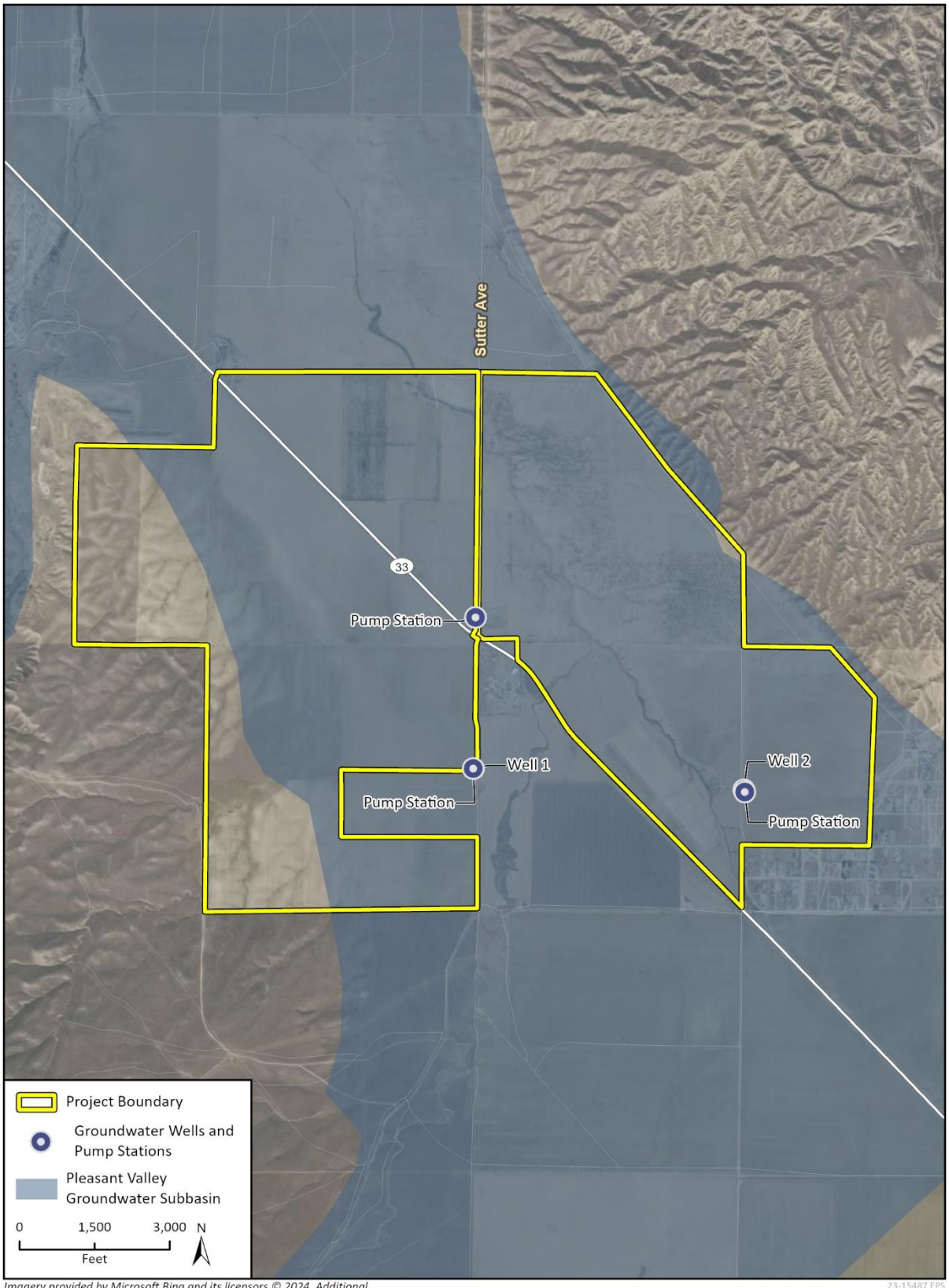
Project Phase (duration)	Water Demand Rate[1]	Total Water Demand – 22 years[1]	Total Water Demand – 37 years[2]
Construction (2 years)	540 AFY	1,080 AF	1,080 AF
Operations (20 years)	30.97 AFY	619 AF	n/a
Operations (35 years)	30.97 AFY	n/a	1,084 AF
Total	**n/a**	**1,699 AF**	**2,164 AF**

Notes: AF = acre-feet, AFY = acre-feet per year, n/a = not applicable

[1] Water demand during construction and operations and maintenance is assumed to be the same during all water year types.

[2] Operational water demands are calculated over 20 years as the future projection period required by SB 610, and over 35 years as the anticipated lifetime of the project (provided for full disclosure and to support a conservative analysis of total project water demands). The "Total Water Demand" columns in this table account for two years of project construction (same for both operational projections) plus the respective operational projection periods of 20 years, for 22 total years, and 35 years, for 37 total years.

Figure 2 Project Site Well Locations



Imagery provided by Microsoft Bing and its licensors © 2024. Additional data provided by the Dept. of Water Resources (DWR), 2024.

23-15487 EPS
Fig X Local Groundwater Wells

SB 610 requires that a WSA assess water supply availability and reliability over a future projection of 20 years. As shown above, construction and operational water demands of the proposed project are estimated to be 540 AFY and 30.97 AFY, respectively. The project's total water demand, including two years of construction and 20 years of operation, would be approximately 1,699 AF. To provide a conservative analysis for the purposes of this WSA, the assessment of water supply availability provided herein considers both the SB 610-required projection of 20 years and the project's operational lifetime projection of 35 years.

Over the project's anticipated operational lifetime of 37 years, the total water demand including two years of construction and 35 years of operations, would be approximately 2,164 AF. Under the SB 610-required future project of 20 years, the proposed project would require an average of 77 AFY, and over the anticipated 35-year lifetime of the project, the proposed project would require an average of 58 AFY. See Section 5, *Conclusions*, for discussion.

Construction

During construction of the proposed project, water would be needed for fugitive dust control during grading and ground disturbance to prepare the site for installation of project facilities. Table 2, below, provides an overview of construction water demands, discussed in detail below the table.

Table 2 Project Construction Water Demands

Water Use	Water Use Rate Per Day	Water Use Rate Per Year	Total Over 2 Years (Duration of Construction)
Dust suppression	1.48 AF/day[1]	540 AFY[2]	1,080 AF

Notes: AF = acre-feet; AFY = acre-feet per year

[1] The water use rate of 1.48 AF/day is rounded up from 1.4767 AF/day. Water demand during construction and operations and maintenance is assumed to be the same during all water year types.

[2] It is conservatively assumed that dust suppression would occur daily throughout the year, at a constant rate of 1.48 AF/day. The construction period would be approximately two years long.

Water demands for fugitive dust suppression were calculated based upon an empirical equation accounting for the following factors: average daytime evaporation rate (79.95 inches/year, based upon measurements from the Friant Government Camp Station, WRCC 2024); removal efficiency of the process for PM10 (80 percent); number of vehicles passing a point (five); and time between applications (six hours) (USDOW 2010a, USDOE 2010b). Based upon the project's proposed development area of 1,618 acres, dust suppression during project construction would require approximately 1.48 acre-feet per day of water, or 540 AFY. Over the project's approximately two-year construction period, water for dust suppression would total approximately 1,080 AF. No water would be needed for concrete manufacturing, as concrete would be purchased from a third-party contractor rather than manufactured onsite. In addition, no water would be needed for sanitary uses, as temporary facilities would be rented from a third-party contractor that would provide regular filling and servicing of the facilities.

Operation and Maintenance

During operation and maintenance of the proposed project, water would be required for emergency fire suppression (stored in tanks on-site), cleaning solar panels to maintain efficiency, conducting soil conditioning and minimal irrigation, and water for sheep that would be used for grazing to

control vegetation and weed growth. Table 3, below, provides an overview of operational water demands, discussed in detail below the table.

Table 3 Project Operational Water Demands

Water Use[1]	Water Use Rate[2]	Total over 20 years[3]	Total over 35 years[3]
Emergency fire suppression	0.2 AFY	4 AF	7 AF
Cleaning solar panels	15 AFY	300 AF	525 AF
Soil conditioning	15 AFY	300 AF	525 AF
Sheep grazing	0.77 AFY	15 AF	27 AF
Total	**30.97 AFY**	**619 AF**	**1,084 AF**

Notes: AF = acre-feet; AFY = acre-feet per year.

[1] It is assumed that water for sanitary uses will not be required because temporary facilities would be rented from a third-party contractor that would provide regular servicing of the facilities.

[2] Water demand during construction and operations and maintenance is assumed to be the same during all water year types.

[3] Operational water demands are calculated over 20 years as the future projection period required by SB 610, and over 35 years as the anticipated lifetime of the project (provided for full disclosure and to support a conservative analysis of total project water demands).

Water required for emergency fire suppression purposes would be stored onsite for use as needed; the storage tanks would have a total capacity of up to 30,000 gallons, or approximately 0.09 AF. To provide a conservative analysis for the purposes of this WSA, it is assumed that the storage tanks would be re-filled up to twice per year, such that the project would have an operational water demand for fire suppression of approximately 0.2 AFY.

Periodic washing of the solar modules would be conducted to remove accumulated dust and maximize efficiency. Water needs for solar module washing were calculated based upon a rate of 0.05 AFY per MW (USDOE 2010a, pg. 9.1-65, Table 9.1.9.2-2, *Estimated Water Requirements during Operations at Full Build-out Capacity at the Proposed Imperial East SEZ*) and project build-out of 300 MW, for a total annual water demand for module washing of approximately 15 AFY. In addition, the applicant has partnered with a local shepherd to explore utilizing sheep grazing for vegetation management during operation of the proposed project. Should grazing occur, water would be required for the estimated 1,500 to 2,000 sheep that would be deployed onsite for grazing, to control weeds and vegetation growth. Based on information provided by the shepherd, it is assumed the grazing season would occur over seven months, between February and July, each year. This duration is subject to change due to multiple factors, including but not limited to climatic variations. During the early grazing season when there is more precipitation (February, March, April), water needs for the sheep are estimated to be between approximately 500 and 750 gallons per day; to provide a conservative analysis for this WSA, it was assumed the early-season water needs would remain constant at 750 gallons per day. During the later grazing season when conditions are typically dryer (May, June, July), water needs for the sheep are estimated to be approximately 2,000 gallons per day. It is further assumed that sheep grazing would occur daily throughout the seven-month-long grazing season. In total, based upon these assumptions, approximately 0.77 AFY of water would be required for sheep that would be onsite during the grazing season.

Operational soil conditioning and occasional irrigation would also require up to approximately 15 AFY, calculated based upon an assumed rate of 0.05 AFY/MW, and accounting for the project's proposed 300 MWs.

The proposed project's total operational water demand would be approximately 619 AF over 20 years, or approximately 1,084 AF over 35 years. As described above for Table 3, for the purposes of providing full disclosure of the project water demands in this WSA, two operational periods are considered, including 20 years as the future projection period required by SB 610, as well as 35 years as the anticipated operational lifetime of the project.

3 Senate Bill 610 Applicability

SB 610 applies to projects that are subject to CEQA, meet the definition of "project" as outlined in SB 610, and would use groundwater to meet some or all water demands during project construction and/or operation and maintenance.

California Water Code, as amended by SB 610, requires a WSA to address the following questions:

- Is there a public water system that will service the proposed project? (see Section 3.3)
- Is there a current Urban Water Management Plan (UWMP) that accounts for the project demand? (see Section 3.4)
- Is groundwater a component of the supplies for the project? (see Section 3.5)
- Are there sufficient supplies to serve the project over the next twenty years? (see Section 3.6)

The primary question to be answered in a WSA is:

> Will the total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection meet the projected water demand of the proposed project, in addition to existing and planned future uses of the identified water supplies, including agricultural and manufacturing uses?

The following sections address the SB 610 WSA questions as they relate to the proposed project.

3.1 Subject to CEQA

California Water Code Section 10910(a) states that any city or county that determines a project (as defined in Section 10912) is subject to CEQA shall comply with Section 10910 of the California Water Code. The proposed project requires discretionary approvals. Therefore, the project is subject to CEQA, and project implementation requires certification of a CEQA document.

3.2 Definition of "Project"

California Water Code Section 10912(a) states that any proposed action which meets the definition of "project" under SB 610 is required to be analyzed in a WSA. SB 610 defines a "project" as any one of seven different development types, each of which is addressed below.

- **Residential Development.** A proposed residential development of more than 500 dwelling units is a "project" under SB 610. The project does not include any residential dwelling units.
- **Shopping Center or Business Establishment.** A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space is a "project" under SB 610. The project does not include a shopping center or business establishment.
- **Commercial Office Building.** A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space is a "project" under SB 610. The proposed project does not include commercial office space.
- **Hotel or Motel.** A proposed hotel or motel, or both, having more than 500 rooms is a "project" under SB 610. The project would not include a hotel or motel.

- **Industrial, Manufacturing, Processing Plant, Industrial Park.** A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area is a "project" under SB 610. The proposed project does not include an industrial, manufacturing, or processing plant, or an industrial park.
- **Mixed-Use Project.** A proposed mixed-use project that includes one or more of the projects specified earlier is a "project" under SB 610. The proposed project does not include one or more previously defined projects, and is not considered a mixed-use project.
- **Equivalent Project.** Any proposed use, regardless of type, which would demand an amount of water equivalent to or greater than the amount of water required by a 500-dwelling unit development is a "project" under SB 610.

Based on the overview of SB-610-defined projects provide above, the proposed project could qualify as both an "industrial, manufacturing, processing plant, industrial park" occurring on more than 40 acres of land, as well as an "equivalent project" which uses an amount of water equivalent to that required for a 500-unit residential development. To estimate the water demands of a 500-unit residential development in the project area, water demand factors from the City of Fresno's 2020 UWMP are considered. Average water demand factor for a single-family residential development in the City of Fresno is 2.54 AF per acre, where 4.25 dwelling units occur per acre, which equates to approximately 0.60 AFY per residence (City of Fresno 2021, pg. 4-12). This was determined by dividing 2.54 (AF/acre) by 4.25 (units/acre) to conclude 0.5976 AF/unit, which is rounded up to 0.60 AF/unit. Therefore, a 500-unit residential development would introduce a water demand of approximately 300 AFY (500 units multiplied by 0.60 AF/unit).

Table 1**,** provided in Section 2.3, *Water Demands*, shows the project's construction and operational water demands are estimated to be approximately 540 AFY and 31 AFY, respectively. The proposed project's construction water demand (540 AFY) is greater than the estimated water demands of a 500-unit residential development. The proposed project meets the definition of "project" provided by SB 610 and therefore, a WSA is required.

3.3 Public Water System

California Water Code Section 10912(c) defines a "public water system" as a system that has 3,000 or more service connections and provides piped water to the public for human consumption. The project site is not within incorporated city limits or the service area of an existing water supply provider. There is no public water system serving the project site.

3.4 Urban Water Management Plan

In California, every urban water supplier (publicly or privately owned) that delivers more than 3,000 AFY of water annually or serves more than 3,000 connections is required to prepare an UWMP to assess, among other metrics, the reliability of the supplier's water sources over a 20-year period, and including with consideration to normal water-year, single-dry water-year (periodic drought), and multiple-dry water-year (sustained drought) scenarios. These are the same requirements of a WSA as specified by SB 610; therefore, when a UWMP is available for a subject project site, it may be used to inform the project's WSA. UWMPs are updated every five years and submitted to the California Department of Water Resources (DWR) for review and approval.

The project site is not located within the service territory of an existing water supply provider or within the management area of an existing UWMP. Therefore, there is no UWMP which accounts for the water demands of the project.

3.5 Groundwater as Supply Source

California Water Code Section 10910(f), Parts 1 through 5, apply if groundwater is a source of water supply for a project. Water supply for the project would be produced from the Pleasant Valley Subbasin of the SJVGB, which underlies the project site. Section 4, *Pleasant Valley Subbasin*, provides detailed description of the Pleasant Valley Subbasin.

3.6 Supply Sufficiency for the Project

California Water Code Section 10910(c)(4) requires a WSA to illustrate the available water supplies, including the availability of these supplies in all water year conditions (normal, single dry and multiple dry years) over a 20-year planning horizon, and an assessment of how these supplies relate to project-specific and cumulative demands over the same 20-year period. The sufficiency of water from the Pleasant Valley Subbasin to be available and reliable as a supply source for the proposed project is assessed in the following sections. Section 5, *Conclusions*, provides a determination of water supply availability and reliability for the project.

4 Pleasant Valley Subbasin

This section provides an overview of the Pleasant Valley Subbasin of the SJVGB. The proposed project would use groundwater from the Pleasant Valley Subbasin; Figure 2 shows the location of on-site wells. Figure 3 on the following page provides an overview of the Pleasant Valley Subbasin, located adjacent to the west of the Westside Subbasin and adjacent to the north of the Kettleman Subbasin, both also within the SJVGB. As shown, the proposed project is located in the southern portion of the subbasin. As discussed in Section 2.2, *Project Description*, the analysis provided in this WSA only applies for project water supply produced from the Pleasant Valley Subbasin.

4.1 Groundwater Management

In 2014, the Sustainable Groundwater Management Act (SGMA) was signed into law and established a framework for local management of groundwater resources. The purpose of SGMA is to reverse overdraft conditions in affected basins, bring all groundwater basins into sustainable conditions through local management, and maintain sustainable conditions into the future. Under SGMA, designated Groundwater Sustainability Agencies (GSAs) are required to develop and implement GSPs for groundwater basins identified by the DWR as Medium or High Priority. The Pleasant Valley Subbasin is designated by DWR as Medium Priority.

There are three GSAs responsible for management of the Pleasant Valley Subbasin, including the Pleasant Valley GSA, which consists of the Pleasant Valley Water District (PVWD) and is the only public water agency within the subbasin, as well as the City of Coalinga GSA, and the County of Fresno GSA-Pleasant Valley (PV). Table 4, below, quantifies the jurisdiction of each GSA within the Pleasant Valley Subbasin, which are also portrayed in Figure 4.

Table 4 Groundwater Sustainability Agencies within the Pleasant Valley Subbasin

Jurisdiction	Acres	Portion of Subbasin
Pleasant Valey GSA (PVWD)	34,569	72%
County of Fresno GSA-PV	9,249	10%
City of Coalinga GSA	4,251	9%
Total	**48,159**	**100%**

Source: Pleasant Valley GSA et al. 2022, pg. 2-7

The table above indicates the jurisdiction of the Pleasant Valley GSA covers the majority of the Pleasant Valley Subbasin. Operating under a Memorandum of Understanding (MOU), the GSAs collectively prepared one GSP for the Pleasant Valley Subbasin, with each GSA responsible for implementing the GSP within their jurisdiction. Figure 4 shows the proposed project site is located within the Pleasant Valley GSA, which is synonymous with the PVWD service territory.

SGMA affords powers to the GSAs as enumerated in California Water Code Division 6 Part 2.74. These powers, which include, but are not limited to the following, will not be used in their full legal authority unless deemed necessary to achieve the goals of SGMA and sustainability in the Pleasant Valley Subbasin: acquire personal property such as land, rights-of-way, water rights, etc.; mandate registration of groundwater extraction facilities; regulate groundwater extractions; impose well operation requirements (Pleasant Valley GSA et al. 2022).

Figure 3 Pleasant Valley Subbasin, San Joaquin Valley Groundwater Basin

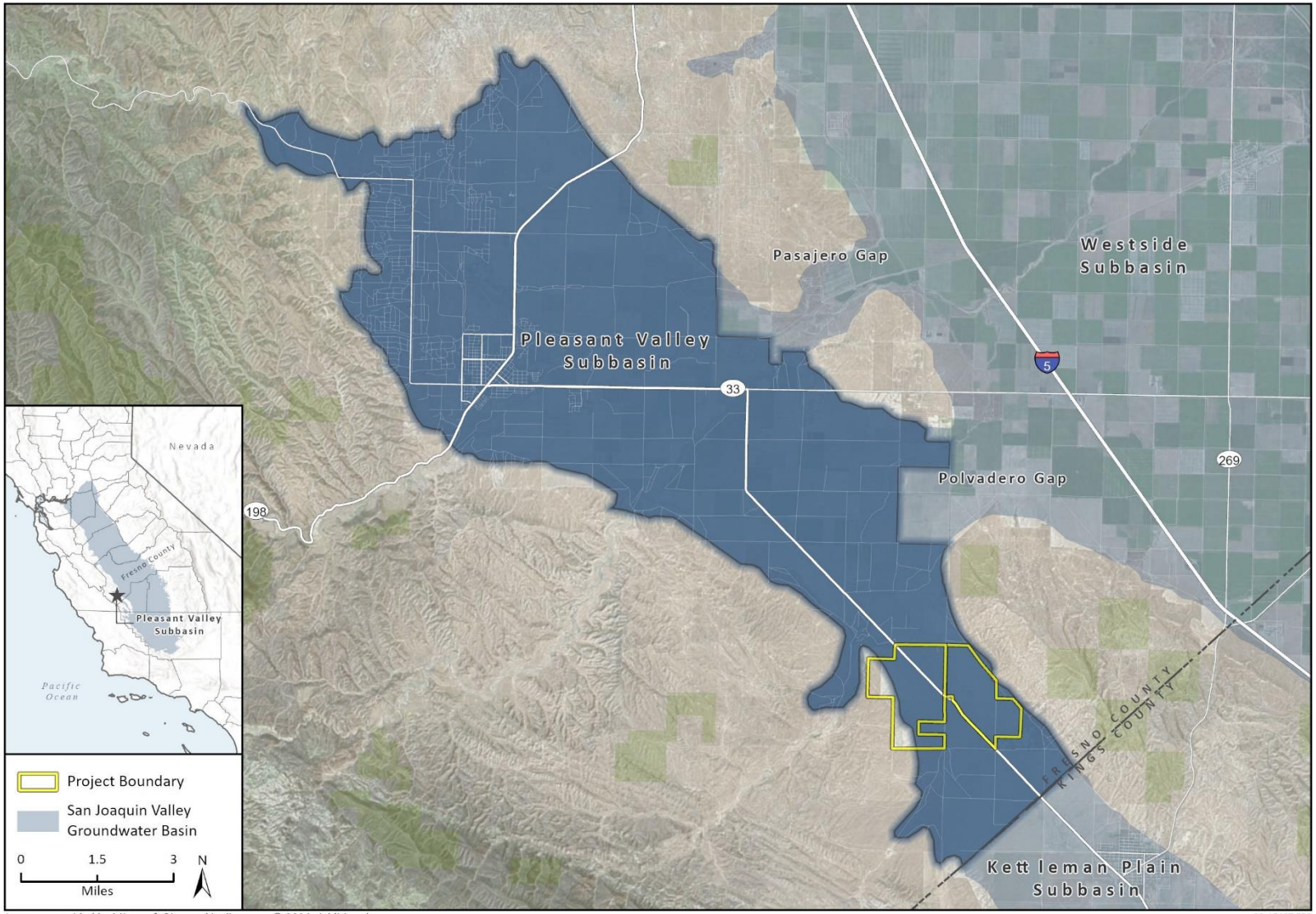
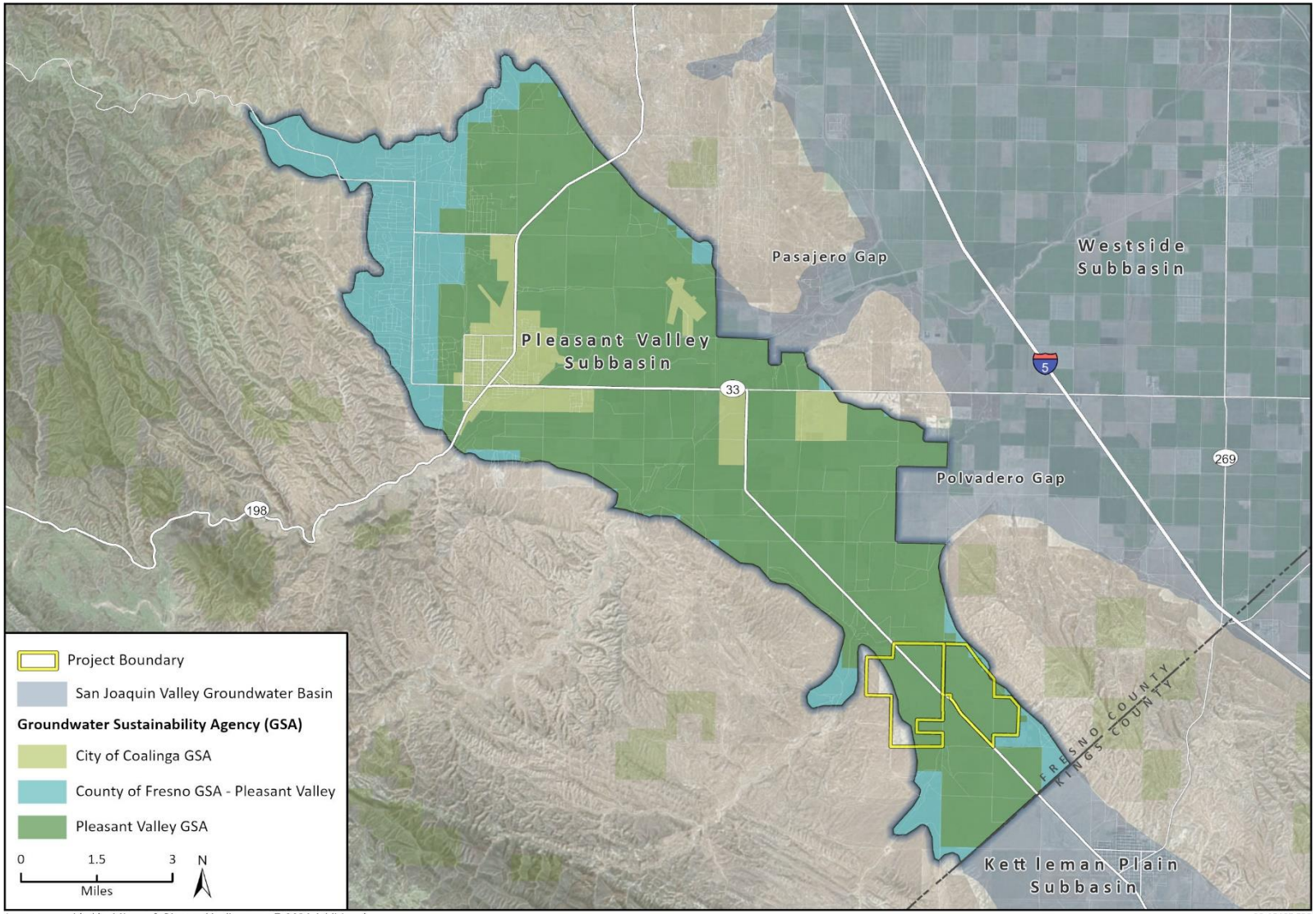


Figure 4 Pleasant Valley Subbasin, Groundwater Sustainability Agencies



Data collected by all three GSAs is shared among the GSAs in accordance with the MOU which serves to provide consistent and coordinated basin management. If monitoring data indicate the presence of "sustainability indicators" or undesirable results that could result in "significant and unreasonable effects" within the subbasin, the GSAs will implement actions to mitigate the undesirable results within 20 years of GSP adoption (which was in 2022).

4.2 Subbasin Characteristics

The Pleasant Valley Subbasin covers approximately 48,159 acres in Fresno County. It is adjacent to the west of the Westside Subbasin and adjacent to the north of the Kettleman Plain Subbasin, both also within the SJVGB. The Pleasant Valley Subbasin is bounded on the north by the Joaquin Ridge, on the west by the Tertiary and older marine sediments of the Coast Ranges, on the south by the Kettleman Hills and Plans and Kings County Line, and on the east by the Guijarral Hills and Westside Subbasin. No portion of the Pleasant Valley Subbasin is adjudicated, and there are no federal lands within the subbasin.

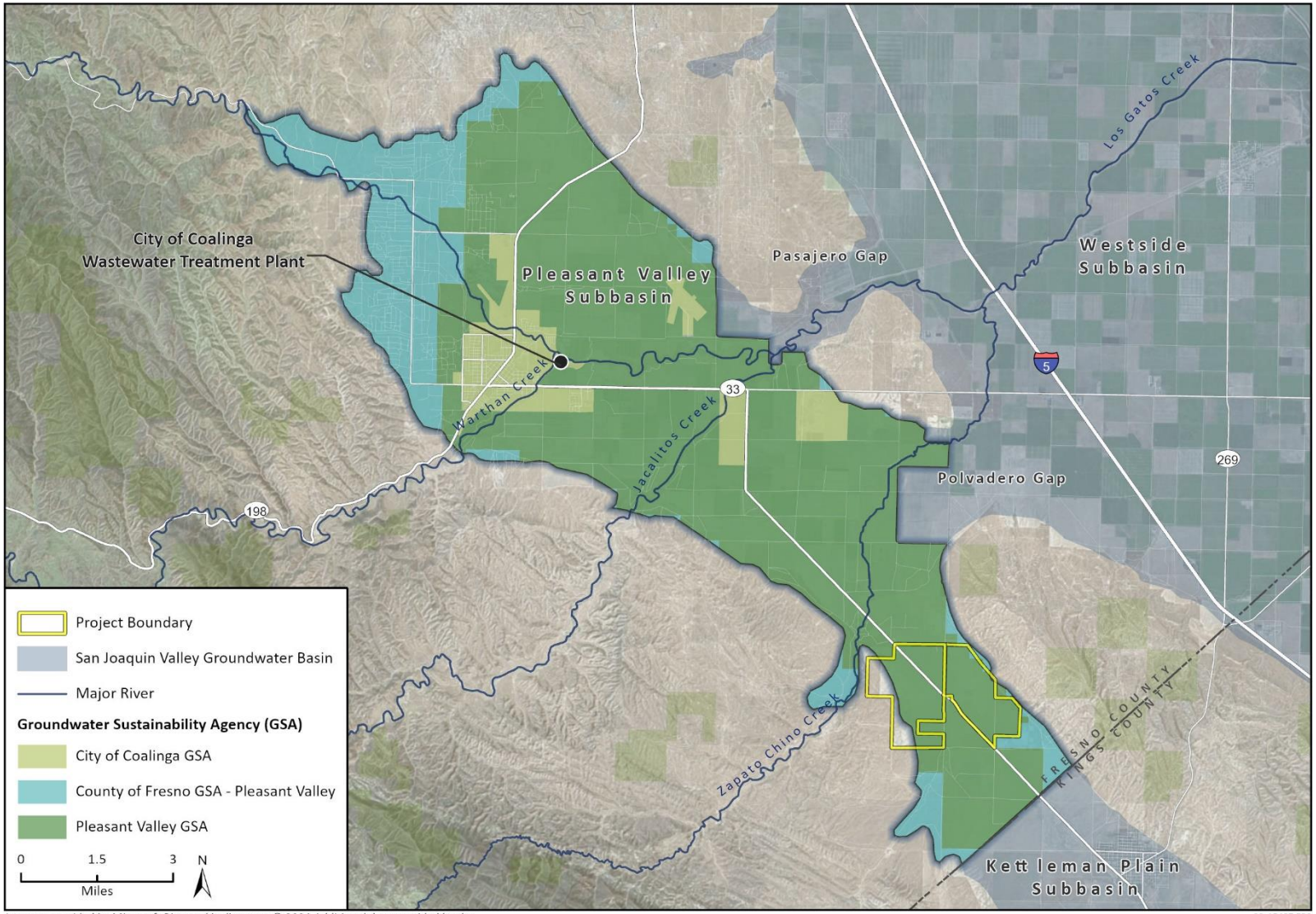
Aquifer System

Groundwater within the Pleasant Valley Subbasin is present within an upper, unconfined aquifer and a deeper, semi-confined aquifer. The primary source of recharge to the subbasin is from streamflow seepage and infiltration of stormwater flows. The depth to groundwater in the Pleasant Valley Subbasin ranges from approximately 350 feet below ground surface (bgs) in the south to 500 feet bgs in the north (Pleasant Valley GSA et al. 2022, pg. 3-19).

Groundwater pumping in the Pleasant Valley Subbasin has altered the direction of flow from natural conditions, under which flow would occur easterly, exiting to the Westside Subbasin via the Pasajero and Polvadero Gaps, shown on Figure 3. Due to over-pumping and increasing depth to groundwater, groundwater no longer flows easterly through the Polvadero Gap, although some groundwater still flows through the Pasajero Gap. Groundwater flow direction currently occurs from the north and south towards a pumping depression near the eastern-central portion of the subbasin. This pumping depression is located between Jacalitos Creek and Zapato Chino Creek, both aligned in a generally southwest-northeast orientation, north of the proposed project site, in the southern portion of the Pleasant Valley Subbasin. (Pleasant Valley GSA et al. 2022, pg. 3-19)

Figure 5 provides an overview of surface water features overlying the Pleasant Valley Subbasin. As noted above, primary recharge to the subbasin is from the infiltration of surface water in streams and from stormwater runoff. In addition, the City of Coalinga Wastewater Treatment Plant (WWTP) includes ponds that are used to provide infiltration of treated wastewater; as shown on Figure 5, the WWTP is located in the northern portion of the subbasin, just east of the City of Coalinga at the confluence of Los Gatos Creek and Warthan Creek (Pleasant Valley GSA et al. 2022, pg. 3-25). Although the subbasin receives recharge from surface water, due to the intermittent nature of surface water and depths to groundwater being 300 to 500 feet bgs, there is no interconnection between surface water and groundwater as defined in SGMA regulations (Pleasant Valley GSA et al. 2022, pg. 3-64); discussion under "Geologic Units," below, provides further context regarding the subbasin characteristics.

Figure 5 Surface Water Features



Geologic Units

Geologic units within the Pleasant Valley Subbasin include the following formations, presented in order of increasing depth below ground surface (Pleasant Valley GSA et al. 2022, pg. 3-24):

- **Halocene Alluvium** consists of highly lenticular deposits of poorly sorted clay, silt, and sand with occasional interbeds of well-sorted fine-to-medium-grained sand. The assumed thickness of this layer is no more than 300 feet. This layer is situated above the groundwater level throughout most of the Pleasant Valley Subbasin.
- **Plio-Pleistocene Tulare Formation** is similar to the Halocene Alluvium in that it consists of highly lenticular deposits of poorly sorted clay, silt, and sand, with occasional interbeds of well-sorted fine-to-medium-grained sand; however, the Plio-Pleistocene Tulare Formation has an estimated thickness of 3,000 feet, and unconformably overlies the older San Joaquin Formation (described below), with complete coverage over the older formations in some places.
- **San Joaquin Formation** consists of non-fossil-containing silt and clay beds alternating with beds of sandstone and conglomerate that contains marine and non-marine fossils.

Groundwater Quality

The constituents of concern for groundwater quality within the Pleasant Valley Subbasin include sodium adsorption ratio, bicarbonate, boron, and pH. Concentrations of total dissolved solids (TDS) range from 1,000 to 3,000 milligrams per liter (mg/L) with an average concentration of 1,500 mg/L (Pleasant Valley GSA et al. 2022, pg. 3-24). Overall, groundwater in the Pleasant Valley Subbasin is of poor quality for drinking water, due to conditions resulting from natural processes. Groundwater in the subbasin is suitable for irrigation of select crops that are tolerant to salinity, including cotton, hay, and pistachios (Pleasant Valley GSA et al. 2022, pg. 3-53).

4.3 Groundwater Budget

This section characterizes groundwater budgets for the Pleasant Valley Subbasin for historical average (1998-2010) conditions, current (2019) conditions, and future projected (2042) conditions. This subbasin, as with most other subbasins within the SJVGB, has historically been affected by overdraft conditions, which occur when more water leaves a basin than is recharged to the basin on an annual basis. Negative changes to groundwater in storage reflect overdraft conditions, whereas positive changes over time indicate recovery from overdraft conditions. In accordance with SGMA, overdraft conditions are required to be reversed by 2042, with sustainable (balanced) groundwater conditions maintained into the future.

Table 5, below, provides a summary overview of changes in groundwater storage for the Pleasant Valley Subbasin under historic, current, and future conditions, and the following Table 6 provides additional water budget data that was used to inform the summary shown below.

Table 5 Summary of Changes in Groundwater Storage

Description	Historical Avg (1998-2010)	Current (2019)	Projected Future (2042)
Groundwater Recharge[1]	21,700	25,977	24,260
Groundwater Pumping[2]	-34,400	-43,300	-23,336
Groundwater Outflow[3]	-1,700	-1,700	-1,700
Annual Change in Groundwater Storage	-14,400	-19,023	-776

[1] See Table 6, items 14 through 23

[2] See Table 6, items 3 through 6

[3] See Table 6, items 24 and 29

The data presented in Table 5, as informed by the detailed information in Table 6, reveal the following key findings regarding groundwater storage and budget for the Pleasant Valley Subbasin:

- The Pleasant Valley Subbasin has historically been affected by overdraft of approximately 14,400 AFY, where 14,400 AF more water was leaving the basin annually than recharging it.
- Groundwater in storage is decreasing more substantially under current conditions than under historical average conditions, increasing overdraft from approximately 14,400 AFY historically to 19,023 AFY in 2019.
- Future projections show substantially improved conditions compared to both current and historical average conditions, with overdraft decreasing from approximately 19,023 AFY in 2019 to approximately 776 AFY under projected future conditions. This represents an improvement of approximately 96 percent, which would be achieved through the implementation of projects and management actions (PMAs) discussed below in Section 5, *Water Supply Availability*.

The increased overdraft shown in 2019 is likely the result of higher crop water demands associated with increased plantings, as well as maturation of pistachio trees, while the reversal of overdraft in future conditions is associated with groundwater management efforts implemented under SGMA, as described further following Table 6 and in Section 5, *Water Supply Availability*.

Table 6 Water Balance Comparison for Historic, Current, and Future Conditions

Description*	Historical Average (1998-2010)	Current (2019)	Future Projected (2042)
Supply			
1) Surface Water – Irrigation	700	5,100	25,065
2) Surface Water – Municipal and Industrial (M&I)	5,500	5,500	6,200
3) Groundwater Pumping – Irrigation (Agency Wells)	0	0	0
4) Groundwater Pumping – Irrigation (Private Wells)	34,200	43,100	23,136
5) Groundwater Pumping – M&I (Agency Wells)	0	0	0
6) Groundwater Pumping – M&I (Private Wells)	200	200	200
7) Precipitation	28,200	28,200	28,200
8) Spill Inflows	0	0	0
9) Other Supply: Aquifer Compaction due to Subsidence	0	0	0
Total Supply	**68,800**	**82,100**	**85,500**

Description*	Historical Average (1998-2010)	Current (2019)	Future Projected (2042)
Demand – Consumptive Use			
10) Evapotranspiration – Applied Water	28,610	39,900	42,100
11) Evapotranspiration – Effective Precipitation	4,000	4,800	4,800
12) Evapotranspiration – M&I	2,900	2,800	3,300
13) Other Consumptive Use	0	0	0
Consumptive Use Subtotal	**35,510**	**47,500**	**50,200**
Demand – Groundwater Recharge			
14) Groundwater – Inflow	0	0	0
15) Deep Percolation – Irrigation	5,200	9,577	7,660
16) Deep Percolation – Precipitation	0	0	0
17) Deep Percolation – M&I	1,800	1,700	1,900
18) Seepage – Channels (& Pipeline Leakage)	200	200	200
19) Seepage – Reservoirs	0	0	0
20) Urban Stormwater – Recharge	500	500	500
21) Local Streams / Rivers – Recharge	14,000	14,000	14,000
22) Groundwater – Intentional Recharge	0	0	0
23) Other Recharge	0	0	0
Groundwater Recharge Subtotal	**21,700**	**25,977**	**24,260**
Demand – Nonrecoverable Losses			
24) Groundwater – Outflow	1,700	1,700	1,700
25) Evaporation – Channels	0	0	0
26) Evaporation – Reservoirs & Recharge Basins	0	0	0
27) Precipitation – Evaporation and Runoff	24,200	23,400	23,400
28) Operational Spills	0	0	0
29) Groundwater – Export	0	0	0
30) Other Losses	0	0	0
Nonrecoverable Subtotal	**25,900**	**25,100**	**25,100**
Demands Total (Consumptive Use + Groundwater Recharge + Nonrecoverable)	83,110	98,577	99,560

Source: Pleasant Valley GSA et al. 2022, pgs. 3-88, 3-90, 3-96

Notes:

1) Surface water for agricultural irrigation comes from a group of private landowners that purchase and import Central Valley Project (CVP) water from the City of Coalinga and other CVP contract agencies, which landowners receive from the Southern Pipeline off the Coalinga Canal.

2) The City of Coalinga uses surface water to meet all of its M&I demands, which are expected to increase by 2042 based upon projections from the City's 2020 UWMP.

3) and 4) Most groundwater pumping for irrigation has either not been measured or has not been reported to the GSAs. In groundwater only areas, pumping is assumed equivalent to crop evapotranspiration demand minus precipitation, divided by average irrigation efficiency. In conjunctive use areas (using both surface water and groundwater), groundwater pumping rates are calculated using water budget variables including crop applied water demands and surface water deliveries. Moving forward, the best way to track and account for groundwater pumpage is to measure it with totalizing flowmeters.

Description*	Historical Average (1998-2010)	Current (2019)	Future Projected (2042)

5) and 6) Groundwater pumping from both private and agency wells for M&I uses has remained consistent between historical, current, and projected conditions.

7) Precipitation data is available for 1942 to 2020 from the National Climatic Data Center (NCDC), with average precipitation of 7.46 inches from 1942 to 2019, within which the average precipitation from 1998 to 2010 was 7.05 inches per year.

8) Spill inflows represent spills of surface water into an irrigation or water district; no operational spills were identified.

9) Water release from aquifer compaction (land subsidence) occurs when clay collapses due to lowered water levels in confined aquifers; available data indicate minimal subsidence during the historical period (1998-2010) and subsidence between zero and 0.5 inch between 2015 and 2018. Therefore, historical subsidence is assumed to be negligible, and no subsidence is anticipated to occur in the future due to the stabilization of groundwater conditions through implementation of the GSP.

10) This variable represents crop evapotranspiration minus precipitation, estimated using cropping land use data and selected crop evapotranspiration rates.

11) Effective precipitation is the amount of rainfall beneficially used by crops, either directly as transpiration or through storage in the root zone and evapotranspiration in subsequent periods.

12) Evapotranspiration from M&I water primarily consists of landscape irrigation demands plus additional evaporation from swimming pools and wash water.

13) No other consumptive uses were identified for the subbasin.

14) No groundwater is believed to flow into the subbasin through adjacent alluvial basins to the east; some groundwater may enter the subbasin from mountain-front inflow from the west, but it is believed to enter the alluvial basin through streamflows, and is therefore represented in item (21), Local Streams/Rivers – Recharge.

15) Deep percolation of irrigation was estimated by assuming the amount of water applied beyond the evapotranspiration rate infiltrates past the root zone into the groundwater system; the quantity of deep percolation is therefore a function of irrigation efficiency, estimated to be approximately 82 percent.

16) Deep percolation of precipitation was estimated based on soil moisture budgets over a 50-year period; deep percolation of precipitation would not occur when annual precipitation is less than 9.69 inches (the average rate of precipitation from 1942 to 2019 was 7.46 inches).

17) Deep percolation of M&I water accounts for indoor water usage sent to treatment plants and septic systems, as well as outdoor landscape and wash water that percolates past the root zone to the groundwater.

18) There are no open channels in the subbasin. Water is conveyed through pipelines in the City of Coalinga, with an assumed average leakage rate of four percent, and the Southern Pipeline off the Coalinga Canal, with no leakage assumed due to the pipeline's recent construction.

19) No surface reservoirs are present in the subbasin, and there are no plans to install recharge basins or recharge in local creeks in the future.

20) The City of Coalinga has several stormwater basins for collecting urban runoff; it was assumed that 20 percent of rainfall in the City of Coalinga percolates from the City's stormwater basins.

21) Four primary streams flow into the subbasin, including Los Gatos Creek, Warthan Creek, Jacalitos Creek, and Zapato Chino Creek. Total runoff within the subbasin is not known; however, assuming the runoff throughout the valley is proportional to that in the Los Gatos Creek drainage, a rough estimate of average runoff from 1937 to 1951 is about 16,000 AFY. This rate represents flow into Pleasant Valley; however, not all inflow would percolate through the ground surface. Streamflow seepage in the watershed is estimated to average 14,000 AFY based on evaluation of historical water budgets.

22) and 23) No intentional groundwater recharge or other recharge activities are present in the subbasin.

24) Groundwater flows out of Pleasant Valley through the Pasajero Gap, where groundwater level data show an 80-foot water level difference over 2.75 miles across the Pasajero Gap, resulting in estimated outflow of 1,700 AFY.

25) All water in the subbasin is transported by pipeline and there are no evaporative losses from conveyance channels.

26) There are no surface reservoirs (except for enclosed steel tanks) or recharge basins in the subbasin and no plans to install recharge basins or recharge in local creeks in the future.

27) All precipitation that is not used in transpiration from crops is considered to be evaporated; this is a non-recoverable loss that does not affect supplies or demands. It either evaporates or is utilized by pasture / rangeland.

28) There are no known operational spills in the subbasin.

Description*	Historical Average (1998-2010)	Current (2019)	Future Projected (2042)
29) Groundwater exports can occur from water transfers, exchanges, banking agreements, or groundwater deeds; there are no known exports from the subbasin.			
30) No other nonrecoverable losses of groundwater are identified in the subbasin.			

As stated above, the data presented in Table 6, as sourced from the Pleasant Valley Subbasin GSP, was used to inform the summary of change in groundwater in storage presented in Table 5. Both tables indicate the Pleasant Valley Subbasin continues to be characterized by overdraft conditions, but is recovering from the extent of overdraft affecting the basin. Specifically, as shown in Table 5, the Pleasant Valley Subbasin is recovering from overdraft conditions at a rate of 793 AFY. This ongoing rate of overdraft recovery will result in reduction of the subbasin's negative balance to 776 AF in 2042. Assuming the subbasin continues to recover from overdraft at a rate of 793 AFY, positive conditions would be achieved by 2043.

4.4 Projects and Management Actions

As noted above, the improved groundwater storage projected for future conditions is a result of PMAs implemented in accordance with the GSP for the Pleasant Valley Subbasin, in compliance with SGMA. SGMA requires local agencies to implement PMAs to ensure activities within the basin operate within the sustainable yield of the basin. SGMA legislation defines "sustainable yield" as the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually without causing an undesirable result (DWR 2016).

Table 7, below, provides an overview of the types of potential PMAs that may be implemented by the Pleasant Valley Subbasin GSAs. Projects will be developed and implemented in areas of greatest need first, or those areas where overdraft conditions and the rates of groundwater level decline are the greatest (Pleasant Valley GSA et al. 2022, pg. 6-2).

Table 7 Projects and Programs for Mitigating Groundwater Overdraft

No.	Description	Supply (s) or Demand (D) action	Years to Implementation
PROJECTS – Surface Water			
1	Groundwater Recharge ▪ Recharge basins ▪ Dry wells ▪ Injection wells ▪ Intentional irrigation field flooding ▪ Unlined canals ▪ Reclaimed water	S	1-5
2	Groundwater Banking	S	1-5
3	Direct Use of Flood and Storm Water	S	1-5
4	Import New Surface Water Supplies	S	1-5
5	Increase Surface Water Storage	S	>5
6	Increase Conveyance Capacity	S	1-5

No.	Description	Supply (s) or Demand (D) action	Years to Implementation
MANAGEMENT ACTIONS – Land Management			
7	Agricultural Land Conversion ▪ Sell/lease land and reserve groundwater rights ▪ Agency purchases and fallows land from willing landowners ▪ Fallow land and flood fields/build recharge basins ▪ Watershed management	D	1-5
8	Deficit Irrigation	D	0-1
9	Urban Land Use Regulations	D	0-1
MANAGEMENT ACTIONS – Groundwater Use Restrictions			
10	Prohibit Groundwater Exports	D	0-1
11	Groundwater Metering and Pumping Restrictions	D	0-1; 1-5
12	Groundwater Pumping Fees	D	0-1
13	Wellhead Fees (annual or new wells)	D	0-1
14	Additional Well Permit Requirements	D	0-1
MANAGEMENT ACTIONS – Water Conservation			
15	Water Use Restrictions in Droughts	D	0-1
16	Urban Water Conservation	S	0-1
17	Urban Water Recycling	S	>5
18	Agricultural Water Recycling	D	1-5
19	Tiered Pricing / Fines for Overuse	S	0-1
MANAGEMENT ACTIONS – Other			
20	Blend Poor and Good Quality Waters	S	1-5
21	Groundwater Credits	n/a	0-1
22	Rainwater Harvesting	S	1-5
23	Public Education	D	0-1

Source: Pleasant Valley GSA et al. 2022, pg. 6-3

The table above identifies a variety of PMAs that may be implemented within the Pleasant Valley Subbasin towards the purpose of reversing overdraft and achieving sustainable conditions.

Each of the three GSAs is responsible for developing and implementing PMAs within their respective jurisdictions, based upon the issues of greatest need and PMAs that would most effectively address those issues to reverse overdraft and provide sustainable conditions across the overall Pleasant Valley Subbasin. Table 8, below, provides an overview of potential projects that have been identified by the GSAs and are in various stages of development and implementation, as well as the amount of estimated groundwater recharge associated with each project. Additional projects may be added or developed as GSP implementation proceeds.

Table 8 List of Potential Projects

Project	Title	Estimated Recharge (AFY)
1	North Canal Pipeline	12,000
2	South Canal Pipeline Expansion	4,000
3	Los Gatos Creek Gravel Pits	720
4	Zapato Creek Instream	75
5	Import Surface Water Supplies	20,000
6	City of Coalinga Surface Water	2,000-3,000
7	City of Coalinga WWTP Recharge	n/a
8	Los Gatos Creek Surface Water Diversion	n/a
9	Los Gatos in-Creek Recharge	n/a
10	Jacalitos Creek Surface Water Diversion	n/a
11	Jacalitos Creek in-Creek Recharge	n/a
12	Zapato Creek Chino Surface Water Diversion	n/a
13	Zapato Creek in-Creek Recharge	n/a
14	Flood Mar	n/a
15	Intentional Recharge Basins	n/a
16	Dry Well Recharge	n/a
17	Cloud Seeding	n/a

Source: Pleasant Valley GSA et al. 2022, pg. 6-8

The future projected groundwater supply conditions summarized in Table 5 and detailed in Table 6 account for the implementation of projects with quantified recharge benefits, as listed in Table 8, above. The GSAs will develop and seek funding for additional projects with potential to provide the maximum benefit possible to sustainable groundwater conditions. Each GSA will prioritize and secure funding for projects within their jurisdictions as opportunities become available. The GSAs will seek and encourage projects that provide multiple benefits, as feasible, and all projects will be supported by the best available information and science. (Pleasant Valley GSA et al. 2022, pg. 6-9).

5 Conclusions

This WSA identifies and characterizes all known and potential water demands of the proposed project, and compares the estimated water supplies available in the Pleasant Valley Subbasin over a 20-year projection, to assess water supply availability and reliability for compliance with California Water Code as amended by SB 610. Varying drought conditions and ongoing long-term supply management activities were also considered in supply availability discussions.

The proposed project would introduce a new use of groundwater from the Pleasant Valley Subbasin, replacing existing agricultural irrigation demands on that property. As presented in Section 2.3, Water Demands, Table 1, Overview of Proposed Project Water Demands, and detailed under respective subheadings for "Construction" and "Operation," proposed project water demands include 540 AFY over a two-year construction period and up to approximately 31 AFY during the operation and maintenance period.

- Under the SB 610-required future projection of 20 years, total water demands (two years of construction plus 20 years of operation) would be 1,699 AF, for an average of 77 AFY.
- Over the anticipated 35-year lifetime of the project, total water demands (two years of construction plus 35 years of operation) would be 2,164 AF, for an average of 58 AFY.

Under both projection scenarios above, the project's construction water demands are averaged into annual demands over the duration of each scenario. Under the 20-year projection required by SB 610, the proposed project's average water demand of approximately 77 AFY is 1,047 AFY less than the 1,124 AFY accounted for in the GSP as being applied on the project site if it were to be irrigated, as allowed under current land use classifications. Under the 35-year operational projection, the project's average water demand of approximately 58 AFY is 1,066 AFY less than accounted for in the GSP. Table 9, below, provides a comparison of the proposed project's water use rates under 20-year and 35-year operational projections to the quantity of water accounted for in the GSP as being used on the project site if it were to be irrigated in accordance with existing allowable uses.

Table 9 Existing Water Use versus Proposed Water Use on Project Site

Factor	Quantity	Percentage of Existing Use
Existing water use potential, based upon land use classification and water usage reported in the GSP	1,124 AFY	n/a
Proposed project water demand rate over 20 years of operation	77 AFY	6.8%
Proposed project water demand rate over 35 years of operation	58 AFY	5.2%

As shown above, the proposed project's water demands represent a small portion of the amount of water that would be applied on the project site if it were irrigated for hay and grain crops, as allowed under existing zoning. Water supply availability for the proposed project is assessed based upon the status of sustainable groundwater management in the Pleasant Valley Subbasin. The Pleasant Valley Subbasin GSAs have identified a variety of tools to achieve sustainable groundwater management, which would facilitate water supply availability in the future. These tools fall into two primary categories: 1) project development for water supply augmentation; and 2) management actions for demand reduction. (Pleasant Valley GSA et al. 2022, pg. 6-1)

As discussed in Section 4.3, under existing groundwater management practices and PMAs being implemented in accordance with the Pleasant Valley Subbasin GSP, groundwater conditions are projected to recover from historic and current overdraft by 2043, at an assumed constant rate of 793 AFY. The groundwater budget and supply availability projections in the Pleasant Valley Subbasin GSP account for the varying climatic conditions required for consideration by SB 610, including normal water years, single-dry years, and multiple-dry-year conditions. The analysis provided in this WSA was directly informed by the GSP, and therefore also accounts for varying climatic scenarios. As shown above, under the 20-year and 35-year projections, respectively, the proposed project would reduce water demands on the project site by approximately 1,047 AFY and 1,066 AFY, respectively. Implementation of the proposed project could therefore accelerate the reversal of overdraft and achievement of sustainable groundwater conditions in the Pleasant Valley Subbasin.

Based upon the information and analysis provided in this WSA, sufficient water supply would be available for the proposed project under varying climatic conditions, under both the SB 610-required projection of 20 years and the project's anticipated operational lifetime of 35 years.

6 References

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Appendix K
Land Use and Planning

K.1 Consistency with Fresno County General Plan

APPENDIX K.1
Consistency with Fresno County General Plan

K.1 Approach to Analysis

Pursuant to California Environmental Quality Act (CEQA) Guidelines Section 15125(d), this analysis describes applicable general plans and regional plans and policies and the manner in which they apply to the Cornucopia Hybrid Project (the Project), and then evaluates the consistency of the Project with these plans and policies. Each environmental resource section in Chapter 3, *Environmental Analysis*, identifies the applicable statutes, regulations, ordinances, plans, policies, and standards that pertain to that resource. The following analysis specifically addresses the Project's consistency with the Fresno County General Plan. The consistency analysis for other applicable plans, policies, and regulations is provided in the pertinent topical sections of Chapter 4, in the context of the subject resource area. **Table K.1-1** provides an index of such discussions, listing both CEQA significance criteria and location in this document where the reader can find the impact evaluation.

The Fresno County General Plan contains seven policy elements that guide physical development within the County: Economic Development; Agriculture and Land Use; Transportation and Circulation; Public Facilities and Services; Open Space and Conservation; Health and Safety; and Housing. Consistent with CEQA Guidelines section 15125(d), General Plan policies that are not relevant to the Project are not discussed here. For example, policies guiding County review of specific plans or policies related to land use designations that are not present within the Project boundary are not addressed.

Because policy language found in a general plan is subject to varying interpretations, it can be difficult to determine whether a proposed project is consistent or inconsistent with such policies. Furthermore, because plans often contain numerous policies emphasizing differing legislative goals, a project may be consistent with a general plan, taken as a whole, even though it may appear to be inconsistent with specific policies within the plan. The board or commission that enacted the plan or policy generally determines the meaning of such policies; these interpretations prevail if they are "reasonable," even though other reasonable interpretations may also exist. In light of these considerations, the consistency evaluation in this Draft EIR reflects the County's determination that, as a whole, that the Project is consistent with applicable plans and policies.[1] Finally, the Project is compared to policies in each of the General Plan elements.

[1] Direct and indirect physical impacts resulting from Project implementation are not addressed in this section, but in the appropriate technical sections of this Draft EIR (See Chapter 4, *Environmental Analysis*). Any conflict between the Project and General Plan policies that relates to physical environmental issues are discussed in Chapter 4. The compatibility of the Project with Fresno County General Plan policies that do not relate to physical environmental issues will be considered by decision-makers as part of their decision about whether to approve or deny the Project. Any potential conflicts identified as part of the process would not alter the physical environmental effects of the Project.

TABLE K.1-1
CEQA SIGNIFICANCE CRITERIA REQUIRING EVALUATION OF CONSISTENCY WITH PLANS AND POLICIES

Significance Criteria (from Appendix G of the CEQA Guidelines)	EIR Section
Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state or locally designated scenic highway	Section 4.2, *Aesthetics*
Conflict with existing zoning for agricultural use, or a Williamson Act contract	Section 4.3, *Agriculture and Forestry Resources*
Conflict with or obstruct implementation of the applicable air quality plan	Section 4.4, *Air Quality*
Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	Section 4.5, *Biological Resources*
Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	Section 4.5, *Biological Resources*
Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.	Section 4.9, *Greenhouse Gas Emissions*
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.	Section 4.12, *Land Use and Planning*
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	Section 4.13, *Mineral Resources*
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	Section 4.14, *Noise and Acoustics*
Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.	Section 4.18, *Transportation*
Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Section 4.18, *Transportation*

Tables K.1-2 through K.1-6 summarizes the Project's consistency with applicable goals, and policies of the other elements of the Fresno County General Plan, as discussed below. As shown in the table, after the implementation of the various mitigation measures identified in this Draft EIR, the Project would be consistent with applicable objectives, goals, and policies.

K.2 Consistency with the Fresno County General Plan Agriculture and Land Use Element

The Agriculture and Land Use Element describes the Countywide land use concept and is intended to help the County achieve integrated and coordinated land use, open space, and transportation by defining areas of intended growth and areas that should be preserved.

The Project site is zoned AE 20 and 40, Exclusive Agricultural with a minimum lot size of 20 and 40 acres (Fresno County 2024a). As indicated in Section 816 of the Fresno County Zoning Code, permitted uses in AE districts include raising livestock, poultry, and plant crops; single-family residences and accessory and farm buildings; and other agricultural and home occupation uses. Electrical transmission and distribution substations are allowed in AE districts subject to director review and approval (Section

816.2(D)). Additionally, Fresno County processes PV solar facilities through the Unclassified Conditional Use Permit process based on Section 853.B(14) of the Zoning Ordinance. Although the Project would occupy land designated as agriculture, it would not conflict with the County's preservation and conservation objectives. The Project's physical environmental impacts on habitat, recreation, scenic values, mineral resource extraction, and natural resource preservation are discussed in Chapter 4 of this Draft EIR. **Table K.1-2** evaluates the Project's consistency with the Countywide agriculture and land use policies.

TABLE K.1-2
FRESNO COUNTY GENERAL PLAN AGRICULTURE AND LAND USE ELEMENT POLICIES

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy LU-A.1: Agricultural Land Conservation. The County shall maintain agriculturally-designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available or can be provided consistent with the adopted General or Community Plan.	***Consistent.*** The Project site is zoned AE 20 and 40 (Exclusive Agricultural, 20-acre and 40-acre minimum). As indicated in Section 816.2(D) of the Fresno County Zoning Code, permitted uses in AE districts include electrical transmission and distribution.
Policy LU-A.2: Agriculture-related Uses. The County shall allow by right in areas designated Agriculture activities related to the production of food and fiber and support uses incidental and secondary to the on-site agricultural operation.	***Consistent.*** The Project site is AE 20 and 40 (Exclusive Agricultural, 40-acre minimum). As indicated in Section 816.2(D) of the Fresno County Zoning Code, permitted uses in AE districts include electrical transmission and distribution.
Policy LU-A.3: Special Agricultural Uses. The County may allow by discretionary permit in areas designated Agriculture, special agricultural uses and agriculturally-related activities, including value added processing facilities, and certain non-agricultural uses. Approval of these and similar uses in areas designated Agriculture shall be subject to the following applicable criteria: a. The use shall provide a needed service to the surrounding agricultural area which cannot be provided more efficiently within urban areas or which requires location in a non-urban area because of unusual site requirements or operational characteristics; b. The use should not be sited on productive agricultural lands if less productive land is available in the vicinity; c. The operational or physical characteristics of the use shall not have a detrimental impact on water resources or the use or management of surrounding properties within at least one-quarter (1/4) mile radius; d. A probable workforce should be located nearby or be readily available; e. For proposed agricultural commercial center uses the following additional criteria shall apply: 1. Commercial uses should be clustered in centers instead of single uses. 2. To minimize proliferation of commercial centers and overlapping of trade areas, commercial centers shall be located a minimum of two (2) miles from a city sphere of influence and four (4) miles from any existing or approved agricultural or rural residential commercial center or designated commercial area. 3. New commercial uses should be located within or adjacent to existing centers. 4. Sites should be located on a major road serving the surrounding area. 5. Commercial centers should not encompass more than one-quarter (1/4) mile of road frontage, or oneeighth (1/8) mile if both sides of the road are involved, and should not provide potential for developments exceeding ten (10) separate business activities, exclusive of caretakers' residences;	***Not applicable.*** The policies pertain to County policy actions that are not related to the Project or review of its associated permit applications.

Goal/Objective/Policy Text	Project Consistency Evaluation
f. For proposed value-added agricultural processing facilities, the evaluation under criteria "a" above, shall consider the service requirements of the use and the capability and capacity of cities and unincorporated communities to provide the required services; and g. For proposed churches and schools, the evaluation under criteria LU-A.3a above shall include consideration of the size of the facility. Such facilities should be no larger than needed to serve the surrounding agricultural community. h. When approving a discretionary permit for an existing commercial use, the criteria listed above shall apply except for LU-A.3b, e2, e4, and e5. (RDR)	
Policy LU-A.4: Resource Extraction in Agricultural Areas. The County shall require that the recovery of mineral resources and the exploration and extraction of oil and natural gas in areas designated Agriculture comply with the Mineral Resources Section of the Open Space and Conservation Element.	***Not Applicable.*** The Project does not include mineral resources recovery of oil and natural gas extraction.
Policy LU-A.5: Existing Agricultural Commercial Center Zoning. The County shall allow the Agricultural Commercial (AC) center zone district to remain in areas designated Agriculture if the land was so zoned prior to September 20, 1990. Commercial uses legally established prior to that date shall be deemed conforming, but expansion or the addition of new commercial uses shall require a discretionary permit as provided in Policy LU-A.3.	***Not Applicable.*** The Project site is zoned AE 20 and 40, Exclusive Agricultural.
Policy LU-A.6: Minimum Agricultural Parcel Size. The County shall maintain twenty (20) acres as the minimum permitted parcel size in areas designated Agriculture, except as provided in Policies LU-A.9, LUA. 10, and LU-A.11. The County may require parcel sizes larger than twenty (20) acres based on zoning, local agricultural conditions, and to help ensure the viability of agricultural operations.	***Not Applicable.*** The Project does not include subdivision of land into smaller parcels.
Policy LU-A.7: Exceptions to Minimum Agricultural Parcel Size. The County shall generally deny requests to create parcels less than the minimum size specified in Policy LU-A.6 based on concerns that these parcels are less viable economic farming units, and that the resultant increase in residential density increases the potential for conflict with normal agricultural practices on adjacent parcels. Evidence that the affected parcel may be an uneconomic farming unit due to its current size, soil conditions, or other factors shall not alone be considered a sufficient basis to grant an exception. The decision-making body shall consider the negative incremental and cumulative effects such land divisions have on the agricultural community.	***Not Applicable.*** The Project does not include subdivision of land into smaller parcels.
Policy LU-A.8: Agricultural Parcel Density. The County shall allow by right on each parcel designated Agriculture and zoned for agricultural use one (1) single family residential unit. One (1) additional single family residential unit shall be allowed for each twenty (20) acres in excess of twenty (20) acres where the required minimum parcel size is twenty (20) acres. One (1) additional single family residential unit shall be allowed for each forty (40) acres in excess of forty (40) acres where the required minimum parcel size is forty (40) acres. The County may, by discretionary permit, allow a second unit on parcels otherwise limited by this policy to a single unit.	***Not Applicable.*** The Project does not propose any dwelling units.
Policy LU-A.9: Homesite Minimum Parcel Size Exceptions. The County may allow creation of homesite parcels smaller than the minimum parcel size required by Policy LU-A.6, if the parcel involved in the division is at least twenty (20) acres in size, subject to the following criteria: a. The minimum lot size shall be sixty thousand (60,000) square feet of gross area, except that a lesser area shall be permitted when the owner submits evidence satisfactory to the Health Officer that the soils meet the Water Quality Control Board Guidelines for liquid waste disposal, but in no event shall the lot be less than one (1) gross acre; and	***Not Applicable.*** The Project does not propose homesites.

Goal/Objective/Policy Text	Project Consistency Evaluation
b. One of the following conditions exists: 1. A lot less than twenty (20) acres is required for financing construction of a residence to be owned and occupied by the owner of abutting property; or 2. The lot or lots to be created are intended for use by persons involved in the farming operation and related to the owner by adoption, blood, or marriage within the second degree of consanguinity, there is only one (1) lot per related person, and there is no more than one (1) gift lot per twenty (20) acres; or 3. The present owner owned the property prior to the date these policies were implemented and wishes to retain his/her homesite and sell the remaining acreage for agricultural purposes. Each homesite created pursuant to this policy shall reduce by one (1) the number of residential units otherwise authorized on the remainder parcel created from the original parcel. The remainder parcel shall be entitled to no less than one residential unit.	
Policy LU-A.10: Substandard Lots for Agricultural Commercial. The County may allow by discretionary permit creation of substandard lots when necessary for the development of an agricultural commercial center pursuant to Policy LU-A.3 or in conjunction with development within a designated commercial interchange within the Westside Freeway Corridor Overlay. Approval of such parcels shall take into consideration the proposed use of the property, surrounding uses, and the potential for abandonment of the planned commercial use at a future date. Appropriate conditions shall be applied to minimize adverse impacts on surrounding agricultural operations. Parcels for agricultural commercial centers shall in no case be less than one (1) gross acre.	***Not Applicable.*** The Project does not propose an agricultural commercial center.
Policy LU-A.11: Substandard Lots for Resource Exploration and Extraction. The County may allow by discretionary permit creation of substandard size lots when such action is deemed necessary by the Board of Supervisors for the recovery of mineral resources and the exploration and extraction of oil and gas in accordance with the policies of Section OS-C, Mineral Resources, of the Open Space and Conservation Element. In no case shall such action result in creation of lots less than five (5) gross acres in size.	***Not Applicable.*** The Project does not include mineral resources recovery of oil and natural gas extraction.
Policy LU-A.12: Agricultural Protection. In adopting land uses policies, regulations and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.	***Consistent.*** This policy is intended to address compatibility between agricultural activities and other land uses within the County. The Project would maintain a buffer between the Project and adjacent agricultural operations and would implement a reclamation plan to return the site to a state of readiness for agricultural use after Project decommissioning. This Admin Draft EIR documents the County's process of evaluating the Project's impacts to the environment, infrastructure, and services, and the County will consider its impacts to the agricultural activities when making decisions regarding approval or disapproval of the permit applications. Section 4.3, *Agriculture and Forestry Resources,* discusses potential impacts to agricultural resources.
Policy LU-A.13: Agricultural Buffers. The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations. Additionally, the County shall consider buffers between agricultural uses and proposed sensitive receptors when processing discretionary land use applications.	***Consistent.*** The Project would maintain a buffer between the Project and adjacent agricultural operations and would implement a reclamation plan to return the site to a state of readiness for agricultural use after Project decommissioning. The Project would be subject to review as part of the unclassified conditional use permit (CUP) process. Section 4.3, *Agriculture and Forestry Resources,* discusses potential impacts to agricultural resources.

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy LU-A.14: Agricultural Land Conversion Review. The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.	***Consistent.*** The Project site is zoned AE 20 and 40, Exclusive Agricultural. As indicated in Section 816.2(D) of the Fresno County Zoning Code, permitted uses in AE districts include electrical transmission and distribution substations.
Policy LU-A.15: Right-to-Farm Notice. The County shall generally condition discretionary permits for residential development within or adjacent to agricultural areas upon the recording of a Right-to-Farm Notice, which is an acknowledgment that residents in the area should be prepared to accept the inconveniences and discomfort associated with normal farming activities and that an established agricultural operation shall not be considered a nuisance due to changes in the surrounding area.	***Consistent.*** Although the Project does not include residential development, the Applicant would be required to record with the County recorder a Right-to-Farm Notice indicating that adjacent agricultural operations shall not become a nuisance due to the changed condition of the Project site.
Policy LU-A.16: Agricultural Land Preservation Programs. The County should consider the use of agricultural land preservation programs that improve the competitive capabilities of farms and ranches, thereby ensuring long-term conservation of viable agricultural operations. Examples of programs to be considered should include: land trusts; conservation easements; dedication incentives; new and continued Williamson Act contracts; Farmland Security Act contracts; the California Farmland Conservancy Program Fund; agricultural education programs; zoning regulations; agricultural mitigation fee program; urban growth boundaries; transfer of development rights; purchase of development rights; and agricultural buffer policies.	***Not Applicable.*** The Project does not conflict with the County's ability to establish agricultural preservation programs. The Project will support State of California and Fresno County goals of protecting farmland through continuing agricultural use under terms of the existing Williamson Act contracts by providing active grazing lands as summarized in Section 4.3, *Agriculture and Forestry Resources*.
Policy LU-A.17: Williamson Act Contracts. The County should accept Williamson Act contracts on all designated agricultural land subject to location, acreage, and use limitations established by the County provided that the County receives full subvention payment as partial replacement of local property tax revenue foregone as a result of participating in the Williamson Act program. All development and uses and activities that occur on land under contract shall comply with the requirements of the California Land Conservation Act and adopted County Rules.	***Consistent.*** The Project will continue agricultural use under terms of the existing Williamson Act contracts by providing active grazing lands as summarized in Section 4.3, *Agriculture and Forestry Resources*.
Policy LU-A.18: Land Improvement Programs. The County shall encourage land improvement programs to increase soil productivity in areas containing lesser quality agricultural soils.	***Not Applicable.*** The Project would not conflict with the County's ability to encourage land improvement programs.
Policy LU-A.19: Reduced Soil Erosion. The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other agencies and organizations.	***Consistent.*** Section 4.8, *Geology, Soils, and Paleontological Resources*, includes an evaluation of potential erosion-related impacts. The Project would comply with a Construction General Permit, and implementation of a Stormwater Pollution Prevention Plan (SWPPP) would limit the impact of construction-related soil erosion by enacting best management practices (BMPs) to address sediment control and limit erosion, such as installation of silt fencing and implementation of temporary sediment disposal measures. In addition, the Applicant-proposed erosion and sediment control and pollution prevention measures described in Administrative Draft EIR Section 2.9.1.3 would be enforced during construction to reduce the possibility that substantial erosion or loss of topsoil could result. Operation of the Project would not include activities that are likely to cause erosion.

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy LU-A.20: Water Resources. The County shall adopt and support policies and programs that seek to protect and enhance surface water and groundwater resources critical to agriculture.	***Consistent.*** The impact of the Project on surface water quality would be less than significant with mitigation incorporated, surface water movement and infiltration is not expected to change significantly. Mitigation would ensure that any contaminated soils caused or encountered by the Project would be properly removed and disposed of in accordance with all applicable federal, state, and local regulations. This would prevent adverse water quality effects from the management of contaminated materials. Additionally, the Project would have a less than significant impact on groundwater supplies and groundwater recharge, which is summarized in Section 4.11, *Hydrology and Water Quality*.
Program LU-A.21: Public Education Programs. The County shall support and participate in ongoing public education programs by organizations such as the County Agricultural Commissioner's Office, UC Cooperative Extension, Farm Bureau, and industry organizations to help the public better understand the importance of the agricultural industry.	***Consistent.*** The Applicant intends to include the Project as a pilot project in a study being conducted by the University of California, Davis (UC Davis). This study would analyze the soils on-site to select the best seed mix and monitor the potential wildlife that interacts with the proposed facility.
Program LU-A.22: Drought Impacts. The County shall adopt and support policies and programs that seek to minimize the impact of reoccurring drought conditions on ground water supply and the agricultural industry.	***Consistent.*** Section 4.11, H*ydrology and Water Quality*, includes local policies that seek to minimize the impact of drought conditions on ground water supply. Additionally, this section also states that the Project would have a less than significant impact on groundwater supplies and groundwater recharge as analyzed in Section 4.11.3.3.
Policies LU-A.23: Farmland Conversion. For discretionary land use projects that are not directly related to or supportive of agricultural uses and which propose the permanent conversion of twenty acres or more of Prime Farmland, Unique Farmland or Farmland of Statewide Importance (as designated by the Farmland Mapping and Monitoring Program) to nonagricultural uses, the County shall consider and adopt feasible measures including, but not limited to: • Acquisition of conservation easements at a 1:1 ratio for lands lost to nonagricultural uses. • Fee title of agricultural mitigation land that may be held by a third party or the County. • In lieu fees paid to the County that may be used to acquire future mitigation property. • Mitigation banks. The County may exempt projects from agricultural mitigation requirements when it has been determined that conversion is occurring pursuant to a local groundwater sustainability plan, or the project is for housing which is predominately for persons of low or moderate income as defined in section 50093 of the Health and Safety Code. Further, the County may exempt discretionary land use projects from agricultural mitigation requirements if it finds that the loss of agricultural land caused by the proposed conversion is outweighed by specific overriding economic, legal, social, technological, or other benefits of the conversion, as contemplated by section 21081(b) of the Public Resources Code.	***Not Applicable.*** The Project is supportive of agricultural uses and will continue agricultural use under terms of the existing Williamson Act contracts by providing active grazing lands.
Policies LU-A.24: Important Farmland Map. The County shall encourage the State of California Department of Conservation to update its Important Farmland Map in consideration of recent restrictions to groundwater pumping, reduced access to surface water and the potential loss of irrigable land.	***Not Applicable.*** The Project would not conflict with the County's ability to encourage the State of California Department of Conservation to update its Important Farmland Map.

K.3 Consistency with Other Elements of the Fresno County General Plan

K.3.1 Transportation and Circulation Element

Fresno County's General Plan includes policies regarding access and safety standards of roadway facilities, bike facilities, and public transit. Although the General Plan seeks to coordinate multiple forms of transportation, including cars, commercial vehicles, buses, transit, bicycles, and pedestrian traffic, the General Plan does not contain specific policies governing pedestrian traffic. Fresno County also has adopted a Regional Bicycle and Recreational Trails Master Plan (Fresno County 2013) that addresses non-motorized transportation systems and identifies barriers to trails and bikeways. The plan is intended to create a vision and recommendations for the ongoing development of new trail connections that create a safe, comfortable, and connected network for walking/hiking, off-road biking, and horseback riding.

Section 4.18, *Transportation*, evaluates potential impacts of the Project relative to the significance criteria provided in the CEQA Guidelines Appendix G environmental checklist. Project consistency with specific Transportation and Circulation Element policies is presented in **Table K.1-3** below.

TABLE K.1-3
FRESNO COUNTY GENERAL PLAN TRANSPORTATION AND CIRCULATION ELEMENT POLICIES

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy TR-A.4: Roadway Access. The County shall require that new or modified access to property abutting a roadway and to intersecting roads conform to access specifications in the Circulation Diagram and Standards section. Exceptions to the access standards may be permitted in the manner and form prescribed in the Fresno County Zoning and Subdivision Ordinances, provided that the designed safety and operational characteristics of the existing and planned roadway facility will not be substantially diminished.	***Consistent.*** Project related traffic would have a less than significant impact related to local roadways abutting the Project site after the implementation of Mitigation Measure 3.18-1. Design and construction of Project access road intersections would conform with Fresno County standards (per General Plan Policies). Among the applicable requirements are rights-of-way and setback requirements.
Policy TR-A.6: Rights-of-Way Dedications. The County shall require dedication of right-of-way or dedication and construction of planned road facilities as a condition of land development, and require an analysis of impacts of traffic from all land development projects including impacts from truck traffic. Each such project shall construct or fund improvements necessary to mitigate the effects of traffic from the project. The County may allow a project to fund a fair share of improvements that provide significant benefit to others through traffic impact fees.	***Consistent.*** An assessment of potential traffic impacts, including truck traffic, is provided in Section 4.18.
Policy TR-A.10: Roadway Improvements. The County shall ensure that land development that affects roadway use or operation or requires roadway access to plan, dedicate, and construct required improvements consistent with the criteria in the Circulation Diagram and Standards section of this element.	***Consistent.*** Section 4.18, *Transportation*, notes that design and construction of Project access road intersections would be required to conform with Fresno County standards. This would ensure that Project elements would not increase transportation-related hazards.

K.3.2 Public Facilities and Services Element

The Public Facilities and Services Element of the Fresno County General Plan contains goals, policies, and implementation program measures to ensure public facilities and services are adequately available and accessible in a timely fashion to serve new development. The Project's impacts with respect to public

services, including police, fire, and education services, are primarily addressed in Sections 4.16, *Public Services.* Project consistency with specific Public Facilities and Services Element policies is presented in **Table K.1-4** below.

TABLE K.1-4
FRESNO COUNTY GENERAL PLAN PUBLIC FACILITIES AND SERVICES ELEMENT POLICIES

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy PF-C.3: Surface Water Use. To reduce demand on the County's groundwater resources, the County shall encourage the use of surface water to the maximum extent feasible.	***Consistent.*** The Project would have a less than significant impact to groundwater resources. Groundwater extraction associated with construction, operation, and decommissioning would not cause substantial depletion of the groundwater basin. An analysis of the Project's impact to groundwater resources is provided in Section 4.11, *Hydrology and Water Quality*.
Policy PF-C.23: Water Conservation Technologies. The County shall require that all new development within the County use water conservation technologies, methods, and practices as established by the County.	***Consistent.*** The Project would comply with the Fresno County Water Conservation Ordinance (Effective October 30, 2014). The Project would comply with water conservation measures outlined in the ordinance, as necessary.
Policy PF-D.6: On-site Sewage Disposal Systems. The County shall permit individual on-site sewage disposal systems on parcels that have the area, soils, and other characteristics that permit installation of such disposal facilities without threatening surface or groundwater quality or posing any other health hazards and where community sewer service is not available and cannot be provided.	***Consistent.*** The Project would use portable restrooms during construction and decommissioning. During operation and maintenance, restrooms and a kitchen would be located within the O&M building. Wastewater from these facilities is expected to be disposed of using a septic tank or a wastewater removal service. The capacity of the septic tank would be determined based on site-specific soil conditions among other factors, as required by the Fresno County Local Agency Management Program.
Policy PF-E.7: Fair-share of Costs. The County shall require new development to pay its fair share of the costs of Fresno County storm drainage and flood control improvements within unincorporated areas.	***Consistent.*** During construction, stormwater facilities including a drainage swale, and two retention basins would be constructed. These stormwater facilities would be designed to meet Fresno County and State Water Resources Control Board requirements. Development fees could be imposed as a condition of permit approval.
Policy PF-E.11: Natural Site Drainage Patterns. The County shall encourage project designs that minimize drainage concentrations and maintain, to the extent feasible, natural site drainage patterns.	***Consistent.*** As discussed in Section 4.11, *Hydrology and Water Quality*, the Project would not substantially alter the existing drainage pattern of the area. The Project would be designed to minimize substantial alterations to drainage patterns on the Project site and would restore the site upon site decommissioning.
Policy PF-E.13: Natural Storm Water Drainage Systems. The County shall encourage the use of natural storm water drainage systems to preserve and enhance natural drainage features.	***Consistent.*** The Project is not located in an area with an existing or planned stormwater drainage system. As discussed in Section 4.19, *Utilities and Service Systems,* water conveyance infrastructure on the Project site consists of agricultural ditches in some locations; other than these ditches, no drainage facilities that have connectivity to any natural water features are located on-site. As explained in the Basin Plan, direct precipitation typically percolates into valley groundwater if not lost through consumptive use, evapotranspiration, or evaporation.
Policy PF-E.14: Retention-Recharge Basins. The County shall encourage the use of retention-recharge basins for the conservation of water and the recharging of the groundwater supply.	***Consistent.*** Design measures, including bioswales and detention basins are proposed, which would collect stormwater flows, facilitate infiltration, and slow the rate of runoff, consistent with low impact development standards.
Policy PF-E.21: Best Management Practices. The County shall require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities, and shall encourage the urban storm drainage systems and agricultural activities to use BMPs.	***Consistent.*** None of the new impervious surfaces would be adjacent to or otherwise directly connected to a stream. A storm water pollution prevention program (SWPPP) would be required for the Project and include best management practices (BMPs) to be implemented during construction, including erosion control, sediment control, and good housekeeping measures. The BMPs would include dewatering procedures, stormwater runoff quality control measures, concrete waste management, watering for dust control, and construction of perimeter silt fences, as needed.

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy PF-F.1: Solid Waste Source Reduction. The County shall continue to promote maximum use of solid waste source reduction, reuse, recycling, composting, and environmentally-safe transformation of wastes.	***Consistent.*** The Project would be required to comply with Fresno County's Construction and Demolition (C&D) Debris Recycling Program which requires a Waste Management Plan for recycling a minimum of 50 percent of all non-hazardous waste. Wooden construction waste would be sold, recycled, or chipped and spread on the Project site for weed control as appropriate. Other compostable materials, such as vegetation, might also be composted off-site. Operation and maintenance activities would produce negligible volumes of solid and liquid wastes that would be disposed of in accordance with all applicable requirements.
Policy PF-F.5: County Integrated Waste Management Plan. The County shall ensure that all new development complies with applicable provisions of the County Integrated Waste Management Plan.	***Consistent.*** The Project would generate solid waste during construction, operation and maintenance, and decommissioning activities. All handling and processing of construction, demolition, and inert debris would be in accordance with applicable regulatory requirements. Landfill waste generated by the Project would not exceed its permitted daily tonnage or deplete substantial long-term capacity.
Policy PF-J.3: On-site Underground Utility Lines. The County shall require all new residential development along with new urban commercial and industrial development to underground utility lines onsite.	***Not Applicable.*** The Project is not a new residential or urban development.
Goal PF-G. To protect life and property by deterring crime and ensuring the prompt an efficient provision of law enforcement service and facility needs to meet the growing demand for police services associated with an increasing population.	***Consistent.*** The Project would not conflict with the County's ability to provide efficient law enforcement services. Police protection primarily may be required for incidents such as the theft of construction equipment and/or vandalism of the Project. To ensure Facility security, offsite security personnel could be dispatched during nighttime hours or could be onsite. In addition, appropriate security measures would be implemented to ensure control of site access and minimize security risks.
Policy PF-G.2: Law Enforcement Staffing Standards. The County shall strive to maintain a staffing ratio of two (2) sworn officers serving unincorporated residents per 1,000 residents served. (This count of officers includes all ranks of deputy sheriff personnel and excludes all support positions and all sworn officers serving county wide population interests such as bailiffs, and sworn officers serving contract cities and grant specific populations).	***Consistent.*** The Project would not conflict with the County's ability to meet the desired staffing ratio; the Project would not result in new residents that could contribute to the demand for police services.
Policy PF-G.6: Safe Design Features. The County shall promote the incorporation of safe design features (e.g., lighting, adequate view from streets into parks) into new development by providing Sheriff Department review of development proposals.	***Consistent.*** Nighttime lighting for site security or maintenance requirements would be directed downward and shielded to focus illumination on the desired work areas only, and to prevent light spillage onto adjacent properties.
Goal PF-H. To ensure the prompt and efficient provision of fire and emergency medical facility and service needs, to protect residents of and visitors to Fresno County from injury and loss of life, and to protect property from fire.	***Consistent.*** Temporary construction- or decommissioning-related increases in demand on fire protection services would not affect the ability of Fresno County Fire Protection District to respond to incidents within the recommended time periods. Operation personnel would not contribute to a significant population increase and would not result in an increase to the demand for fire protection services or require new or altered facilities.
Policy PF-H.1: Provision of Fire/Emergency Medical Service. The County shall work cooperatively with local fire protection districts to ensure the provision of effective fire and emergency medical services to unincorporated areas within the county.	***Consistent.*** The Project would not conflict with the County's ability to provide effective emergency services. The Project would not result in new residents that could contribute to the demand for police services, and would incorporate onsite security measures.

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy PF-H.2: Adequate Fire Protection Facilities. Prior to the approval of development projects, the County shall determine the need for fire protection services. New development in unincorporated areas of the County shall not be approved unless adequate fire protection facilities are provided.	***Consistent.*** Increases in long-term demand for fire protection services typically are associated with substantial increases in population. Once operational, up to 7 workers could be on the site at any one time which would not contribute to a significant population increase, and would not result in an increase to the demand for fire protection services or require new or altered facilities.
Policy PF-H.5: Minimize Fire Hazard Risk. The County shall require that new development be designed to maximize safety and minimize fire hazard risks to life and property.	***Consistent.*** Section 4.20, *Wildfire*, includes an evaluation of potential fire hazards. The Project is not located in a zone of very high fire severity hazard as defined by CAL FIRE. Regardless, best management practice/ fire prevention measures would be implemented to minimize fire risk.
Policy PF-H.8: Minimum Response Times. The County shall encourage local fire protection agencies in the County to maintain the following as minimum standards for average first alarm response times to emergency calls: a. 5 minutes in urban areas; b. 15 minutes in suburban areas; and c. 20 minutes in rural areas.	***Consistent.*** Temporary construction- or decommissioning-related increases in demand on fire protection services would not affect the Fresno County Fire Protection District's ability to respond to incidents within the recommended time periods.
Policy PF-H.10: California Fire Code. The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other State and local ordinances.	***Consistent.*** Section 4.20 includes an evaluation of potential fire hazards. The Project is not located in a zone of very high fire severity hazard as defined by CAL FIRE. Regardless, best management practice/ fire prevention measures would be implemented in order to minimize fire risk.
Policy PF-H.11: Emergency Medical Service. The County shall encourage local fire protection agencies to provide and maintain advanced levels of emergency medical services (EMS) to the public, consistent with current practice.	***Consistent.*** The Project would not affect emergency response agencies' ability to provide and maintain advanced emergency services. Construction and operation would result in a less than significant impact with mitigation incorporated to minimize the impact of any road closure necessitated to install the powerline. See Section 4.10, *Hazards and Hazardous Materials*, and Section 4.18, *Transportation*.
Goal PF-I. To provide for the educational needs of Fresno County and provide libraries for the educational, recreational, and literary needs of Fresno County residents.	***Consistent.*** No residences are proposed as part of the Project and in-migration of construction workers is not anticipated; therefore, the Project would neither generate a demand for new school facilities nor require the alteration of existing school facilities.
Policy PF-I.1: Quality Education Facilities. The County shall encourage school districts to provide quality educational facilities to accommodate projected student growth in locations consistent with land use policies of the General Plan.	***Consistent.*** No residences are proposed as part of the Project and in-migration of construction workers is not anticipated; therefore, the project would neither generate a demand for new school facilities nor require the alteration of existing school facilities.
Policy PF-I.4: Planning School Facility Needs. The County shall work cooperatively with school districts in monitoring housing, population, and school enrollment trends and in planning for future school facility needs and shall assist school districts in locating appropriate sites for new schools.	***Consistent.*** No residences are proposed as part of the Project and in-migration of construction workers is not anticipated; therefore, the Project would neither generate a demand for new school facilities nor require the alteration of existing school facilities.

K.3.3 Open Space and Conservation Element

This purpose of this element is to guide the conservation, preservation, and/or development of open space and natural resources, including biological, cultural, mineral, and scenic resources. The Project's impacts with respect to species and habitat preservation, mineral resource extraction, and aesthetics are primarily addressed in Sections 4.2, *Aesthetics*, 4.5, *Biological Resources*, 4.6, *Cultural and Tribal Resources*, and

4.13, *Mineral Resources.* The Project site has been cultivated for agricultural use for at least the past 100 years; no naturally occurring plant communities are present. The physical environmental impacts of the Project are described throughout the Administrative Draft EIR. Generally speaking, the Project would not contribute substantially to the degradation of natural resources after the implementation of mitigation measures.

The Open Space and Conservation Element of the Fresno County General Plan also evaluates the scenic resources of Fresno County and provides policies intended to protect the scenic resources of the County and ensure that development enhances those resources through various measures including identification, development review, acquisition, and other methods. The Project site has not been identified as a scenic resource. The Fresno County General Plan also includes policies intended to protect scenic resources along roadways of the County by identifying, developing, and maintaining scenic amenities along roads and highways in the County and ensuring that development enhances those resources. According to Policy OS-L.1, Fresno County has designated a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. According to this element, the only designated scenic roadway in the vicinity of the Project site is Interstate 5.

Project consistency with specific Open Space and Conservation Element policies is presented in **Table K.1-5** below.

TABLE K.1-5
FRESNO COUNTY GENERAL PLAN OPEN SPACE AND CONSERVATION ELEMENT POLICIES

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy OS-A.20: Minimization of Sedimentation and Erosion. The County shall minimize sedimentation and erosion through control of grading, cutting of trees, removal of vegetation, placement of roads and bridges, and use of off-road vehicles. The County shall discourage grading activities during the rainy season unless adequately mitigated to avoid sedimentation of creeks and damage to riparian habitat.	***Consistent.*** Section 4.8, *Geology, Soils, and Paleontological Resources*, includes an evaluation of potential erosion-related impacts and associated mitigation. The Project would comply with a Construction General Permit, and implementation of a SWPPP would limit the impact of construction-related soil erosion by enacting BMPs to address sediment control and limit erosion, such as installation of silt fencing and implementation of temporary sediment disposal measures. Operation of the Project would not include activities that are likely to cause erosion. Following construction, the site could be replanted with low-growing plant species appropriate for maintaining soil quality. The Project does not include tree removal or construction in creeks or riparian areas.
Policy OS-A.21: Best Management Practices. The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff.	***Consistent.*** Impermeable surfaces are broken into individual areas that would drain through gravel that would help maximize infiltration and to disburse flows, and bioretention swales that would further slow runoff and facilitate infiltration. Section 4.8, *Geology, Soils, and Paleontological Resources*, includes an evaluation of potential erosion-related impacts. The Project would comply with a Construction General Permit, and implementation of a SWPPP would limit the impact of construction-related soil erosion by enacting BMPs to address sediment control and limit erosion, such as installation of silt fencing and implementation of temporary sediment disposal measures. Operation of the Project would not include activities that are likely to cause erosion.

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy OS-C.1: Incompatible Mining Uses. The County shall not permit incompatible land uses within the impact area of existing or potential surface mining areas.	***Consistent.*** There is no current surface mining onsite. There is no indication or evidence that the clay, silt, and sand present on the Project site would be suitable for aggregate production of statewide or regional significance. Aggregate resources are widely available throughout the region and neither the California State Mining and Geology Board (SMGB) nor Fresno County has officially designated the area as an aggregate resource area or mineral deposit of statewide or regional significance.
Policy OS-C.2: Mineral Resource Zones. The County shall not permit land uses incompatible with mineral resource recovery within areas designated as Mineral Resource Zone 2 (MRZ-2).	***Consistent.*** The Project site is not within an MRZ.
Policy OS-C.7: Mining Buffers. The County shall require that new non-mining land uses adjacent to existing mining operations be designed to provide a buffer between the new development and the mining operations. The buffer distance shall be based on an evaluation of noise, aesthetics, drainage, operating conditions, biological resources, topography, lighting, traffic, operating hours, and air quality.	***Consistent.*** There are no significant mineral resources at or adjacent to the Project site or in the area.
Policy OS-C.10: Mineral Resource Lands Protection. The County shall not permit land uses that threaten the future availability of mineral resource or prelude future extraction of those resources.	***Consistent.*** There is no current surface mining onsite. There is no indication or evidence that the materials present on the Project site would be suitable for aggregate production of statewide or regional significance. Neither the SMGB nor Fresno County has officially designated the area as an aggregate resource area or mineral deposit of statewide or regional significance.
Policy OS-C.12: New Development Compatibility. The County shall ensure that new discretionary land use developments are compatible with existing and potential surface mining areas and operations as identified on the Mineral Resource Zone Maps prepared by the State Division of Mines and Geology and other mineral resource areas identified by the County.	***Consistent.*** The Project site is not within an MRZ. There are no significant mineral resources at or adjacent to the Project site or in the area.
Policy OS-C.13: Oil and Gas Regulation Areas. Fresno County shall be divided into three areas for the regulation of oil and gas development. A) Urban areas including all land within one- fourth mile of the planned urban boundaries shown on adopted community plans. B) Established oil and gas fields as determined and updated by the California Division of Oil and Gas, excluding urban areas except where specifically included in these policies. C) Non-urban areas including all land not within either established oil and gas fields or urban areas.	**Consistent.** As discussed in Section 4.10.1 *Setting*, there are two subsurface petroleum product pipelines at the Project site that if interfered with (through excavation, grading, or other earthwork), could result in the accidental exposure of workers and the environment to hazardous materials. As discussed in 4.10.1.3, *Regulatory Settings*, state law requires an excavator to contact a regional notification center to identify any underground utility before excavation activities. As such, any utilities would be identified before excavation. In addition, as shown on the site plans in Chapter 2, Project Description, the Project design has accounted for the location of the natural gas pipeline and easement. Therefore, the natural gas pipeline would not be disturbed during construction activities.
Policy OS-E.1: Avoid Habitat Loss. The County shall support efforts to avoid the "net" loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function, and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the U.S. Fish and Wildlife Service and the California Department of Fish and Game to ensure that appropriate mitigation measures and	***Consistent.*** The Project site does not lie within a recognized terrestrial wildlife connectivity area identified in the *California Essential Habitat Connectivity Project*. Based on the agricultural use of the site and that the surrounding areas are heavily influenced by agriculture, limited opportunities for habitat continuity or wildlife movement are available due to the lack of open natural habitat. The site does not contain wildlife travel routes such as riparian strips, waterways or underpasses, nor does it provide connectivity between large areas of open space. While the site is not a preferred habitat, wildlife species such as the San Joaquin kit fox; Swainson's hawk; and nesting birds may be present on site. Implementation of Mitigation Measures including Worker Environmental Awareness Training and preconstruction nesting bird surveys, would prevent potential impacts to these species. See Chapter 2, *Project Description*, for additional measures that would reduce potential impacts to species.

Goal/Objective/Policy Text	Project Consistency Evaluation
the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.	
Policy OS-E.2: Construction Buffers. The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both on-site habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the U.S. Fish and Wildlife Service and/or the California Department of Fish and Game.	**Consistent**. While the disked and actively cultivated agricultural lands on-site are not preferred denning habitat and only provide limited foraging habitat, the Project site is surrounded by other agricultural lands, which could potentially support San Joaquin kit fox residency or movement. Preconstruction clearance surveys, fencing, valley fever reduction measures, and other minimization measures would minimize potential impacts to San Joaquin kit fox during construction or decommissioning.
Policy OS-E.3: Wildlife Habitat Protection. The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the value of the habitat for wildlife is maintained.	***Consistent.*** The Project site does not lie within a recognized terrestrial wildlife connectivity area identified in the California Essential Habitat Connectivity Project and has been heavily influenced by agriculture. The site does not contain wildlife travel routes such as riparian strips, waterways or underpasses, nor does it provide connectivity between large areas of open space. While the site is not preferred habitat, wildlife species such as the San Joaquin kit fox, Swainson's hawk, and nesting birds may be present on site. Implementation of Mitigation Measures including preconstruction nesting bird surveys, would minimize adverse impacts on wildlife habitat values.
Policy OS-E.4: Wildlife Habitat Management Practices. The County shall encourage private landowners to adopt sound wildlife habitat management practices, as recommended by the California Department of Fish and Game officials and the U.S. Fish and Wildlife Service.	***Consistent.*** The Project Applicant would provide Worker Environmental Awareness training and pre-construction surveys, and would monitor ground disturbing activities and restrict Project activities to designated staging and access areas, cover exposed trenches and pipes to prevent entrapment, and impose speed limits onsite.
Policy OS-E.6: Habitat Corridors. The County shall ensure the conservation of large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife populations, as long as this preservation does not threaten the economic well-being of the County.	***Consistent.*** This Project does not conflict with the County's ability to implement land conservation.
Policy OS-E.9: Biological resource Evaluation. Prior to approval of discretionary development permits, the County shall require, as part of any required environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant resources and/or special-status plants or animals. Such evaluation will consider the potential for significant impact on these resources and will either identify feasible mitigation measures or indicate why mitigation is not feasible.	***Consistent.*** Section 4.5, *Biological Resources*, contains an analysis of potential impacts to biological resources. The analysis presented in this section is based on a review of relevant literature, field reconnaissance surveys, and focused biological surveys. It also relies on the Biological Resources Assessment provided in administrative draft EIR Appendix G that documents existing conditions and the findings of various biological surveys on the Project site and in the surrounding vicinity.
Policy OS-E.10: Permanent Protection. The County shall support State and Federal programs to acquire significant fish and wildlife habitat areas for permanent protection and/or passive recreation use.	***Not Applicable.*** The Project would not conflict with the County's ability to support programs to acquire significant fish and wildlife habitat areas.

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy OS-E.15: wildlife Migration Routes. The County should preserve, to the maximum extent practicable, significant wildlife migration routes such as the North Kings Deer Herd migration corridors and fawn production areas.	***Consistent.*** Potential Impacts to migration routes are described in Section 4.5, *Biological Resources*. The Project site is within the Pacific Flyway, a significant avian migration route. The Mendota Wildlife Area is a recognized stopover location for migratory birds travelling along the Pacific Flyway. The Project would not physically affect the Pacific Flyway. There are no other important migratory routes, corridors, or wildlife nursery sites near the Project site.
Policy OS-E.17: Endangered Species Habitat. The County should preserve, to the maximum possible extent, areas defined as habitats for rare or endangered animal and plant species in a natural state consistent with State and Federal endangered species laws.	***Consistent.*** There is potential habitat for Swainson's hawk, loggerhead shrike, San Joaquin kit fox, and nesting raptors and migratory birds; however, pre-construction surveys will ensure nesting areas are avoided.
Policy OS-E.18: Habitat Easements and Regulations. The County should preserve areas identified as habitats for rare or endangered plant and animal species primarily through the use of open space easements and appropriate zoning that restrict development in these sensitive areas.	***Consistent.*** The Project site is zoned AE 20 and 40, Exclusive Agricultural, and is not preserved under an open space easement.
Policy OS-F.5: Rare, Threatened, and Endangered Species. The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. The County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.	***Consistent.*** Based on the literature review and seasonally timed rare plant surveys conducted for the Project (Administrative Draft EIR Appendix G), no rare plants were observed or have potential to occur on site. The entire site was subject to disturbance from agriculture, disking and related activities. Only small patches of ruderal vegetation persisted.
Policy OS-F.8: Vegetation for Wildlife. The County should encourage landowners to maintain natural vegetation or plant suitable vegetation along fence lines, drainage and irrigation ditches and on unused or marginal land for the benefit of wildlife.	***Consistent.*** Based on the literature review and seasonally timed rare plant surveys conducted for the Project (Appendix E), no rare plants were observed or have potential to occur on site. The entire site was subject to disturbance from agriculture, disking and related activities. Only small patches of ruderal vegetation persisted.
Policy OS-G.11: Sensitive Receptors. The County shall continue, through its land use planning processes, to avoid inappropriate location of residential uses and sensitive receptors in relation to uses that include but are not limited to industrial and manufacturing uses and any other use which have the potential for creating a hazardous or nuisance effect.	***Consistent.*** Based on the results of a health risk assessment, the predicted worst case increase in cancer risk is below the San Joaquin Valley Air Pollution Control District (SJVAPCD) threshold. The Project would not be a significant source of criteria pollutant emissions or fugitive dust during operation and maintenance. Impacts to sensitive receptors would be less than significant during construction, operation and maintenance, and decommissioning.
Policy OS-G.14: Fugitive Dust Control Measures. The County shall include fugitive dust control measures as a requirement for subdivision maps, site plans, and grading permits. This will assist in implementing the SJVUAPCD's particulate matter of less than ten (10) microns (PM_{10}) regulation (Regulation VIII). Enforcement actions can be coordinated with the Air District's Compliance Division.	***Consistent.*** The Applicant would submit a Fugitive Dust Control Plan to the SJVAPCD for review and approval. The Dust Control Plan shall meet the requirements in Rule 8021-1 and incorporate the Regulation VIII recommended fugitive dust control measures to reduce PM_{10} emissions to the extent practical. See Draft EIR Section 4.4, *Air Quality*, for details.
Policy OS-G.15: Access Road Standards. The County shall require all access roads, driveways, and parking areas serving new commercial and industrial development to be constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.	***Consistent.*** Gravel access roads would be constructed around the perimeter of the Project site and aggregate base access roads would be constructed between blocks of enclosures. On-site parking would meet Fresno County Municipal Code parking requirements. Regarding the control of particulate emissions, see Administrative Draft EIR Section 4.4, *Air Quality*.

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy OS-G.16: Roadway Dust Control. The County shall continue to work to reduce PM_{10} and $PM_{2.5}$ emissions from County-maintained roads by considering shoulder treatments for dust control as part of road reconstruction projects.	***Consistent.*** The Project does not involve road reconstruction. Construction and operation of the Project will be implemented in compliance with SJVAPCD's Regulation VIII, Fugitive PM_{10} Prohibitions and the current $PM_{2.5}$ Plan.
Policy OS-H.2: Park Standards. The County shall strive to maintain a standard of five (5) to eight (8) acres of County-owned improved parkland per one thousand (1,000) residents in the unincorporated areas.	***Consistent.*** The Project would not be located on designated parkland, affect the amount of County-owned parkland, nor result in population growth within Fresno County. Therefore, the Project would not conflict with the County's ability to maintain the parkland ratio established in this policy.
Goal OS-J: To identify, protect, and enhance Fresno County's important historical, archeological, paleontological, geological, and cultural sites and their contributing environment, and promote and encourage preservation, restoration, and rehabilitation of Fresno County's historically significant resources in order to promote historical awareness, community identify, and to recognize the County's valued assets that have contributed to past County events, trends, styles of architecture, and economy.	***Consistent.*** The Project would not conflict with the County's ability to protect cultural resources because the Project would not affect cultural resources. There are no historic structures on the Project site.
Policy OS-J.1: Preservation of Historic Resources. The County shall encourage preservation of any sites and/or buildings identified as having historical significance pursuant to the list maintained by the Fresno County Historic Landmarks and Records Advisory Commission.	***Consistent.*** The Project would not impact preservation of historic sites or buildings. There are no historic structures on the Project site.
Policy OS-J.2: Historic Resources Consideration. The County shall consider historic resources during preparation or evaluation of plans and discretionary development projects.	***Consistent.*** Section 4.6, *Cultural and Tribal Cultural Resources*, contains results of a records search and field survey for the County's consideration of the Project.
Policy OS-J.4: Cultural Resources Protection and Mitigation. The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, tribal, paleontological, and cultural sites and resources. For projects requiring ground disturbance and located within a high or moderate cultural sensitivity areas, a cultural resources technical report may be warranted, including accurate archival research and site surveys conducted by qualified cultural resources practitioners. The need to prepare such studies shall be determined based on the tribal consultation process and initial outreach to local or state information centers.	***Consistent.*** Section 4.6, *Cultural and Tribal Cultural Resources*, provides an evaluation of potential Project impacts to cultural, archaeological, and historic resources. Section 3.8, *Geology, Soils, and Paleontological Resources*, analyzes potential impacts to paleontological resources. In the event that unknown archaeological resources are discovered during Project construction, the Applicant would implement Mitigation Measures which would requires the retention of a qualified archaeologist and cultural resources awareness training, and which governs procedures in the event of inadvertent discovery of archaeological materials.
Goal OS-K: To conserve, protect, and maintain the scenic quality of Fresno County and discourage development that degrades areas of scenic quality.	***Consistent.*** Project facilities including fencing, battery storage structures and overhead power lines would be visible and would transform the landscape from an agriculture visual character to an industrial character. However, the Project would not block or impair any existing significant visual resources or significantly impact the local visual character. See Administrative Draft EIR Section 4.2, *Aesthetics*, for details.
Policy OS-K.1: Scenic Resource Preservation. The County shall encourage the preservation of outstanding scenic views, panoramas, and vistas wherever possible. Methods to achieve this may include encouraging private property owners to enter into open space easements for designated scenic areas.	***Consistent.*** There are no designated scenic vistas within the viewshed of the entire Project site.
Policy OS-K.4: Incorporating Scenic Features. The County should require development adjacent to scenic areas, vistas, and roadways to incorporate natural features of the site and be developed to minimize impacts to the scenic qualities of the site.	***Consistent.*** There are no designated scenic vistas within the viewshed of the entire Project site.

Goal/Objective/Policy Text	Project Consistency Evaluation
Goal OS-L: To conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County.	***Consistent.*** There are no designated state scenic highways within the Project vicinity; nor roadways that are eligible for scenic designation within the Project viewshed.
Policy OS-L.1: Scenic Roadway System. The County designates a system of scenic roadways that includes landscaped drives, scenic drives, and scenic highways. Definitions and designated roadways are showing in the Scenic Roadways list below. Figure OS-1 shows the locations of the designated roadways.	***Consistent.*** There are no designated state scenic highways within the Project vicinity or roadways eligible for scenic designation within the Project viewshed.
Policy OS-L.3: Scenic Roadway Management. The County shall manage the use of land adjacent to scenic drives and scenic highways based on the following principles: b. Proposed high voltage overhead transmission lines, transmission line towers, and cell towers shall be routed and placed to minimize detrimental effects on scenic amenities visible from the right-of-way.	***Consistent.*** There are no designated state scenic highways or roadways eligible for scenic designation within the Project viewshed.

K.3.4 Health and Safety Element

The Health and Safety Element outlines Fresno County's planning strategies regarding emergency management and response, fire hazards, flood hazards, seismic and geological hazards, airport hazards, hazardous materials, and noise. The Project's impacts with respect to safety are primarily addressed in Section 4.8, *Geology, Soils, and Paleontological Resources*, Section 4.10, *Hazards and Hazardous Materials,* and Section 4.14*, Noise and Acoustics*. The design of the Project, as well as mitigation measures recommended in this Draft EIR, consider the potential seismic, soil instability, flood, fire, waste, and other hazards that are present in the Project area or that could result as a consequence of Project implementation. Although the Project would not avoid all hazards, even with Project consistency with specific Health and Safety Element policies is presented in **Table K.1-6** below.

K.3.5 Housing Element

The Housing Element provides the County's goals, policies, and programs for the development, improvement, and maintenance of housing within the unincorporated areas of the County. As described in Section 4.15, *Population and Housing*, the Project would neither induce growth nor displace people or housing. The Project does not propose or require new housing. This element is therefore not applicable to the Project.

TABLE K.1-6
FRESNO COUNTY GENERAL PLAN HEALTH AND SAFETY ELEMENT POLICIES

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy HS-B.1: Fire Hazards Review. The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.	***Consistent.*** Section 4.10, *Hazards and Hazardous Materials*, and Section 4.20, *Wildfire*, include an evaluation of potential fire hazards. The Project is not located in a very high fire severity hazard zone as defined by CAL FIRE. Regardless, fire prevention measures would be implemented in order to minimize fire risk.
Policy HS-B.7: Fire and Emergency Vehicle Access. The County shall require new discretionary development projects to have adequate access for fire and emergency vehicles and equipment. All major subdivisions shall have a minimum of two (2) points of ingress and egress. The County shall implement feasible recommendations in AB2911 Office of the State Fire Marshall Subdivision Survey Reports, which survey subdivisions without a secondary means of egress routes for evacuation and other fire safety factors.	***Consistent.*** The Project site would be accessible to emergency vehicles. See Section 4.10, *Hazards and Hazardous Materials*, and Section 4.18, *Transportation*.
Policy HS-B.10: Fire Agency Review of Development Proposals. The County shall refer development proposals in the unincorporated county to the appropriate local fire agencies for review of compliance with fire safety standards. If dual responsibility exists, both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall apply.	***Consistent.*** The Applicant would coordinate as needed with the Fresno County Fire District to address potential exposure to fire and other hazards in the Project site and would incorporated any standards or requirements required by the district.
Policy HS-D.3: Soils and Geologic-Seismic Analysis. The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, groundshaking, lateral spreading, lurchcracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).	***Consistent.*** Geologic hazards at the site are not significant. There is no risk of fault rupture, and the Project would not lead to significant impacts related to seismic ground shaking, liquefaction, erosion, or subsidence. See Section 4.10, *Hazards and Hazardous Materials.*
Policy HS-D.4: Soils and Geologic-Seismic Structure Design. The County shall require all proposed structures, additions to structures, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the Uniform Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.	***Consistent.*** The Project would be constructed in compliance with the geotechnical and seismic design criteria required for construction in accordance with the California Building Code (CBC).
Policy HS-D.5: Alquist-Priolo Earthquake Fault Act. Pursuant to the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Chapter 7.5), the County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones unless the specific provisions of the Act and Title 14 of the California Code of Regulations have been satisfied.	***Consistent.*** While the Project site is not within a mapped Seismic Hazard Zone, the site may be subject to strong earthquake-related ground shaking at some point during the lifetime of the facility due to the potential for relatively large earthquakes to the south and west of the Project site. The Project would be constructed in compliance with the geotechnical and seismic design criteria required for construction in accordance with the CBC. The Project does not include structures for human occupancy.
Policy HS-D.7: Soils Report. The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is located in an area containing soils with high “expansive” or “shrink-swell” properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.	***Consistent.*** The Project would be required to comply with applicable building codes and structural improvements which would address any expansive soil hazards.

Goal/Objective/Policy Text	Project Consistency Evaluation
Policy HS-D.8: Minimize Soil Erosion. The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.	***Consistent.*** The Project would comply with a Construction General Permit, and implementation of a SWPPP would limit the impact of construction-related soil erosion by enacting BMPs to address sediment control and limit erosion, such as installation of silt fencing and implementation of temporary sediment disposal measures. Operation of the Project would not include activities that are likely to cause erosion. Following construction, the site could be replanted with low-growing plant species appropriate for maintaining soil quality. See Draft EIR Section 4.8, *Geology, Soils, and Paleontological Resources*, for additional information.
Goal HS-F: To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.	***Consistent.*** The use, storage, transport, and disposal of hazardous materials in connection with the Project would be carried out in accordance with federal, state, and local regulations. BMPs in the SWPPP would minimize the risk of hazardous materials leakage include: reporting of spills of hazardous materials to the appropriate regulatory entities; immediate cleanup of hazardous materials spills; and excavation and appropriate disposal of contaminated soils.
Policy HS-F.1: Hazardous Materials Facilities. The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations.	***Consistent.*** The use, storage, transport, and disposal of hazardous materials in connection with the Project would be carried out in accordance with federal, state, and local regulations.
Policy HS-F.3: Hazardous Materials Incident Response Plan. The County, through its Hazardous Materials Incident Response Plan, shall coordinate and cooperate with emergency response agencies to ensure adequate Countywide response to hazardous materials incidents.	***Consistent.*** As identified in Section 4.10, *Hazards and Hazardous Materials*, and Section 4.18, *Transportation,* the Project would not interfere with emergency response plans or times.
Policy HS-H.1: Minimize Noise Impacts. The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.	***Consistent.*** Short-term construction and decommissioning activities would be exempt from the County's noise policies and standards because activities would occur between the hours of 6:00 a.m. and 9:00 p.m. on weekdays, or 7:00 a.m. and 5:00 p.m. on Saturdays and Sundays. A Construction Noise Reduction Plan is to be approved by the county prior to issuance of construction permits.
Policy HS-H.4: Noise Mitigation Design and Acoustical Analysis. So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where: a) Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are "generally unacceptable" or higher according to the Chart HS-1: "Land Use Compatibility for Community Noise Environments;" b) Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise-sensitive uses.	***Consistent.*** Section 4.14 includes an analysis of noise impacts associated with the Project.
Policy HS-H.6: Construction-related Noise. The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.	***Consistent.*** Short-term construction and decommissioning Project activities would be exempt from the County's noise policies and standards because activities would occur between the hours of 6:00 a.m. and 9:00 p.m. on weekdays, or 7:00 a.m. and 5:00 p.m. on Saturdays and Sundays.
Policy HS-H.8: Noise Levels Compatibility. The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, "Land Use Compatibility for Community Noise Environments."	***Consistent.*** With the incorporation of Mitigation Measures, the Project would not exceed County noise standards and would not have a significant impact to noise levels.

K.4 References

Fresno County, 2013. Fresno County Regional Bicycle & Recreational Trails Master Plan. September 24, 2013. http://www.co.fresno.ca.us/ViewDocument.aspx?id=50346.

Fresno County, 2024. Fresno County Zoning Map.

K.2 Consistency with Fresno County's Solar Facility Guidelines

APPENDIX K.2

Consistency with Fresno County's Solar Facility Guidelines

Toward balancing the need to accommodate new renewable energy technology with the need to protect important farmlands and minimize impacts to existing agricultural operations, the County's land use process for evaluating solar facilities relies on flexible general guidelines and policies rather than specific standards. The Solar Facility Guidelines, adopted by the Fresno County Board of Supervisors in 2013 and revised in 2017, identify consideration to be evaluated as part of the County's process for evaluating solar facilities within the county (Fresno County 2017). The County's identified need to maintain flexibility to accommodate new renewable energy technologies, such as battery energy storage, which facilitates the use of solar-generated energy by addressing some of the limitations of the electric grid, applies equally to battery energy storage as to solar energy development.

TABLE K.2-1
CORNUCOPIA HYBRID PROJECT CONSISTENCY WITH FRESNO COUNTY SOLAR FACILITY GUIDELINES

Guideline	Consistency
1) Information shall be submitted regarding the historical agricultural operational/usage of the parcel including, specific crop type, for the last 10 years (if no agricultural operation in the last 10 years, specify when land was last in agricultural use).	Information regarding the historical agricultural operation of the Project site is provided in Section 4.3, *Agriculture and Forestry Resources*. A detailed 10-year crop history for the Project site is provided in the Land Evaluation and Site Assessment (LESA) included in Administrative Draft EIR Appendix D.
2) Information shall be submitted that identifies the source of water for the subject parcel (surface water from irrigation district, individual well(s), conjunctive system). If the source of water is via district delivery, the applicant shall submit information documenting the allocations received from the irrigation district and the actual disposition of the water (i.e., utilized on-site or moved to other locations) for the last 10 years. If an individual well system is used, provide production capacity of each well, water quality data and data regarding the existing water table depth.	Information regarding Project water sources is described in Section 2.5.2, *Water, Wastewater, Power, and Hazardous Materials,* and in Section 4.19, *Utilities and Service Systems*. A Water Supply Assessment for the Project is provided in Appendix J.
3) Identify the current status of the parcel (Williamson Act Contract, Conservation Easement, retired land, etc.), the purpose of any easement and limitations of the parcel. The applicant shall submit a Title Report or Lot Book Guarantee for verification.	The current status of the Project site parcels is detailed in Section 4.3, *Agriculture and Forestry Resources*. The LESA and Project application materials suggested that all eight Project site parcels are subject to Williamson Act Contract, see Section 2.2, *Location of the Project Site*, for further information.

Guideline	Consistency
4) Identify (with supporting data) the current soil type and mapping units of the parcel pursuant to the standards of the California State Department of Conservation and the Natural Resources Conservation Service.	Soil types found on the Project site are described in Section 4.8, *Geology, Soils and Paleontological Resources,* and in the LESA included in Draft EIR Appendix D. Information is provided in Administrative Draft EIR Section 4.3 about the Project site parcels' map categorization as "Nonprime Farmland" by the State Department of Conservation's Farmland Mapping and Monitoring Programs.
5) List all proposed measures and improvements intended to create a buffer between the proposed solar facility and adjacent agricultural operations (detailed information must be shown on site-plan) and provide factual/technical data supporting the effectiveness of said proposed buffering measures.	Proposed buffers are described in Section 2.5 of the Project Description (Administrative Draft EIR Chapter 2) and in Section 4.3, *Agriculture and Forestry Resources*.
6) Provide a Reclamation Plan detailing the lease life, timeline for removal of the improvements and specific measures to return the site to the agricultural capability prior to installation of solar improvements. If the project is approved, adequate financial security to the satisfaction of the County shall be provided to ensure site reclamation. Financial security can be in the form of a cash deposit to be placed in a trust account by the County with additional deposits required as needed to adjust for inflation and/or a Letter of Credit to be renewed every year to adjust for inflation.	The Reclamation Plan is described in Section 2.8, *Decommissioning and Site Reclamation*.
7) Provide information documenting efforts to locate the proposed solar facility on non-agricultural lands and non-contracted parcels and detailed information explaining why the subject site was selected.	The evaluation of project alternatives is described in Chapter 4, *Alternatives*.
8) Develop and submit a project site pest management plan to identify methods and frequency to manage weeds, insects, disease and vertebrate pests that may impact adjacent sites.	An Integrated Pest Management Plan is provided in Administrative Draft EIR Appendix B.1.
9) The applicant must acknowledge the County's Right to Farm Ordinance and shall be required to record a Right to Farm Notice prior to issuance of any permits. This shall be included as a recommended condition of approval of the land use entitlement.	The Conditional Use Permit application materials will be submitted by the Applicant, BayWa r.e. Solar Projects, LLC, and will state something along the lines of, "Acknowledgement of the County's Right to Farm Ordinance. The Applicant shall be required to record a Right to Farm Notice prior to the issuance of any permits. This shall be included as a recommended Condition of Approval of the land use entitlement." Recordation of this notice will be included as a condition of approval.
10) Note: The life of the approved land use permit will expire upon expiration of the initial life of the solar lease. If the solar lease is to be extended, approval of new land use permit will need to be obtained.	Not applicable. All Project site parcels are under a purchase option agreement with the Applicant, who intends to purchase the land prior to starting Project construction. Because the Project site will be owned by the Applicant and because the Project proposed energy storage rather than solar energy generation, there will be no solar lease.
11) If the project is approved, the applicant shall make all reasonable efforts to establish a point of sale in Fresno County for equipment and construction related items necessary for the project.	As will be stated in materials accompanying the Applicant's Conditional Use Permit application, the Applicant will commit to making reasonable efforts to establish a point of sale in Fresno County.
12) If the project is approved, the applicant shall make all reasonable efforts to conduct local recruitment efforts and/or coordinate with employment agencies in an attempt to hire from the local workforce.	As will be stated in materials accompanying the Applicant's Conditional Use Permit application, the Applicant will commit to making reasonable efforts to hire from the local workforce.

Guideline	Consistency
13) In addition to disclosing the number of trips in the required project Operational Statement, the applicant shall disclose the weight of the shipments anticipated to the site. If the project is approved, pursuant to the CEQA analysis and based upon the existing road conditions and the weight/frequency of shipments to the site, the applicant shall mitigate impacts to County roads.	The Traffic Impact Study prepared for the Project (see Appendix L) included an analysis of potential pavement impacts, as required by Fresno County. Pavement impacts are analyzed based on a comparison of the TI with the Project to the TI without the Project. Based on the County's thresholds, the TI analysis concluded that construction of the Project would not result in a significant impact to the pavement on SR 33 and Sutter Avenue bisecting the Project site.
14) If the project is approved, the applicant shall make all reasonable efforts to purchase products and equipment from local (Fresno County) manufacturing facilities and./or vendors.	As will be stated in materials accompanying the Applicant's Conditional Use Permit application, the Applicant will commit to making reasonable efforts to purchase products and equipment from local manufacturers and vendors.

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Appendix L

Noise and Vibration Technical Report and Update

Cornucopia Hybrid Project

Noise and Vibration Technical Report

prepared for

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June **2024**

RINCON CONSULTANTS, INC. SINCE 1994

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1 Introduction

This Noise and Vibration Technical Report has been prepared for the Cornucopia Hybrid, LLC for the Cornucopia Hybrid (battery and solar) Project (proposed project) in Fresno County, California. The purpose of this study is to analyze the noise and vibration levels related to both temporary construction activity and long-term operation of the proposed project. Table 1 provides a summary of project impacts.

Table 1 Summary of Impacts

Impact Threshold	Proposed Project's Level of Significance	Mitigation
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 with mitigation (Construction) Less than significant impact (Operation)	NOI-1
Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	Less than significant impact (Construction) Less than significant impact (Operation)	None
For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No impact	None

2 Project Description

2.1 Project Location

The project site is located in an unincorporated portion of Fresno County, California, situated between the communities of Coalinga and Avenal. Interstate 5 (I-5) is located approximately 4 miles east of the project site. The project site is bifurcated north to south by Sutter Avenue and east to west by State Route (SR) 33 (South Lost Hills Road). The project includes approximately 2,446.46 acres of land at the base of the eastern slope of the Diablo Range leased by BayWa r.e. Solar Projects LLC. The project site includes fallow agricultural land and is mostly surrounded by vacant agricultural land to the north, west, and south with residential uses to the southeast. There is a small residential area which lies just north of the northernmost portion of the project site along SR 33 and a commercial barn that borders the project site to the east of SR 33 at the junction of SR 33 with Sutter Avenue

Figure 1 shows the regional location and Figure 2 shows the project site location and boundary.

2.2 Project Description

The proposed Cornucopia Hybrid Project (proposed project) would include the development of a new utility-scale, 300-megawatt (MW) solar facility consisting of approximately 686,880 solar modules, a 300-megawatt alternating current (MWac) energy storage system (ESS), and two prefabricated structures for maintenance, operation, and control services. Figure 3 shows a preliminary site plan for the project.

The key components of the proposed project include:

- 686,880 photovoltaic (PV) solar modules rated at 585 watts (W), mounted on tracking devices and organized as rows in a uniform grid pattern (solar array). The PV modules would be connected to 74 power inverters.
- Substations to interconnect the proposed project to the grid, including equipment such as breakers, switches, relays, meters, lightning protection, transformers, grounding, and a control enclosure.
- An ESS capable of storing up to 300 MW of electricity and conducting energy to the regional electrical grid. The ESS would consist of battery banks housed in electrical enclosures and buried electrical conduit.
- Connection to a Pacific Gas and Electric Company (PG&E) Switching Station's existing 230 kV transmission lines.
- Two prefabricated structures, of which one would be used for maintenance and operation service and one for control services.
- Access road network to be constructed throughout the project site, with entrances proposed on SR 33 and Sutter Avenue.
- Revegetation of project site with a blend of native grasses and pollinator species.
- Laydown area located at the southeast corner of the site to be used for material and equipment staging.

Figure 1 Regional Location

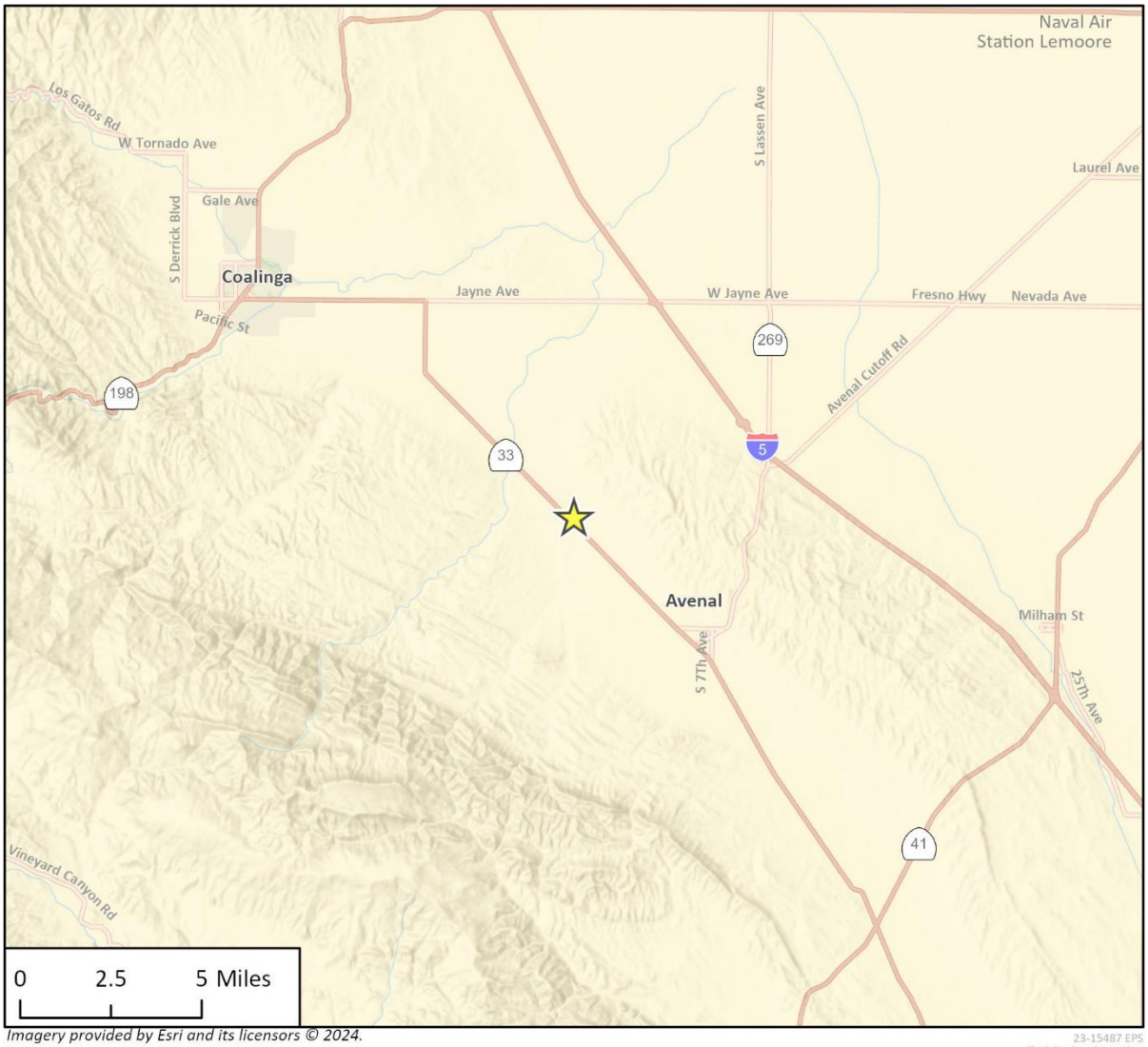
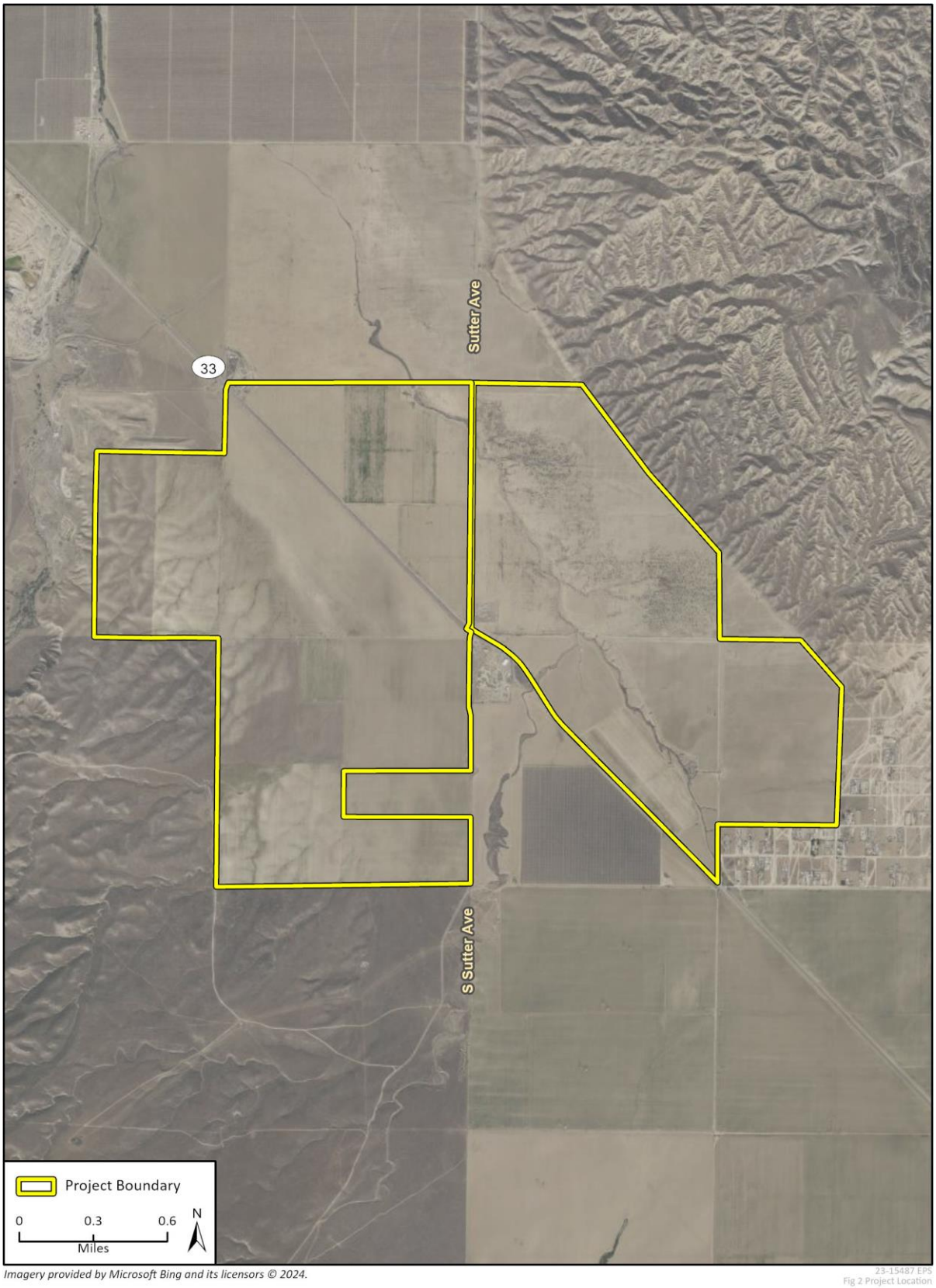


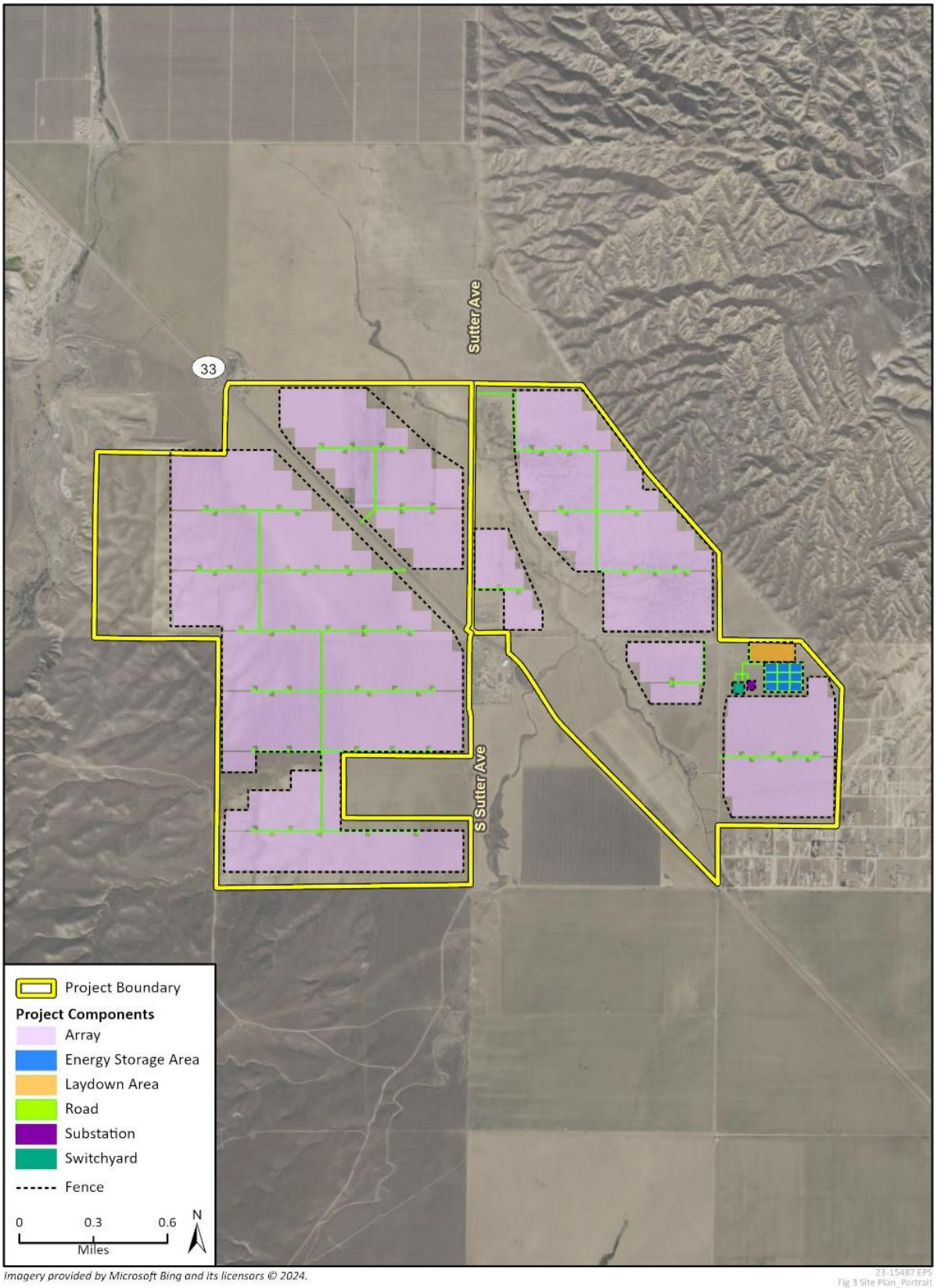
Figure 2 Project Location



Imagery provided by Microsoft Bing and its licensors © 2024.

23-15487 EPS
Fig 2 Project Location

Figure 3 Preliminary Site Plan



2.2.1 Construction

Construction of the proposed project is anticipated to involve the following three main project components:

- **Solar Facility**
  - Construction of the solar facility will be broken into three phases: site preparation, installation of the PV system, and installation of the inverters, transformers, substation, switching station, and the gen-tie line.
- **ESS**
  - Construction of the ESS will be broken into three phases: site preparation, installation of foundations, structures, and DC electrical system, and installation of inverters, substation, and AC electrical system.
- **PG&E Improvements**
  - Construction of PG&E improvements will be broken into two phases: site work and electrical work.

Construction of the project is anticipated to begin in the fourth quarter of 2026 and last approximately 39 months, with a commercial operation date of the fourth quarter of 2029.

Typical construction hours for all project components are expected to be 6:00 a.m. to 6:00 p.m. on Mondays through Fridays. Construction may occur on weekends as needed between 7:00 a.m. and 5:00 p.m. Nighttime construction may also occur on an as-needed basis for concrete pouring at the ESS and substation areas.

Construction activities would require use of the following types of equipment: pile drivers, rock drillers, forklifts, trenchers, mini excavators, generators, compressors, and/or cranes.

2.2.2 Operation

The proposed project is anticipated to be operational in the fourth quarter of 2029 and would operate 24 hours per day, 7 days a week, and 365 days per year. Due to the remote nature of the project site, operation and maintenance activities would be carried out by approximately six full-time employees and occur on a scheduled and as-needed basis; therefore, regular onsite staff would not be required. When technical support is needed, a small crew of technicians would enter the project site during typical business hours and complete any required operation and maintenance activities. The planned project life is 35 years.

3 Setting

3.1 Environmental Setting

3.1.1 Overview of Sound Measurement

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs. Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (California Department of Transportation [Caltrans] 2013).

Noise levels are commonly measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz (Hz) and less sensitive to frequencies around and below 100 Hz (Kinsler, et. al. 1999). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used to measure earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; dividing the energy in half would result in a 3 dB decrease (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not “sound twice as loud” as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease (i.e., twice the sound energy); that a change of 5 dBA is readily perceptible; and that an increase (or decrease) of 10 dBA sounds twice (half) as loud (Crocker 2007).

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in level as the distance from the source increases. The manner by which noise reduces with distance depends on factors such as the type of sources (e.g., point or line, the path the sound will travel, site conditions, and obstructions). Noise levels from a point source typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance (e.g., construction, industrial machinery, ventilation units). Noise from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013). The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site, such as a parking lot or smooth body of water, receives no additional ground attenuation and the changes in noise levels with distance (drop-off rate) result from simply the geometric spreading of the source. An additional ground attenuation value of 1.5 dBA per doubling of distance applies to a soft site (e.g., soft dirt, grass, or scattered bushes and trees) (Caltrans 2013). Noise levels may also be reduced by intervening structures; the amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features such as hills and dense woods, and man-made features such as buildings and walls, can significantly alter noise levels. Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (Federal Highway Administration [FHWA] 2011). Structures can substantially reduce exposure to noise as well. The FHWA’s guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows.

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important factors of project noise impacts. Most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. One of the most frequently used noise metrics is the equivalent noise level (L_{eq}); it considers both duration and sound power level. L_{eq} is defined as the single steady A-weighted level equivalent to the same amount of energy as that contained in the actual fluctuating levels over time.

The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

Noise that occurs at night tends to be more disturbing than that occurring during the day. Community noise is usually measured using Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a +10 dBA penalty for noise occurring during nighttime (10:00 PM to 7:00 AM) hours. It is also measured using CNEL, which is the 24-hour average noise level with a +5 dBA penalty for noise occurring from 7:00 p.m. to 10:00 p.m. and a +10 dBA penalty for noise occurring from 10:00 PM to 7:00 AM (Caltrans 2013). Noise levels described by L_{dn} and CNEL usually differ by about 1 dBA. The relationship between the peak-hour L_{eq} value and the L_{dn}/CNEL depends on the distribution of traffic during the day, evening, and night.

3.1.2 Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of Hz. The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body starts from a low frequency of less than 1 Hz and goes to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (FTA 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern of vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Vibration amplitudes are usually expressed in peak particle velocity (PPV). The PPV velocity is normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting and

construction vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

3.1.3 Sensitive Receptors

Noise-sensitive receptors are land uses that may be subject to stress and/or interference from excessive noise, such as residential development, schools, hospitals, nursing homes, churches, and libraries. Industrial and commercial land uses are generally not considered sensitive to noise.

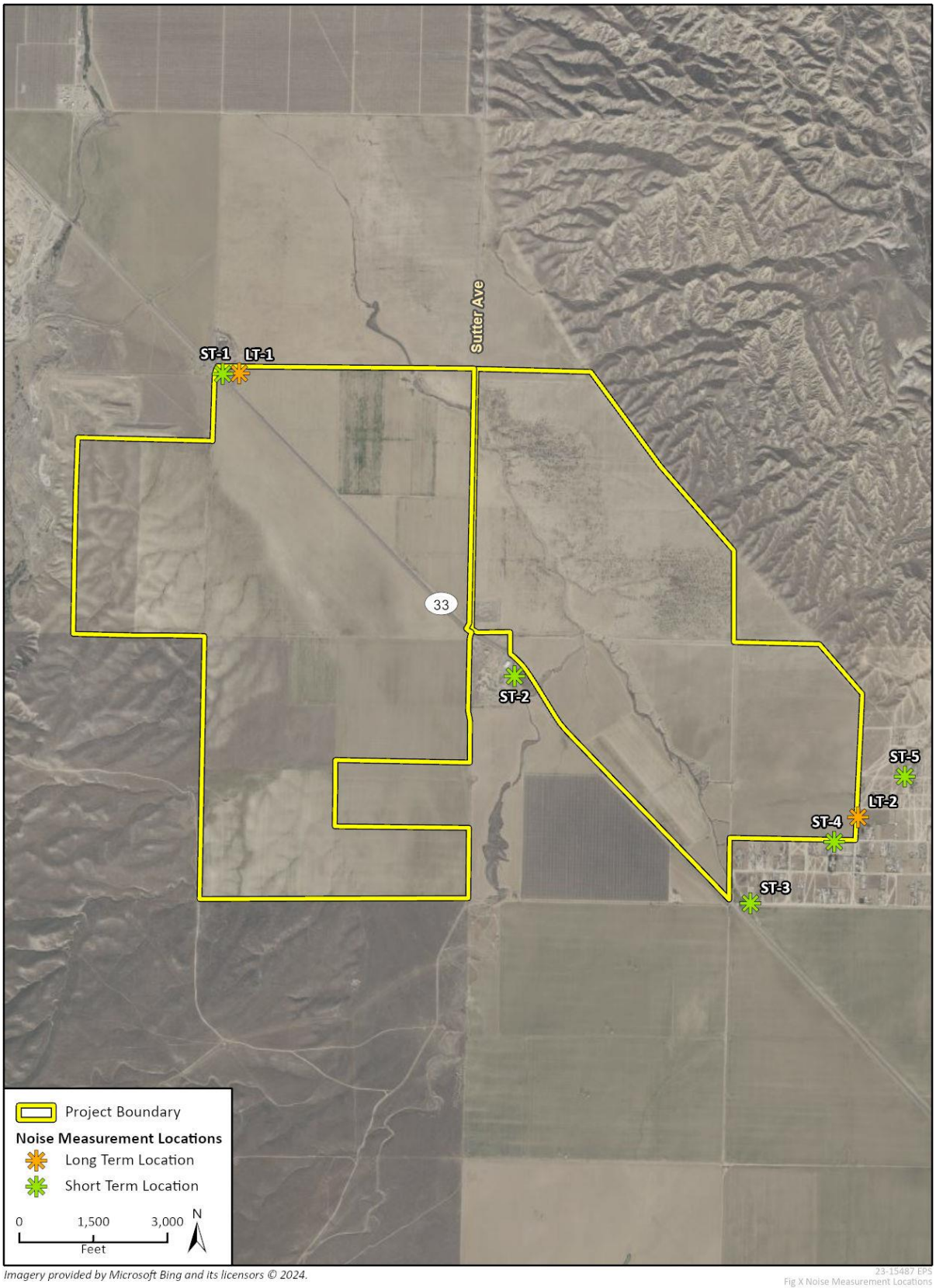
Vibration-sensitive receptors, which are similar to noise-sensitive receivers, include residences and institutional uses, such as schools, churches, and hospitals. However, vibration-sensitive receivers also include buildings where vibrations may interfere with vibration-sensitive equipment that is affected by vibration levels (e.g., recording studies or medical facilities with sensitive equipment).

The nearest sensitive receptors are the single-family residences adjacent to the southeastern area of the project site and the single-family residence located on SR 33, adjacent to the northwestern area of the project site.

3.1.4 Project Noise Setting

The project site is located within an unincorporated, agricultural area of Fresno County that includes other agricultural land uses in the surrounding area. The major noise source in the vicinity of the site is vehicular traffic on SR 33, which bisects the project site from east to west. To characterize ambient noise levels in the vicinity of the site, five short-term, 15-minute sound level measurements were conducted on February 28, 2024, and two long-term 24-hour measurements were conducted on February 28–29, 2024. Two Soft dB Piccolo-II, ANSI Type 2 integrating sound level meters were used to conduct the measurements. The sound level meters were field calibrated before and after the monitoring period. Short-Term (ST) measurement 1 (ST-1) was conducted offsite along SR 33 at the single-family residence located near the northwestern area of the project site; -ST-2 was conducted near the agricultural building located east of Sutter Avenue and south of SR 33; ST-3 was conducted at a property in the ranch community near SR 33, approximately 0.3 miles south of the southern project boundary; ST-4 was conducted at a property in the ranch community near the southeastern area of the project site, approximately 230 feet south of the southern project boundary; ST-5 was conducted at a property in the ranch community near the southeastern area of the project site, approximately 0.5 miles southeast of the proposed energy storage area. Long-Term (LT) measurement 1 (LT-1) was conducted near the single-family residence along SR 33 at the northwestern area of the project site; -LT-2 was conducted at a property in the ranch community near the southeastern area of the project site. Figure 4 shows the approximate measurement locations, Table 2 summarizes the results of the short-term noise measurements, Table 3 summarizes the results of the long-term noise measurements at LT-1, and Table 4 summarizes the results of the long-term noise measurements at LT-2.

Figure 4 Approximate Noise Measurement Locations



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23-15487 EPS
Fig X Noise Measurement Locations

Table 2 Short-Term Noise Monitoring Results

Measurement Name	Measurement Location	Sample Times	Primary Noise Sources	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	L_{10} (dBA)	L_{50} (dBA)	L_{90} (dBA)
ST1	Offsite, along SR 33; near single-family residence at northwestern corner of project site	2:25 p.m. to 2:40 p.m.	SR 33	62.5	36.9	79.9	66.6	45.0	38.6
ST2	Offsite, near agricultural building east of Sutter Ave and south of SR 33	2:00 p.m. to 2:15 p.m.	SR 33	55.6	37.7	71.9	58.6	47.5	41.4
ST3	At property in ranch community near southeastern corner of project site, approximately 0.3 mi south of southern project boundary	12:30 p.m. to 12:45 p.m.	SR 33	50.5	37.9	66.3	53.3	44.8	39.2
ST4	At property in ranch community near southeastern corner of project site, approximately 230 ft south of southern project boundary	12:54 p.m. to 1:09 p.m.	SR 33; ambient agricultural/residential environment	43.5	39.2	60.1	43.1	40.9	39.9
ST5	At property in ranch community near southeastern corner of project site, approximately 0.5 mi southeast of proposed energy storage area	1:16 p.m. to 1:31 p.m.	SR 33; ambient agricultural/residential environment	48.3	38.8	60.3	51.9	45.7	41.5

Detailed sound level measurement data are included in Appendix A; measurement locations are shown on Figure 4.

Table 3 Long-Term Noise Monitoring Results – LT1

Sample Time	dBA L_{eq}	Sample Time	dBA L_{eq}
LT1 – Single-family residences near northwestern corner of project site, February 28–29, 2024			
3:00 PM	46	3:00 AM	48
4:00 PM	50	4:00 AM	50
5:00 PM	49	5:00 AM	56
6:00 PM	53	6:00 AM	57
7:00 PM	51	7:00 AM	55
8:00 PM	51	8:00 AM	55
9:00 PM	50	9:00 AM	52
10:00 PM	48	10:00 AM	51
11:00 PM	45	11:00 AM	55
12:00 AM	48	12:00 PM	55
1:00 AM	48	1:00 PM	53
2:00 AM	46	2:00 PM	60
24-hour Noise Level		**CNEL**	**58.4**

Source: Rincon Consultants, field measurements conducted on February 28–29, 2024, using ANSI Type II Integrating sound level meter. See Appendix A for graphical measurement results.

Table 4 Long-Term Noise Measurement Results – LT2

Sample Time	dBA L_{eq}	Sample Time	dBA L_{eq}
LT2 – Property in ranch community near southeastern corner of project site, February 28–29, 2024			
2:00 PM	40	2:00 AM	51
3:00 PM	44	3:00 AM	43
4:00 PM	49	4:00 AM	47
5:00 PM	47	5:00 AM	50
6:00 PM	41	6:00 AM	52
7:00 PM	46	7:00 AM	47
8:00 PM	46	8:00 AM	44
9:00 PM	47	9:00 AM	48
10:00 PM	39	10:00 AM	53
11:00 PM	41	11:00 AM	54
12:00 AM	45	12:00 PM	50
1:00 AM	47	1:00 PM	53
24-hour Noise Level		**CNEL**	**54.3**

Source: Rincon Consultants, field measurements conducted on February 28–29, 2024, using ANSI Type II Integrating sound level meter. See Appendix A for measurement data.

3.2 Regulatory Setting

3.2.1 Federal

There are no specific federal noise standards that would be applicable to the project other than federal noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 Code of Federal Regulations (CFR), Part 205, Subpart B. The federal truck pass by noise standard is 80 dBA at 15 meters (approximately 50 feet) from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

3.2.2 State

California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards, and provides guidance for local land use compatibility. State law requires each county and city to adopt a General Plan that includes a Noise Element prepared per guidelines adopted by the Governor's Office of Planning and Research. The purpose of the Noise Element is to limit the exposure of the community to excessive noise levels. CEQA requires all known environmental effects of a project to be analyzed, including environmental noise and vibration impacts.

3.2.3 Local

The project site is located in an unincorporated portion of Fresno County. Applicable noise standards are codified in the following County regulations:

Fresno County General Plan Noise Element

The Fresno County General Plan's Health and Safety Element (Section G, Noise) identifies goals, policies, and implementation programs that guide development in unincorporated Fresno County with regard to noise. The policies in the Health and Safety Element (Section G) set noise standards and seek to protect noise-sensitive land uses from excessive noise either through noise-reducing project design features or by allowing noise-sensitive land uses to locate only in areas with ambient noise levels below specific thresholds (Fresno County 2000).

According to the County's noise compatibility matrix, ambient noise levels up to 75 dBA L_{dn}/CNEL are normally acceptable for industrial uses while ambient noise levels up to 80 dBA L_{dn}/CNEL are conditionally acceptable (Fresno County 2000).

The Noise Element also contains goals and policies associated with effective planning to reduce noise levels throughout the County. The following goals and policies are applicable to the project:

> **Goal HS-G:** To protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels; to identify maximum acceptable noise levels compatible with various land use designations; and to develop a policy framework necessary to achieve and maintain a healthful noise environment.
>
> **Policy HS-G.1:** The County shall require that all proposed development incorporate design elements necessary to minimize adverse noise impacts on surrounding land uses.

Policy HS-G.4: So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where:

a. Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are "generally unacceptable" or higher according to the Chart HS-1: "Land Use Compatibility for Community Noise Environments;"

b. Proposed projects are likely to produce noise levels exceeding the levels shown in the County's Noise Control Ordinance at existing or planned noise sensitive uses.

Policy HS-G.5: Where noise mitigation measures are required to achieve acceptable levels according to land use compatibility or the Noise Control Ordinance, the County shall place emphasis of such measures upon site planning and projects design. These measures may include, but are not limited to, building orientation, setbacks, earthen berms, and building construction practices. The County shall consider the use of noise barriers, such as sound walls, as a means of achieving the noise standards after other design-related noise mitigation measures have been evaluated or integrated into the projects.

Policy HS-G.6: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.

Policy HS-G.8: The County shall evaluate the compatibility of proposed projects with existing and future noise levels through a comparison to Chart HS-1, "Land Use Compatibility for Community Noise Environments" (reproduced below in Table 5).

Table 5 Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Equivalent Level (CNEL) or Day-Night Level (Ldn), dB(A)			
	Normally Acceptable	Conditionally Acceptable	Generally Unacceptable	Land Use Discouraged
Residential: Low-Density Single-Family, Duplex, Mobile Homes	<60	55-70	70-75	>75
Residential: Multiple Family	<65	60-70	70-75	>75
Transient Lodging: Motels, Hotels	<65	60-70	70-80	>80
Schools, Libraries, Churches, Hospitals, Nursing Homes	<70	60-70	70-80	>80
Auditoriums, Concert Halls, Amphitheaters	N/A	<70	N/A	>65
Sports Arenas, Outdoor Spectator Sports	N/A	<75	N/A	>70
Playgrounds, Neighborhood Parks	<70	N/A	67-75	>72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	<75	N/A	70-80	>80
Office Buildings, Business Commercial and Professional	<70	67-77	>75	N/A
Industrial, Manufacturing, Utilities, Agriculture	<75	70-80	>75	N/A

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Generally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Land Used Discouraged: New construction or development should generally not be undertaken.

Source: Fresno County General Plan Policy Document, Chart HS-1.

Fresno County Code of Ordinances

Chapter 8.40 – Noise Control of the Fresno County Code of Ordinances outlines standards to protect people from excessive noise levels within or near a residence, school, church, hospital or public library. Section 8.40.040 provides exterior noise level standards not to be exceeded at any receiving, occupied single- or multiple-family residence, school, hospital, church or public library. These exterior noise limits are shown in Table 6.

Table 6 Fresno County Code of Ordinances Exterior Noise Standards

Category	Cumulative Number of Minutes in Any One-hour Time Period	Noise Level Standards, dBA	
		Daytime Hours (7 a.m. to 10 p.m.)	Nighttime Hours (10 p.m. to 7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Source: Fresno County Code of Ordinances Chapter 8.40 – Noise Control, Section 8.40.040.

Section 8.40.060 of the Fresno County Code of Ordinances provides exemptions to the noise level limits above for the following activities relevant to the project:

- Noise sources associated with construction, provided such activities do not take place before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, or before seven a.m. or after five p.m. on Saturday or Sunday.
- Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities.

Additionally, Section 8.40.090 places noise restriction on electrical substations, specifying that noise associated with the operation of these sources cannot exceed 50 dBA when measured within 50 feet of an affected residence, school, hospital, church, or public library at five feet above the ground.

4 Methodology and Significance Criteria

This section presents the methodology and significance criteria used for the analysis of construction and operational noise and vibration for the proposed project.

4.1 Methodology

4.1.1 Construction Noise

Construction activity would result in temporary noise in the overall project site vicinity, exposing surrounding nearby receivers to increased noise levels. Construction noise was estimated using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) (FHWA 2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise-sensitive receptors near the project site. During construction, equipment undergoes varying load cycles and is operated intermittently to allow for non-equipment tasks such as measurement. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FTA 2018).

Construction of the project would involve grading, solar array installation, substation, switchyard, and gen-tie installation, ESS construction, and access road construction. Each phase of construction would have a specific equipment mix, depending on the work to be carried out during that phase. The construction equipment list was based on the California Emissions Estimator Model (CalEEMod) default values for a project of this type and size (Rincon 2024). Construction equipment is typically dispersed in various areas of the site, with only a limited amount of equipment operating near a given location at a particular time. To account for the worst-case noise impact, construction noise was evaluated separately per phase at the respective locations within the site nearest to the sensitive receptors where the work is expected to occur based on the site plan and locations of proposed project features.

Construction activities would primarily occur between the hours of 6:00 a.m. and 6:00 p.m. on weekdays and between the hours of 7:00 a.m. and 5:00 p.m. on weekends (as needed), consistent with Section 8.40.060 of the Fresno County Code of Ordinances; however, nighttime construction may occur on an as-needed basis for concrete pouring at the ESS and substation area. An evaluation of nighttime construction work is also provided for potential noise impacts.

4.1.2 Groundborne Vibration

The project would not include any substantial vibration sources associated with operation. Thus, the most substantial vibration sources with the potential to affect nearby receivers would be associated with activity during construction of the proposed project, especially during the solar array and substation, switchyard, and gen-tie installation phases. The greatest vibratory source during construction in the vicinity of the project site would be pile driving to install helical pile supports for the photovoltaic modules. Table 7 shows typical vibration levels for various pieces of construction equipment used in the assessment of construction vibration (FTA 2018).

Table 7 Typical Vibration Levels Measured during Construction Activities

Equipment	PPV at 25 ft. (in/sec)
Impact Pile Driver	1.518
Vibratory Roller	0.21
Large Bulldozer	0.089
Loaded Trucks	0.076

Source: FTA 2018

Vibration limits used in this analysis to determine a potential impact to local land uses from construction activities, such as pile-driving, vibratory compaction, demolition, drilling, or excavation, are based on information contained in Caltrans' *Transportation and Construction Vibration Guidance Manual* and the Federal Transit Administration and the FTA *Transit Noise and Vibration Impact Assessment Manual* (Caltrans 2020; FTA 2018). Maximum recommended vibration limits by the American Association of State Highway and Transportation Officials (AASHTO) are identified in Table 8.

Table 8 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in/sec)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

Source: Caltrans 2020

Based on AASHTO recommendations, limiting vibration levels to below 0.2 in/sec PPV at residential structures would prevent structural damage regardless of building construction type. These limits are applicable regardless of the frequency of the source.

4.1.3 Operational Noise

Under normal operation, the project site would be remotely monitored with no personnel on-site except for periodic operation and maintenance activities to occur on a scheduled and as-needed basis. Operation and maintenance activities would be completed by a small crew of technicians (up to six full-time employees) and would not generate substantial noise. The primary source of operational noise generated by the proposed project after completion of construction would include stationary outdoor equipment such as inverters and ESS containers.

Modeling of the noise generated by future operation of the project was developed using SoundPLAN noise modeling software, Version 9.0. SoundPLAN incorporates noise propagation algorithms and reference sound levels published by various government agencies and the scientific community. Noise sources and receivers are input using three-dimensional coordinates. All surrounding buildings, structures, and topography in the vicinity of the project site were conservatively not modeled to present an evaluation of worst-case noise impact, as these features would normally provide shielding for nearby receivers. All receivers were modeled at the average height of the human ear, which is five feet above ground elevation.

Propagation of modeled stationary noise sources was based on ISO Standard 9613-2, "Attenuation of Sound during Propagation Outdoors, Part 2: General Method of Calculation." The assessment methodology assumes that all receivers would be downwind of stationary sources. This is a worst-case assumption for total noise impacts since only some receivers would be downwind at any one time.

On-site noise sources were modeled based on sound test data provided by the project applicant. Per the information provided, inverters would be Sungrow SG4400UD-MV-US units, which generate an average noise level of approximately 69 dBA at 1.25 meters based on manufacturer test data. ESS containers would be Sungrow ST2752UX-US units, which generate a noise level of approximately 75 dBA at 1 meter based on manufacturer test data. For a conservative scenario, all equipment was assumed to operate at 100 percent of an hour for 24 hours per day.

4.1.4 Traffic Noise

Construction traffic would access the project site via SR 33. Existing traffic volumes are compared with proposed construction traffic along this roadway to estimate the potential project-related traffic noise increase during construction of the project. Traffic information was based on annual average daily traffic (AADT) volumes published by the California Department of Transportation (Caltrans) for the year 2017 (Caltrans 2017).

All roadway vehicle trips generated by construction activities for the project are based on default estimates provided by the CalEEMod (Rincon 2024). During construction of the project site, it is estimated that up to 600 worker vehicle trips would occur per day during the peak construction period (Photovoltaic Array Installation). A vehicle trip is defined as a one-direction vehicle movement. The total number of trips generated by the project would include both inbound and outbound trips. Therefore, project construction would generate a maximum of 1,200 one-way trips per day.

Table 9 shows the estimated number of existing vehicle trips and future construction vehicle trips for the project. All construction trips were assumed to occur on SR 33. To assess the increase in ambient noise levels at the nearby sensitive receptors, per California Code of Regulations requirements, the traffic noise increase was determined using the following equation: Traffic Noise Increase = 10*LOG (Future Traffic Volumes/Existing Traffic Volumes). Appendix C contains the traffic noise modeling inputs and outputs.

Table 9 Estimated Existing Vehicle Trips and Future Construction-Related Vehicle Trips

Roadway Segment	Existing Daily Vehicle Trips[1]	Future Daily Construction Vehicle Trips	Existing + Future Daily Construction Vehicle Trips
SR 33, Alpine/Lost Hills Road	3,100	1,200	4,300

[1] Existing annual average daily traffic (AADT) volumes obtained from Caltrans (Caltrans 2017).

4.2 Significance Criteria

The significance criteria used to evaluate the proposed project related to noise and vibration are based on the recommendations provided in Appendix G of the *CEQA Guidelines* (14 CCR 15000 et seq.). For the purposes of this noise and vibration analysis, a significant impact would occur if the proposed project would:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or,
2. Generation of excessive groundborne vibration or groundborne noise levels; or,
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

4.2.1 Construction Noise

As stated previously in Section 3.2, the Fresno County Code of Ordinances provides an exemption for noise generated by construction activity as long as it occurs within the specified day and time restrictions (between 6:00 a.m. and 9:00 p.m. on Mondays through Fridays or between 7:00 a.m. and 5:00 p.m. on Saturdays or Sundays). As stated in Section 2.2.1, the construction schedule specifies that construction activity would primarily occur within these required day and time restraints; however, nighttime construction may be carried out for concrete pouring at the ESS and substation area. Nighttime construction activity was evaluated to the nighttime exterior noise limit established in the Fresno County Code of Ordinances, which is 45 dBA at a receiving property line.

To present a comprehensive environmental review of proposed project impacts, construction noise was evaluated to the noise limits outlined in the FTA *Transit Noise and Vibration Impact Assessment* Manual (FTA 2018) in the absence of applicable local construction noise level limits. Based on FTA recommendations, the average daytime construction noise level over an eight-hour period should be limited to 80 dBA L_{eq} at a noise-sensitive receiver. Therefore, if noise levels from construction activity associated with the project exceed 80 dBA L_{eq} for an eight-hour period at the property line of a nearby residential receiver, a significant noise impact would occur.

4.2.2 Onsite Operational Noise

The project site is located in an agricultural area of the County, with the closest residential properties located adjacent to the northwestern and southeastern corners of the project property lines. The Fresno County Code of Ordinances includes quantified noise limits for new proposed stationary noise sources. According to the County Code of Ordinances, noise generated by stationary sources cannot exceed the following noise limits at a residential property line: 50 dBA L_{eq} between 7:00 a.m. and 10:00 p.m. and 45 dBA L_{eq} between 10:00 p.m. and 7:00 a.m. Therefore, on-site operational noise could be significant if it exceeds these thresholds.

4.2.3 Offsite Traffic Noise

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas. Most people of normal hearing can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and

changes of 1 to 3 dBA are detectable under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an exterior environment. Based on this, the following thresholds of significance similar to those recommended by the Federal Aviation Administration (FAA) are used to assess traffic noise impacts at sensitive receptor locations (FAA 2020). A significant impact would occur if project-related traffic noise increases the existing noise environment by the following:

- Greater than 1.5 dBA for ambient noise environments of 65 dBA CNEL and higher; or
- Greater than 3 dBA for ambient noise environments of 60 to 64 dBA CNEL; or
- Greater than 5 dBA for ambient noise environments of less than 60 dBA CNEL.

4.2.4 Construction Vibration

Fresno County has not adopted standards to assess vibration impacts during construction and operation. Therefore, vibration limits used in this analysis are based on those outlined in Caltrans *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020) to evaluate potential construction vibration impacts related to potential building damage. Based on the Caltrans criteria shown above in Table 8, construction vibration impacts would be significant if vibration levels exceed 0.2 in/sec PPV for residential structures, which are the limits where minor cosmetic, i.e., non-structural, damage may occur to these buildings.

5 Impact Analysis

Threshold 1:	Would the proposed 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?

IMPACT N-1 CONSTRUCTION OF THE PROPOSED PROJECT WOULD RESULT IN TEMPORARY INCREASES IN NOISE AT NEARBY SENSITIVE RECEPTORS. DAYTIME CONSTRUCTION ACTIVITIES WOULD NOT EXCEED COUNTY NOISE THRESHOLDS; HOWEVER, NIGHTTIME ACTIVITIES COULD EXCEED THRESHOLDS. NONETHELESS, IMPLEMENTATION OF MITIGATION MEASURE NOI-1 WOULD REDUCE TEMPORARY NIGHTTIME CONSTRUCTION NOISE IMPACTS TO BELOW THE COUNTY'S THRESHOLD. THEREFORE, CONSTRUCTION ACTIVITIES WOULD BE CONDUCTED IN ACCORDANCE WITH THE FRESNO COUNTY CODE OF ORDINANCES. OPERATION OF THE PROJECT WOULD NOT GENERATE NOISE LEVELS ABOVE THE COUNTY'S DAYTIME AND NIGHTTIME LIMITS AT NEARBY SENSITIVE RECEPTORS. IN ADDITION, WHILE PROJECT-GENERATED TRAFFIC DURING CONSTRUCTION AND OPERATION WOULD RESULT IN NOISE INCREASES ON SR 33, THE ANTICIPATED NUMBER OF VEHICLE TRIPS ON THIS ROADWAY WOULD NOT INCREASE NOISE LEVELS ABOVE THE APPLICABLE THRESHOLD. THEREFORE, THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED.

Construction

Daytime Construction Activities

General construction activities are expected to typically occur between 6:00 a.m. and 6:00 p.m. on Mondays through Fridays. Construction may also occur on weekends on an as needed basis between 7:00 a.m. and 5:00 p.m. Estimated construction noise levels at sensitive receptors near the project site are shown in Table 10. Note that construction noise levels shown in this table conservatively do not take into account shielding from any intervening buildings, terrain, or other nearby structures or site features.

Table 10 Estimated Noise Levels at Sensitive Receptors by Construction Phase

	dBA L_{eq} (8-hour)			
Construction Phase	**RCNM Reference Noise Level[1] (50 feet)**	**Residences near southeast corner of project site, east of SR 33 (195 feet)**	**Residences near southwest corner of project site, east of SR 33 (265 feet)**	**Residence near northwest corner of project site, east of SR 33 (639 feet)**
Grading	87	75	72	65
Solar Array Installation	90	78	75	67
Substation, Switchyard, and Gen-Tie Installation	88	77	74	66
ESS Construction	88	76	73	66
Access Roads Construction	87	75	73	65

Numbers in bold would exceed the construction noise threshold.

Source: Roadway Construction Noise Model (RCNM). See Appendix B for modeling outputs.

As shown in Table 10, noise levels generated by construction of the Project would not exceed the FTA construction noise threshold of 80 dBA L_{eq} at nearby noise-sensitive receivers, and noise impacts due to the construction of the project during daytime hours would be less than significant.

Nighttime Construction Work

Based on information provided by the project applicant, nighttime construction may occur for concrete pouring at the ESS and substation area. Noise generated during completion of nighttime construction work would be required to comply with the exterior noise limit specified in the Fresno County Code of Ordinances, which is 45 dBA at a receiving residential property line. Nighttime construction work would consist of the following equipment: a concrete mixer truck, concrete pump truck, and generator. All equipment was assumed to operate at the center of the ESS and substation area to account for the average location of equipment as it moves around this work area. When accounting for simultaneous operation of the above equipment, the noise level at the nearest residential receptor property line (located approximately 2,650 feet to the southeast of where concrete pouring would occur) would be 49 dBA $L_{eq,}$ which would exceed the County's nighttime limit of 45 dBA at a receiving residential property line. Therefore, nighttime construction noise impacts would be potentially significant. Mitigation Measure NOI-1 is provided to reduce noise impacts during nighttime construction to below the County's required threshold.

Construction Vehicle Trips

During construction, the project would generate new, temporary vehicle trips that would increase noise levels on nearby roadways (primarily SR 33). The project is anticipated to generate a maximum of 1,200 daily vehicle trips between workers and deliveries of equipment during the peak phase of construction (Photovoltaic Array Installation). The project would not make alterations to roadway alignments or substantially change the vehicle classifications mix on the surrounding roadways (i.e., SR 33). Therefore, the primary factor affecting off-site noise levels would be increased traffic volumes primarily on SR 33, which carries an AADT volume of 3,100 vehicles. A temporary increase of 1,200 daily vehicle trips would result in a daily traffic noise level increase of approximately 1.4 dBA CNEL on SR 33, which is below the 5.0 dBA CNEL impact criterion for an ambient noise environment below 60 CNEL (as presented in Section 3.1.4, the onsite noise measurement survey determined the ambient noise level at the project site was between 54 and 58 dBA CNEL). Therefore, noise impacts due to vehicle trips during construction would be less than significant.

Operation

Onsite Stationary Operational Noise

Following the methodology discussed in Section 4.1.3, noise levels generated by operation of the solar facility from stationary equipment were modeled, and noise contours were calculated throughout the project site and surroundings. Operational noise levels generated by the project's stationary equipment are summarized below in Table 11 and noise contours are shown on Figure 5.

Table 11 Project Operational Noise Levels

Receiver Name	Receiver Description	Modeled Noise Level (dBA L_{eq})	Exceeds Daytime Noise Threshold?[1]	Exceeds Nighttime Noise Threshold?[1]
R1	Residential property line near southeastern corner of project site, east of SR 33	38.4	No	No
R2	Residential property line near southern project boundary, east of SR 33	37.3	No	No
R3	Residential property line near southwestern corner of project site, east of SR 33	37.9	No	No
R4	Residential property line near northwestern corner of project site, east of SR 33	31.0	No	No

[1] Per the Fresno County Code of Ordinances, the applicable daytime noise threshold (7:00 a.m. to 10:00 p.m.) is 50 dBA L_{eq} at residential properties, while the applicable nighttime noise threshold (10:00 p.m. to 7:00 a.m.) is 45 dBA L_{eq} at residential properties.

As shown on Figure 5 and Table 11, noise levels at the nearest residential property line southeast of the project site (represented as R1) would be 38.4 dBA L_{eq}, while noise levels at the next nearest residential property lines would be even lower due to increased distances from the project site. Therefore, noise generated by operation of the project would be below the County's daytime and nighttime thresholds of 50 and 45 dBA L_{eq}, respectively. Long-term operational noise impacts from on-site equipment would be less than significant.

Figure 5 Project Operational Equipment Noise Contours

Other Onsite Operational Noise Sources

The project applicant has partnered with a local shepherd to explore utilizing sheep grazing for vegetation management during operation of the proposed project. Should sheep grazing occur, it would involve deployment of approximately 1,500–2,000 sheep during the grazing season which is anticipated to be from approximately February to July each year. The sheep would remain at the site during the grazing season to remove dry vegetation from the site and reduce fire fuel loads. While these sheep would produce some noise at the site over the approximately seven months they are on the site, it is not anticipated that livestock-generated noise would be substantial, and it is expected that operational noise from grazing sheep would be compatible with the overall agricultural nature of the project vicinity. Thus, noise impacts related to sheep grazing would also be less than significant.

Offsite Traffic Noise

The project would generate new vehicle trips that would increase noise levels on nearby roadways (primarily SR 33). New vehicle trips would be from scheduled/as-needed maintenance and operation visits and would not occur on a regular basis, assumed to be two workers twice per week on average. When compared with the existing ADT volume of 3,100 vehicles on SR 33, these operation and maintenance worker trips would result in a negligible traffic noise increase (much less than 0.1 dBA CNEL) on this roadway.

In addition, as mentioned previously in the *Other Onsite Stationary Operational* Noise *Sources* section, operation of the project may include sheep grazing onsite, which would involve delivery of sheep to the site at the start of grazing season and removal of sheep at the end of the grazing season. It is anticipated that trucks would access the site via SR 33. Each phase (delivery and removal) would be completed by three or four semitrucks at a time, thus adding up to eight vehicle trips during two days per year on SR 33. When compared with the existing ADT volume of 3,100 vehicles on SR 33, sheep mobilization trips would also result in a negligible traffic noise increase (much less than 0.1 dBA CNEL) on this roadway.

Therefore, offsite traffic noise impacts would be well below the impact threshold criterion of 5.0 dBA CNEL for ambient noise environments below 60 dBA CNEL and these impacts would be less than significant.

Mitigation

NOI-1 Nighttime Construction Noise Reduction Measures

The following noise control measures shall be implemented to reduce nighttime construction noise impacts to the extent feasible:

- All construction equipment, stationary and mobile, shall be equipped with properly operating and maintained mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features that meet or exceed original factory specifications.
- Construction equipment shall be equipped with shrouds and noise-control features that are supplied as standard accessories from the original equipment manufacturer.
- Routine field inspection of mufflers to ensure proper function shall be performed by the construction manager.

- All noisy equipment shall be operated only when necessary and shall be switched off when not in use. All other equipment shall be turned off if not in use for more than five minutes. The construction manager shall be responsible for enforcing this.
- Locate stationary noise-generating equipment such as portable power generators as far as possible from sensitive receptors.

Significance After Mitigation

Implementation of Mitigation Measure NOI-1 would reduce construction noise levels by 10 dBA or more (FHWA 2017), reducing noise generated during nighttime construction activities to 39 dBA L_{eq} or less, which would be below the County's nighttime limit of 45 dBA at a receiving residential property line. Therefore, with mitigation, temporary noise impacts resulting from nighttime construction activities would be less than significant.

Threshold 2:	Would the proposed project result in generation of excessive ground-borne vibration or ground-borne noise levels?

IMPACT N-2 CONSTRUCTION OF THE PROJECT WOULD INTERMITTENTLY GENERATE GROUNDBORNE VIBRATION ON-SITE AND AT NEARBY SENSITIVE RECEPTORS; HOWEVER, VIBRATION GENERATED AT NEARBY SENSITIVE RECEPTORS WOULD NOT REACH LEVELS AT WHICH POTENTIAL DAMAGE TO THESE STRUCTURES COULD OCCUR. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Construction

Construction Equipment

Construction activities known to generate high levels of ground-borne vibration, such as pile driving, may be conducted during construction of the solar PV modules. Pile driving construction equipment may be used as close as approximately 265 feet to the nearest off-site structure (single-family residence located near the southeastern corner of the project site). Impact pile driving generates a vibration level of approximately 1.518 in/sec PPV at a distance of 25 feet (FTA 2018). This vibration level generated by a pile driver would attenuate to approximately 0.044 in/sec PPV at a distance of 265 feet and would, therefore, not exceed the threshold of 0.2 in/sec PPV at this vibration-sensitive receiver. Therefore, temporary vibration impacts associated with construction would be less than significant.

Operation

Operational Vibration

Operation of the project would not include any substantial vibration sources; therefore, operational vibration impacts would be less than significant.

Mitigation

No mitigation required.

Threshold 3:	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

IMPACT N-3 THE PROJECT IS NOT LOCATED WITHIN THE VICINITY OF A PRIVATE AIRSTRIP OR AN AIRPORT INFLUENCE AREA. THEREFORE, THE PROJECT WOULD NOT EXPOSE PEOPLE RESIDING OR WORKING IN THE PROJECT AREA TO EXCESSIVE AVIATION-RELATED NOISE, AND THE PROJECT WOULD HAVE NO IMPACT.

The closest major airport to the project site is the New Coalinga Municipal Airport (C80), located approximately nine miles to the northwest. According to the Fresno County Airport Land Use Compatibility Plan, "noise exposure contours for Coalinga Municipal Airport remain entirely on airport property" (Coffman Associates, Inc. 2018). Therefore, the project site is located outside of the noise contours of this airport. As a result, no substantial noise exposure from airport noise would occur to users or workers of the project, and no impacts would occur.

Mitigation

No mitigation required.

6 Conclusion

The proposed Project would generate both temporary noise associated with construction activity and long-term noise associated with operation.

Daytime construction noise would not exceed noise standards at the nearest sensitive receptors and impacts due to daytime construction noise would be less than significant. Nighttime construction noise activity may exceed County thresholds at the nearest residential property line. However, with implementation of Mitigation Measure NOI-1, this impact would be less than significant.

Operational noise would not exceed the County's daytime and nighttime noise limits at the nearest sensitive receptors to the project site. Therefore, long-term operational noise impacts would be less than significant.

Project-generated traffic during construction and operation would result in noise increases on SR 33; however, a limited number of trips are anticipated and would not increase noise levels above the significance threshold of 5.0 dBA CNEL. Therefore, off-site traffic noise increases generated by the project would be less than significant.

The project would generate groundborne vibration during construction, but vibration would not exceed the applicable thresholds at the sensitive structures nearest to the project site. Therefore, construction-related vibration impacts would be less than significant.

Due to the large distance between the project site and nearest airport, no substantial noise exposure from airport noise would occur to construction workers, maintenance workers, or infrequent visitors to the facility, and no impact would occur related to aircraft noise.

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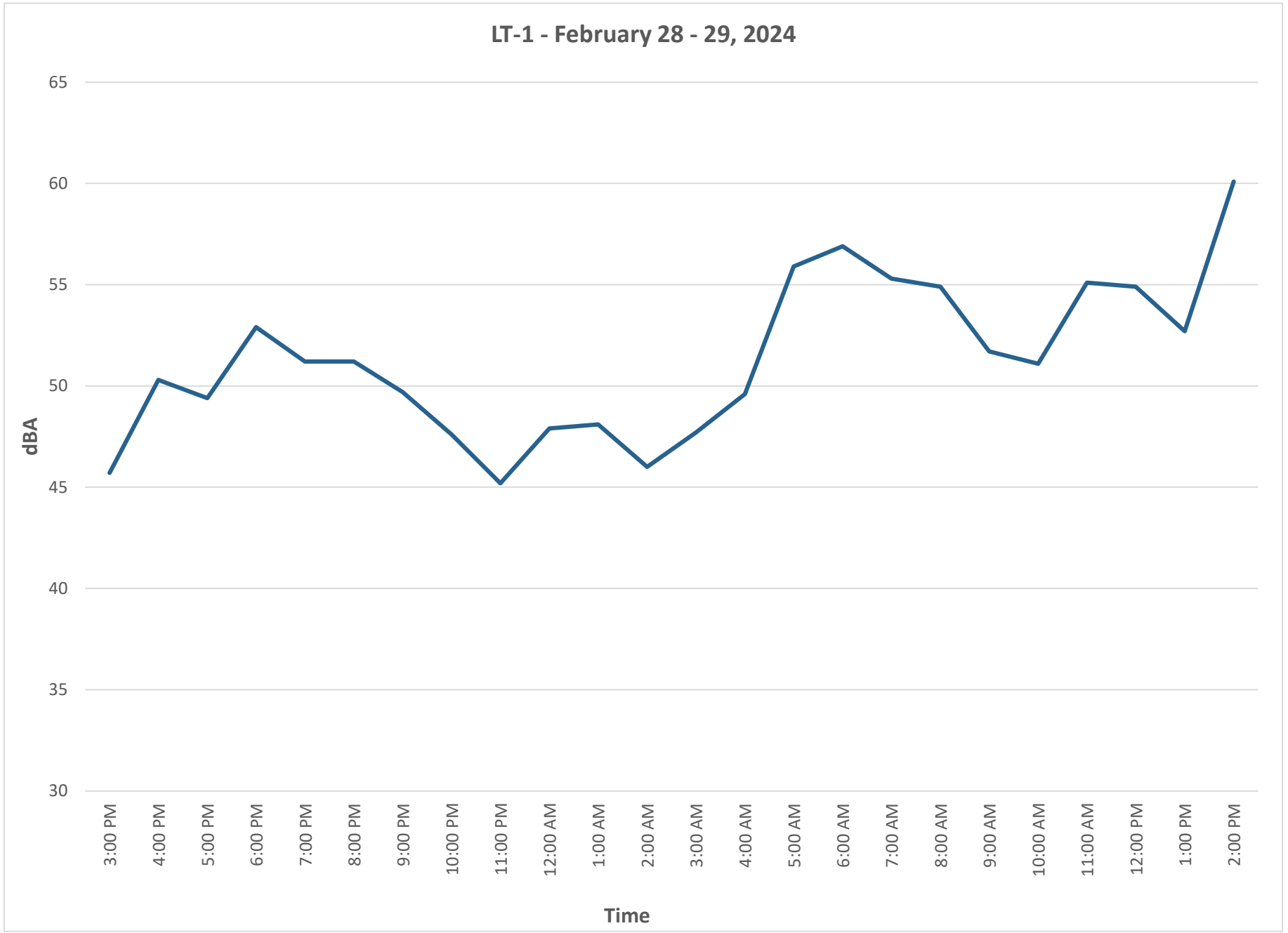
Appendix A

Noise Measurement Data

Measurement Location	Start Date	Start Time	End Time	Duration	Meas Mode	Input Range	Input Type	SPL Time W	LN% Freq W	Overload	UnderRange	Sensitivity	LZeq	LCeq	LAeq	LZSmax	LCSmax	LASmax	LZSmin	LCSmin	LASmin	LZE	LCE	LAE	LZpk	LCpk	LApk	LAS1%	LAS2%	LAS5%	LAS8%	LAS10%	LAS25%	LAS50%	LAS90%	LAS95%	LAS99%
ST1	2/28/2024	2:25:09 PM	2:40:15 PM	0:15:06	Single	High	Mic	Slow	dBA	No	Yes	18.44mV/Pa	70.7	68.7	62.5	89.8	89.3	79.9	48.7	44	36.9	100.3	98.3	92.1	98.8	99.7	92.8	75.2	72.4	69.1	67.7	66.6	56.6	45	38.6	38	37.4
ST2	2/28/2024	2:00:55 PM	2:15:56 PM	0:15:01	Single	High	Mic	Slow	dBA	No	Yes	18.44mV/Pa	67.7	63.2	55.6	81.2	75	71.9	49.5	46.5	37.7	97.2	92.7	85.1	96.3	96.1	95.8	67	65.8	63.8	61.4	58.6	51.7	47.5	41.4	40.4	38.4
ST3	2/28/2024	12:30:27 PM	12:45:44 PM	0:15:17	Single	High	Mic	Slow	dBA	No	Yes	15.17mV/Pa	75.1	69.5	50.5	91	84.5	66.3	48.8	46.3	37.9	104.7	99.1	80.1	103	100.1	82.9	62	59.9	56.9	54.2	53.3	48.9	44.8	39.2	38.7	38.2
ST4	2/28/2024	12:54:15 PM	1:09:22 PM	0:15:07	Single	High	Mic	Slow	dBA	No	Yes	15.17mV/Pa	66.8	61.1	43.5	79.5	73	60.1	56.2	53.7	39.2	96.4	90.7	73.1	94.9	94.3	95.8	54.8	51.1	45.1	43.6	43.1	41.8	40.9	39.9	39.7	39.4
ST5	2/28/2024	1:16:38 PM	1:31:40 PM	0:15:02	Single	High	Mic	Slow	dBA	No	Yes	15.17mV/Pa	59.8	55.4	48.3	74.3	71.4	60.3	46.1	43.5	38.8	89.4	85	77.9	91.3	89.9	88.1	56.4	55.2	53.4	52.4	51.9	49	45.7	41.5	40.6	39.5


LT-1 - February 28 - 29, 2024
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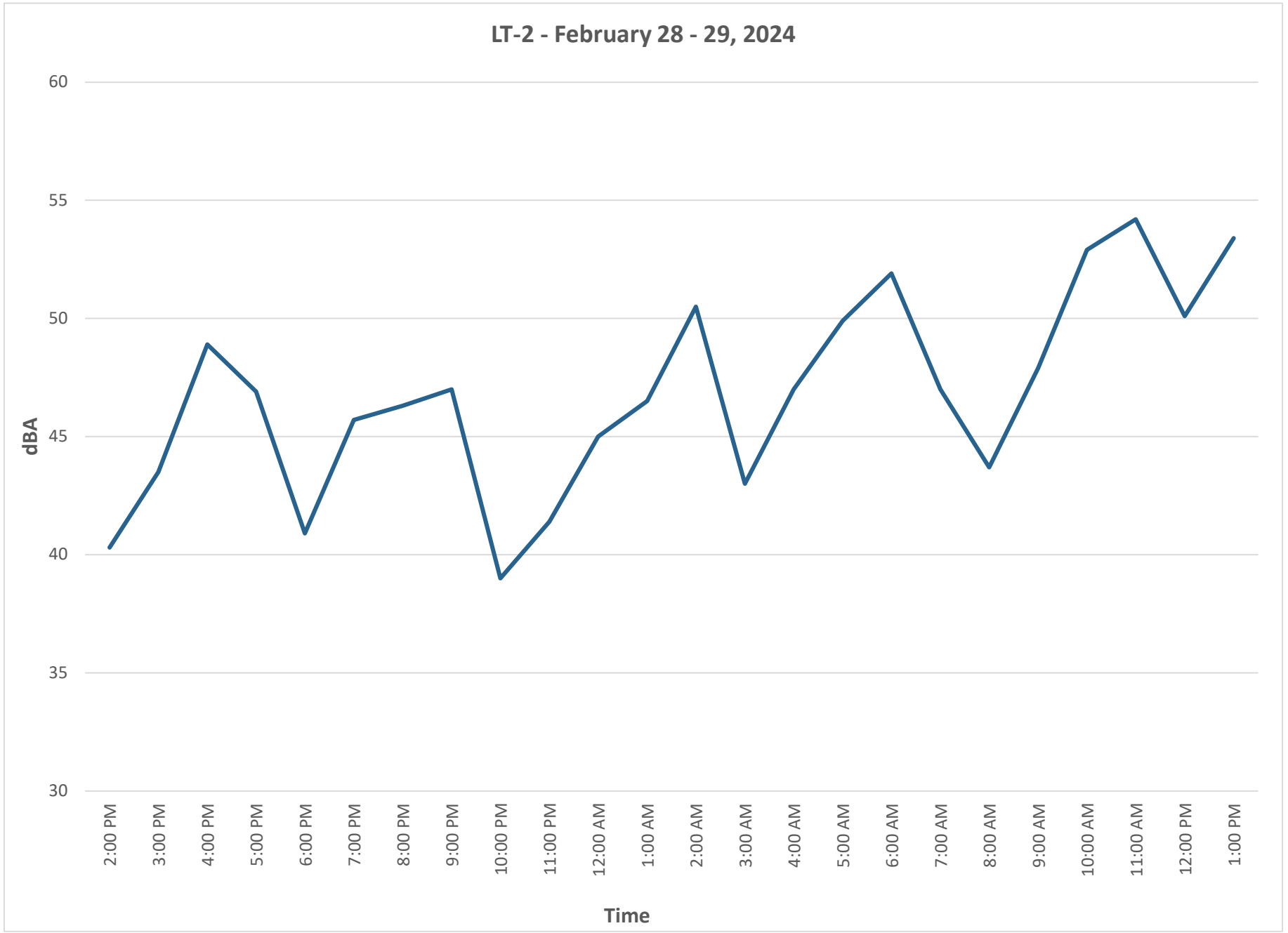
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Appendix B

Construction Noise Modeling Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/29/2024
Case Description: Cornucopia Solar

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Grading	Residential	60.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Grader	No	40	85.0		50.0	0.0
Excavator	No	40	85.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0
Drill Rig Truck	No	20	84.0		50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Compressor (air)	No	40	80.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drill Rig Truck	84.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Compressor (air)			80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Total	85.0	86.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 03/18/2024
Case Description: Cornucopia Solar

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Solar Array Installation	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Man Lift	No	20	85.0		50.0	0.0
Drill Rig Truck	No	20	84.0		50.0	0.0
Crane	No	16	85.0		50.0	0.0
Dump Truck	No	40	84.0		50.0	0.0
Impact Pile Driver	Yes	20	95.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Man Lift	85.0	78.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drill Rig Truck	84.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	85.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Impact Pile Driver	95.0	88.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Backhoe			80.0	76.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
	Total		95.0	89.7	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/29/2024
Case Description: Cornucopia Solar

**** Receptor #1 ****

Description	Baselines (dBA) Land Use	Daytime	Evening	Night
Substation/Switchyard/GenTie Installation	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Man Lift	No	20	85.0		50.0	0.0
Generator	No	50	82.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0
Crane	No	16	85.0		50.0	0.0
Front End Loader	No	40	80.0		50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Excavator	No	40	85.0		50.0	0.0
Grader	No	40	85.0		50.0	0.0
Roller	No	20	85.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Man Lift	85.0	78.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	82.0	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Backhoe			80.0	76.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Crane			85.0	77.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Front End Loader			80.0	76.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Tractor			84.0	80.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Excavator			85.0	81.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Grader			85.0	81.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Roller			85.0	78.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
	Total		85.0	88.4	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 04/02/2024
Case Description: Cornucopia Solar

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
ESS Construction	Residential	60.0	55.0	50.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Man Lift	No	20	85.0		50.0	0.0
Generator	No	50	82.0		50.0	0.0
Generator	No	50	82.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Front End Loader	No	40	80.0		50.0	0.0
Excavator	No	40	85.0		50.0	0.0
Roller	No	20	85.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Man Lift	85.0	78.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	82.0	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	82.0	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Tractor			84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Front End Loader			80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Excavator			85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A					
Roller			85.0	78.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A					
		Total	85.0	87.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A					

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 04/02/2024
Case Description: Cornucopia Solar

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Access Roads Construction	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40	85.0		50.0	0.0
Grader	No	40	85.0		50.0	0.0
Backhoe	No	40	80.0		50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Scraper	No	40	85.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	80.0	76.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

| | | |

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/29/2024
Case Description: Cornucopia Solar

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Nighttime Concrete Pouring	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Concrete Mixer Truck	No	40	85.0		50.0	0.0
Concrete Pump Truck	No	20	82.0		50.0	0.0
Generator	No	50	82.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Concrete Mixer Truck	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	82.0	75.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	82.0	79.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	83.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix C

Traffic Modeling Results

Traffic Noise Calculator: FHWA 77-108 **Project Title: PNUM-01**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	64.1	67.9	68.2	38	82	177	SR 33 (Existing)	Alpine/Lost Hills Rd	3,100	65	0.0%	95.0%	3.0%	2.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
2	65.6	69.3	69.7	47	102	220	SR 33 (Ex + Fut Construction Trips)	Alpine/Lost Hills Rd	4,300	65	0.0%	95.0%	3.0%	2.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
3	64.1	67.9	68.2	38	82	177	SR 33 (Future Operation Trips)	Alpine/Lost Hills Rd	3,102	65	0.0%	95.0%	3.0%	2.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20

Appendix D

SoundPLAN Modeling Results

Cornucopia Hybrid Solar Project
Run info
Operational Noise Impact_Single Points

Project info

Project title: Cornucopia Hybrid Solar Project
Project No.: 23-15487
Project engineer: Kyle Pritchard
Customer:

Description:
Operational noise modeling of Cornucopia Hybrid Solar Project (Fresno County)

Run description

Calculation type: Single Point Sound
Title: Operational Noise Impact_Single Points
Calculation group
Run file: RunFile.runx
Result number: 3
Local calculation (ThreadCount=12)
Calculation start: 2/23/2024 12:37:42 PM
Calculation end: 2/23/2024 12:37:48 PM
Calculation time: 00:01:202 [m:s:ms]
No. of points: 4
No. of calculated points: 4
Kernel version: SoundPLANnoise 9.0 (1/31/2024) - 64 bit

Run parameters

Reflection order: 3
Maximum reflection distance to receiver 200 m
Maximum reflection distance to source 50 m
Search radius 5000 m
Weighting: dB(A)
Allowed tolerance (per individual source): 0.100 dB
Create ground effect areas from road surfaces: Yes
Treat roads as terrain following: No

Standards:
- Industry: ISO 9613-2: 1996
- Air absorption: ISO 9613-1

regular ground effect (chapter 7.3.1), for sources without a spectrum automatically alternative ground effect

- Limitation of screening loss:
  - single/multiple 20.0 dB /25.0 dB
- Side diffraction: ISO/TR 17534-3:2015 compliant: no side diffraction if terrain blocks line of sight
- Use Eqn (Abar=Dz-Max(Agr,0)) instead of Eqn (12) (Abar=Dz-Agr) for insertion loss
- Environment:
  - Air pressure 1013.3 mbar
  - rel. humidity 70.0 %
  - Temperature 10.0 °C
  - Meteo. corr. C0(7-22h)[dB]=0.0; C0(22-7h)[dB]=0.0;
  - Ignore Cmet for Lmax industry calculation: No
- Parameter for screening: C2=20.0

Dissection parameters:

Distance to diameter factor	8
Minimal distance	1 m
Max. difference ground effect + diffraction	1.0 dB
Max. number of iterations	4

Attenuation

Foliage:	ISO 9613-2
Built-up area:	ISO 9613-2
Industrial site:	ISO 9613-2

Assessment: Day Night Level LDN
Reflection of "own" facade is suppressed

Geometry data

Operational Noise Impact.sit	2/23/2024 12:37:36 PM
- contains:	
Batteries.geo	2/21/2024 3:01:46 PM
Calculation Area.geo	2/21/2024 3:03:16 PM
Geo-File1.geo	1/25/2024 10:34:36 AM
Inverters.geo	2/21/2024 2:05:48 PM
Property Line.geo	2/21/2024 3:01:46 PM
Roads.geo	2/15/2024 12:06:54 PM
Sensitive Receptors.geo	2/23/2024 12:37:36 PM

Cornucopia Hybrid Solar Project
Run info
Operational Noise Impact_Grid Map

Project info

Project title: Cornucopia Hybrid Solar Project
Project No.: 23-15487
Project engineer: Kyle Pritchard
Customer:

Description:
Operational noise modeling of Cornucopia Hybrid Solar Project (Fresno County)

Run description

Calculation type: Grid Map
Title: Operational Noise Impact_Grid Map
Calculation group
Run file: RunFile.runx
Result number: 4
Local calculation (ThreadCount=12)
Calculation start: 3/6/2024 8:42:28 AM
Calculation end: 3/6/2024 8:45:21 AM
Calculation time: 02:50:377 [m:s:ms]
No. of points: 846112
No. of calculated points: 846112
Kernel version: SoundPLANnoise 9.0 (1/31/2024) - 64 bit

Run parameters

Reflection order: 3
Maximum reflection distance to receiver 200 m
Maximum reflection distance to source 50 m
Search radius 5000 m
Weighting: dB(A)
Allowed tolerance: 0.100 dB
Create ground effect areas from road surfaces: Yes
Treat roads as terrain following: No

Standards:
- Industry: ISO 9613-2: 1996
- Air absorption: ISO 9613-1

regular ground effect (chapter 7.3.1), for sources without a spectrum automatically alternative ground effect

- Limitation of screening loss:
  - single/multiple 20.0 dB /25.0 dB

Side diffraction: ISO/TR 17534-3:2015 compliant: no side diffraction if terrain blocks line of sight
Use Eqn (Abar=Dz-Max(Agr,0)) instead of Eqn (12) (Abar=Dz-Agr) for insertion loss

- Environment:
  - Air pressure 1013.3 mbar
  - rel. humidity 70.0 %
  - Temperature 10.0 °C
  - Meteo. corr. C0(7-22h)[dB]=0.0; C0(22-7h)[dB]=0.0;
  - Ignore Cmet for Lmax industry calculation: No
- Parameter for screening: C2=20.0

Dissection parameters:		
Distance to diameter factor		8
Minimal distance		1 m
Max. difference ground effect + diffraction		1.0 dB
Max. number of iterations		4
Attenuation		
Foliage:	ISO 9613-2	
Built-up area:	ISO 9613-2	
Industrial site:	ISO 9613-2	
Assessment:	Day Night Level LDN	
Grid Noise Map:		
Grid space:	5.00 m	
Height above ground:	1.500 m	
Grid interpolation:		
	Field size =	9x9
	Min/Max =	10.0 dB
	Difference =	0.2 dB
	Limit level=	40.0 dB

Geometry data

Operational Noise Impact.sit	3/6/2024 8:42:18 AM
- contains:	
Batteries.geo	2/21/2024 3:01:46 PM
Calculation Area.geo	2/21/2024 3:03:16 PM
Geo-File1.geo	1/25/2024 10:34:36 AM
Inverters.geo	2/21/2024 2:05:48 PM
Property Line.geo	2/21/2024 3:01:46 PM
Roads.geo	3/6/2024 8:42:18 AM
Sensitive Receptors.geo	3/6/2024 8:42:18 AM

Appendix M

Trip Generation-Distribution Memo

MEMORANDUM

TO: John Crosby, BayWa r.e. Solar Projects, LLC

FROM: Erik Ruehr, VRPA Technologies, Inc.
Nisha Pathak, VRPA Technologies, Inc.

DATE: April 26, 2024

RE: Cornucopia Hybrid Project
Trip Generation – Distribution and Vehicle Miles Traveled (VMT) Analysis

VRPA Technologies, Inc. (VRPA) has prepared the following memorandum to document expected trip generation and distribution and vehicle miles traveled (VMT) characteristics of the Cornucopia Hybrid Solar Project in Fresno County.

The remainder of the memorandum includes sections on the project description, trip generation, trip distribution, traffic analysis, and VMT analysis.

PROJECT DESCRIPTION

The Cornucopia Hybrid Project (proposed project) site consists of approximately 2,446.46-acres located in an unincorporated area of western Fresno County (County), California. However, for the purposes of the California Environmental Quality Act (CEQA), 2,385.11 acres were evaluated for impacts. The project site is situated between the City of Coalinga (Fresno County) and the City of Avenal (Kings County) at the base of the eastern slope of the Diablo Range. Interstate 5 (I-5) is located approximately 4 miles east of the project site. The project site is bifurcated north to south by State Route (SR) 33 (South Lost Hills Road) and east to west by Sutter Avenue. I-5 and SR-33 provide regional access to the project site, while SR-33 and Sutter Avenue provide local access. See Exhibit 1 for the project site plan.

TRIP GENERATION

To assess the impacts that the project may have on the surrounding roadway network, the first step is to determine project trip generation. Trip generation was analyzed separately for operation of the site and construction of the project, as described below.

Once the project is in operation, it is expected to include the following activities:

- ✓ Operation of the site is expected to include six employees who would visit the occasionally to perform maintenance functions.
- ✓ In addition, during grazing season the project site is expected to be used to graze sheep.

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www.vrpatechnologies.com

- ✓ Sheep grazing is expected to require eight round trip truck trips to the site to deliver sheep at the beginning of the season and eight round trip truck trips to remove sheep at the end of the grazing season. In addition, two sheepherders are expected who may need to travel to the site on a daily basis.

None of the activities described above would result in a generation of 10 peak hour trips on a regular basis and the traffic and vehicle miles traveled impacts of the project can be considered to be less than significant.

It is expected that construction activity at the project site will reach peak levels of approximately 600 workers during the panel installation phase. The average number of workers on-site is anticipated to be approximately 200 to 250. On average, it is anticipated that 25 percent of worker trips would be in carpools. Based on VRPA's experience with similar projects, this is a typical carpool percentage for a large construction project relatively far away from major urban centers.

Project trip generation is shown in Exhibit 2. It is based on peak levels of construction activity using the following methodology:

- ✓ It is expected that there will be one inbound and one outbound trip per worker with 25% of the workers being passengers in carpools. This leads to a trip generation of 450 inbound and 450 outbound trips per day, or a total of 900 daily trips.

- ✓ AM and PM peak hour trips for autos was based on the Manufacturing category (Land Use Code 140) from the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition).

- ✓ Truck trip generation and AM and PM peak hour trip generation for autos was based on the Manufacturing category (Land Use Code 140) from the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition). The number of trips was assumed to be the same as a manufacturing facility that generates 900 daily trips.

- ✓ Truck trips are often analyzed in terms of passenger car equivalents (i.e., the number of passenger car trips that would be equal to one truck trip for capacity analysis purposes). For the proposed project, passenger car equivalents determined using a standard passenger car equivalent of 3.0 which is typical for large trucks. In Exhibit 2, trip generation totals are provided for autos, trucks, total vehicles, and passenger car equivalents.

TRIP DISTRIBUTION

Project trip distribution is shown in Exhibit 3. Trips were distributed to the roadway system based on analysis of potential origins and destinations of construction traffic and prevailing traffic patterns. The resulting traffic project daily, AM peak hour, and PM peak hour traffic is shown in Exhibit 4, expressed in passenger car equivalents.

TRAFFIC ANALYSIS

A detailed traffic analysis would typically be prepared later in the project development process. However, based on the analysis described above and VRPA's experience with similar projects, the following comments can be provided:

- ✓ Once the project is in operation, it is expected to have only six employees. It would be expected to generate less than 10 trips per day and the traffic and vehicle miles traveled impacts of the project can be considered to be less than significant.

- ✓ A detailed traffic analysis is likely to be needed for the construction of the project. Based on the level of traffic described in this memo, traffic operational improvements are not expected to be needed, with the possible exception of temporary traffic control personnel or a temporary traffic signal if needed for traffic operations at key construction access points to the site.

- ✓ Pavement analysis may be needed to determine whether construction trucks will cause the need for pavement to be strengthened for any access roadways to the project site. Based on the estimated trip generation described in this memorandum, it is expected that any pavement improvements would be relatively minor but more detailed analysis may be needed later in the project development process.

VEHICLE MILES TRAVELED (VMT) ANALYSIS

Senate Bill 743 (SB 743) went into effect throughout California on July 1, 2020. This legislation changed the performance measure for CEQA transportation studies from level of service to vehicle miles traveled (VMT).

Many agencies throughout California have prepared or adopted specific guidelines for VMT analysis to meet the requirements of SB 743. For agencies that do not have their own guidelines, typical practice is to use statewide guidance for VMT analysis. The State of California Governor's Office of Planning and Research (OPR) provided guidance on VMT analysis titled *Technical Advisory on Evaluating Transportation Impacts in CEQA* dated December 2018 (OPR Guidelines). Since Fresno County does not have specific guidance for VMT analysis, the OPR Guidelines were used in this analysis.

It should be noted that the Fresno Council of Governments (Fresno COG) has completed a document titled *Fresno County SB 743 Implementation Regional Guidelines* dated January 2021 that provides guidance on VMT analysis conducted within the Fresno COG region (including the unincorporated area of Fresno County). This guidance is advisory only and individual agencies within the County may choose whether to follow Fresno COG's guidance or use some other methodology for VMT analysis. Fresno County has not approved the use of the Fresno COG guidance.

It should also be noted that truck trips are excluded from VMT analysis per the OPR Guidelines. Therefore, the discussion that follows applies only to employee trips.

For the purposes of the transportation analysis, the project is being analyzed as a construction project. Once construction is complete and regular operations have started, traffic levels associated with operation of the project will not be large enough to require analysis of traffic operations or VMT. During regular options, the solar portion of the project will have 6 employees. These 6 employees would be expected to generate 12 daily trips, not including any reductions for carpooling. According to the OPR Guidelines, any project generating less than 110 trips per day can be presumed to have a less than significant impact on VMT.

The OPR Guidelines do not provide specific guidance for VMT analysis of construction projects. The guidelines do provide some guidance that could apply to VMT analysis for the project follows:

- ✓ "Of land use projects, residential, office, and retail projects tend to have the greatest influence on VMT. For that reason, OPR recommends the quantified thresholds described above for purposes of analysis and mitigation. Lead agencies, using more location-specific information, may develop their own more specific thresholds, which may include other land use types."

- ✓ "To assist in the determination of significance, many lead agencies rely on "thresholds of significance." The CEQA Guidelines define a "threshold of significance" to mean "an identifiable **quantitative, qualitative or performance level** of a particular environmental effect, non-compliance with which means the effect will ***normally*** be determined to be significant by the agency and compliance with which means the effect ***normally*** will be determined to be less than significant." (CEQA Guidelines, § 15064.7, subd. (a) (emphasis added).)"

- ✓ "Generally, qualitative analyses should only be conducted when methods do not exist for undertaking a quantitative analysis."

Since there is no specific guidance for VMT analysis for construction projects and therefore no methodology for a quantitative analysis, a qualitative VMT analysis was used. This analysis follows:

- ✓ CEQA technical analyses typically compare conditions with the project to a no build scenario in which the project would not be built. In this case, the no build condition would result in no construction trips to the project site. However, in a no build condition it would be reasonable to assume that the construction workers who would have built the project would be employed elsewhere on different project sites. There is no reason to believe that construction at different project site would result in shorter trips or lower levels of VMT. The most likely scenario is that the no build condition would include construction trips and VMT generation similar to what would occur if the project were built.

- ✓ If the project were to cause an increase in VMT, no matter how large or small, the VMT increase would be temporary. For example, with a construction period of 12 months, the period of VMT generation would be less than 5% of a permanent residential, office, or retail development that would be built at the same time as the project and would be in place through the Fresno County regional planning horizon year of 2046.

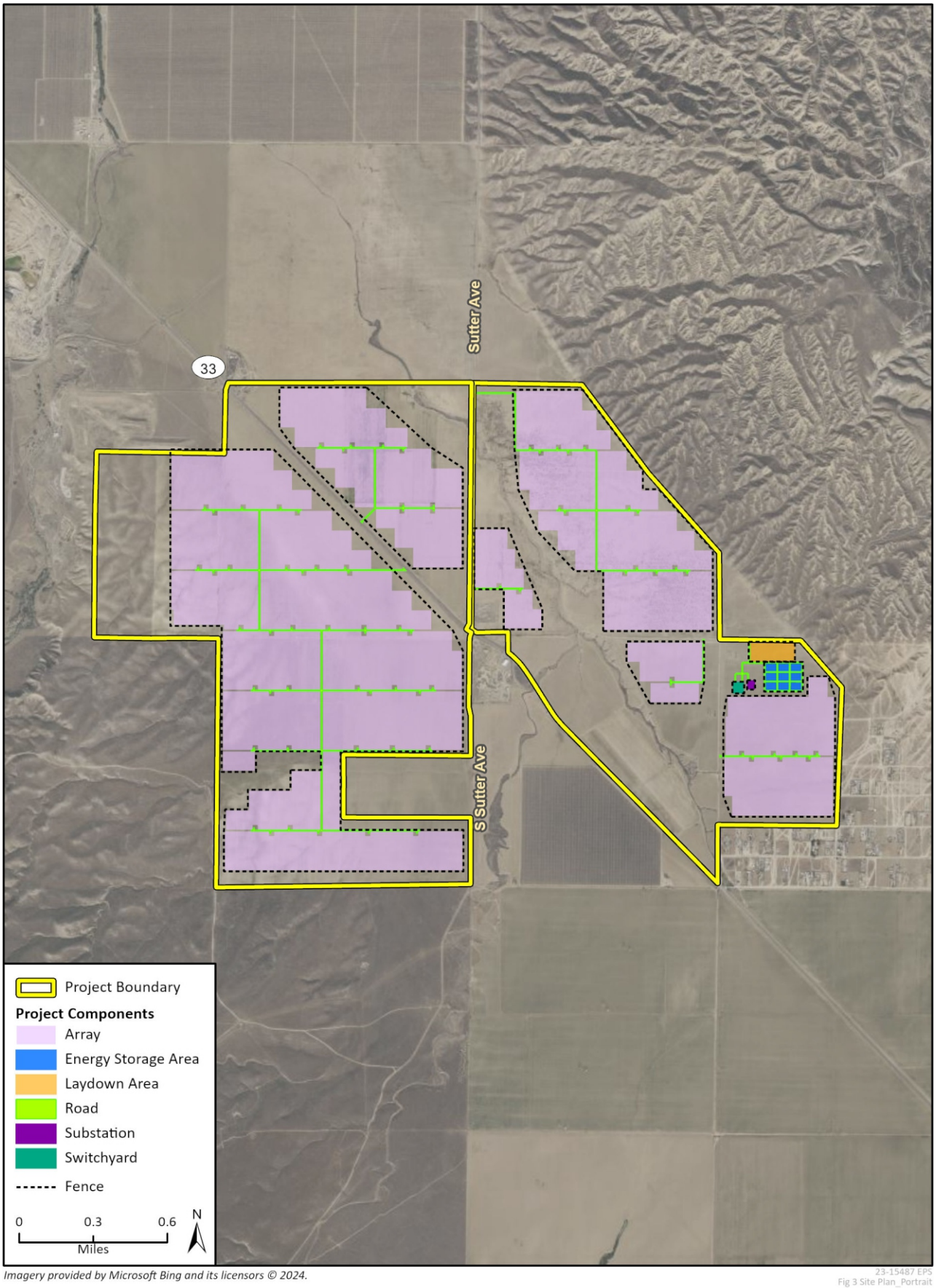
Since the project's VMT generation would be similar to the VMT generation in a no build scenario and because any increases in VMT would be temporary, the VMT impact of the project is considered to be less than significant. No mitigation measures related to VMT are needed.

Please feel free to contact me if you have any questions. I can be reached by email at eruehr@vrpatechnologies.com or by phone at 858/361-7151.

Cornicopia Hybrid Solar Project

Site Plan

Exhibit 1



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23-15487 EPS
Fig 3 Site Plan_Portrait

VRPA TECHNOLOGIES, INC.

Exhibit 2
Cornucopia Hybrid Solar Project
Trip Generation at Maximum Level of Construction Activity

Autos

								AM Peak Hour Trips				PM Peak Hour Trips	
Land Use	ITE Code (1)	Units	Size	Daily Trip Generation Rate	Daily Trips	AM Peak Hour rate	In:Out Split	In	Out	PM Peak Hour rate	In:Out Split	In	Out
Hybrid Solar Project	140	Employees	600	1.50	900	0.18	67:33	72	29	0.01	33:66	2	4
					900		Subtotal	72	29		Subtotal	2	4
							Total trips	102			Total trips	6	

Trucks

								AM Peak Hour Truck Trips				PM Peak Hour Truck Trips	
Land Use	ITE Code (1)	Units	Size	Daily Trip Generation Rate	External Daily Trips	AM Peak Hour rate	In:Out Split	In	Out	PM Peak Hour rate	In:Out Split	In	Out
Hybrid Solar Project	140	Employees	600	0.18	108	0.02	59:41	3	2	0.02	37:63	4	8
					108		Subtotal	3	2		Subtotal	4	8
							Total trips	5			Total trips	12	

Total Vehicles

								AM Peak Hour Trips				PM Peak Hour Trips	
Land Use	ITE Code (1)	Units	Size	Daily Trip Generation Rate	External Daily Trips	AM Peak Hour rate	In:Out Split	In	Out	PM Peak Hour rate	In:Out Split	In	Out
Hybrid Solar Project	140	Employees	600	N/A	1,008	N/A	N/A	75	31	N/A	N/A	7	11
					1,008		Subtotal	75	31		Subtotal	7	11
							Total trips	107			Total trips	18	

Passenger Car Equivalents (2)

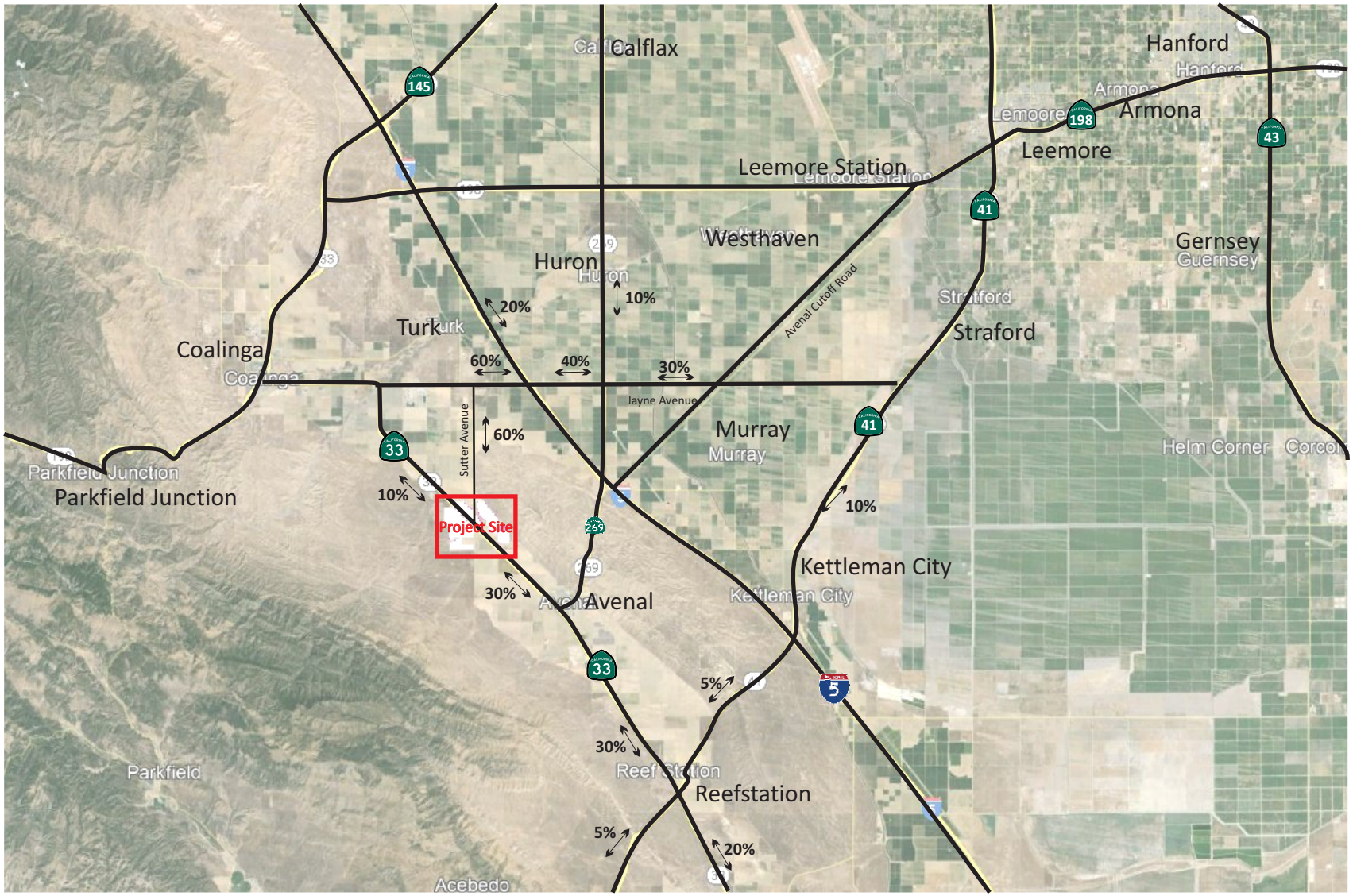
								AM Peak Hour Trips				PM Peak Hour Trips	
Land Use	ITE Code (1)	Units	Size	Daily Trip Generation Rate	External Daily Trips	AM Peak Hour rate	In:Out Split	In	Out	PM Peak Hour rate	In:Out Split	In	Out
Hybrid Solar Project	140	Employees	600	N/A	1,225	N/A	N/A	81	35	N/A	N/A	17	27
					1,225		Subtotal	81	35		Subtotal	17	27
							Total trips	117			Total trips	43	

Notes:
(1) Daily total trip generation for autos and trucks was based on the project description. A maxium of 600 workers per day were assumed, 25% of whom would be expected to carpool with an average occupancy of 2.0 per vehicle. Peak hour trips were based on the Manufacturing category (Land Use Code 140) from the Institute of Transportation engineers Trip Generation Manual, 11th Edition.
(2) Passenger car equivalents were estimaed to be 1.0 for autos and 3.0 for trucks.

Cornicopia Hybrid Solar Project

Traffic Trip Distribution

Exhibit 3



LEGEND

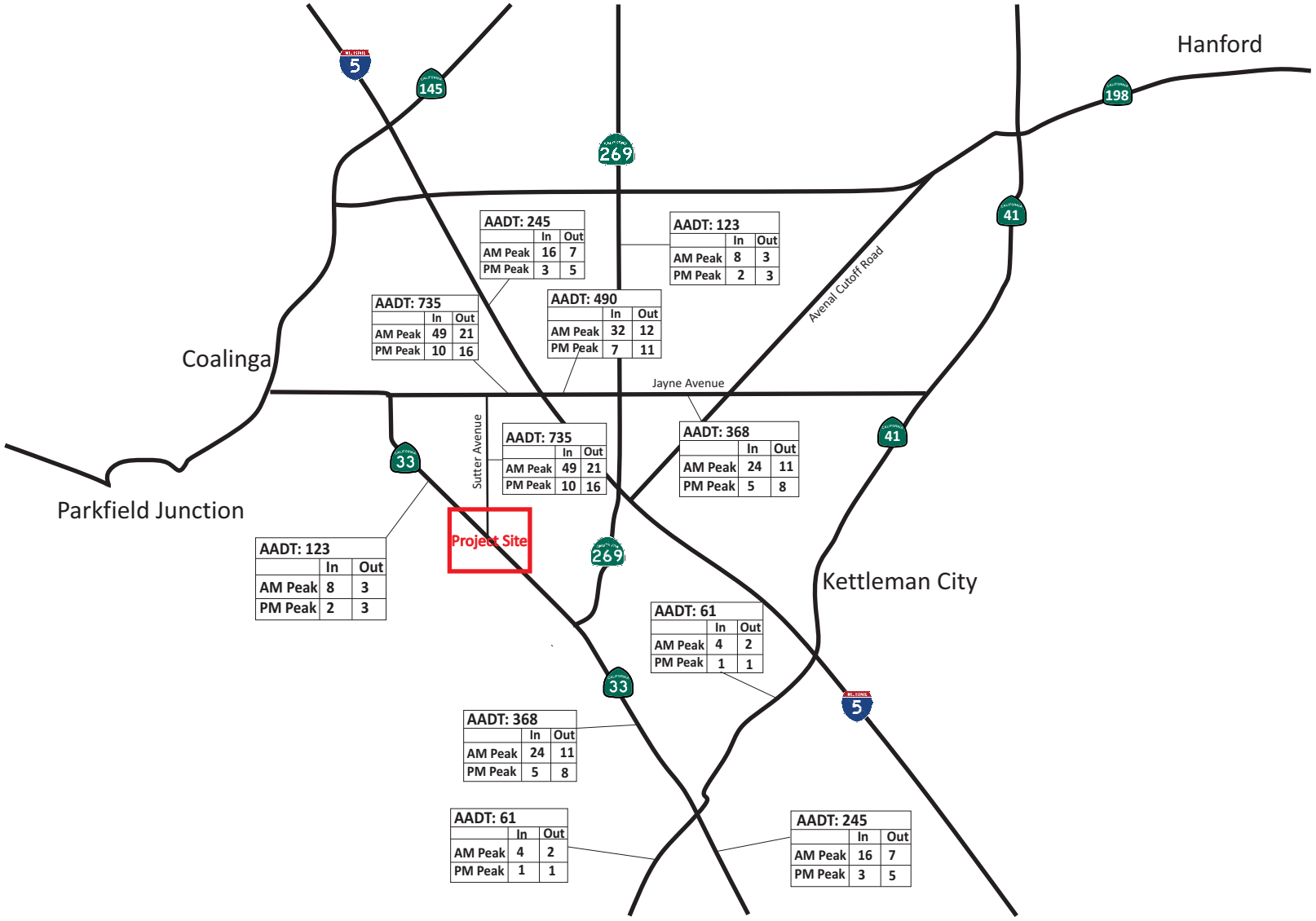
— Existing Roadway | Project Site | 5% Trip Distribution Percentage

VRPA TECHNOLOGIES, INC.

Cornicopia Hybrid Solar Project

Project Trips

Exhibit 4



LEGEND

Existing Roadway

Project Site

VRPA TECHNOLOGIES, INC.

Appendix N
Fire Risk Assessment

Cornucopia BESS

PRELIMINARY FIRE RISK ASSESSMENT

Rev 2.0 | May 2025

Summary

This document serves as the Preliminary Fire Risk Assessment (FRA) for the Cornucopia Hybrid energy storage facility to be located in an unincorporated part of Fresno County. The FRA will be based off guidance from NFPA 551 (the Guide for the Evaluation of Fire Risk Assessments), NFPA 855 (the Standard for the Installation of Stationary Energy Storage Systems) and industry best practices.

Prepared For:

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1 INTRODUCTION

1.1 Background and Scope

Energy Safety Response Group (ESRG) has been retained by BayWa r.e.to perform a preliminary Fire Risk Assessment of a proposed outdoor stationary battery energy storage system (BESS) to be located in an unincorporated western Fresno County. Despite being a hybrid solar and battery storage facility, Fresno County only requires a Fire Risk Assessment for the battery storage part.

The intent of this document is to take a qualitative risk assessment review of the proposed Cornucopia facility, identifying potential Battery Energy Storage System (BESS) related fire hazards, assessing the likelihood of occurrence, analyzing the potential consequences, identifying mitigation strategies, with key areas to consider including: system details, battery type, environmental factors, potential ignition sources, thermal runaway scenarios, fire detection and suppression systems, emergency response plans, and risk ranking based on severity and likelihood; all while adhering to the 2022 California Fire Code. The assessment has been written uses guidance from NFPA 551, NFPA 855 and industry best practices.

Recommendations found within this assessment are provided based on current knowledge and best practices around energy storage safety, insights into trends, and experiences with the California approval processes and requirements.

1.2 Applicable Codes and Standards

The following codes, standards, and other local requirements apply to this document:

- *2022 California Fire Code (CFC) (based on the 2021 IFC with amendments)*
- *2022 California Building Code (CFC) (based on the 2021 IBC with amendments)*
- *UL 9540 Standard for Energy Storage Systems and Equipment (2nd Ed and 4th Ed.)*
- *NFPA 855 is not directly adopted by the 2022 California Fire Code*
- *NFPA 551 Guide for the Evaluation of Fire Risk Assessments (2022)*
- *NFPA 850 Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations (2020)*

1.3 Assumptions and Limitations

Considering the early conceptual stage of the proposed project(s) and the preliminary nature of this document's scope, the entirety of the subject property is reviewed herein, while considerations are offered for individual sites where applicable.

The following assumptions of the project(s) and site activity are made in order to practically assess feasibility and provide relevant feedback:

- This assessment is conducted based on preliminary drawings provided by BayWa r.e. and may be subject to change based on changes to layout, equipment, etc.
- The subject property / properties and area are reviewed as they currently exist, incorporating information from California databases and visual findings from site visits. The existing information is then compared against preliminary designs and local BESS requirements, safety considerations, and expected AHJ conditions.
- The technology/manufacture is the Fluence Gridstack Pro 5000 at the time of this assessment but is subject to change.
- Proper due diligence will be conducted for each of the expected lots and designs, including any surveys, studies / assessments, or other documentation required to initiate permitting and / or construction, e.g., property surveys, environmental assessments, interconnection, etc.
- Any additional requirements or other pre-existing conditions found outside this document's BESS fire code and safety scope will be resolved or addressed, e.g. property / building violations, zoning analysis, incentive programs, and associated prior-approvals / authorizations will be obtained
- Installation and construction activity will follow all standards and requirements, including overall 2022 California Building Code, 2022 California Fire Code, permitting, any AHJ-specific conditions, equipment manufacturer instructions, inspections, commissioning, and close-out processes.
- At this time, there is no moratoriums on Battery Energy Storage Systems for proposed locations.

1.4 Summary of Findings

Key observations and findings from the fire risk assessment and community risk assessment performed for the energy storage system of the Cornucopia Hybrid Project are summarized below:

- Hazards specific to the BESS installation were analyzed to conceptualize the associated level of risk. Evaluated hazards include large-scale fire events (external flaming), deflagrations, offsite smoke mitigation and toxicity. While control over some hazards are difficult, data and analysis is provided to communicate the minimal risk presented by identified hazards.

- The battery system is equipped with many protection systems (e.g., BMS control, active temperature control; smoke, heat, and gas detection; electrical shutdown and disconnects; and exhaust ventilation) to effectively manage the more common fault conditions that are associated with UL 9540A type failure events (single to multi-cell thermal runaway

propagating failure). UL9540A large-scale testing was performed at the cell, module, and unit levels. Unit level testing was favorable, in which thermal runaway was limited to the initiating module. No flying debris, external flaming, explosive discharge of gases, sparks, electrical arcs, or other electrical events were observed during testing.

- The Fluence GSP 5000 enclosure is equipped with six deflagration vents on the top of the unit. Two vents, designed to open when signaled by the fire alarm system, and four vents to open if enough pressure builds. The deflagration mitigation system was evaluated in a separate series of tests which showed the two actuated vents effectively dissipated any accumulation of vent gases in accordance with the requirements of NFPA 69 Standard on Explosion Prevention Systems.

- The proposed BESS facility and site location poses minimal risk to public or life safety and property by way of being on a secured site with no public access to the site. It is recommended that training is provided to the first responders to familiarize themselves with the site and hazards associated with lithium-ion BESS and are provided an Emergency Response Plan (ERP) in the unlikely event of a system failure.

- To reduce risk further, several mitigation options were addressed. A robust emergency response plan with Fire Department training is critical to assist the responding Department on emergency response procedures during a large-scale failure event. The availability of on-site water, BMS and Fire Alarm remote monitoring and reporting capabilities, as well as access to a subject matter expert (SME) during an emergency may improve the effectiveness of fire service interventions.

2 PROJECT OVERVIEW

2.1 Site Description

BayWa r.e.is proposing to install a 300 MW solar and 300 MW 4-hour duration battery energy storage system, named Cornucopia Hybrid LLC. Solar and BESS, in Fresno County, California. The Cornucopia facility is to be located on private property in unincorporated western Fresno County, CA within an approximately 2,446-acre area. The project site is located approximately 11 miles southeast of the city of Coalinga in Fresno County, 2.8 miles northwest of the city of Avenal in Kings County, and four miles west of Interstate 5 (I-5).

The BESS portion of the site consists of 229 Fluence Gridstack Pro 5000 BESS units providing approximately 300 MW / 1200 MWh of energy storage power and capacity, respectively with a 4-hour duration.

The BESS subject lots are situated on parcel numbers that consists of Assessor's Parcel Numbers (APNs) 090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12S, and 085-110-13S. and the subject site is zoned AE-20. The

AE-20 Zone is an exclusive zone for intensive agricultural uses and for those uses which are a necessary and integral part of the agricultural operation.

Figure #1-Aerial Image

The table below lists current general information for the existing property associated with the proposed BESS.

Table 1 – Property Information

Address	Unincorporated Fresno County
Associated Addressed (DCP)	N/A
Coordinates	36.048261, -120.178539
Parcel	090-030-06S, 090-030-04S, 090-030-02S, 090-030-03, 090-040-01, 085-110-23S, 085-110-12S, and 085-110-13S
Total Area	12 acres of a 2,446 acre site
Zoning District	AE-20
Land Use	intensive agricultural
Fire District	Fresno County Fire Protection District

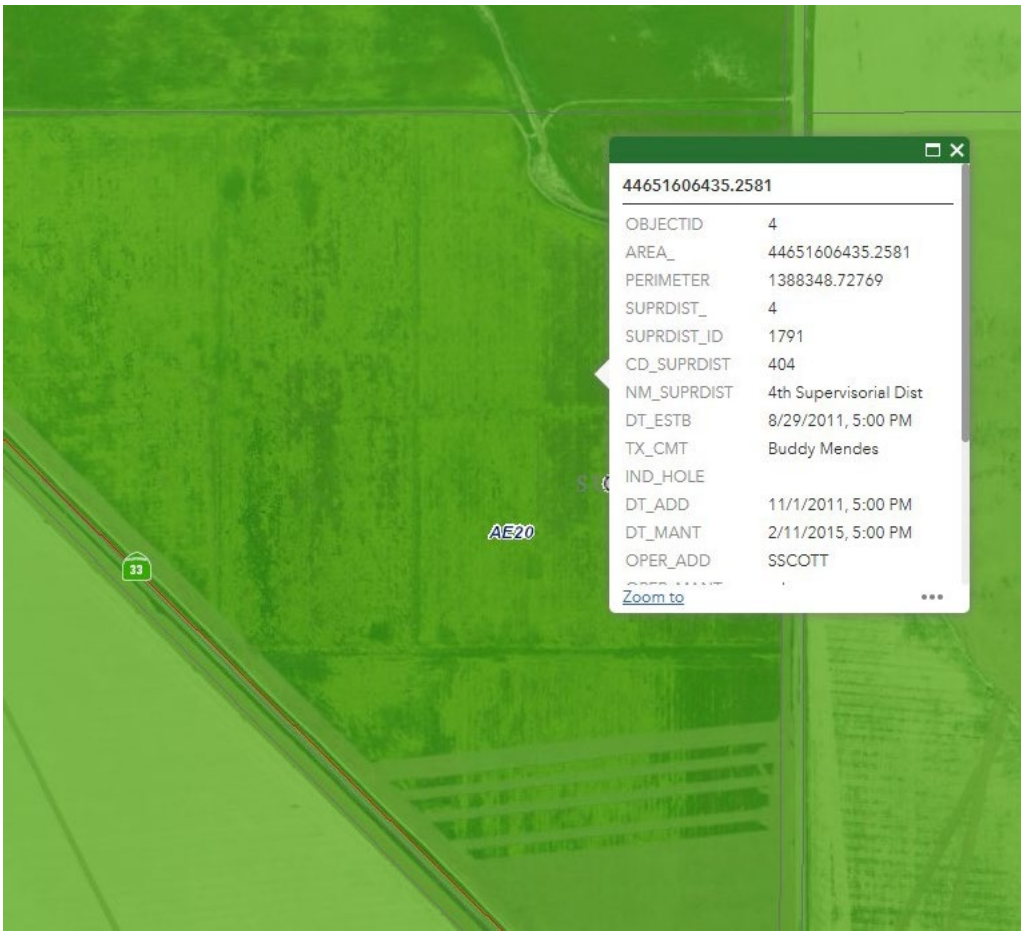


Figure #2 - Subject Property Zoning / Land Use Map

2.2 Emergency Response

Part of any comprehensive fire risk assessment is to study the local fire department and their response capabilities. The local fire department for this project is the Fresno County Fire Protection District with its headquarters located in Sanger, California. According to Fire Chief Dustin Hail, the vision for the Fresno-Kings Unit and Fresno County Fire Protection District is to provide the highest level of service to the citizens of Fresno County through the professional abilities of our employees, efficient and cost effective programs, innovative ideas and methods, technological improvements, and continued development of cooperative relationships. The Fresno County Fire Protection District provides fire prevention and suppression, emergency medical response, search and rescue, and emergency dispatch services. It also conducts building permit and other inspections. The District, ranked as an ISO Class 3/3Y department, is located in the heart of the San Joaquin Valley in Central California. The Fire District encompasses approximately 2,655 square miles and serves a population of more than 220,000 citizens. It is bounded on the east by the Sierra Nevada Mountains and on the west by the Coastal Mountain Range. Within our borders firefighters serve the Communities of Tarpey Village, Calwa, Easton,

Malaga, Del Rey, Caruthers, San Joaquin, Tranquillity, Prather, Friant, Wonder Valley, Cantua Creek, Three Rocks, Five Points, Tivy Valley, Sand Creek and the Cities of San Joaquin, Parlier, Mendota, Fowler and Huron.

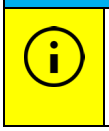
The Fresno County Fire Protection District has multiple types of fire apparatus to include Fire Engines/Pumpers, Ladder Trucks, Water Tenders, and Brush Trucks. There is no specialized fire apparatus or equipment that is needed to address any incident at Cornucopia so they have all the equipment necessary to mitigate the event. The biggest item that a fire department needs to respond to an incident at a battery energy storage facility is training. BayWa r.e. has contracted ESRG to provide training to Fresno County Fire Protection District and any other first responder in the area that may respond to Cornucopia. This training will be provided prior to commissioning and on an ongoing schedule as necessary per Fresno County Fire Protection District and the local AHJ. This training, in combination with the Emergency Response Plan, will ensure the first responders understand the hazards of this facility and how to address and mitigate those hazards.

******Note******

Fire response and tactics are covered in the site specific Emergency Response Plan (ERP).

2.3 Fire Department Access and Staging Area

Responding fire department units should begin staging at least 100 ft from the powered equipment until an assessment of incident severity demonstrates that such a separation distance can be reduced. If there is no visible flaming or smoking, responding units may proceed to the predetermined Fire Department Staging Area.

NOTICE	
	The fire department should not attempt to approach the BESS enclosures unless there is a clear imminent threat to life safety

The Primary Fire Department Staging Area will be determined with coordination with the Fresno County Fire Protection District and will provide a designated entry point for initial fire response. This positioning ensures that responding fire apparatus have clear access while maintaining a minimum distance of 100 feet from any battery enclosure

The Secondary Fire Department Staging Area may be deemed necessary by the Incident Commander during a fire event if the conditions render the Primary Fire Department Staging Area untenable. This Secondary Fire Department Staging Area will be determined based on incident conditions including wine speed and wind direction at the time of the incident.

Fire department access into the Cornucopia BESS is provided via Knox Box at the gate. Additional specific information will be available prior to construction.

2.4 Site Security Perimeter

The site perimeter is secured by a chain link security fence. Main access and vehicle gates are provided with a minimum width of 20 ft. Additionally, multiple 5 ft man gates are provided throughout the site. “HIGH VOLTAGE”, “NO TRESPASSING” AND “AUTHORIZED PERSONNEL ONLY” signage is mounted on the main gate, personnel gate and entire security perimeter fence. Additional fencing and gates surround the non-battery electrical substation equipment.

2.5 Emergency Response Plan Access

Physical copies of the ERP, operational permits, O&M logs, product manuals, and other pertinent documents are provided to the fire department. Additional copies will be provided on site in a weatherproof enclosure in a manner approved by the AHJ.

2.6 Equipment Access

The BESS enclosures are only accessible for maintenance purposes via cabinet-style enclosure doors and cannot be physically entered by personnel at any time.

NOTICE	
ⓘ	The fire department should not attempt to approach the BESS enclosures unless there is a clear imminent threat to life safety

2.7 Fire Department Water Supply

The surrounding area is not served by a pressurized fire hydrant system. As part of the project, 30,000 gallons of water in fire suppression water tanks are to be installed along the main access driveway, just outside the main vehicle entrance gate.

2.8 Nearby Exposures

The preliminary aerial maps show the new equipment can be sited with proper spacing, indicating code required BESS separations can be met, and no related exposures hazards are expected to be present.

Also, while there appears to be adequate space to meet prescribed separation and other siting requirements, specific project features, system operations, and emergency plans should not only account for the exposures near BESS units, but also the potential for adverse interactions during a failure to the larger area around the sites.

2.8.1 Collector Substation and Point of Interconnection Switchyard to West of BESS

The Cornucopia BESS will tie into the grid via the Point of Interconnection Switchyard which is located west of the BESS cabinets outside of the fenced area.

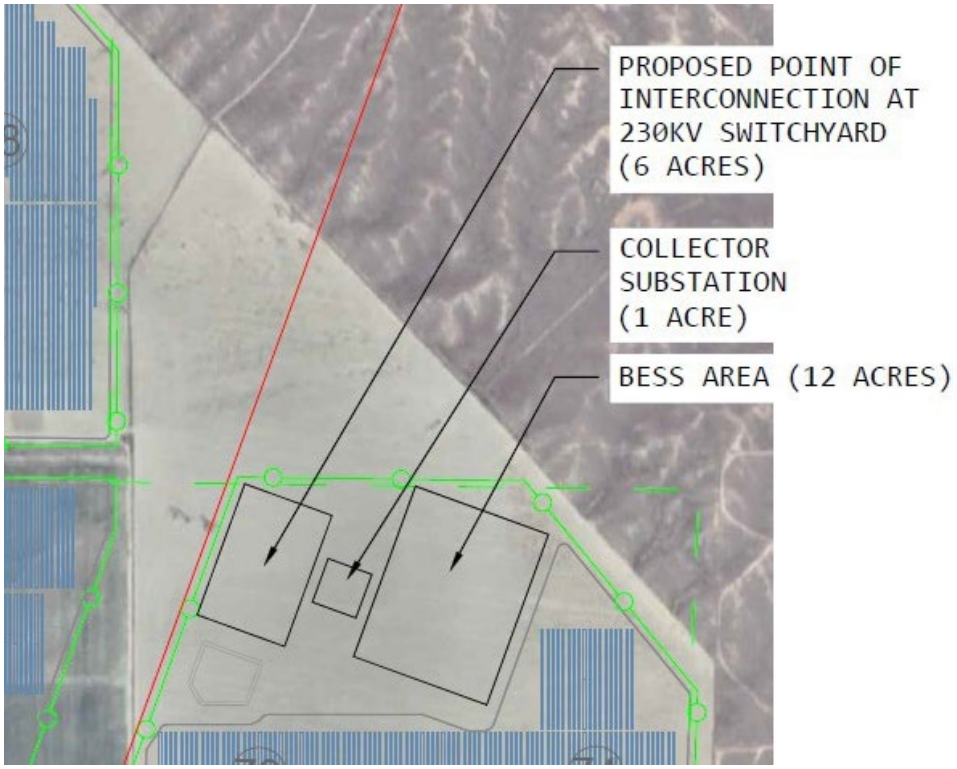


Figure #3 – Point of Interconnection Switchyard

2.8.2 Residential Occupancy

There is currently, according to Googe Maps, a residential subdivision located to the Southeast of the BESS site. The closest residential structure is over 1375 feet from the nearest battery enclosure. Results of large scale fire testing have demonstrated that these exposures will not be negatively impacted by the BESS facility.

Figure #4 – Nearby Exposures

2.8.3 Other Exposures

The proposed BESS site is within a very low populated agricultural area. There are no large commercial buildings or high occupancy commercial or residential buildings in the area. Besides the residential exposures above, there are solar farms in the general vicinity of the BESS location, but these solar farms are far enough away with a road in between to be of any concern. In addition, agricultural properties usually have less dried brush to become a fuel for a grass fire that could endanger the BESS site. The BESS site will provide a minimum of 10 feet between the battery cabinets and any vegetation as a buffer and defensible space that the fire department can utilize if a brush fire does occur.

2.9 Site Maintenance

The facility's access gate and interior access pathways shall be maintained to guarantee accessibility to the site for emergency personnel, especially during inclement weather. The system owner / operator shall ensure that applicable, ongoing upkeep activities (e.g., snow removal, landscaping, etc.) are in place prior to construction for the duration of the life of the project.

NOTICE	
	The fire department should not attempt to approach the BESS enclosures unless there is a clear threat to life safety

3 Fire Risk Assessment

The dynamics of lithium-ion BESS failures are extremely complex, and the pathway of failure events may vary widely based on system design, mitigative approaches utilized, and even small changes in environmental or situational conditions. However, the primary consequences stemming from a propagating lithium-ion battery failure largely fall into several specific hazard scenarios, as depicted in the Hazard Mitigation Analysis (HMA) developed by ESRG for the specific Fluence Gridstack Pro installation at the Cornucopia facility. The HMA evaluates the prescriptive failure modes defined by the California Fire Code and NFPA 855 and evaluates the criticality and effectiveness of the fire protection and electrical protection features provided by the technology.

This assessment will qualitatively evaluate a much-less likely, but still potential fire scenario of a larger-scale thermal runaway failure event such as an external visible flaming failure or enclosure deflagration.

3.1 Frequency of Events

This section is based upon the generally recognized probability scale summarized in Table 2: General Probability Levels. The discussion that follows is reflective of the failure scenarios in section 3.4.

Table 2: General Probability Levels

Probability	Description
1) Frequent	Likely to occur or experienced frequently
2) Probable	Will occur several times during system life
3) Occasional	Unlikely to occur in a given system operation
4) Remote	So improbable, may be assumed this hazard will not be experienced
5) Improbable	Probability of occurrence not distinguishable from zero

(Source: NFPA 551, Table A.5.2.5 (a), 2019 edition)

The Lithium-Ion BESS industry is still relatively new, however, there have been a number of notable failures that have happened. The EPRI BESS Failure Incident Database is the primary source of information for guidance on the frequency, and general probability of such failure events. According to a recent article, “a widely shared viewpoint is that 1 in ten million 18650 lithium-ion cells is likely to fail because of internal faults causing a thermal runaway event.” [1] This means that although internal faults can cause a thermal runaway, the likelihood is very low. The addition of more robust safety and fire codes has also reduced the likelihood of an event.

3.2 Consequence of Events

This section is based on a generally recognized consequence scale summarized in Table 3: General Severity Categories. The discussion that follows is reflective of the data addressed in section 3.4 (Fire Scenarios).

Table 3: General Severity Categories

Severity	Impact
A) Negligible	The impact of loss will be so minor that it would have no discernible effect on the facility, its operations, the environment, or city infrastructure.
B) Marginal	The loss will have an impact on the facility or city infrastructure, which may have to suspend some operations briefly. Some monetary investments may be necessary to restore the facility or city infrastructure to full operations. Minor personal injury may be involved. The emergency could cause localized environmental damage.
C) Critical	The loss will have a high impact on the facility or city infrastructure, which may have to suspend operations. Significant monetary investments may be necessary to restore to full operations. Personal injury and possibly deaths may be involved. The emergency could cause significant reversible environmental damage.
D) Catastrophic	The emergency will produce death or multiple deaths or injuries, or the impact on operations will be disastrous, resulting in long-term or permanent closing. The facility would cease to operate immediately after the emergency. The emergency could cause significant irreversible environmental damage.

(Source: NFPA 551, Table A.5.2.5 (b), 2019 edition)

3.3 Primary Hazards

Thermal runaway, as defined by NFPA 855 §3.3.26, is the self-heating of an electrochemical system in an uncontrollable fashion. The cause of a thermal runaway event can range from a manufacturing defect in the cell, external impact, exposure to dangerously high temperatures, or a multitude of controls and electrical failures. Furthermore, a thermal runaway event in a single cell can propagate to nearby cells, thus

1 Mylenbusch, I. S., Claffey, K., & Chu, B. N. (2023). Hazards of lithium-ion battery energy storage systems (BESS), mitigation

creating a cascading runaway event across battery modules and racks, leading to more heat generation, fire, off-gassing, and increased potential for a deflagration event.

Several protections are provided to reduce the potential for thermal runaway at the cell level, most notably via monitoring and controls provided by the battery management system (BMS) which will trigger respective safety actions based on the fault signal received. Should a thermal runaway condition spread to a single module, rack, or unit, additional protections, including BMS control and system shutdown / disconnects, are anticipated to mitigate further propagation of failure throughout the system. UL 9540A unit level testing indicated that thermal runaway propagation was contained within the module to a limited number of cells and did not result in any external flaming or an explosive release (although flammable gases were released). The following evaluated failure scenarios, however, assume that thermal runaway propagation and failure of the system has overwhelmed the robust passive and active protections provided by the technology and enclosure.

3.4 Evaluated Fire Scenarios

3.4.1 Scenario 1 - Single or Multi-Cell thermal Runaway (UL 9540A)

Thermal runaway propagation is one of the most critical concerns involving large, utility scale battery systems. Older generation batteries did not have any thermal propagation resistance, and we show multiple incidents involving these older batteries. In response to this concern, the industry and codes have developed thermal propagation resistance requirements that all current batteries must adhere to. The codes and standards now require that all BESS be listed to UL 9540 before they can be installed in any jurisdiction. In order to be listed to UL 9540, the batteries must pass the UL 9540A large scale fire test. One part of the UL 9540A test is a thermal runaway propagation test. Only battery energy storage systems that show during live, full scale fire testing that a thermal runaway in one cell or module or rack will not propagate to adjacent cells or modules or racks get UL 9540 listed. Real world test results of listed batteries plainly demonstrate their propagation resistance. The Fluence Gridstack Pro system has a battery management system (BMS) that monitors the temperature and voltage of each individual battery cell. If the BMS detects a cell with abnormal temperatures or voltage, that cell can be remotely shutdown. This shutdown can also include the module and/or rack that the bad cell is in. By shutting off the cell, it reduces the chances of that cell going into thermal runway so thermal runaway propagation is not even a concern.

In the event of smoke, heat, or gas detection activation within the Fluence enclosures, the centrally monitored Fire Alarm Control Panel (FACP) shall send alarm signals to the Central Station which shall then be relayed to the local responding Fire Department who shall coordinate dispatch of FD units, while simultaneously conducting shut-down and isolation features to mitigate said failure. Through testing and integral safety features, the Fluence BESS addresses all thermal hazards. For more information on single and multi-

cell thermal runaway propagation protection and safeties of the Fluence BESS, refer to the HMA conducted by ESRG.

Probability: Probable
Severity: Negligible

3.4.2 Scenario 2 - Large-Scale Fire Scenarios – External Flaming and Explosion

Scenario 2.1 – Full Enclosure Flaming and Consumption

If a large-scale failure occurs within the enclosure (potentially due to external sources) that overwhelms the previously mentioned UL 9540A type passive and active protections, a thermal runaway may propagate throughout the enclosure, developing into a larger-scale external flaming event. This failure event includes the enclosure completely consuming itself in a fire condition until all sources of fuel within the enclosure are consumed, and the event is concluded.

Probability: Remote
Severity: Marginal

Scenario 2.2 – Full Enclosure Flaming and Enclosure to Enclosure Propagation

The Fluence Gridstack Pro 5000 enclosures proposed for the Cornucopia facility are strategically spaced from each other to provide a passive means of thermal protection. There is a possibility, however, that during a large-scale fire event (as described in 3.1.2.1) external factors such as sustained winds may increase the likelihood that the large-scale thermal runaway propagation event can occur between Fluence enclosures (enclosure to enclosure propagation). This failure scenario may require significant firefighting intervention to prevent further propagation and isolate the failure to the initiating Fluence enclosure.

Probability: Remote
Severity: Critical

Scenario 2.3 – Enclosure Deflagration

Lithium-ion batteries release flammable off-gases during thermal runaway which, if allowed to accumulate within the enclosure, may create an explosive atmosphere, posing serious risk to first responders and nearby exposures. These gases may accumulate within the BESS enclosure at levels above the lower explosive limit (LEL). At sufficiently high accumulations, gases can also exceed their upper explosive limit (UEL), at which point ventilation may bring the environment back into flammable limits, creating a new explosion risk. If un-mitigated, this deflagration may lead to hazardous overpressures, shrapnel, and enclosure damage. If personnel are located within the blast radius and within line

of site of the doors/weak seams (100 ft/30m), there is likelihood of injuries or fatalities.

Probability: Remote
Severity: Marginal

3.4.3 Scenario 3 - Release Hazards – Water Runoff and Toxicity from Off-Gas

While some or all these compounds may be emitted during thermal runaway or a fire event, current data from a wide range of tests, as well as real world incident metering, reveal that these gases are comparable to those released from most structure or commodity fires and do not pose a greater risk than those events. Additionally, studies have shown that toxic gas concentrations drop rapidly within a short distance from a failure location in low wind conditions. Carbon monoxide (CO) is a significant toxic gas released during thermal runway, along with other toxic gases. Due to the quantity of carbon monoxide generated during a BESS fire, toxicity thresholds, ease of monitoring capability during a real-world fire event, and credible fire test data available (UL 9540A), it is often used as a baseline indicator to determine toxicity impacts. Carbon monoxide is a primary concern due to its high concentrations and toxicity levels, with an IDLH level of 1200 ppm and AEGL-3 level of 600 ppm for a 30-minute exposure. Smoke from battery fires contains hazardous substances, including asphyxiant gases, irritant toxic gases, and particulate matter, however, smoke from all fires (not just battery fires) contain similar substances. Through ESRG's experiences, there are no unique or exotic substances in battery fires that would not be found in similar industrial/residential/commercial type fires. Recent incidents involving LI batteries have generated a concern regarding toxic off-gassing and impact to municipal water supplies due to firefighting runoff. There have been recent notable incidents where extensive monitoring has been conducted during a failure event, which have shown that the air and water from those fires did not exceed dangerous levels. You can see two recent LI Battery fire smoke and water runoff reports at:

Escondido: https://www.escondido.gov/CivicAlerts.aspx?AID=96

Moss Landing: https://www.readymontereycounty.org/emergency/2025-moss-landing-vistra-power-plant-fire

Impact of Hydrogen Fluoride (HF)

Hydrogen fluoride (HF) is often referenced in academic papers and news articles as the notable product of combustion resulting from lithium-ion battery fires. HF is widely known as an acutely toxic gas at low concentrations relevant to other products of combustion such as carbon monoxide. HF concentrations and impacts were not evaluated in this report, primarily due to the lack of repeatable data on generation rates on concentrations of HF during a lithium-ion battery fire event. Additionally, it is not mandatory to evaluate HF release during UL 9540A full-scale testing, therefore credible release data is not available. Due to the high variability of HF generation rates in publicly available data, it is

still recommended that carbon monoxide is used as the primary marker for toxicity and toxic impacts, due to the availability of credible release data and relatively low thresholds for toxicity. Carbon monoxide gas monitoring is recommended by ESRG during a full-scale fire event, due to the effectiveness of gas monitoring equipment, high release concentrations during fire events, and readily available data on toxicity impacts and thresholds. Carbon monoxide monitoring and results during full-scale fire events could provide valuable information to the Incident Commander on the extent of impact from the fire, allowing them to actively manage the scene and make data-informed fireground operational decisions during the event.

Probability: Remote
Severity: Marginal

4 RISK REDUCTION (MITIGATION) MEASURES

4.1 Emergency Response Plan and Training

An Emergency Response Plan (ERP) has been developed for the Fluence Battery Energy Storage System (BESS). The document serves as a comprehensive guide outlining the roles, responsibilities, and communication protocols for the responding Fire Department, as well as the system owner/operator, property owner, and relevant subject matter experts (SMEs). It provides essential information to ensure preparedness and a coordinated, safe response in the event of a fire, explosion, or any other battery-related incident requiring public safety intervention at the energy storage facility.

****Note**** Fire response and tactics are covered in the site-specific Emergency Response Plan (ERP).

It is expected that a site-familiarization drill and training will be conducted to solidify the appropriate Standard Operating Procedures (SOPs) when responding to a BESS related incident. Training and refresher courses shall be conducted annually.

4.2 Staging Area and Standoff Distances

The site-specific emergency response plan prescribes a 100 ft safety standoff area from the nearest BESS enclosure. The primary First Responder staging area is located adjacent to the proposed fire-water tank at the exterior of the facilities fenced in-perimeter, at or greater than 100ft from the nearest enclosure. ESRG's experience with first-hand deflagration testing and real-world failure events indicate that the 100 ft safety standoff distance is appropriate to account for any potential hazards associated with an unmitigated deflagration event.

4.3 Water Supply

As part of the project, 30,000 gallons of water for fire suppression is to be installed along the main access driveway, just outside the main vehicle entrance gate. Access to this

water supply will afford the First Responders the opportunity to utilize water defensively if needed, managing smoke plumes or defensively cooling adjacent (unaffected) enclosures to mitigate enclosure-to-enclosure propagation.

4.4 Monitoring and Reporting Capability (Fire Alarm and BMS)

During normal operation, the Fluence Gridstack Pro 5000 will be under control of a site Emergency Management System (EMS). The EMS in turn will communicate with, and be controlled by, an offsite fleet controller, SCADA operations center, or other third-party dispatch and monitoring entity. Fluence alarms will be forwarded to such remote operations, and in turn, remote operations personnel can shut down the Fluence Gridstack Pro if determined to be necessary.

If available, real-time BMS data from the ROC should be utilized (e.g., temperature, voltage, or other critical measurements) to monitor the spread of failure and assess the health of adjacent BESS units. This data will help guide response procedures as the event unfolds.

4.5 Passive Enclosure Separation Distances (Heat Flux Analysis)

A product-specific Heat Flux Analysis (HFA) utilizing Computational Fluid Dynamics (CFD) software was conducted by Hazard Dynamics on the Fluence Gridstack Pro 5000 units, to evaluate the impact of the separation distances of the Fluence enclosures, and the potential for unit to unit (Fluence to Fluence) fire propagation in the unlikely event of a large-scale fire event with external flaming. The conclusions of the report indicate that for wind conditions at or below 20 mph, it is unlikely that a large-scale fire event will propagate to adjacent Fluence enclosures and internal temperatures remain below thermal runaway failure temperatures.

Research shows that yearly wind averages remain well below the 20 mph threshold, with the maximum average wind speed in Coalinga of 8.31 mph.

https://myperfectweather.com/api/cityinfo/6019Coa/degF/Average-Weather-in-Coalinga-California-United-States-Year-Round#google_vignette

5 LIKELIHOOD ASSESSMENT

5.1 Assessment of Risk

This section summarizes the evaluation of risk, based on the prior review of frequency and consequence of scenarios involving this hazard. This is based on the summary of the information in previous sections and is summarized and shown in Table 4: Summary Risk Assessment Table. The “Summary Risk Assessment Table” (Table 4) utilizes a “what-if” analysis methodology to evaluate frequency and consequence for each scenario, in accordance with section 5-2.1 of NFPA 551. The following is a re-cap of the ranking system per NFPA 551, and Tables 2 & 3 above, to support the key summary Table 4.

Table 4: Summary Risk Assessment Table

1) Frequent	**MODERATE**	**HIGH**	**HIGH**	**HIGH**
2) Probable	**MODERATE SCENARIO 1**	**MODERATE**	**HIGH**	**HIGH**
3) Occasional	**LOW**	**MODERATE**	**MODERATE**	**HIGH**
4) Remote	**LOW**	**LOW SCENARIO 2.1 SCENARIO 2.3 SCENARIO 3**	**LOW/MODERATE SCENARIO 2.2**	**HIGH**
5) Improbable	**LOW**	**LOW**	**LOW**	**MODERATE**
	A) Negligible	B) Marginal	C) Critical	D) Catastrophic

Source: *NFPA 551, Figure A.5.2.5, 2019 edition*

Note: The following is an explanation of the terms in Table 4

Frequency of Event:

*1) **Frequent**: Likely to occur or experienced frequently*
*2) **Probable**: Will occur several times during system life*
*3) **Occasional**: Unlikely to occur in a given system operation*
*4) **Remote**: So improbable, may be assumed this hazard will not be experienced*
*5) **Improbable**: Probability of occurrence not distinguishable from zero*

Consequence of Event:

*A) **Negligible**: The impact of loss will be so minor that it would have no discernible effect on the facility, its operations, the environment, or city infrastructure.*
*B) **Marginal**: The loss will have an impact on the facility or city infrastructure, which may have to suspend some operations briefly. Some monetary investments may be necessary to restore the facility or city infrastructure to full operations. Minor personal injury may be involved. The emergency could cause localized environmental damage.*
*C) **Critical**: The loss will have a high impact on the facility or city infrastructure, which may have to suspend operations. Significant monetary investments may be necessary to restore to full operations. Personal injury and possibly deaths may be involved. The emergency could cause significant reversible environmental damage.*
*D) **Catastrophic**: The emergency will produce death or multiple deaths or injuries, or the impact on operations will be disastrous, resulting in long-term or permanent closing. The facility would cease to operate immediately after the emergency. The emergency could cause significant irreversible environmental damage.*

6 COMMUNITY RISK ASSESSMENT

As indicated in the report, there are a number of sensitive receptors (exposures) indicated for the facility. The Cornucopia BESS is located in a fairly remote rural location with, according to Googe Maps, a residential subdivision is located southeast of the BESS.

The maximum distances for toxicity consequences with maximum average wind speed are many orders of magnitude below the location of the nearest sensitive receptor. It is not expected that any of the nearest exposures will be negatively affected by smoke or off-gassing from a large-scale BESS enclosure fire.

7 CONCLUSIONS

This fire risk assessment identified potential hazards that a BESS facility can create. The foreseeable fire and failure scenarios fell into the Low to Moderate risk profiles. With the hazards identified, the next step is to identify the mitigation measures and their effectiveness to keep those risks to a very low level. The location of this facility is a great distance away from most exposures and the BESS is provided with all the latest code required safety systems. If an event does occur, the local fire department will be properly trained on how to respond to the facility and mitigate the incident.