COUNTY OF TULARE
RESOURCE MANAGEMENT AGENCY

5961 South Mooney Boulevard
Visalia, CA 93277

Initial Study and Mitigated Negative Declaration

Foxtail Solar
(PSP 24-065)

February 2025

Prepared by
County of Tulare Resource Management Agency
Economic Development and Planning Branch
Environmental Planning Division

INITIAL STUDY CHECKLIST

1. **Project Title:** Foxtail Solar Project (PSP 24-065)

2. **Lead Agency:** County of Tulare
   Resource Management Agency
   5961 S. Mooney Blvd.
   Visalia, CA 93277

3. **Contact Persons:** David Alexander, Planner III (Project Planner) – 559-624-7138
   Gary A. Mills, Chief, Environmental Planning Division – 559-624-7199

4. **Project Location:** The Project site is located at 18839 Road 80, Tulare, CA 93274, within the USGS 7.5 Minute Quadrangles: Paige and Taylor Weir, on the west side of Road 80, approximately 3.8 miles west of the intersection of State Route 99 and Avenue 184 (See Figure 1). The Project site is bounded by Avenue 190 to the north, Road 80 to the east, Avenue 184 to the south, and Road 72 to the west. The site is located within Section 5, Township 21 South, Range 24 East, MDB&M entirely within Assessor Parcel Number (APN) 228-050-020.

5. **Applicant:** Foxtail Solar, LLC.
   17785 Center Court Drive, Suite 200
   Cerritos, CA 90703

6. **Owner** Joe V. Cardoza III
   18839 Road 80
   Tulare, CA 93274

7. **General Plan Designation:** Rural Valley Lands Plan - Valley Agriculture

8. **Zoning:** AE-40 (Exclusive Agriculture – 40 Acre Minimum)

9. **Description of Project (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary.)** The comprehensive project description, including project components is included in Attachment H (Operational Statement & Project Description), and the following is a summary of the project description. The Project would provide approximately 55 MW of electricity (renewable energy), and 55 MW Battery Energy Storage System (BESS), at four hours of continuous discharge on an approximate 475.50 acre site.

   Panels: The Project would install approximately 108,344 single-axis tracker solar panels on the site. The layout of the single axis tracker solar panels will be in an east-west direction. The maximum height of the would be up to 10 feet above grade at the beginning and end of each day. Each solar panel would be attached to embedded piers using a support structure. Module layout and spacing is typically optimized to balance energy production versus peak capacity and depends on the sun angles and shading due to the surrounding horizon of the site. The modules would typically be mounted with the longer side-oriented east to west across the tracker system's north-south axis. Individual arrays of modules would be combined to generate the total plant capacity.

   Electrical Collector System and Inverters: The AC-DC electrical collection system includes all cables and combiners that collect electricity from the panels, delivers it to the inverters, collects it from the inverters, and

ultimately delivers it to the Project switching station(s). The collection system would likely be installed along internal access roads to collect power from the rows of modules and deliver it to the switching station. This collection system would likely be installed in subsurface trenches, though in some areas of the site, part or all the collection system may be housed in above-grade raceways mounted on supports approximately 24-36 inches above ground level. The collection system would be rated at between 1,000-2,000 volts DC until it reached the inverters and a 33 kV AC intermediate voltage system between the inverters and the project switching station.

The Project would use a typical unmanned field control system. The controls generally include a field supervisory controller in a central location and local microprocessor controllers connected to each tracker, if trackers are to be used. The field control system monitors solar insolation, wind velocity, and tracker performance and status, and communicates with all the local microprocessor controllers. When the appropriate conditions exist, the field supervisory controller initiates the trackers' daily tracking of the sun, and at the end of the day stows the trackers in the solar array.

The DC electricity produced by the solar panels is converted to three-phase alternating current by a series of inverters. The solar facility and BESS would each require up to 16 inverters. Alternating current is the type of electricity usable by the electric utility and is the form required to connect to the transmission system. The inverter pad equipment includes a transformer that steps up the electricity in its new form to an output voltage of 66 kV. This electricity is then transmitted via the medium voltage collection system to the switching station.

Battery Energy Storage System (BESS): As proposed, the proposed project includes a BESS that would be located within the project footprint. The BESS would encompass a maximum of approximately 3.43 total acres.

The BESS, would be installed/constructed on the project site and would have appropriate fire suppression systems built to applicable state and local code requirements. The final design would include appropriate containment features (secondary containment) to prevent the escape of liquids or spills from the BESS site.

The BESS would be contained within an outdoor-rated steel enclosure and electrically connected to the inverters. The modular container stacks would be set on a concrete or steel pile foundation and would be approximately 8 feet wide by 72 feet long by 11 feet high. The proposed BESS would be designed, constructed, operated, and maintained in accordance with applicable industry best practices and regulatory requirements, including compliance with the latest National Fire Protection Association (NFPA) fire safety codes and fire rating in conformance with Tulare county standards.

The BESS would use one of several commercially available lithium ion (Li ion) technologies, though alternatives may be considered (such as flow batteries). Due to the rapidly changing technology in the battery industry, it may be more efficient, environmentally conscious, and economical, to use a then-current technology.

As planned, the BESS would consist of self-contained battery storage modules placed in racks, switchboards, inverters, transformers, controls, and integrated heating, ventilation, and air conditioning (HVAC) units, all enclosed in one or more buildings or in prefabricated metal modular container stacks. Potential hazards associated with BESS include increased potential for electrical shock and chemical release associated with the batteries used. The BESS would have fire suppression systems that would have a fire rating and built to applicable State and local code requirements. Also, implementation of established construction controls and safety procedures would reduce the risk of hazardous materials spills and releases.

The proposed battery energy storage system would be designed, constructed, operated and maintained in accordance with applicable industry best practices and regulatory requirements, including fire safety standards.

Point of Interconnection and Interconnection Agreement: The project's point of interconnection will be connecting directly to the existing 66 kV transmission line that runs to the adjacent SCE substation. The project plans to negotiate and execute a Generator Interconnection Agreement (GIA) with SCE.

Construction Activities: The construction activities for the proposed Project fall into three main categories: (1) site grading and earthwork; (2) solar array construction; and (3) electrical interconnection to transmission owner infrastructure. Construction of the Project is anticipated to take up to 18 months, starting in Q4 2025 and completed by Q2 2027. Construction would primarily occur during daylight hours, Monday through Friday. Additional hours/days may be necessary to facilitate the schedule.

10. **Surrounding land uses and setting (Brief description):**
    North – Agriculture developed land improved with operating dairies and accessory structures zoned AE-40 (Exclusive Agriculture, 40-acre minimum).
    East – Agricultural land zoned AE-40.
    South – Agricultural land zoned AE-40 and a Southern California Edison (SCE) electrical substation.
    West – Agricultural land zoned AE-40.

11. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):** Regional Water Quality Control Board, San Joaquin Valley Unified Air Pollution Control District, Tulare County Fire Chief, Tulare County Building Division, Tulare County Code Compliance Division, Tulare County Environmental Coordinator, Tulare County Flood/Permits/Subdivisions Division, Tulare County Environmental Health Services Division, Tulare County Council, other TBD.

12. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that include, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?** Pursuant to AB 52, a Sacred Land File request was submitted to the Native American Heritage Commission on November 22, 2024, and was returned on December 3, 2024, with negative results. Between November 27, 2024, and December 3, 2024, tribal consultation notices were sent to twenty-one (21) tribal contacts representing ten (10) Native American tribes. The County received no responses from the tribes within the 30-day response time; two (2) "no comment" responses were received after the 30-day response time. Mitigation measures have been included in the project to reduce potential impacts on tribal cultural resources in the unlikely event that any are unearthed during construction-related activities.

Figure 1 - Vicinity Map

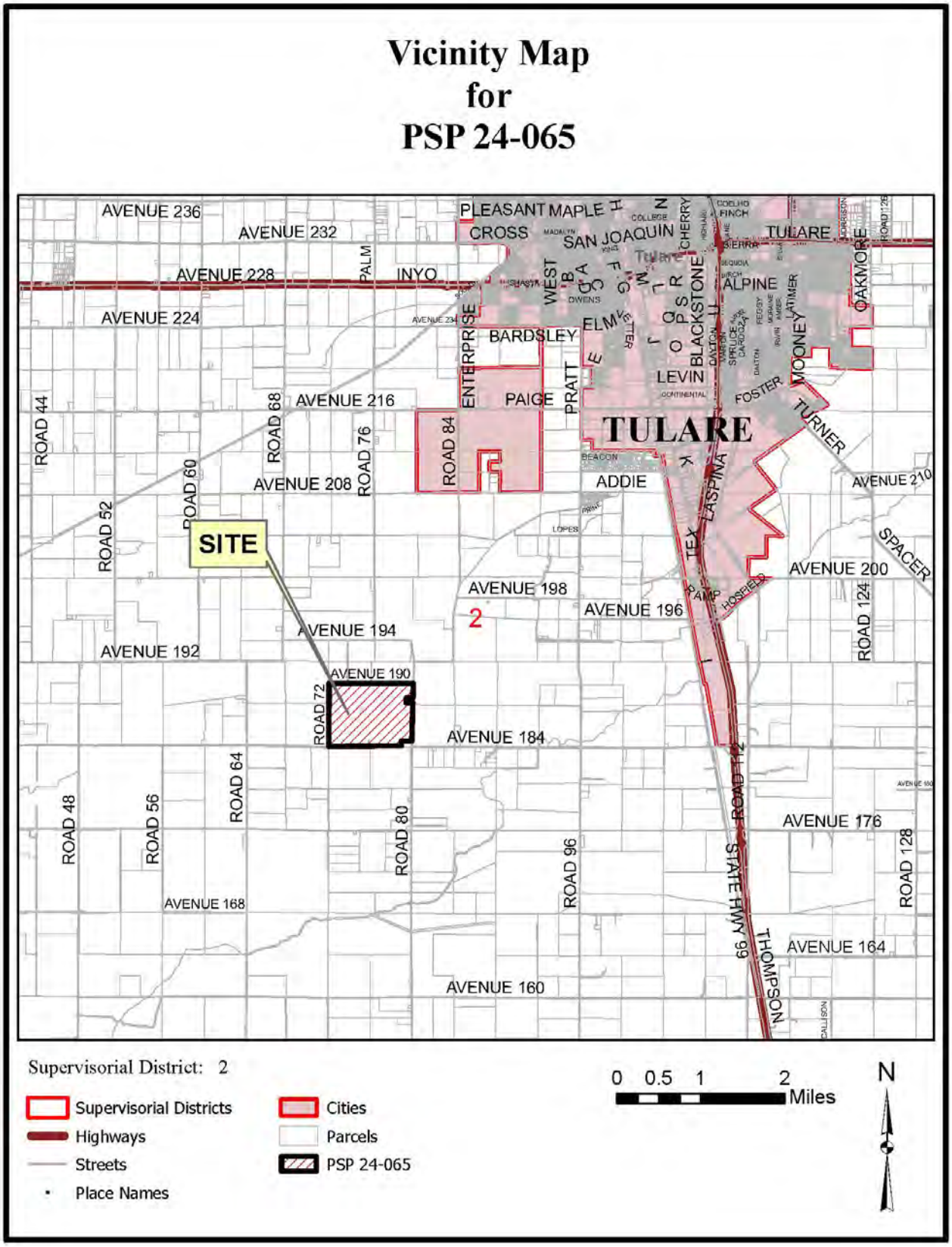


Figure 2 - Aerial View of Site

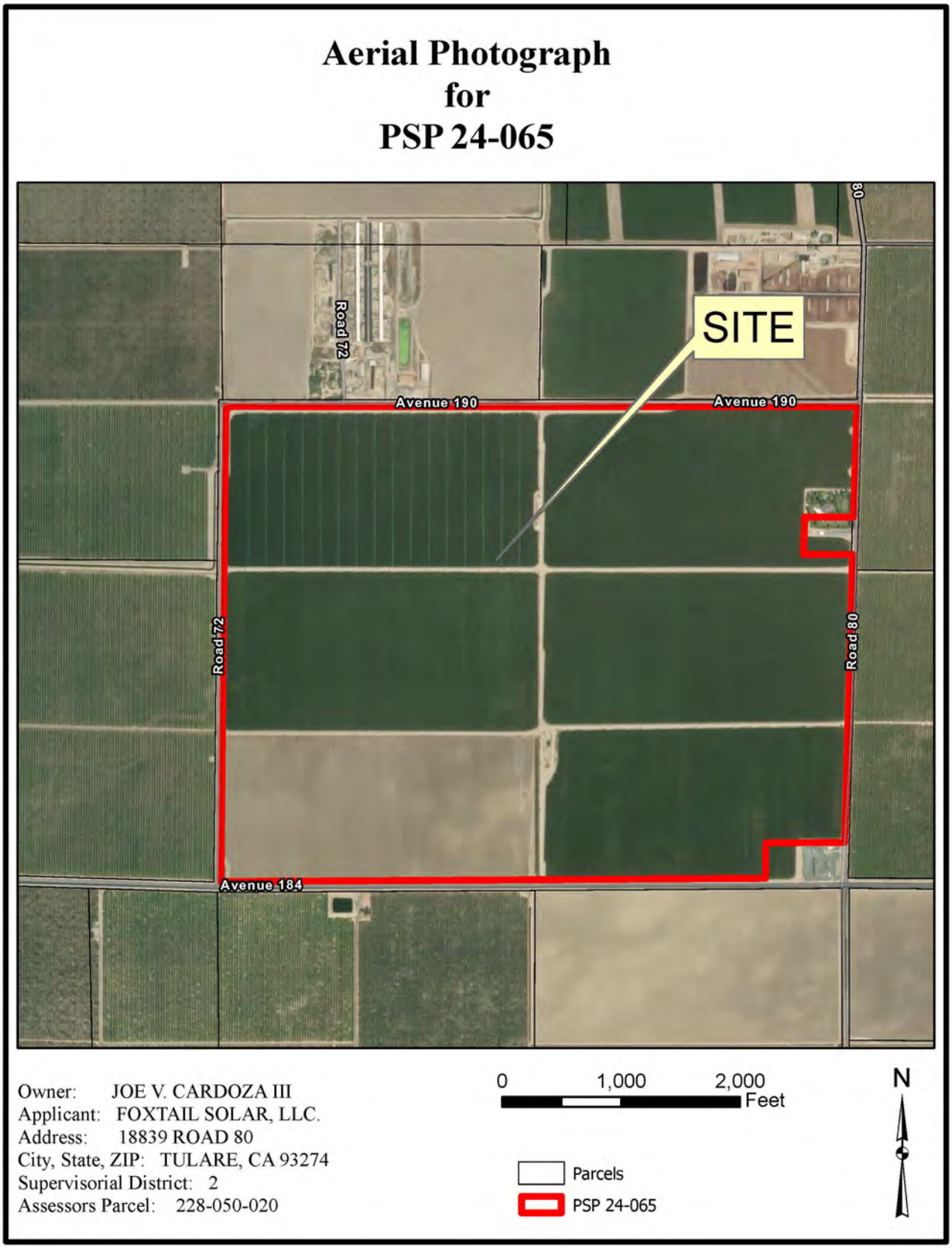


Figure 3 - Zoning

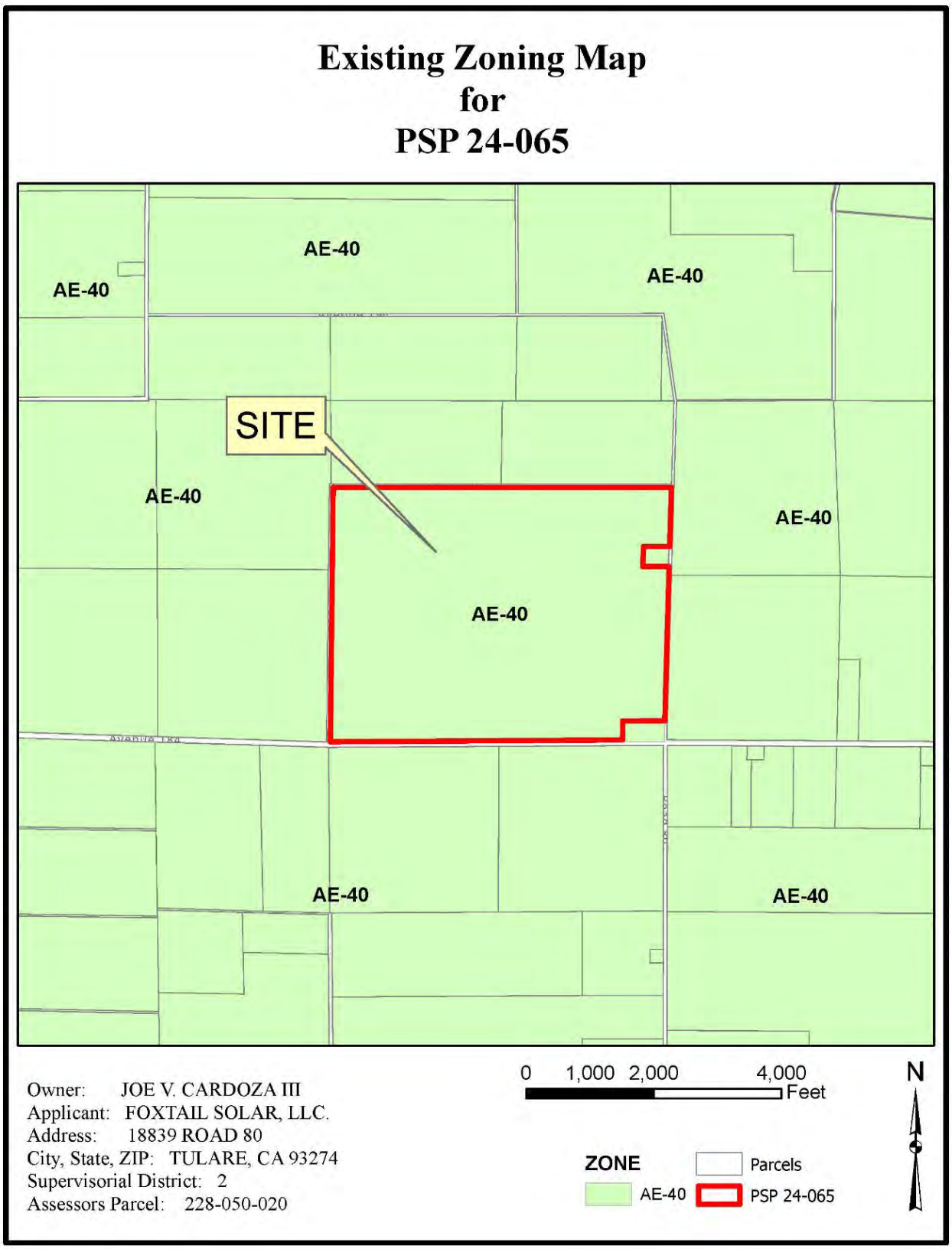


Figure 4 – Project Overview

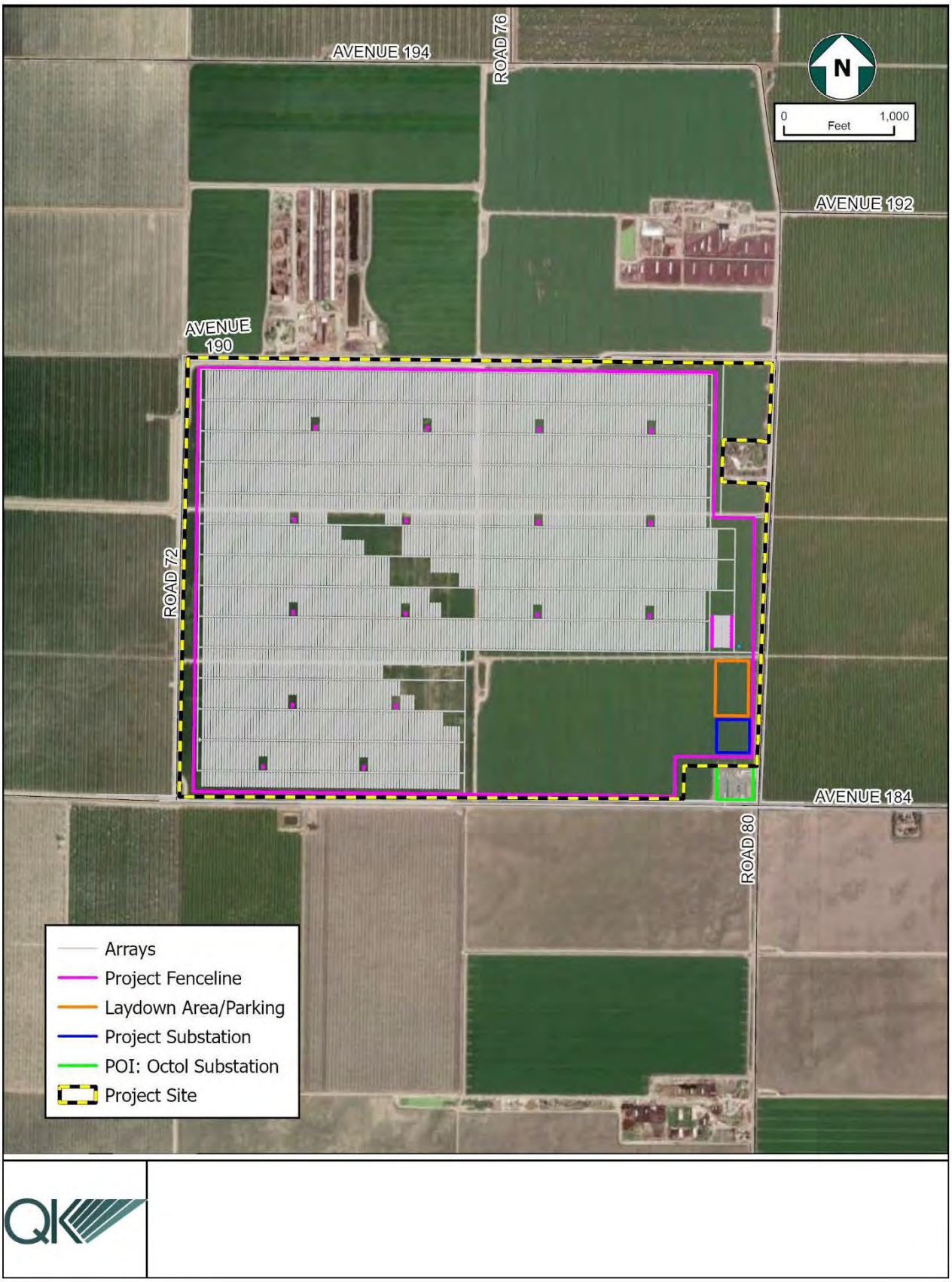


Figure 5 - Site Plan

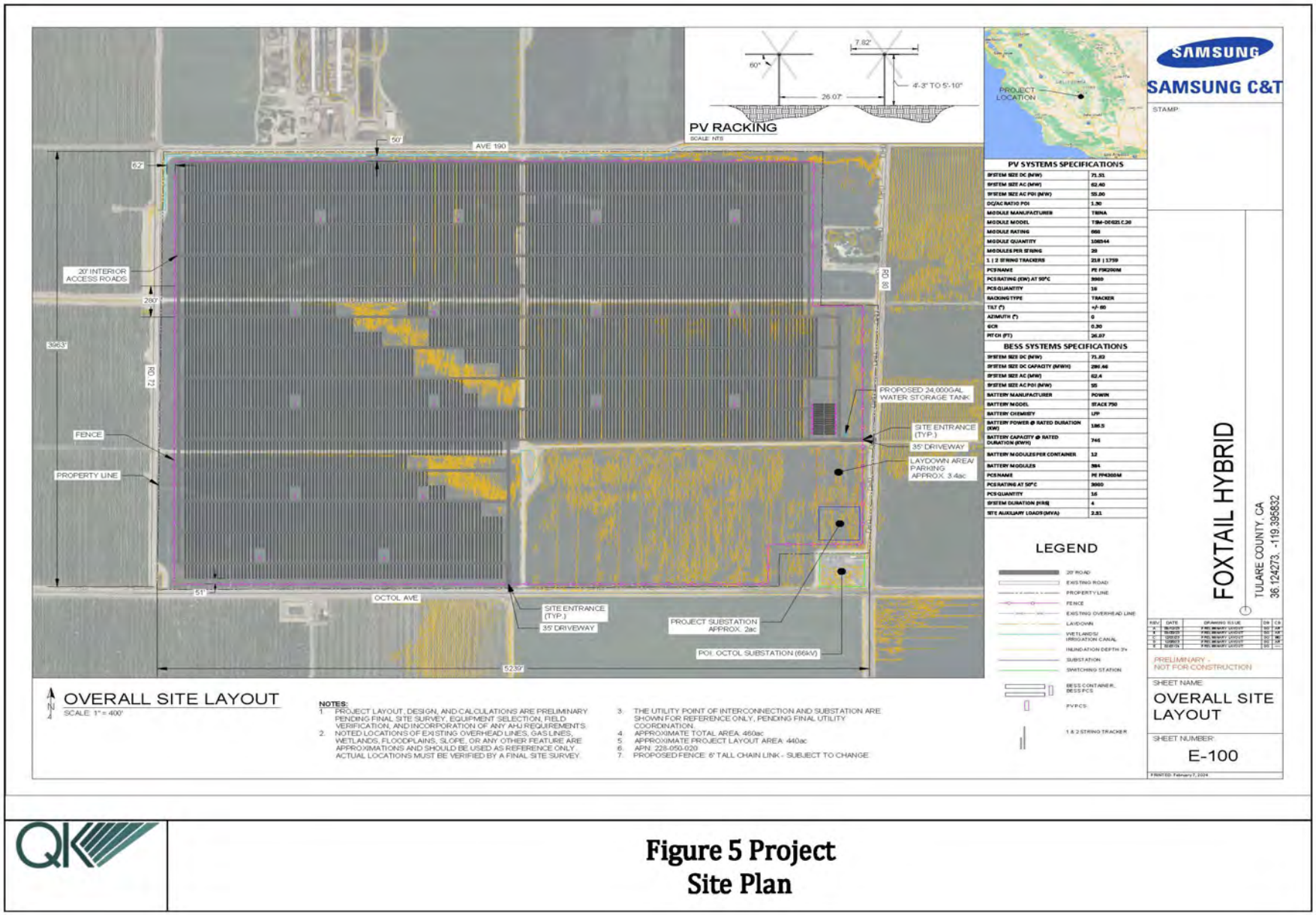


Figure 5 Project Site Plan

A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

B. DETERMINATION:

On the basis of this initial evaluation:

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

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

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

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

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

Signature: Gary A Mills Date: 2/26/2025

Gary A. Mills — Printed Name
Chief Planner, Environmental Planning Division — Title

Signature: Michael Washam Date: 2/26/2025

Michael Washam — Printed Name
Associate Director, Resource Management Agency — Title

C. EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.

   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify: the significance criteria or threshold, if any, used to evaluate each question; and the mitigation measure identified, if any, to reduce the impact to less than significance.

1.	AESTHETICS				
Would the project:		SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Aesthetic resources are protected by several federal regulations, none of which are relevant to this Project because it will not be located on lands administered by a federal agency nor is the Project applicant requesting federal funding or any federal permits.

State

Nighttime Sky – Title 24 Outdoor Lighting Standards

The California Energy Commission (CEC) adopted changes to Title 24, Parts 1 and 6, Building Energy Efficiency Standards (Standards), on November 5, 2003. These new Standards became effective on October 1, 2005. Included in the changes to the Standards are new requirements for outdoor lighting. The requirements vary according to which "Lighting Zone" the lighting equipment is located. The Standards contain lighting power allowances for newly installed equipment and specific alterations that are dependent on which Lighting Zone the project is located. Existing outdoor lighting systems are not required to meet these lighting power allowances. However, alterations that increase the connected load, or replace more than 50% of the existing luminaires (for each outdoor lighting application that is regulated by the Standards) must comply with the lighting power allowances for newly installed equipment.

The Standards base the allowable lighting power on the brightness of the surrounding conditions. The eyes adapt to darker surrounding conditions, and less light is needed to properly see; conversely, when the surrounding conditions are brighter, more light is needed to see. The least lighting power is allowed in Lighting Zone 1 and increasingly more lighting power is allowed in Lighting Zones 2, 3, and 4.

The CEC defines the boundaries of Lighting Zones based on U.S. Census Bureau boundaries for urban and rural areas as well as the legal boundaries of wilderness and park areas (see Standards Table 6-2).[1] By default, government designated parks, recreation areas and wildlife preserves are Lighting Zone 1; rural areas are Lighting Zone 2; and urban areas are Lighting Zone 3. Lighting Zone 4 is a special use district that may be adopted by local government.

California Scenic Highway Program

The Scenic Highway Program allows county and city governments to apply to the California Department of Transportation (Caltrans) to establish a scenic corridor protection program which was created by the Legislature in 1963. Its purpose 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. Two Eligible State Scenic Highways occur in Tulare County, State Route 198 and 190; however, they are not Designated State Scenic Highways.

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update: Chapter 7 – Scenic Landscapes, contains the following goals and policies that relate to aesthetics, preservation of scenic vistas and daytime lighting/nighttime glare and which have potential relevance to the Project's CEQA review: *SL-1.1 Natural Landscapes* which requires new development to not significantly impact or block views of Tulare County's natural landscapes*; SL-1.2 Working Landscapes* which requires that new non-agricultural structures and infrastructure located in or adjacent to croplands, orchards, vineyards, and open rangelands be sited so as to not obstruct important viewsheds and to be designed to reflect unique relationships with the landscape; and *SL-2.1 Designated Scenic Routes and Highways* which is intended to protect views of natural and working landscapes along the County's highways and roads by maintaining a designated system of County scenic routes and State scenic highways.

PROJECT IMPACT ANALYSIS

a) Less Than Significant Impact: For the purposes of this Project, a scenic vista is defined as an area that is designated, signed, and accessible to the public for the purpose of viewing and sightseeing. The Project site is located in unincorporated southwestern Tulare County in a generally undeveloped area on the floor of the San Joaquin Valley. The area surrounding the Project site is primarily rural agricultural land (i.e., scattered rural residences in every direction, active row crops, and dairy operations) and the Project would be low-profile (that is, no building will be greater than 35' feet in height and the solar tracker array would not exceed 12 feet in height). Zoning height limitations would restrict structures (e.g.; inverter stations, battery storage, etc.) to no greater than a two-story equivalent (i.e., 2-½ stories and not to exceed 35 feet maximum). No parts of the Project would obstruct local scenic views, be visually intrusive or incompatible with the surrounding area, or be visible to large numbers of sensitive receptors. A new transmission will also be constructed along the east side Road 164 which has an existing right-of-way of 50'(of which 17.5' is a paved surface while the remaining 32.5' (approximately 16. 25' of either side of the road) is used as an unpaved shoulder). However, as a similar transmission line is currently in place on the west side of Road 164, the new line will not represent a substantial intrusion on the viewshed of the area. Also, there are no designated scenic vistas within visible distance of the Project site. As noted in the Project Description, If the Applicant installs lighting, it shall be hooded and directed downward to minimize off-site light and glare. Therefore, the Project would have no impact on a scenic vista.

b) No Impact: There are no rock outcroppings, historic buildings, or other designated scenic resources within or near the Project site. The California Scenic Highway Program allows counties to nominate an eligible scenic highway to be approved by the California Department of Transportation and placed under the scenic corridor protection program. In Tulare County, there is currently one officially designated scenic highway, and two highways that are eligible for designation. Approximately two (2) miles of the officially designated Scenic Highway (State Route) 180 passes through Tulare County, but this segment of SR 180 is greater than 45 miles northeast of the Project site. Additionally, there are two Eligible State Scenic Highways (SR 190, approximately seven miles south; and SR 198, approximately 12 miles north),

[1] California Energy Commission (CEC). Title 24 Standards Table 6-2: Lighting Zone Characteristics and Rules for Amendments by Local Jurisdictions. https://www.energy.ca.gov/filebrowser/download/5109. Site accessed February 2025.

but neither of these are near the Project site. As such, the Project is not located within the viewshed of any of the listed designated or eligible highway segments.

Additionally, the County of Tulare identified several County Scenic Roads in its 2012 General Plan Update; however, none of the roads are near or within the vicinity of the Project site. As a result, the Project would have no impact on existing scenic resources or highways. As noted earlier, the Project is located in a relatively flat area and does not contain scenic resources such as significant trees, rock outcroppings, or historic buildings. Therefore, there would be no impact to an eligible or designated state scenic highway or other scenic resources as a result of the proposed Project.

c) No Impact: The Project site is located in an isolated, rural, predominantly agricultural area. The remoteness of the site, the absence of persons (there are only four rural residences near the site, with the nearest approximately 625 feet away from the solar panels), and the likely low average daily vehicle trips per day (based on the lack of traffic generating uses, such as commercial, industrial, higher residential densities, etc.) do not avail the site to a significant number of opportunities for the site to result in an adverse impact to public views or vantage points viewing. As such, even though the Project location is in a non-urbanized area, it would not substantially degrade the existing visual character or quality of the site and its surroundings. Therefore, the project would not conflict with applicable zoning and other regulations governing scenic quality resulting in no impact to this resource.

d) Less Than Significant Impact: As noted in the Project Description, if the Applicant installs security lighting, it shall be hooded and directed downward to minimize off-site light and glare. As such, the Project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area resulting in a less than significant impact to this resource.

2. AGRICULTURAL AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the Rural Valley Lands Plan point evaluation system prepared by the County of Tulare as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

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

	in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Federal regulations for agriculture and forest resources are not relevant to this project because it is not a federal undertaking (the Project site is not located on lands administered by a federal agency, and the Project applicant is not requesting federal funding or any federal permits).

State

California Environmental Quality Act (CEQA) Definition of Agricultural Lands

Public Resources Code Section 21060.1 defines "agricultural land" for the purposes of assessing environmental impacts using the FMMP. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP serves as a tool to analyze agricultural land use and land use changes throughout California. As such, this Project is being evaluated using the FMMP pursuant to CEQA.

California Department of Conservation, Division of Land Resource Protection

The California Department of Conservation (DOC) applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands. These agricultural designations are used in planning for the present and future of California's agricultural land resources. Pursuant to the DOC's FMMP, these designated agricultural lands are included in the Important Farmland Maps (IFM). As noted earlier the FMMP was established in 1982 to assess the location, quality and quantity of agricultural lands, and the conversion of these lands. The FMMP serves as tool to analyze agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The following list provides a comprehensive description of all the categories mapped by the DOC. Collectively, for CEQA purposes lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are constitute "agricultural land".[2]

- Prime Farmland. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- Unique Farmland. Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated groves or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative

[2] California Department of Conservation. Important Farmland Categories. https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx. Accessed February 2025.

Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

- Urban and Built-up Land. Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.
- Other Land. Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

California Land Conservation Act (Williamson Act)

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. The Department of Conservation assists all levels of government, and landowners in the interpretation of the Williamson Act related government code. The Department also researches, publishes and disseminates information regarding the policies, purposes, procedures, and administration of the Williamson Act according to government code. Participating counties and cities are required to establish their own rules and regulations regarding implementation of the Act within their jurisdiction. These rules include but are not limited to: enrollment guidelines, acreage minimums, enforcement procedures, allowable uses, and compatible uses.[3]

Williamson Act Contracts are formed between a county or city and a landowner for the purpose of restricting specific parcels of land to agricultural or related open space use. Private land within locally-designated agricultural preserve areas are eligible for enrollment under a contract. The minimum term for contracts is ten years. However, since the contract term automatically renews on each anniversary date of the contract, the actual term is essentially indefinite. Landowners receive substantially reduced property tax assessments in return for enrollment under a Williamson Act contract. Property tax assessments of Williamson Act contracted land are based upon generated income as opposed to potential market value of the property.[4]

Forestry Resources

State regulations regarding forestry resources are not relevant to the proposed project because no forestry resources exist at the Project site.

Local

County of Tulare

On February 26, 2013, per Resolution No. 2013-0104, Tulare County adopted a two-level review process for evaluating the siting of public and private utility structures on agricultural zoned land to analyze potential agricultural conversion impacts. The first level of review pertains to all agricultural zoned lands, while the second level applies to lands under Williamson Act contract. Level II states that a project should adhere to all the criteria noted in Level I.

Level I: Agricultural Zoned Lands

a) Public and private utility structures on land other than irrigated prime farmland, as defined in Level 1, Section C, may be permitted and subject to findings and conditions. Desired locations include marginal or impaired lands, land with insufficient water supplies for viable agricultural production or in the UDB, UAB, HOB areas of

[3] Department of Conservation. Williamson Act Program. https://www.conservation.ca.gov/dlrp/wa. Accessed February 2025.
[4] Department of Conservation. Williamson Act Contracts. https://www.conservation.ca.gov/dlrp/wa/Pages/contracts.aspx. Accessed February 2025.

the County for agricultural buffers. Although the 475.5-acre Project site is mapped as Prime Farmland, the Project is consistent with the "other than irrigated because it will not be permanently removed as agricultural acreage; it is being re-purposed for an anticipated 35-year timeframe thereby preserving the land for future cropland use.

b) Should be in proximity to the electrical grid/corridor/electrical substation or end user. The proposed Project would transmit the power generated at the site via a new on-site Project substation which would connect directly to the existing 66kV transmission line that runs to the adjacent SCE substation at the corner of Avenue 184 and Road 80.

c) Should not support, unless a unique proposal is approved by the Board of Supervisors, the siting of public and private solar utility structures located outside of UDB, UAB, HOB areas of the County on irrigated prime farmland as defined by any of the following criteria:

i. Identified as Prime farmland by the FMMP. As noted above, the Project site is considered Prime Farmland by the FMMP; however, the Project site will not be irrigated throughout its 35-year life and will be reclaimed to irrigated agricultural use after its decommissioning.

ii. Identified as Class I Soil by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). The NRCS Non-Irrigated Land Capability Classification System evaluates the suitability of soils for most types of field crops. Soils are then grouped in capability classes that describe the limitations that the soil class might present for crop cultivation. The Class groups are numbered from 1 through 8.[5] The capability classes of the soil types of the Project site are presented below in **Table AG-1**. Although the Biggriz-Biggriz saline sodic complex and Copien loam soils (which make up approximately 132 acres (28%) and 343 acres (72%), respectively, of the soils within the Project site) are rated as "Prime Farmland" by the NRCS, this classification only applies if the area is irrigated and either protected from flooding or not frequently flooded during the growing season. If left un-irrigated, the soil is not considered as Prime Farmland.

The Project site is within Flood Zone A meaning it is in an area with a 1% annual chance of flooding in any given year. An elevation certificate and associated flood hazard mitigation measures will be required on all proposed buildings within FEMA Zone A. The subject parcel is located in a federally identified Special Flood Hazard Area as depicted on said plat. Individual site plan approval is required for any parcel located within or partially within a special flood hazard area prior to the issuance of any permits. The location of a structure within the special flood hazard area shall require compliance with the National Flood Insurance Program under FEMA and the special provisions of the Tulare County Flood Damage Prevention Ordinance.

TABLE AG-1
SOIL INFORMATION FOR FOXTAIL SOLAR PROJECT SITE

Map Unit Symbol	Map Unit Name	Non-Irrigated Capability Class	Acreage/Site Percentage
104	Biggriz-Biggriz, saline-Sodic complex, 0 to 2% slopes	6s	132.8 aces/27.9%
108	Copien loam,0 to 2% slopes	4c	342.8 acres/72.3%

Source: USDA/NRCS 2019 accessed at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

[5] USDA NRCS Field Office Technical Guide. Accessed February 2025 at https://efotg.sc.egov.usda.gov/references/Delete/2004-3-27/landcap.htm#:~:text=The%20classes%20are%20defined%20as,that%20require%20moderate%20conservation%20practices.

As shown in **Table AG-1**, Approximately 28% of soils within the Project site have a Non-Irrigated Capability Class of 6 meaning that the soils "have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat." Approximately 72% of soils within the Project site have a Non-Irrigated Capability Class of 4 meaning that the soils "have very severe limitations that restrict the choice of plants or that require very careful management, or both."

iii. Land having been actively farmed in permanent crops at least one year during the past ten years. The land has been planted as field crops. Therefore, solar development of the site does not require removal of any permanent crops (such as orchards or vineyards)

d) Should not support the removal of permanent crops when there is sufficient water available for continued crop production on lands outside of UDB, UAB and HOB areas of the County regardless of soil capability classification. As noted earlier, the Project site has been planted as field crops and would not result in the removal of permanent crops. Further, the Applicant shall not use onsite water for the purpose of cleaning the solar arrays, as such will preserve the water used for growing the fields crops for the duration of the 35 year operation before the land is reclaimed.

e) Identify sources of water not limited to well, irrigation canal, water transfer and conduct water availability analysis demonstrating either (1) the insufficiency of adequate water supplies for continued crop production, or (2) the infeasibility of continued agricultural activities on the subject property. This analysis must include input from the water district, or other water authority. The proposed Project is not supplied by, or located within, any urban water management planning area. Nor is it located within any agricultural or urban water districts, or other public or private utilities that deliver water to the end user. The Project would use imported/trucked water to supply water as necessary (that is, to supply watering trucks used to minimize dust during construction-related activities and for solar panel washing up to four (4) times per year).

f) Analyze the potential negative impacts on neighboring farming operations and mitigate for those impacts including, but not limited, to increases in invertebrate and vertebrate pest and invasive plant species. Compliance with the measures identified in the Mitigation Monitoring Reporting Program (MMRP) will mitigate potential negative impacts as identified in this Initial Study. Also, conditions of approval will require removal of combustible material from the site; the submission of a soil reclamation plan; fencing; dust management; on-site parking; etc. These measures will ensure impacts on neighboring farm operations will be less-than-significant. Therefore, the proposed Project is consistent with the "neighboring farming operations" criterion.

g) Should not impede or reduce the productive agricultural capacity of the land for future uses. Thus, reclamation of the land to its previous agricultural condition is crucial and appropriate financial assurances are essential. The proposed solar facility represents a conversion of farmland with a life of approximately 35 years. It is unknown at this time if the solar facility may extend beyond 35 years. As a condition of approval, a Reclamation Plan shall be submitted as a part of the permit application materials. This Reclamation Plan shall provide financial assurances along with a detailed plan to remediate soils and return the land to its original pre-construction condition upon termination (decommissioning) of the Project.

As described in the Project Description, the proposed life of the Project is 35 years. The Applicant would finalize and submit to the County for approval, a Decommissioning and Reclamation Plan, and attendant bond. The Decommissioning and Reclamation Plan shall include the methods for removing all solar panels, demolishing and removing all support racks and structures, and removal of all infrastructure (road, foundations), which is assured according to the lease agreement with the property owner and through the agreement on and posting of a reclamation bond with the County.

The Project site would be leveled where needed and the onsite soil would be reclaimed to a condition that would again support agriculture. The Decommissioning and Reclamation Plan shall include a summary of specific measures to restore the soil to its pre-Project condition, including removal of all fixtures, equipment, non-agricultural roads, and restoration of compacted soil. Reclamation would be completed within 120 days of the

expiration of the county special use permit. The modules and ancillary materials would be sold and reused or recycled to minimize impact on the environment.

At the time of re-use, the zoning/land use designations will be used to determine the Project site's highest and best use. As a result, the Project would result in a less than significant impact on this item.

h) Require developer agreements that include cost recovery, loss of crop production and/or subvention funds, removal of facility and reclamation requirements, and other Tulare County financial incentives. A condition of approval will require the Project proponent to enter into the "Developer Agreement and Reclamation Plan for the Solar Photovoltaic Electric Generating Facility", adopted on August 31, 2010 by Board of Supervisors Resolution 2010-0717. Therefore, the proposed Project is consistent with the "developer agreement" criterion.

i) Require Sales and Use Tax Agreements to maximize capture of sales and use tax revenue. A condition of approval will require the Project proponent to enter into the "Agreement For Allocation of Sales and Use Tax Revenues and Limitations on Transfer of the Project to Nontaxable or Tax Exempt Entities", adopted by the Board of Supervisors on February 28, 2012 by Resolution 2012-0187. Therefore, the proposed project is consistent with the "Sales and Use Tax Agreements" criterion.

Level II: Agricultural Zoned Lands Under Williamson Act Contracts

a) Adhere to all criteria noted in Level I to be completed. Please see above.

b) Review Resolution No. 89-1275 - Uniform Rules for Agricultural Preserves - and Resolution No. 99-0620 establishing Rules for Farmland Security Zones to insure compatibility. The Tulare County Board of Supervisors defined allowable uses on contracted lands in Resolution No. 89-1275, which established Uniform Rules for Agricultural Use. Resolutions No. 89-1275 and No. 99-0620 established the construction of gas, electric, water, and community utility facilities as compatible uses for lands under a Williamson Act Contract. Public and private utility structures were determined to be a compatible use on lands under Williamson Act Contract with Resolution No 2010-0717. Under Resolution No. 2010-0590, the Tulare County Board of Supervisors determined that solar generating facilities are a compatible use in Exclusive Agriculture Zone Districts subject to conditions of approval set forth in Special Use Permits.

c) Review Williamson Act Contract Contents to insure compatibility. Williamson Act – Land Conservation Contracts Nos. 3528 and 3529 were recorded February 2, 1970 (Box 2879, Pages 227 and 232, respectively). The Tulare County Board of Supervisors defined allowable uses on contracted lands in Resolution No. 89-1275, which established Uniform Rules for Agricultural Use. Resolutions No. 89-1275 and No. 99-0620 established the construction of gas, electric, water, and community utility facilities as compatible uses for lands under a Williamson Act Contract. Public and private utility structures were determined to be a compatible use on lands under Williamson Act Contract with Resolution No 2010-0717. Under Resolution No. 2010-0590, the Tulare County Board of Supervisors determined that solar generating facilities are a compatible use in Exclusive Agriculture Zone Districts subject to conditions of approval set forth in Special Use Permits. The proposed Project is therefore compatible with the Williamson Act contracts applicable to the Project site.

PROJECT IMPACT ANALYSIS

a) Less Than Significant Impact: As noted earlier, the Tulare County Board of Supervisors (Board) approved Resolution No. 2013-0104 on February 26, 2013, whereby Tulare County adopted a two-level review process for evaluating the siting of public and private utility structures on agricultural zoned land to analyze potential agricultural conversion impacts. As indicated above, this Project is consistent with the Board adopted resolutions. As such, the Project would not result in the Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. Upon ultimate decommissioning of the site, it will be reclaimed to the extent that agricultural production may be re-initiated. Implementation of the site's Reclamation Plan would result in a less than significant impact to this resource.

b) Less Than Significant Impact: The Project site is zoned AE-40 (Exclusive Agriculture- 40 acre minimum). Additionally, the parcel is under a Williamson Act Contract. The Williamson Act enables local governments to enter into contracts with private landowners that restrict land use to agricultural or related uses in return for lower property tax assessments. Local governments are responsible for the implementation of this program; therefore, the rules that determine compatible uses within a contract vary by jurisdiction. As noted earlier, The Tulare County Board of Supervisors defined allowable uses on contracted lands in Resolution No. 89-1275, which established Uniform Rules for Agricultural Use. Resolutions No. 89-1275 and No. 99-0620 established the construction of gas, electric, water, and community utility facilities as compatible uses for lands under a Williamson Act Contract. Public and private utility structures were determined to be a compatible use on lands under Williamson Act Contract with Resolution No 2010-0717. Under Resolution No. 2010-0590, the Tulare County Board of Supervisors determined that solar generating facilities are a compatible use in Exclusive Agriculture Zone Districts subject to conditions of approval set forth in Special Use Permits.

Resolutions 2010-0717 and 2013-0104 subsequently created a two-level process through which solar facility projects can be found as a compatible use on Williamson Act Contracted lands. This allows impaired agricultural lands to be put to the highest and best use without cancelling the Williamson Act Contract, therefore preserving the option to return to farming the land in the future. Pending the approval of the Special Use Permit for the proposed Project and the approval of findings of compatibility under the Williamson Act, the Project would present a temporary change in land use that has been found to be compatible with the terms of the existing Williamson Act contract on the Project site. Therefore, the proposed Project would not conflict with existing zoning or a Williamson Act Contract and no impact would occur.

c and d) No Impact: The Project will not occur on land zoned as forest land or timberland or result in a loss of forest land. As such, the Project would not conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources code 12220(g), timberland (as defined in Public Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

e) No Impact: The Project site is not located near land zoned as forest land or timberland and therefore would not result in any changes in the environment that might convert forest land to non-forest land. The proposed Project would result in the use of approximately 475.5 acres of farmland for non-agricultural use for approximately 35 years. However, as discussed earlier, this conversion is planned as temporary and in accordance with existing land use policies and regulations. Land surrounding the Project site is a mix of agriculturally productive lands, a dairy, and scattered rural residences. As discussed in the Project Description, construction-, operation-, maintenance-, and decommissioning-related activities would take place within Project site boundaries. The proposed Project is not anticipated to involve changes to the environment that are different than impacts to the environment from agricultural production. Additionally, during construction- and decommissioning-related activities, Best Management Practices such as erosion prevention measures and dust-minimization measures (including those required by the San Joaquin Valley Air Pollution Control District) would be employed to limit the impact of the proposed Project on adjacent properties. Maintenance activities during Project operation would be minimal and limited to maintenance of facility components and washing the panels periodically. Therefore, no other changes to the environment are anticipated that could result in the conversion of farmland to non-farmland. There would be no impact on this item.

3. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

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

c)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d)	Result is other emissions (such as those leading to odors adversely affecting a substantial number of people?	☐	☐	☒	☐

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), the emissions calculations prepared by County staff (Attachment A), and the resources cited in this analysis.

REGULATORY SETTING

Federal

National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for six (6) criteria pollutants to protect the public health and welfare. These criteria pollutants include ground level ozone which is formed from reaction of nitrogen oxides (NOx) and volatile organic compounds (VOCs), commonly referred to as reactive organic gases (ROG), with sunlight; particulate matter (PM10 and PM 2.5); carbon monoxide (CO); sulfur dioxide (SO2); nitrogen dioxide (NO2); and Lead (Pb). The federal and state standards were developed independently with differing purposes and methods, although both processes are intended to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent.

The Federal Clean Air Act requires the Environmental Protection Agency (EPA), to set NAAQS for the six criteria pollutants, noted above, that occur throughout the United States. Of the six pollutants, particle pollution and ground-level ozone are the most widespread health threats. EPA regulates the criteria pollutants by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health is called primary standards. Another set of limits intended to prevent environmental and property damage is called secondary standards.

EPA is required to designate areas as meeting (attainment) or not meeting (nonattainment) the air pollutant standards. The Federal Clean Air Act (CAA) further classifies nonattainment areas based on the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious. The Federal CAA requires areas with air quality violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures that states will use to attain the NAAQS. The Federal CAA amendments of 1990 require states containing areas that violate the NAAQS to revise their SIP to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of Air Basins as reported by the agencies with jurisdiction over them. The EPA reviews SIPs to determine if they conform to the mandates of the Federal CAA amendments and will achieve air quality goals when implemented. If the EPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and impose additional control measures.

The SJVAB is considered to be in attainment for federal and state air quality standards for carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2); attainment for federal and non-attainment for state air quality standards for respirable particulate matter (PM10); and non-attainment of state and federal air quality standards for ozone (O_3) and fine particulate matter (PM2.5). To meet federal Clean Air Act requirements, the Air District has adopted the following attainment plans: the 2004 Extreme Ozone Attainment Demonstration Plan (for the 1-hour standard); the 2007 Ozone Plan (for the 1997 8-hour standard); the 2013 Plan for the Revoked 1-Hour Ozone Standard; the 1-Hour Ozone Attainment Request; the 2016 Plan for the 2008 8-Hour Ozone Standard; the 2022 Ozone Plan for the San Joaquin Valley; the 2006 PM10 Maintenance Plan; the 2008 PM2.5 Plan (for the 1997 annual standard); the 2012 PM2.5 Plan (for the 2006 24-hour standard); the 2015 Plan for the 1997 PM2.5 Standard (for annual and 24-hour standards); the 2016 Moderate Area Plan for the 2012 PM2.5 Standard; the 2018 PM2.5 Plan for the San Joaquin Valley, the 2024 Plan for the 2012 PM2.5 Standard, and the 2004 Revision to the California State Implementation Plan for Carbon Monoxide. The State does not have an attainment deadline for the ozone standards; however, it does require implementation of all feasible measures to achieve attainment at the earliest date possible. State

PM10 and PM2.5 standards have no attainment planning requirements, but must demonstrate that all measures feasible for the area have been adopted.

State

The California Air Resources Board (CARB or ARB) is the state agency responsible for implementing the federal and state Clean Air Acts. ARB has established California Ambient Air Quality Standards (CAAQS), which include all criteria pollutants established by the NAAQS, but with additional regulations for Visibility Reducing Particles, sulfates, hydrogen Sulfide (H2S), and vinyl chloride.

The Project is located within the San Joaquin Valley Air Basin, which includes San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and parts of Kern counties and is managed by the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or Air District).

Air basins are designated as attainment or nonattainment. Attainment is achieved when monitored ambient air quality data is in compliance with the standards for a specified pollutant. Non-compliance with an established standard will result in a nonattainment designation and an unclassified designation indicates insufficient data is available to determine compliance for that pollutant.

Standards and attainment status for listed pollutants in the Air District can be found in **Table AQ-1**. Note that both state and federal standards are presented.

Local

<u>San Joaquin Valley Unified Air Pollution Control District (Air District)</u>

The San Joaquin Valley Unified Air Pollution Control District (Air District) is the local agency charged with preparing, adopting, and implementing mobile, stationary, and area air emission control measures and standards. The Air District has several rules and regulations that may apply to the Project, following is an example of those rules/regulations which likely apply to this Project:

- Rule 3135 (Dust Control Plan Fees) – This rule requires the project applicant to submit a fee in addition to a Dust Control Plan. The purpose of this rule is to recover the Air District's cost for reviewing these plans and conducting compliance inspections.

- Rules 4101 (Visible Emissions) and 4102 (Nuisance) – This rule applies to any source of air contaminants and prohibits the visible emissions of air contaminants or any activity which creates a public nuisance.

- Regulation VIII (Fugitive PM10 Prohibitions) – This regulation is a series of eight rules designed to reduce PM10 emissions by reducing fugitive dust emissions. Regulation VIII requires implementation of control measures to ensure that visible dust emissions are substantially reduced.

- Rule 9510 (Indirect Source Review) - requires developers to mitigate project emissions through 1) on-site design features that reduce trips and vehicle miles traveled, 2) controls on other emission sources, and 3) with reductions obtained through the payment of a mitigation fee used to fund off-site air quality mitigation projects. Rule 9510 requires construction related NOx emission reductions of 20 percent and PM10 reductions of 45 percent. Rule 9510 requires a 33 percent reduction in operational NOx emissions and a 50 percent reduction in PM10. The reductions are calculated by comparing the unmitigated baseline emissions and mitigated emissions from the first year of project operation. The Air District recommends using the [CalEEMOD] model to quantify project emissions and emission reductions. Rule 9510 was adopted to reduce the impacts of development on Air District's attainment plans.

Table AQ-1
SJVAB Attainment Status

	Designation/Classification	
Pollutant	**Federal Standards**	**State Standards**
Ozone – one hour	Revoked / No Federal Standard[1]	Nonattainment/Severe
Ozone – eight hour	Nonattainment/Extreme[2]	Nonattainment
PM_{10}	Attainment[3]	Nonattainment
$PM_{2.5}$	Nonattainment[4]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Vinyl Chloride	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified

1 Effective June 15, 2005, the U.S. EPA revoked the federal 1-hour ozone standard, including associated designations and classifications. However, EPA had previously classified the SJVAB as extreme nonattainment for this standard. Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.

2 Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010)

3 On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM_{10} National Ambient Air Quality Standard (NAAQS) and approved the PM_{10} Maintenance Plan.

4 The Valley is designated nonattainment for the 1997 $PM_{2.5}$ NAAQS. EPA designated the Valley as nonattainment for the 2006 PM2.5 NAAQS on November 13, 2009 (effective December 14, 2009).

Source: San Joaquin Valley Unified Air Pollution Control District. Ambient Air Quality Standards & Valley Attainment Status. http://www.valleyair.org/aginfo/attainment.htm. Accessed February 2025.

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project: *AQ-1.1 Cooperation with Other Agencies* requiring the County to cooperate with other local, regional, Federal, and State agencies (e.g., Valley Air District) in developing and implementing air quality plans to achieve State and federal Ambient Air Quality Standards to achieve better air quality conditions locally and regionally; *AQ-1.5 California Environmental Quality Act (CEQA) Compliance* where the County will ensure that air quality impacts identified during the CEQA review process are consistently and reasonable mitigated when feasible*; AQ-2.2 Indirect Source Review* regarding mitigating air quality impacts associated with the Project to Valley Air District's Rule 9510*; AQ-3.4 Landscape* regarding the use of ecologically based landscape design principles that can improve local air quality by absorbing CO_2, producing oxygen, providing shade that reduces energy required for cooling, and filtering particulates*;* and *AQ-4.2 Dust Suppression Measures* regarding implementation of dust suppression measures during excavation, grading, and site preparation activities consistent with SJVAPCD Regulation VIII – Fugitive Dust Prohibitions.

PROJECT IMPACT ANALYSIS

a) Less Than Significant Impact With Mitigation: Air quality plans (also known as attainment plans) and subsequent rules are used to bring the applicable air basin into attainment with federal ambient air quality standards designed to protect the health and safety of residents within that air basin. The proposed Project will be required to comply with all applicable Air District rules and regulations including, but not limited to, Regulation VIII (Fugitive PM_{10} Prohibitions) requirements and District Rule 9510 (Indirect Source Review). The Air District's *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI) states, "…the District has established thresholds of significance for criteria pollutant

emissions, which are based on District New Source Review (NSR) offset requirements for stationary sources. Stationary sources in the District are subject to some of the toughest regulatory requirements in the nation. Emission reductions achieved through implementation of District offset requirements are a major component of the District's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined to "Not conflict or obstruct implementation of the District's air quality plan." (GAMAQI, page 65, available online at https://www.valleyair.org/transportation/GAMAQI-2015/FINAL-DRAFT-GAMAQI.PDF)

"Determination of whether a project would exceed the applicable thresholds of significance for criteria pollutants requires quantification of project specific emissions. To streamline the process of assessing significance of criteria pollutant emissions from commonly encountered projects, the District has developed the screening tool, Small Project Analysis Level (SPAL). Using project type and size, the District has pre-quantified emissions and determined a size below which it is reasonable to conclude that a project would not exceed applicable thresholds of significance for criteria pollutants." (GAMAQI, page 85)

Construction-, operation-, and maintenance-, and decommissioning-related activities of the proposed Project would result in emissions of criteria pollutants including ozone precursors such as ROG and NOx as well as particulate matter. The San Joaquin Valley Unified Air Pollution Control District's (Air District or SJVAPCD) 2022 Ozone Plan for the San Joaquin Valley, 2016 Plan for the 2008 8-Hour Ozone Standard, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2007 Ozone Plan, 2007 PM_{10} Maintenance Plan and Request for Redesignation, 2008 $PM_{2.5}$ Plan, 2012 $PM_{2.5}$ Plan, 2015 Plan for the 1997 $PM_{2.5}$ Standard, the 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard, 2018 PM2.5 Plan for the San Joaquin Valley, and 2024 Plan for the 2012 PM2.5 Standard outline a number of control strategies to help the SJVAPCD reach attainment for the revoked federal 1-hour ozone standard, the 24-hour PM_{10} standard, and the federal and state $PM_{2.5}$ standards, respectively. The San Joaquin Valley Air Basin (SJVAB or Air Basin) is in attainment for CO, SO2, and lead, so there are no attainment plans for those pollutants.

Control measures outlined in the ozone plans focus primarily on control of stationary and indirect sources such as housing and commercial developments that may generate substantial vehicle trips during operations. The primarily source of criteria pollutant emissions generated by the proposed Project would be associated with construction-related activities; operation of the proposed Project would require only minor use of equipment and generate a very small number of vehicle trips required to perform routine maintenance and PV panel washing. Therefore, the proposed Project would not create a permanent substantial source of ozone precursor emissions, and would not obstruct implementation of the SJVAPCD's ozone attainment plan.

The 2008 PM2.5 Plan, 2012 PM2.5 Plan, and 2015 Plan for the 1997 PM2.5 Standard focus specifically on PM2.5, although the control strategies from previous PM10 plans (particularly those related to fugitive dust control) have already improved the SJVAB ambient PM2.5 levels. Therefore, because fugitive dust controls continue to be addressed in the PM10 plan, the plans contain a comprehensive list of strict regulatory and incentive-based measures to reduce directly-emitted PM2.5 and precursor emissions. However, the Project would result in relatively negligible PM2.5 emissions from those types of sources, with the vast majority of PM2.5 emissions associated with the Project arising from the PM2.5 component of fugitive dust.

The Air District has determined that projects with emissions below the thresholds of significance for criteria pollutants would not conflict or obstruct implementation of the Air District's air quality plan. The Project would be required to comply with applicable Air District rules and regulations, such as Regulation VIII (Fugitive PM10 Prohibitions) and Rule 9510 (Indirect Source Review, or ISR), further reducing Project-related emissions. Consistent with the Air District's ISR requirements and District policy on CEQA compliance, construction emissions have been estimated. As construction activities are unknown at this time and because similar projects will likely result in similar emissions, the emissions estimates for this Project are derived from a similar solar project and are used in this document by analogy.[6] The emissions estimates for the comparative project were quantified using the California Emissions Estimator Model (CalEEMod) that was current at the time of its analysis. The model was used to quantify annual construction-related activities ROG, NOx, CO, SO2, PM2.5 and PM10 emissions from off-road equipment, haul trucks, on-road worker vehicle emissions, and vendor delivery trips. Since CalEEMod does not contain a Solar Array Land use type, a user defined

[6] The Mitigated Negative Declaration for the Deer Creek Solar Project is available on the Tulare County Resource Management Agency website at: https://tularecounty.ca.gov/rma/planning-building/environmental-planning/mitigated-negative-declarations/deer-creek-solar-project/.

industrial land use type was used to estimate on-site construction emissions. Construction phasing and off-road equipment estimates were based on information provided by the Project applicant. The annual construction-related emissions can be found in **Table AQ-2**; modeling outputs can be found in Attachment A.

As construction fleets are getting cleaner and more efficient and emissions rates are decreasing over time, estimation of this Project's emissions by analogy is still appropriate. This Project is smaller than the comparative project with respect to energy production and the number of panels installed and will likely generate fewer operational emissions; however, because the Project site is physically larger and dependent upon the specific construction schedule and construction equipment fleet, it may result in higher short-term, on-site construction-related emissions. For this analysis, the emissions of the comparative Project were increased by 50% as they represent the highest value when compared to other size metrics.[7] As Project construction is expected to take up to 18 months, the emissions provided in **Table AQ-2** represent a conservative estimate of the Project's annual construction emissions (i.e., they are not split between construction years). Based on the emissions provided in **Table AQ-2**, the Project's construction NOx emissions would exceed the Air District's thresholds of significance. Mitigation Measure AQ-1 will be required to reduce construction-related emissions to a less than significant level.

Mitigation Measure AQ-1
Engine Standards for Off-Road Equipment. In order to reduce the impact of off-road equipment NOx exhaust emissions during construction-related activities, the applicant shall ensure that construction contracts stipulate that all off-road diesel-powered equipment used will be equipped with USEPA Tier 4 or cleaner engines, except for specialized equipment in which an USEPA Tier 4 engine is not available. In lieu of Tier 4 engines, project equipment can incorporate retrofits such that emissions reductions achieved equal to those of the Tier 4 engines at a minimum. The construction contractor shall submit a detailed list of the equipment fleet that demonstrates the achievement of this mitigation measure to Tulare County Resource Management Agency Planning Branch for approval prior to receiving Notice to Proceed.

Implementation of the proposed Project would result in a renewable energy resource that would generate no direct emissions of criteria air pollutants. Indirect on- and off-site emissions of criteria pollutants associated with proposed Project operation would be generated as a result of employee trips related to maintenance and periodic PV panel washing activities. The proposed Project site would be monitored remotely 24 hours a day, seven (7) days a week. Visits to the site for emergency purposes/upset events would likely, if at all, occur infrequently (i.e., only a few times per year).

As shown in **Tables AQ-2 and AQ-3**, the estimated Project emissions will not exceed the Air District's CEQA significance thresholds for any pollutants with implementation of **Mitigation Measure AQ-1**.

TABLE AQ-2
CONSTRUCTION EMISSIONS ESTIMATES

Construction Year	Estimated Emissions, unmitigated tons per year					
	ROG	NOx	CO	SO_2	Total PM_{10}	Total $PM_{2.5}$
2025 (unmitigated)	1.0197	11.4161	7.8813	0.0195	1.0316	0.6531
2025 (mitigated)	0.3288	6.9149	9.3045	0.0195	0.5922	0.2475
SJVAPCD Thresholds	10	10	100	27	15	15
Threshold Exceeded	No	No	No	No	No	No

See Attachment A of this document.

[7] See Attachment A. These emissions estimates were derived from another solar energy project in Tulare County that is approximately the same size (i.e., mega-watts (70MW vs. this Project's 55MW), 200,000-300,000 solar panels vs. 108,344 solar panels for this Project, construction time frame (12-months vs. this Project's 18-total months), and physical area (378 acres vs. this Project's 475 acres).

TABLE AQ-3 OPERATION AND MAINTENANCE EMISSIONS ESTIMATES						
Construction Year	Estimated Emissions, unmitigated tons per year					
	ROG	NOx	CO	SO_2	Total PM_{10}	Total $PM_{2.5}$
2027 (unmitigated)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SJVAPCD Thresholds	10	10	100	27	15	15
Threshold Exceeded	No	No	No	No	No	No
See Attachment A of this document.						

According to the Air District's GAMAQI, a project would be considered to contribute considerably to a significant cumulative impact if it would result in an increase in ROG, NOx, SOx, CO, PM10, or $PM_{2.5}$ of more than its respective significance thresholds. As presented in **Tables AQ-1** and **AQ-2**, Project's mitigated construction- and unmitigated operational-related activities emissions would not exceed the annual SJVAPCD thresholds of significance for ROG, NOx, SOx, CO, PM10, and PM2.5. Therefore, this Project would result in a less than significant impact with mitigation. Furthermore, the Project would be regulated by applicable Air District rules and regulations which would ensure compliance with the Air District's air quality plan and, the Project therefore would result in a less than significant impact to this resource item.

b) Less Than Significant Impact: As discussed earlier at item a), the Air Basin is currently designated as non-attainment for the 1-hour state ozone standard as well as for the federal and state 8-hour standards. Additionally, the Air Basin is designated as non-attainment for the state 24-hour and annual arithmetic mean PM10 standards, as well as the state annual arithmetic mean and the national 24-hour PM2.5 standards. See **Table AQ-1** for designations and classifications of all criteria pollutants.

The contribution of a project's individual air emissions to regional air quality impacts is, by its nature, a cumulative effect. Emissions from past, present, and future projects in the region also have or will contribute to adverse regional air quality impacts on a cumulative basis. No single project by itself would be sufficient in size to result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions. The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants.

According to the Air District's GAMAQI, a project would be considered to contribute considerably to a significant cumulative impact if it would result in an increase in ROG, NOx, SOx, CO, PM10, or PM2.5 of more than its respective significance thresholds. As presented in **Tables AQ-2** and **AQ-3**, proposed Project construction- and operational-related activities emissions would not exceed the annual SJVAPCD thresholds of significance for ROG, SOx, CO, PM10, and PM2.5. Implementation of **Mitigation Measure AQ-1** would reduce construction-related NOx emissions to below the SJVAPCD thresholds of significance. Therefore, this Project would result in a less than significant cumulative impact on air quality.

c) Less Than Significant Impact: Diesel particulate matter (DPM) represents the primary toxic air contaminates (TAC) of concern associated with the proposed Project. DPM emissions are primarily the result of the operation of internal combustion engines in equipment (e.g., loaders, backhoes, and cranes, as well as haul trucks) commonly associated with construction-related activities. Since activities associated with the operation-related activities of the proposed Project would result in short-term, temporary, and intermittent use of mobile or stationary sources of DPM (e.g., maintenance workers driving to and from the Project site, and the occupational use of off-road equipment to move equipment), operation-related activities of the proposed Project would not expose nearby sensitive receptors to DPM emissions that would result in a health risk. Therefore, health risks associated only with proposed Project construction-related activities is evaluated below.

The dose to which receptors are exposed is the primary factor affecting health risk from TACs. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. According to the State of California Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments (which determine the exposure of sensitive receptors to TAC emissions), should be based on 9, 30, and/or 70-year

exposure periods when assessing TACs (such as DPM) that have only cancer or chronic non-cancer health effects. However, such health risk assessments should be limited to the duration of the emission-producing activities associated with the Project, unless the activities occur for less than 6 months. Since construction-related activities of the proposed Project would occur over an estimated 18-month period and the nearest sensitive receptor is located within 600 feet (183 meters) from the proposed Project's eastern boundary, the proposed Project has the potential to temporarily and intermittently expose off-site sensitive receptors to increased criteria pollutant emission concentrations from diesel powered construction-related equipment during the short-term, temporary construction-related phase.

The Air District recommends conducting a screening analysis for projects that have the potential to expose sensitive receptors to TAC emissions (e.g. DPM during project construction-related activities) that could pose a significance health risk. The SJVAPCD has devolved a prioritization tool to evaluate whether a Health Risk Assessment (HRA) should be prepared, which is based on the California Air Pollution Control Officers Association's (CAPCOA) latest methodology and OEHHA guidance. According to the Air District guidance, projects that obtain a prioritization score of 10 or more is considered to be potentially significant and an HRA should be required for the project.

The Air District's prioritization screening tool was used to evaluate the potential health risks during proposed Project construction-related activities. Similar to the discussion at Item a) above, emissions have been estimated (using the District approved Health Risk Assessment model (the HRA model)) from a similar solar project and are used in this document by analogy as similar projects will likely result in similar emissions. This Project's construction area is larger than the comparative project and will likely generate higher emissions.[8] The result of the analysis can be found in **Table AQ-4.** Modeling outputs for the comparative project can be found in Attachment A. As shown in **Table AQ-4**, residences within 500 meters (i.e., 1,640 feet) would result in a score greater than 10 as allowed by the Air District. Diesel particulate matter (DPM) represents the primary toxic air contaminates (TAC) of concern associated with the proposed Project.

The operation of each piece of equipment within the proposed Project site would not be constant throughout the day and all the equipment would not operate concurrently at the same location of the proposed Project construction-related area. To quantify the maximum prioritization score, the receptor proximity is based on the distance between the center of the proposed Project construction-related area and the nearest sensitive receptor, which equates to 1,400 feet (426 meters). Using the Air District's prioritization tool, annual emission rate of 31.6 pounds per year of PM10 exhaust and a receptor proximity distance of 426 meters, the proposed Project would obtain a score of 48, which would exceed the Air District's allowed score of 10. Therefore, emissions from construction-related activities of the proposed Project could expose nearby sensitive receptor to DPM that could result in a significant health risk. However, implementation of **Mitigation Measure AQ-1**, would reduce the max score to below 10 (see **Table AQ-4**) by requiring the proposed Project applicant to use Tier 4 engines for all off-road construction equipment during project construction-related activities. Tier 4 engines use advanced engine controls and sensors that significantly reduce engine emissions on all four constituents (NOx, HC, CO and PM). The use of Tier 4 engines would reduce PM_{10} emissions generated by off-road equipment.

TABLE AQ-4
PROJECT CONSTRUCTION PRIORITIZATION SCORE

Receptor Proximity (in meters)	Deer Creek		Foxtail	
	Unmitigated Max Score	Mitigated Max Score	Unmitigated Max Score	Mitigated Max Score
0 < R < 100	804	86	1206	129
100 < R < 250	201	22	302	33
250 < R < 500	32	4	48	6
500 < R < 1,000	9	1	14	1.5

Notes: 1. Prioritization score is based on an annual emission rate of 31.6 pounds per year emission rate, see Appendix A for modeling details.
Source: SJVAPCD, 2018; ESA, 2018.

See Attachment A. These emissions estimates were derived from another solar energy project in Tulare County that is approximately the same size (i.e., mega-watts (70MW vs. this Project's 55MW), 200,000-300,000 solar panels vs. 108,344 solar panels for this Project, and construction time frame (12-months vs. this Project's 18-total months).

Therefore, with implementation of **Mitigation Measure AQ-1**, Construction-related activities of the proposed Project would result in less than significant construction-related health risks.

d) Less Than Significant Impact: Operation of the proposed Project would not create odorous emissions. However, proposed Project construction-related activities would include fuels and other odor sources (such as diesel-fueled equipment), could result in the creation of objectionable odors. Since construction-related activities would be short-term, temporary, and spatially dispersed (i.e., intermittent), and occur in a predominantly rural area, these activities would not affect a substantial number of people. Therefore, odors generated by construction-related activities of the Project would result in a less than significant impact.

4. BIOLOGICAL RESOURCES

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), the technical documents "*Background and Database Review for the Foxtail Hybrid Solar Project Tulare County, California*" (BDR Memo) and *"Biological Resources Due Diligence Report for Foxtail Hybrid Solar Project"* (BRDD Report) prepared by Rincon Consultants, Inc. (Attachment B), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Endangered Species Act

The Federal Endangered Species Act (FESA) protects plants and wildlife that are listed as endangered or threatened by the USFWS and National Oceanic and Atmospheric Administration (NOAA) Fisheries. Section 9 of the FESA prohibits the taking of listed wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging-up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16USC1538). Pursuant to Section 7 of the FESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed plant or wildlife species or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species. Section 10 of the FESA provides for issuance of incidental take permits to private parties, provided a Habitat Conservation Plan (HCP) is developed.

Migratory Bird Treaty Act

The MBTA implements international treaties devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits are in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the CDFG Code.

Federal Clean Water Act

The Federal Clean Water Act's (CWA's) purpose is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the United States without a permit from the U.S. Army Corps of Engineers (ACOE). The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3 7b)." The USEPA also has authority over wetlands and may override an ACOE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or Waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the RWQCB.

State

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA, but unlike its federal counterpart, the CESA applies the take prohibitions to species proposed for listing (called candidates by the state). Section 2080 of the CDFG Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the CDFG Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The CESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with the CDFG to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened, or candidate species or result in destruction or adverse modification of essential habitat. The CDFG administers the act and authorizes take through Section 2081 agreements (except for designated fully protected species).

Fully Protected Species

The State of California first began to designate species as fully protected prior to the creation of the CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians, reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered pursuant to the CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CDFG Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, the CDFG prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

Native Plant Protection Act

Regarding listed rare and endangered plant species, the CESA defers to the California Native Plant Protection Act (NPPA) of 1977 (CDFG Code Sections 1900 to 1913), which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. The CESA includes an additional listing category for threatened plants that are not protected pursuant to NPPA. In this case, plants listed as rare or endangered pursuant to the NPPA are not protected pursuant to CESA, but can be protected pursuant to the CEQA. In addition, plants that are not state listed, but that meet the standards for listing, are also protected pursuant to CEQA (Guidelines, Section 15380). In practice, this is generally interpreted to mean that all species on lists 1B and 2 of the CNPS Inventory potentially qualify for protection pursuant to CEQA, and some species on lists 3 and 4 of the CNPS Inventory may qualify for protection pursuant to CEQA. List 3 includes plants for which more information is needed on taxonomy or distribution. Some of these are rare and endangered enough to qualify for protection pursuant to CEQA. List 4 includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the standards for listing.

Local

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project such as: *ERM-1.1 Protection of Rare and Endangered Specie*s which protects environmentally sensitive wildlife and plant life, including those species designated as rare, threatened, and/or endangered by State and/or Federal government, through compatible land use development; *ERM-1.4 Protect Riparian Areas* where the County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls; *ERM-1.6 Management of Wetlands* where the County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats; *ERM-1.7 Planting of Native Vegetation* where the County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained; and *ERM-1.16 Cooperate with Wildlife Agencies* which states that the County shall cooperate with State and federal wildlife agencies to address linkages between habitat areas.

PROJECT IMPACT ANALYSIS

The technical documents "*Background and Database Review for the Foxtail Hybrid Solar Project Tulare County, California*" (BDR Memo) and *"Biological Resources Due Diligence Report for Foxtail Hybrid Solar Project"* (BRDD Report) were prepared by Rincon Consultants, Inc. in October 2023 and December 2023, respectively, to identify areas with potential biological constraints and identify whether additional surveys, reporting, permitting, and/or mitigation may be required during the environmental review process. (See Attachment B).

The Technical Memorandum *"Jurisdictional Delineation for the Foxtail Hybrid Solar Project, Tulare County, California" (JD Memo) was prepared by Rincon Consultants, Inc. in January 2024 to confirm extent of potential jurisdiction undersection 404 of the Clean Water* Act (CWA) and Section 401 of the CWA and the Porter-Cologne Water Quality Control Act, and California Fish and Game Code (CFGC) Section 1600 et seq. and identify whether additional surveys, reporting, permitting, and/or mitigation may be required during the environmental review process. (See Attachment B).

a) Less Than Significant Impact With Mitigation: The proposed Project consists of installation of a new Solar Facility and Battery Energy Storage System (BESS). The project site is located on approximately 463.8 acres of land (Project Area),

approximately bordered Avenue 190 to the north, Road 80 to the east, Avenue 184 to the south, and Road 72 to the west. The Project will not require removal of any native valley oaks or other trees. There were eighteen special-status wildlife species recorded within the nine topographic quadrangles. Of these special-status species, seven (7)s may be present within the vicinity of the Project site, or due to the transient nature of some species, the Project site could provide habitat or foraging areas for special status species such as Swainson's hawk, burrowing owl, loggerhead shrike, kit fox, prairie falcon, northern harrier, and tricolored blackbird.

As such, **Mitigation Measures BIO-1** through **BIO 15** would be implemented reduce potential impacts on special status species to less than significant, as applicable. **Table BIO-1** summarizes **Mitigation Measures BIO-1** through **BIO-15** which can be found in their entirety in Attachment B of this IS/MND.

Therefore, the proposed Project will not significantly impact any biological plant or animal species. The proposed Project will not have a significant direct or cumulative impact, or create an unusual circumstance that will cause the proposed Project to have a significant effect on the biological resources of the area and environment.

b), c), and d) No Impact: The proposed Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service; would not result in an adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; and it would not 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.

Based on the information in the Jurisdictional Delineation (JD) Report, by Rincon (Attachment B), "there is one intermittent stream/irrigation canal (Intermittent Stream 1) and two detention basins within the Study Area that are potentially state jurisdictional waters subject to natural resource agency permitting. However, Intermittent Stream 1 lacks connectivity to a TNW and is an agricultural canal (irrigation canal) and therefore is not considered waters of the US subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act, neither non-wetland nor wetland waters of the US are present. The irrigation canal (Intermittent Stream 1) is potentially a non-wetland waters of the State and is therefore likely regulated by the Central Valley RWQCB pursuant to the Porter-Cologne; no wetland waters of the State are present. In addition, Intermittent Stream 1 is potentially a CDFW-jurisdictional streambed and therefore will likely be regulated pursuant to Section 1600 et seq. of the CFGC.

Not all of the USACE wetland parameters were met for Detention Basin 1 and Detention Basin 2, these features do not meet the definition of wetland waters of the US or the State. Detention Basin 1 and Detention Basin 2 are potentially non-wetland waters of the State and therefore are likely subject to the Central Valley RWQCB pursuant to Porter-Cologne. In addition, since Detention Basin 1 and Detention Basin 2 are anthropogenically made and have low habitat value, these features will likely not be considered jurisdictional by CDFW and therefore are not anticipated to be regulated pursuant to Section 1600 et seq. of the CFGC.

The findings and conclusions presented in this report, including the location and extent of areas subject to regulatory jurisdiction, represent the professional opinion of the consultant biologists. These findings and conclusions should be considered preliminary and at the final discretion of the applicable resource agency. herefore, the proposed Project will not significantly impact any jurisdictional waters. "

e) and f) No Impact: The proposed Project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances. Moreover, the proposed Project is not expected to conflict with the goals or policies of the Tulare County General Plan that protect biological resources. Also, as the Project is not within or in the vicinity of any approved habitat conservation plans, natural community conservation plans, or regional or state habitat conservation plans in effect, the Project would result in no impact to these resources within the vicinity of the proposed Project site.

5.	**CULTURAL RESOURCES**			
Would the project:	**SIGNIFICANT IMPACT**	**LESS THAN SIGNIFICANT**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**

			IMPACT WITH MITIGATION		
a)	Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), the "*Foxtail Hybrid Solar Project Cultural Resources Technical Report*" (CRTR) prepared by Rincon Consultants, Inc. (Attachment C), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Cultural resources are protected by several federal regulations, none of which are relevant to this project because it will not be located on lands administered by a federal agency and the project applicant is not requesting federal funding and does not require any permits from any federal agencies.

State

The proposed Project is subject to CEQA which requires public or private projects financed or approved by public agencies to assess their effects on historical resources. CEQA uses the term "historical resources" to include buildings, sites, structures, objects or districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance. CEQA states that if implementation of a project results in significant effects on historical resources, then alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed (CCR 15064.5, 15126.4). For the purposes of this CEQA document, a significant impact would occur if project implementation:

- Causes a substantial change in the significance of a historical resource
- Causes a substantial adverse change in the significance of an archaeological resource
- Disturbs any human remains, including those interred outside of formal cemeteries

Therefore, before impacts and mitigation measures can be identified, the significance of historical resources must be determined. CEQA guidelines define three ways that a property may qualify as a historical resource for the purposes of CEQA review:

- If the resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR)
- If the resource is included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the PRC unless the preponderance of evidence demonstrates that it is not historically or culturally significant
- The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (CCR, Title 14, Division 6, Chapter 3, Section 15064.5(a))

Each of these ways of qualifying as a historical resource for the purpose of CEQA is related to the eligibility criteria for inclusion in the CRHR (PRC 5020.1(k), 5024.1, 5024.1(g)).

A historical resource may be eligible for inclusion in the CRHR if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- Is associated with the lives of persons important in our past
- 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
- Has yielded, or may be likely to yield, information important in prehistory or history Properties that area listed in or eligible for listing in the National Register of Historic Places are considered eligible for listing in the CRHR, and thus are significant historical resources for the purpose of CEQA (PRC Section 5024.1(d)(1)).

CEQA Guidelines Section 15126.4(b)

"(b) Mitigation Measures Related to Impacts on Historical Resources.

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer, the project's impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

(2) In some circumstances, documentation of an historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

(3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

(A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:

1. Planning construction to avoid archaeological sites;
2. Incorporation of sites within parks, greenspace, or other open space;
3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provisions for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

(D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center."[9]

Public Resources Code §5097.5

California Public Resources Code §5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5

[9] California Environmental Quality Act (CEQA) Statute and Guidelines. 2019.

states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Local

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project: *ERM-6.1 Evaluation of Cultural and Archaeological Resources* which states that the County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards; *ERM-6.2 Protection of Resources with Potential State or Federal Designations* wherein the County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of Statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values as determined by a qualified archaeological professional; *ERM-6.3 Alteration of Sites with Identified Cultural Resources* which states that when planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource; *ERM-6.4 Mitigation* – which states that if preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records; *ERM-6.7 Cooperation of Property Owners* where the County should encourage the cooperation of property owners to treat cultural resources as assets rather than liabilities, and encourage public support for the preservation of these resources; *ERM-6.8 Solicit Input from Local Native Americans* (which is consistent with AB 52 in regards to Tribal Consultation) wherein the County shall continue to solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance; *ERM-6.9 Confidentiality of Archaeological Sites* which is also consistent with AB 52) where the County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts; and *ERM-6.10 Grading Cultural Resources Sites* wherein the County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. seq.

PROJECT IMPACT ANALYSIS

A Cultural Resources Technical Report (CRTR) was prepared for the Foxtail Hybrid Solar Project by Rincon Consultants, Inc., in December 2023.

a) No Impact: Background research included review of historical aerial imagery and topographic maps, completion of a geoarchaeological analysis, Sacred Lands File search, and cultural resources records search of the California Historical Resources Information System (CHRIS). The CHRIS records search did not identify any cultural resources within the project site. The field survey and background research identified two (2) historical built environmental resources in the project site, the Cardoza Property and the Elk Bayou Ditch. These resources were evaluated for listing in the National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR) and recommended as ineligible for both registers. As they are not considered historical resources, the project would result in no impact on historical resources.

b) Less Than Significant Impact With Mitigation: A pedestrian field survey was conducted and although the site has been highly disturbed with agricultural practices, based on the age of landforms, proximity to water sources prior to agricultural development, and information provided by the landowner, the project has the potential to impact buried archaeological resources. Based on the results of CRTR and in support of the County's General Plan policy ERM-6.8, Rincon recommends the retention of a Cultural Resources Specialist (CRS) to oversee the mitigation measures related to cultural resources, development of a Cultural Resources Monitoring Plan, as well as the implementation of a Cultural Resources Sensitivity Training, archaeological and Native American monitoring, and unanticipated discovery measures to mitigate the potential for impacts to buried archaeological resources. With implementation of the mitigation measures below, the Project would have a less than significant impact to archaeological resources. The project would also be required to adhere to existing regulations regarding the unanticipated discovery of human remains, as detailed below.

Mitigation Measures CUL-1 (Designated Cultural Resources Specialist)
The Applicant shall retain a designated CRS who will be available to carry out mitigation measures related to cultural resources for the project. The CRS will meet or exceed the Secretary of the Interior's Professional Qualifications Standards for Archaeology (National Park Service 1983). The CRS will be qualified in site detection, evaluation of deposit significance, consultation with regulatory agencies, and plan site evaluation and mitigation activities.

Mitigation Measures CUL-2 (Cultural Resources Monitoring Plan)
Prior to the start of permitted ground-disturbing activities, a Cultural Resources Monitoring Plan should be prepared by the CRS. The monitoring plan should include a description of the monitoring methodology, including when monitoring will be required, 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), provide guidance in the event an Environmentally Sensitive Area (ESA) must be designated, review and approval protocols (e.g., define review periods for agencies and interested communities), and dispute resolution.

Mitigation Measures CUL-3 (Cultural Resources Sensitivity Training)
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 training 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 50 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.

Mitigation Measures CUL-4 (Archaeological and Native American Monitoring)
Archaeological monitor(s) working under the direction of the CRS 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 18 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.

Preceding construction, a monitoring plan should be drafted to guide the monitoring effort. The archaeological monitor will have the authority to halt and redirect work should any archaeological resources be identified during monitoring. If archaeological resources are encountered during ground-disturbing activities, work in the immediate area should be halted and/or redirected, and the find evaluated for listing in the CRHR. Should an unanticipated resource be found as CRHR eligible and avoidance is infeasible, additional analysis (e.g., testing) may be necessary to determine if project impacts would be significant.

Archaeological monitoring may be reduced or terminated at the discretion of the CRS 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).

Mitigation Measures CUL-5 (**Unanticipated Discovery of Cultural Resources)**
In the event archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and the project CRS be contacted immediately to evaluate the resource. If the resource is determined by the CRS to be prehistoric, then a Native American representative shall also be contacted to participate in the evaluation of the resource. If the CRS and/or Native American representative determines it to be appropriate, archaeological testing for CRHR eligibility should be completed. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, the CRS 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 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 CRS and Native American representative, as appropriate, should recover and document the scientifically consequential information that justifies the resource's significance. The lead agency 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 California Code of Regulations Section 15126.4(b)(3)(C).

Therefore, implementation of **Mitigation Measures CUL-1** through **CUL-5** would result in a Less than Significant Impact to this item.

c) Less Than Significant Impact With Mitigation: As noted in Item b), based on the results of the CRTR and in support of the County's General Plan policy ERM-6.8, Rincon recommends the retention of a Cultural Resources Specialist (CRS) to oversee the mitigation measures related to cultural resources, including unanticipated discovery measures to mitigate the potential for impacts to buried archaeological resources. With implementation of the mitigation measure below, the Project will have a less than significant impact to archaeological resources i in the event that human remainsaare discovered during construction activities.

Mitigation Measure CUL-6 (Compliance with HSC § 7050.5)
No human remains are known to be present within the project site. However, the discovery of human remains is always a possibility during ground-disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the NAHC, which will determine and notify a MLD. The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. With adherence to existing regulations, Rincon recommends a finding of less-than-significant impact to human remains under CEQA.

Therefore, implementation of **Mitigation Measure CUL-6** would result in a less than significant impact on this item.

6.	**ENERGY**

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Energy Policy Act of 2005

The Energy Policy Act of 2005 seeks to reduce reliance on non-renewable energy resources and provide incentives to reduce current demand on these resources. For example, under the Act, consumers and businesses can obtain federal tax credits for purchasing fuel efficient appliances and products, including buying hybrid vehicles, building energy-efficient buildings, and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

State

California Energy Commission

The California Energy Commission CEC was created in 1974 to serve as the state's primary energy policy and planning agency. The CEC is tasked with reducing energy costs and environmental impacts of energy use - such as greenhouse gas emissions - while ensuring a safe, resilient, and reliable supply of energy. State of California Integrated Energy Policy (SB 1389) In 2002, the Legislature passed Senate Bill 1389, which required the California Energy Commission (CEC) to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for Zero Emission Vehicles and their infrastructure needs, and encouragement of urban designs that reduce vehicles miles traveled and accommodate pedestrian and bicycle access. The CEC adopted the 2013 Integrated Energy Policy Report on February 20, 2014. The 2013 Integrated Energy Policy Report provides the results of the CEC's assessment of a variety of issues, including:

a) Ensuring that the state has sufficient, reliable, and safe energy infrastructure to meet current and future energy demands;

b) Monitoring publicly-owned utilities' progress towards achieving 10-year energy efficiency targets; defining and including zero-net-energy goals in state building standards;

c) Overcoming challenges to increased use of geothermal heat pump/ground loop technologies and procurement of biomethane;

d) Using demand response to meet California's energy needs and integrate renewable technologies;

e) Removing barriers to bioenergy development; planning for California's electricity infrastructure needs given potential retirement of power plants and the closure of the San Onofre Nuclear Generating Station;

f) Estimating new generation costs for utility-scale renewable and fossil-fueled generation;

g) Planning for new or upgraded transmission infrastructure;

h) Monitoring utilities' progress in implementing past recommendations related to nuclear power plants;

i) Tracking natural gas market trends;

j) Implementing the Alternative and Renewable Fuel and Vehicle Technology Program; and,

k) Addressing the vulnerability of California's energy supply and demand infrastructure to the effects of climate change; and planning for potential electricity system needs in 2030.

California Global Warming Solutions Act of 2006 (Assembly Bill 32)

California Global Warming Solutions Act of 2006 (Assembly Bill 32) Assembly Bill 32 (Health and Safety Code Sections 38500–38599; AB 32), also known as the California Global Warming Solutions Act of 2006, commits the state to achieving year 2000 GHG emission levels by 2010 and year 1990 levels by 2020. To achieve these goals, AB 32 tasked the California Public Utilities Commission and CEC with providing information, analysis, and recommendations to the California Air Resources Board regarding ways to reduce GHG emissions in the electricity and natural gas utility sectors.

California Energy Code (Title 24, Part 6, Building Energy Efficiency Standards)

California Code of Regulations Title 24, Part 6 comprises the California Energy Code, which was adopted to ensure that building construction, system design and installation achieve energy efficiency. The California Energy Code was first established in 1978 by the CEC in response to a legislative mandate to reduce California's energy consumption, and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. The standards are updated periodically to increase the baseline energy efficiency requirements. The 2013 Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings and include requirements to enable both demand reductions during critical peak periods and future solar electric and thermal system installations. Although it was not originally intended to reduce greenhouse gas (GHG) emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

Clean Energy and Pollution Reduction Act (SB 350)

The Clean Energy and Pollution Reduction Act (SB 350) was passed by California Governor Brown on October 7, 2015, and establishes new clean energy, clean air, and greenhouse gas reduction goals for the year 2030 and beyond. SB 350 establishes a greenhouse gas reduction target of 40 percent below 1990 levels for the State of California, further enhancing the ability for the state to meet the goal of reducing greenhouse gas emissions by 80 percent below 1990 levels by the year 2050.

Renewable Portfolio Standard (SB 1078 and SB 107)

Established in 2002 under SB 1078, the state's Renewables Portfolio Standard (RPS) was amended under SB 107 to require accelerated energy reduction goals by requiring that by the year 2010, 20 percent of electricity sales in the state be served by renewable energy resources. In years following its adoption, Executive Order S-14-08 was signed, requiring electricity retail sellers to provide 33 percent of their service loads with renewable energy by the year 2020. In 2011, SB X1-2 was signed, aligning the RPS target with the 33 percent requirement by the year 2020. This new RPS applied to all state electricity retailers, including publicly owned utilities, investor-owned utilities, electrical service providers, and community choice aggregators. All entities included under the RPS were required to adopted the RPS 20 percent by year 2020 reduction goal by the end of 2013, adopt a reduction goal of 25 percent by the end of 2016, and meet the 33 percent reduction goal by the

end of 2020. In addition, the Air Resources Board, under Executive Order S-21-09, was required to adopt regulations consistent with these 33 percent renewable energy targets.

Local

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project: *ERM-4.1 Energy Conservation and Efficiency Measures* wherein the County encourages the use of solar energy, solar hot water panels, and other energy conservation and efficiency features; *ERM-4.3 Local and State Programs* wherein the County shall participate, to the extent feasible, in local and State programs that strive to reduce the consumption of natural or man-made energy sources and; *ERM-4.3 Local and State Programs* wherein the County shall participate, to the extent feasible, in local and State programs that strive to reduce the consumption of natural or man-made energy sources.

PROJECT IMPACT ANALYSIS

a) and b) No Impact: The proposed Project will not have a direct or cumulative impact, or create wasteful, inefficient, or unnecessary consumption of energy resources during project construction-related activities or operations. Also, it will not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. The only energy consumed would be through the use of fossil fuels (gasoline and diesel operated equipment) during construction-related activities which will be completed in approximately 18 months. The Project will not use any energy per se over the next 35 years of its anticipated life. Rather, the Project is renewal energy (electricity) generated by the proposed solar array. The energy derived from the Project, approximately 55 MW annually, will be transmitted via a new transmission line to the Southern California Energy Octol substation. Therefore, there will be beneficial impact to the Energy resource. As such, the Project will result in no adverse impact to this resource.

7. GEOLOGY/SOILS

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication No. 42.	☐	☐	☐	☒
	ii) Strong seismic ground shaking?	☐	☐	☐	☒
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
	iv) Landslides?	☐	☐	☐	☒
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒

d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), the *"Foxtail Solar Preliminary Geotechnical Engineering Report"* (Geotechnical Engieering Report) prepared by Terracon (Attachment D), and the resources cited in this analysis.

REGULATORY SETTING

Federal

None that apply to the Project.

State

California Building Code

"The California Building Code is another name for the body of regulations known as the California Code of Regulations (C.C.R.), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards."[10]

Alquist-Priolo Earthquake Fault Zoning Act

"The Alquist- Priolo Earthquake Fault Zoning Act (formerly the Alquist- Priolo Special Studies Zone Act), signed into law December 1972, requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazards associated with fault rupture and to prohibit the location of most structures for human occupancy across these traces."[11]

State Water Resources Control Board and Regional Water Quality Control Board

National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity- Water Quality Order 99-08 DWQ.

Typically, General Construction Storm Water NPDES permits are issued by the RWQCB for grading and earth-moving activities. The General Permit is required for construction activities that disturb one or more acres. The General Permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which specifies practices that include prevention of all construction pollutants from contacting stormwater with the intent of keeping all products of erosion form moving off site into receiving waters. The NPDES permits are issued for a five-year term. NPDES general permits require adherence to the Best Management Practices (BMPs) including:

- Site Planning Consideration- such as preservation of existing vegetation.
- Vegetation Stabilization- through methods such as seeding and planting.

[10] Tulare County, Revised Draft General Plan 2030 Update, Accessed February 2025. Page. 8-3.
[11] Ibid.

- Physical Stabilization- through use of dust control and stabilization measures.
- Diversion of Runoff – by utilizing earth dikes and temporary drains and swales.
- Velocity Reduction – through measures such as slope roughening/terracing.
- Sediment Trapping/Filtering – through use of silt fences, straw bale and sand bag filters, and sediment traps and basins.

Local

Tulare County General Plan Policies

The General Plan has a number of policies that apply to projects within Tulare County. General Plan policies that relate to the Project include: *HS-1.2 Development Constraints* wherein the County shall permit development only in areas where the potential danger to the health and safety of people and property can be mitigated to an acceptable level*; HS-1.3 Hazardous Lands* wherein the County shall designate areas with a potential for significant hazardous conditions for open space, agriculture, and other appropriate low intensity uses; *HS-1.5 Hazard Awareness and Public Education* wherein the County shall continue to promote awareness and education among residents regarding possible natural hazards, including soil conditions, earthquakes, flooding, fire hazards, and emergency procedures; *HS-1.11 Site Investigations* wherein the County shall conduct site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, and/or flooding; *HS-2.1 Continued Evaluation of Earthquake Risks* wherein the County shall continue to evaluate areas to determine levels of earthquake risk; *HS-2.4 Structure Siting* The wherein the County shall permit development on soils sensitive to seismic activity permitted only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity; *HS-2.7 Subsidence* wherein the County shall confirm that development is not located in any known areas of active subsidence; *HS-2.8 Alquist-Priolo Act Compliance* wherein The County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones; *WR-2.2 NPDES Enforcement* wherein the County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board; *WR-2.3 Best Management Practices* wherein the County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board; and *WR-2.4 Construction Site Sediment Control* wherein the County shall continue to enforce provisions to control erosion and sediment from construction sites.

Five County Seismic Safety Element (FCSSE)

The FCSSE report represents a cooperative effort between the governmental entities within Fresno, Kings, Madera, Mariposa and Tulare Counties to develop an adoptable Seismic Safety Element as required by State law. Part I, the Technical Report, is designed to be used when necessary to provide background for the Summary document. Part II, the Summary Report, establishes the framework and rationale for evaluation of seismic risks and hazards in the region. Part II of the Seismic Safety Element, the Policy Report, has been prepared as a "model" report designed to address seismic hazards as delineated in the Technical Report. The intent has been to develop a planning tool for use by county and city governments in implementing their seismic safety elements. The planning process utilized to develop the Element was developed through the efforts of Technical and Policy Committees, composed of both staff and elected representatives from Cities, Counties, and Special Districts or Areawide Planning Organizations in cooperation with the consulting firms of Envicom Corporation and Quinton-Redgate.[12]

PROJECT IMPACT ANALYSIS

a) Less Than Significant Impact: According to the Tulare County General Plan, the planning area lies in the V1 seismic study area, characterized by a relatively thin section of sedimentary rock overlying a granitic basement. The V-1 seismic zone, which is characterized by a relatively thick section of sedimentary rock overlying a granitic basement, has "low" risks for shaking hazards, "minimal" risk for landslides, "low to moderate" risk for subsidence, "low" risks for liquefaction and "minimal" risk for seiching.[13] The distance to area faults i.e. the Clovis Group, Pond-Poso, and San Andreas, expected sources of significant shaking, is sufficiently great that shaking effects should be minimal.

[12] Five County Seismic Safety Element. Fresno, Kings, Madera, Mariposa, & Tulare Counties. 1974. Pages 4-7. Prepared by Envicom Corporation.
[13] Envicom Corporation, 1974. Summary of Seismic Hazards & Safety Recommendations. Five County Seismic Safety Element Fresno, Kings, Madera, Mariposa & Tulare Counties.

i) *Fault Rupture:* No substantial faults are known to occupy Tulare County according to the Alquist-Priolo Earthquake Fault Zoning Maps and the State of California Department of Conservation. The nearest known faults likely to affect the Project site are the San Andreas Fault (approximately 40 miles to the Tulare County's western border). According to the Five County Seismic Safety Element (FCSSE), the proposed Project site is located in the V-2 zone, characterized as a region of relatively thick sedimentary hard rock alluvium overlying a granitic basement. The FCSSE further states that, "The distance to either of the faults expected to be a source of shaking is sufficiently great that shaking should be minimal and the requirements of the Uniform Building Code Zone II should be adequate for normal facilities". Amplification of shaking that will affect low to medium-rise structures is relatively high but the distance to either of the fault systems that are expected sources of the shaking is sufficiently great that the effect will be minimal.

   Therefore, as noted earlier, no Alquist-Priolo Earthquake Fault Zones or known active faults are in or near the Project area. As such, the risk of rupture of a known earthquake fault will be less than significant.

ii) *Ground Shaking:* The Project area is located in a seismic zone which is sufficiently far from known faults and consists primarily of a stable geological formation. Any impacts regarding strong seismic ground shaking have been discussed in Impact VI-a-i. As such, the impact due to ground shaking would be less than significant.

iii) *Ground Failure and Liquefaction:* The proposed Project site is located in the Five County Seismic Safety Element's V-2 zone, and therefore has a low risk of liquefaction. The technical report provided by Terracon indicates that, "Based on the clayey nature of the subsurface soils encountered and anticipated groundwater depth, liquefaction hazard potential at the site is considered to be low. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also considered low." No subsidence-prone soils or oil or gas production is involved with the proposed Project. These impacts will be less than significant.

iv) *Landslides:* The proposed Project is located in the Five County Seismic Safety Element's V-2 zone and therefore will have a minimal risk of landslides. As the proposed Project is located on the Valley floor, it is situated on relatively flat topography, and there are no geologic landforms on or near the site that could result in a landslide event. Therefore, there is no risk of landslides within or near the Project area.

b) Less Than Significant Impact: Site construction-related activities will include trenching, earthmoving, pouring concrete, grading, solar panels, and BESS. These activities could expose soils to erosion processes. The extent of erosion will vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions. The site has very little slope (i.e., a slight grade from east to west of 0 to 2%) and will have a flat topography after grading. To preserve and restore the agricultural productivity of the Project site to the existing condition during and upon completion of the life of the Project, no soils would be removed from the Project site during construction or operation of the Project. As stated earlier, the relatively flat nature of the site reduces the need for grading which would be limited to access roads, substation, inverter pads, and switchyard. Any soils removed from these areas would be redistributed around and retained elsewhere on the Project site (i.e., along solar panel support rack alignments). Beyond grading, soil disturbance would occur in association with trenching for emplacement of electrical conduits along each alignment of panel racks.

To prevent water and wind erosion during the construction period, a Storm Water Pollution Prevention Plan (SWPPP) will be developed for the proposed Project as required for all projects which disturb more than one acre. As part of the SWPPP, the applicant will be required to provide erosion control measures to protect the topsoil.[14] Any stockpiled soils will be watered and/or covered to prevent loss due to wind erosion as part of the SWPPP during construction. In addition, depending upon activity, the Project would be subject to Air District Rules Rule 8021 (construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities) for construction and earthmoving activities; 8031 (Bulk Materials) which limits fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials (such a topsoil); 8041 (Carryout and Trackout) which requires prevention and/or cleanup of soil that is tracked out by vehicle tires exiting the site or carried out by vehicles exiting the site; 8051 (Open Areas) requiring stabilization of areas cleared of vegetation in anticipation of construction-related activities; and 8071 (Unpaved Vehicle/Equipment Traffic Areas) to limit fugitive dust emissions from

[14] Ibid.

unpaved vehicle and equipment traffic areas within the Project's construction-related areas.[15] As a result of these efforts, loss of topsoil and substantial soil erosion during the construction period are not anticipated.

As such, the Project would not result in substantial soil erosion or loss of thereby the impact by this Project would be a less than significant impact.

c) Less Than Significant Impact: Substantial grade change will not occur in the topography to the point where the proposed Project will expose people or structures to potential substantial adverse effects on, or offsite, such as landslides, lateral spreading, liquefaction or collapse. As noted earlier, this Project is located in the Five County Seismic Safety Element's V-2 zone, as such, the Project site has a low to moderate risk of subsidence or liquefaction. Therefore, the Project would result in a less than significant impact.

d) Less Than Significant Impact: According to the USDA, NRCS, and the Soil Survey of Tulare County, the proposed Project site contains Biggriz-Biggriz saline-Sodic complex and Copien loam soils. The are located on a site with a 0-2% slope and are somewhat poorly and moderately well drained soil, respectively. Generally, these soils are alluvium derived from granitic rock sources and have a depth to water table of over 80 inches. Therefore, the native soils identified on the site do not contain the characteristics of an expansive soil. As such, the Project would result in a less than significant impact and would not create substantial direct or indirect risks to life or property.

e) No Impact: The proposed Project does not include the installation or use of septic tanks or other alternative wastewater disposal systems. As such, the Project would result in no impact

f) Less Than Significant Impact: There are no known paleontological resources within the Project area, nor are there any known geologic features in the proposed Project area. Project construction will not be anticipated to disturb any paleontological resources not previously disturbed; however, **Mitigation Measure(s) CUL-1** through **CUL-6**, as specified in Item V Cultural Resources (as applicable), will ensure that any impact will be less than significant.

8. GREENHOUSE GAS EMISSIONS

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

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), the emissions analysis prepared by County staff (Attachment A), and the resources cited in this analysis.

REGULATORY SETTING

Federal

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years.

The USEPA Mandatory Reporting Rule (40 CFR Part 98), which became effective December 29, 2009, requires that all facilities that emit more than 25,000 metric tons CO2-equivalent per year beginning in 2010, report their emissions on an annual

[15] Op. Cit. 4.

basis. On May 13, 2010, the USEPA issued a final rule that established an approach to addressing GHG emissions from stationary sources under the CAA permitting programs. The final rule set thresholds for GHG emissions that define when 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 addition, the Supreme Court decision in Massachusetts v. EPA (Supreme Court Case 05-1120) found that the USEPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the CAA. On April 17, 2009, the USEPA found that CO2, CH4, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride may contribute to air pollution and may endanger public health and welfare. This finding may result in the USEPA regulating GHG emissions; however, to date the USEPA has not proposed regulations based on this finding.

State

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations applied to automobiles and light trucks beginning with the 2009 model year.

California has taken action to reduce GHG emissions. In June 2005, Governor Schwarzenegger signed Executive Order S-3-05 to address climate change and GHG emissions in California. This Order sets the following goals for statewide GHG emissions:

- Reduce to 2000 levels by 2010
- Reduce to 1990 levels by 2020
- Reduce to 80 percent below 1990 levels by 2050

In 2006, California passed AB 32, the California Global Warming Solutions Act of 2006. The Act requires ARB to design and implement emission limits, regulations, and other feasible cost-effective measures to reduce statewide GHG emissions to 1990 levels by 2014. Senate Bill 97 was signed into law in August 2007. The Senate Bill required the Office of Planning and Research (OPR) [now name Office of Land Use and Climate Innovation (LCI)] to prepare, develop, and transmit to the Resource Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions by July 1, 2009. On April 13, 2009, the OPR submitted to the Secretary for Natural Resources its recommended amendments to the State CEQA Guidelines for addressing GHG emissions. On July 3, 2009, the Natural Resources Agency commenced the Administrative Procedure Act rulemaking process for certifying and adopting the amendments. Following a 55-day public comment period and 2 public hearings, and in response to comments, the Natural Resources Agency proposed revisions to the text of the proposed Guidelines amendments. The Natural Resources Agency transmitted the adopted amendments and the entire rulemaking file to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the CCR. The Amendments became effective on March 18, 2010.

The AB 32 Scoping Plan contains the main strategies California will use to reduce GHG emissions that cause climate change. The scoping plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms (such as a cap-and-trade system), and an AB 32 cost of implementation fee regulation to fund the program. The first regulation adopted by the ARB pursuant to AB 32 was the regulation requiring mandatory reporting of GHG emissions. The regulation requires large industrial sources emitting more than 25,000 metric tons of CO2 per year to report and verify their GHG emissions from combustion of both fossil fuels and biomass-derived fuels. The California Cap and Trade program is being developed and the ARB must adopt regulations by January 1, 2011.Also, Governor Schwarzenegger directed the ARB, pursuant to Executive Order S-21-09, to adopt a regulation by July 31, 2010, requiring the state's load serving entities to meet a 33 percent renewable energy target by 2020.

<u>California Environmental Quality Act (CEQA) Requirements</u>

Section 15064.4 Determining the Significance of Impacts from Greenhouse Gas Emissions

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance based standards.

(b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.[16]

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update: Chapter 9 – Air Quality contains a number of policies that apply to projects within Tulare County that support GHG reduction efforts and which have potential relevance to the Project's CEQA review: *AQ-1.3 Cumulative Air Quality Impacts* wherein the County shall require development to be located, designed, and constructed in a manner that would minimize cumulative air quality impacts; *AQ-1.5 California Environmental Quality Act (CEQA) Compliance* wherein the County shall ensure that air quality impacts identified during the CEQA review process are consistently and reasonably mitigated when feasible; *AQ-1.7 Support Statewide Climate Change Solutions* wherein the County shall monitor and support the efforts of Cal/EPA, CARB, and the SJVAPCD, under AB 32 (Health and Safety Code §38501 et seq.), to develop a recommended list of emission reduction strategies, as appropriate, the County will evaluate each new project under the updated General Plan to determine its consistency with the emission reduction strategies; *AQ-1.8 Greenhouse Gas Emissions Reduction Plan/Climate Action Plan* wherein the County will develop a Greenhouse Gas Emissions Reduction Plan (Plan) that identifies greenhouse gas emissions within the County as well as ways to reduce those emissions. The Plan will incorporate the requirements adopted by the California Air Resources Board specific to this issue. In addition, the County will work with the Tulare County Association of Governments and other applicable agencies to include the following key items in the regional planning efforts.

1. Inventory all known, or reasonably discoverable, sources of greenhouse gases in the County,

2. Inventory the greenhouse gas emissions in the most current year available, and those projected for year 2020, and

[16]. California Environmental Quality Act (CEQA). Section 15064.4 Determining the Significance of Impacts from Greenhouse Gas Emissions

3. Set a target for the reduction of emissions attributable to the County's discretionary land use decisions and its own internal government operations.

Tulare County Climate Action Plan

The Tulare County Climate Action Plan (CAP) serves as a guiding document for County of Tulare ("County") actions to reduce greenhouse gas emissions and adapt to the potential effects of climate change. The CAP is an implementation measure of the 2030 General Plan Update. The General Plan provides the supporting framework for development in the County to produce fewer greenhouse gas emissions during Plan buildout. The CAP builds on the General Plan's framework with more specific actions that will be applied to achieve emission reduction targets consistent with California legislation.[17]

Construction-related emissions have been estimated (using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2 (the model), from a similar solar project and are used in this document by analogy as similar projects will likely result in similar GHG emissions. This Project is smaller than the comparative project and will likely generate fewer emissions.[18] T

PROJECT IMPACT ANALYSIS

a) Less Than Significant Impact: The Project will result in approximately 1,759 tons of GHG which will be generated only during construction-related activities (particularly, heavy-duty off road equipment). However, these emissions will be intermittent (i.e., varying times throughout the course of a day, varying uses of construction-related equipment, varying duration of use by equipment type, etc.), temporary (i.e., only occurring during daylight hours), and short-term (lasting no longer than nine (9) months). GHG emissions also would be generated by construction-related worker-related daily commutes, by heavy-duty diesel tractor-trailer trucks that would be required to haul materials and debris to/from the proposed Project site, and as a result of water use for dust control and other construction-related activities. Once construction-related activities have ceased, operational emissions would be limited to infrequent vehicle–related emissions by maintenance staff and periodic PV panel washing.

Table GHG-3

Project Phase	CO_{2e} (metric tons per year)
Construction	1,759
Operation	15
Project Total	1774
Annual Displacement	-32,283
Annual Net Emissions	-30,509

Source: See attachment A.

High-voltage switchgear for the proposed Project may have circuit breakers that contain SF_6 gas, a GHG with high global warming potential. SF_6 is used as an insulator and arc suppressor in the circuit breakers. Under normal operating conditions, the SF_6 gas would be contained in the equipment and only released due to a leak in the circuit breaker housing.

The electricity generated during the operation of the Project would be added to the power grid and displace electricity generated from fossil fuels. Displaced GHG emissions were calculated by using the average solar radiation hours per day and the current mix of power sources in California. Power sources other than coal and natural gas were not included. The operation of the proposed Project would displace approximately 32,283 metric tons of CO_{2e} per year and result in a net reduction of GHG emissions. This annual displacement in GHG emissions would result in an annual net GHG emissions of 30,509 metric tons of CO_{2e} per year, as shown in **Table GHG-3**. (Calculations are provided in Attachment A)

[17] Tulare County Climate Action Plan. Page 1. Accessed May 2019 at: http://generalplan.co.tulare.ca.us/documents.html. then select tab noted as "Climate Action Plan February 2010 Draft"

[18] See Attachment A. These emissions estimates were derived from another solar energy project in Tulare County that is approximately the same size (i.e., mega-watts (70MW vs. this Project's 55MW), 200,000-300,000 solar panels vs. 108,344 solar panels for this Project, and construction time frame (12-months vs. this Project's 18-total months).

The methodology found in the SJVAPCD's Climate Change Action Plan was used to determine the significance of impacts caused by GHG emissions from the Project (SJVAPCD, 2009). This methodology recommends projects be compared to a "business-as-usual" scenario, and that projects should be considered to not have a significant impact if it can be demonstrated to have a 29 percent reduction in GHG emissions from the "business-as-usual" scenario. The "business-as-usual" scenario for the Project assumes that the current electricity generation mix in California remains the same during the operational lifetime of the project (30+ years) and that there would be no changes to the methods used to generate electricity in California. As described in Table GHG-1, the proposed Project would result in an annual GHG emissions reduction of more than 38,320 metric tons CO_{2e} compared to the "business-as-usual scenario", a reduction of greater than 100 percent.

The Project will result in a benefit as it will reduce GHG emissions typically generated by other energy producers as this Project is a renewable energy project (solar). Overall, the GHG emissions generated during construction-related activities will be nullified when the Project is fully operational. As such, the Project would result in a less than significant impact to this resource.

b) Less Than Significant Impact: Since the proposed Project is located in an unincorporated area of Tulare County, the most applicable GHG plan is the Tulare County Climate Action Plan (CAP) (County of Tulare, 2010), Executive Order S-3-05, Executive Order B-30-15, SB 350, SB 100, AB 32, and SB 32, including the potential for the Project to conflict with the recommended actions identified by CARB in its 2017 Climate Change Scoping Plan.

In April 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Reaching this emission reduction target will make it possible for California to reach its ultimate goal of reducing emissions 80 percent under 1990 levels by 2050, as identified in Executive Order S-3-05. Executive Order B-30-15 also specifically addresses the need for climate adaptation and directs state government to:

- Incorporate climate change impacts into the State's Five-Year Infrastructure Plan;
- Update the Safeguarding California Plan, the State climate adaption strategy to identify how climate change will affect California infrastructure and industry and what actions the State can take to reduce the risks posed by climate change;
- Factor climate change into State agencies' planning and investment decisions; and
- Implement measures under existing agency and departmental authority to reduce GHG emissions.

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also creates new standards for the Renewables Portfolio Standard (RPS) goals established by SB 350 in 2015. Specifically, the bill increases required energy from renewable sources for both investor-owned utilities and publicly-owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers must also have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. California must procure 100 percent of its energy from carbon free energy sources by the end of 2045. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

Executive Order B-30-15 required CARB to update the AB 32 Climate Change Scoping Plan to incorporate the 2030 target. Subsequently, SB 32, which codifies the Executive Order's 2030 emissions reduction target, was approved by the Governor on September 8, 2016. SB 32 requires CARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 statewide GHG emissions limit no later than December 31, 2030 (the target date established by Executive Order B-30-15. CARB recently adopted the 2017 Scoping Plan) to achieve this goal.

The CAP serves as a guiding document for County actions to reduce GHG emissions and adapt to the potential effects of climate change. The CAP requires projects on average achieve a reduction that is six percent in excess of the reductions stated in the ARB Scoping Plan and by regional regulations and programs. AB 32 requires the California Air Resources Board to design and implement feasible and cost-effective emissions limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions).

The Project involves the construction-, operation- and maintenance-, and decommissioning-related activities of a solar facility that would produce a new renewable source of energy in Tulare County. Therefore, the Project would directly support the renewable energy target under the 2017 Scoping Plan Update, and a goal of SB 100, for increasing California's procurement of electricity from renewable sources from 50 percent to 60 percent by 2030. As previously discussed, and through analogy of a similar project (see Attachment A), the proposed Project would result in a result in an annual GHG emissions reduction of more than 38,320 metric tons CO2e compared to the "business-as-usual scenario" (a reduction of greater than 100 percent) and would be consistent with the Tulare County CAP, SB 32, SB 100, and AB 32. As such, the Project would result in no impact and provides a net, long-term benefit towards reducing GHG.

Therefore, the Project would not generate greenhouse gas emissions, either directly or indirectly that may have a significant impact on the environment.

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

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), the *"Phase I Environmental Site Assessment Foxtail Hybrid Solar Joe Cardoza Parcels Avenue 184 Tulare, CA 93274"* (ESA Report) prepared by Practical Environmental Solutions (Attachment E), and the resources cited in this analysis.

REGULATORY SETTING

Federal

The NFPA 70®: National Electrical Code® is adopted in all 50 states. It includes requirements for electrical wiring and equipment. Article 705 covers interconnecting generators, windmills, and solar and fuel cells with other power supplies.[19] The federal Resource Conservation and Recovery Act (RCRA) and California Hazardous Waste Control Law regulate the disposal of solar PV cells. The local hazardous waste regulatory authority is the County of Tulare.

State

The California Department of Industrial Relations, Division of Occupational Safety and Health, is the administering agency designed to protect worker health and general facility safety. The California Department of Forestry and Fire Protection (CalFire) has designated the area that includes the project site as a Local Responsibility Area which is defined as an area where the local fire jurisdiction is responsible for emergency fire response. The project area is also defined as "Unzoned," which means that the fire hazard severity of the site has not been determined.[20]

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update (at Chapter 10 – Health and Safety) contains the following goals and policies that relate to hazards and hazardous materials, and which have potential relevance to the Project's CEQA review: HS-4.1 Hazardous Materials wherein the County shall strive to ensure hazardous materials are used, stored, transported, and disposed of in a safe manner, in compliance with local, State, and Federal safety standards, including the Hazardous Waste Management Plan, Emergency Operations Plan, and Area Plan; HS-4.2 Establishment of Procedures to Transport Hazardous Wastes wherein the County shall continue to cooperate with the California Highway Patrol (CHP) to establish procedures for the movement of hazardous wastes and explosives within the County; HS-4.3 Incompatible Land Uses wherein the County shall prevent incompatible land uses near properties that produce or store hazardous waste; and HS-4.4 Contamination Prevention wherein the County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination.

PROJECT IMPACT ANALYSIS

a) and b) Less Than Significant Impact: The proposed Project construction will require the transport and use of small quantities of hazardous materials in the form of gasoline, diesel, and oil. According to construction activities the "Construction of the Project is anticipated to take up to 18 months, starting in Q4 2025 and completed by Q2 2027". There is the potential for small leaks due to refueling of the construction equipment; however, standard construction Best Management Practices (BMPs) included in the SWPPP will reduce the potential for accidental release of construction-related fuels and other hazardous materials. These BMPs will prevent, minimize, or remedy storm water contamination from spills or leaks, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials.

Proposed Project operations may require the storage of small amounts of hazardous materials, such as fuel and lubricants. The storage, transport, and use of these materials will comply with Local, State, and Federal regulatory requirements.

Therefore, the proposed Project will not result in a significant hazard to the public or the environment and impacts will be less than significant.

c) No Impact: The nearest school, Palo Verde Elementary School, is approximately two miles northeast of the proposed Project site. The Project involves construction of a solar energy generation facility and will not emit hazardous emissions, involve hazardous materials, or create a hazard to the school. Additionally, the site review did not reveal any release, significant threat from an offsite source, or concerns regarding vapor migration during this assessment. There will be no impact.

[19] National Fire Protection Association. 2010. NFPA 70: National Fire Code.
[20] California Department of Forestry and Fire Protection. 2007. Draft Fire Severity Zones in LRA Map. September.

d) No Impact: According to the State of California Department of Toxic Substances Control (DTSC) – Envirostor Search, no hazardous materials sites exist within an approximate two-mile radius of the proposed Project site, which was an evaluation of the Imperial Achor Pallet Company.[21] The proposed Project site are not listed as hazardous materials sites pursuant to Government Code Section 65962.5 and are not included on a list compiled by the Department of Toxic Substances Control per a review of "Identified Hazardous Waste Sites" (conducted on May, 2019), by RMA staff. Therefore, as the proposed Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 it would not create a significant hazard to the public or the environment.

e) No Impact: The nearest airport, Mefford Field Airport, is approximately six miles west of the proposed Project site; there are no private airports within the Project vicinity. The Project would not result in the placement of transmission lines or other structures sufficiently tall enough to interfere with the flight path of either airport (which is located approximately 6 miles west of the Project site). The proposed Project will not conflict with Tulare County Airport Land Use Plan (ALUP) policy and it is not within any airport's safety zone. The proposed Project will not result in a safety hazard for people working in the area. As such, the Project would result in no impact to this resource.

f) No Impact: The proposed Project is not located in the vicinity of a principal route of assistance, as described by the Safety Element of the Tulare County General Plan. The Project site does cross a publicly accessed route. Due to its remoteness of the Project it will not interfere with implementation of an emergency response plan or evacuation. Road 80 and Avenue 184 are rural in nature and are part of a grid of County roads that do not directly lead to the nearest state routes or other County communities. As such, neither roads are a unique, convenient, or a direct route to or from the nearest community (Woodville), highways or other Tulare County communities. As such, the proposed Project will not interfere with implementation of an emergency response plan or evacuation.

g) No Impact: The surrounding land is predominantly agricultural and rural residential uses and is not subject or vulnerable to wildland fires. The land is located within a Local Responsibility Area according to CalFire, as of 2008 it was determined that Tulare County has no Very High Fire Hazard Severity Zones in LRA. Therefore, Tulare County will not have a map of recommended (Very High Fire Hazard Severity Zones) VHFHSZ in LRA.[22] The proposed Project will not contain any housing or buildings where workers will reside or be stationed that will be at risk of fire. As such, the Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires and would result in no impact to this resource.

10.	**HYDROLOGY AND WATER QUALITY**				
Would the project:		**SIGNIFICANT IMPACT**	**LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☐	☒
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				

[21] California Dept. of Toxic and Substances Control Accessed February 2025 at: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Tulare+County%2C+CA.

[22] LRA Fire Hazard Severity Zone Maps Accessed February 2025 at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/fire-hazard-severity-zones-maps

	i) Result in substantial erosion or siltation on-or off-site? ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite? iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? iv) Impede or redirect flood flows?	☐ ☐ ☐ ☐	☐ ☐ ☐ ☐	☒ ☒ ☐ ☐	☐ ☐ ☒ ☒
d)	In) flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☒	☐	☐
e)	Conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), the "*Samsung Foxtail Hydrology Study*" (Hydro Study) prepared by Kimley Horn (Attachment F), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Clean Water Act

The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

The National Flood Insurance Act (1968) makes available federally subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

State

State Water Resources Control Board

The State Water Resources Control Board (SWRCB), located in Sacramento, CA, is the agency with jurisdiction over water quality issues in the State of California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code) which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-Cologne Act is to regulate factors which may affect the quality of waters of the State to attain the highest quality which is reasonable, considering a full range of demands and values. Much of the implementation of the SWRCB's responsibilities is delegated to its nine Regional Boards. The Project site is located within the Central Valley Region.

Regional Water Quality Board

The Central Valley Regional Water Quality Control Board (RWQCB) administers the NPDES storm water-permitting program in the Central Valley region. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires preparation and implementation of a Storm Water Pollution Prevention

Plan (SWPPP). The plan will include specifications for Best Management Practices (BMPs) that will be implemented during proposed Project construction to control degradation of surface water by preventing the potential erosion of sediments or discharge of pollutants from the construction area. The General Construction Permit program was established by the RWQCB for the specific purpose of reducing impacts to surface waters that may occur due to construction activities. BMPs have been established by the RWQCB in the California Storm Water Best Management Practice Handbook (2003), and are recognized as effectively reducing degradation of surface waters to an acceptable level. Additionally, the SWPPP will describe measures to prevent or control runoff degradation after construction is complete, and identify a plan to inspect and maintain these facilities or project elements.

Local

Tulare County Land Development Regulations

The Tulare County Resource Management Agency (RMA) is responsible for review, approval, and enforcement of planning and land development throughout the unincorporated portions of Tulare County. County of Tulare regulations that direct planning and land development (and related water and wastewater utilities) include the Tulare County General Plan, Zoning Ordinance, Subdivision Ordinance, and CEQA procedures. These responsibilities are divided between Planning Branch, Public Works Branch, and other divisions or departments of RMA, and in coordination with the Environmental Health Division of the Tulare County Health and Human Services Agency, and the Tulare County Fire Department.

The County's flood damage prevention code is intended to promote public health, safety, and general welfare in addition to minimizing public and private losses due to flood conditions. The County code provisions to protect against flooding include requiring uses vulnerable to floods be protected against flood damage at the time of initial construction; controlling the alteration of natural flood plains; and preventing or regulating the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas. The County flood damage prevention code, most recently amended by Ord. No. 3212 and effective October 29, 1998, is modeled based upon FEMA guidance.

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update: (Chapter 10 – Health and Safety and Chapter 11 – Water Resources) contains the following goals and policies that relate to hydrology and water quality and which have potential relevance to the Project's California Environmental Quality Act (CEQA) review: *AG-1.17 Agricultural Water Resources* wherein the County shall seek to protect and enhance surface water and groundwater resources critical to agriculture; *HS-4.4 Contamination Prevention* wherein the County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination; *WR-1.1 Groundwater Withdrawal* wherein the County shall cooperate with water agencies and management agencies during land development processes to help promote an adequate, safe, and economically viable groundwater supply for existing and future development within the County. These actions shall be intended to help the County mitigate the potential impact on ground water resources identified during planning and approval processes; *WR-2.1 Protect Water Quality* wherein all major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. This policy requires the County to confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site; *WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement* wherein the County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board; *WR-2.3 Best Management Practices (BMPs)* wherein the County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board; and *WR-2.4 Construction Site Sediment Control* wherein the County shall continue to enforce provisions to control erosion and sediment from construction sites.

PROJECT IMPACT ANALYSIS

a) **No Impact:** The State Water Resources Control Board requires any new construction project greater than one acre to complete a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP would be prepared for the Project by a qualified engineer or erosion control specialist as a condition of approval and would be submitted to the County for review and approval before being implemented during construction. The SWPPP would be designed to reduce potential impacts related to erosion and surface water quality during construction activities and throughout the life of the Project. It would include Project information and best management practices (BMP). 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. Implementation of the SWPPP will minimize the potential for the Project to substantially alter the existing drainage pattern in a manner that will result in substantial erosion or siltation onsite or offsite. There will be no discharge to any surface or groundwater sources which may impact water quality standards. As such, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Therefore, the Project would result in no impact on this resource.

b) **Less Than Significant Impact:** The proposed Project site is in the Tulare Lake Basin, an area significantly affected by overdraft. The Department of Water Resources (DWR) has estimated the groundwater by hydrologic region and for the Tulare Lake Basin. DWR estimates a total overdraft of 820,000 acre-feet per year (which is the largest overdraft projected in the state, and approximately 56 percent of the statewide total overdraft). The Project site is located within the Tule Sub-basin portion of the regional area.

Per the Hydrology Study created by Kimley Horn for the Foxtail Solar Project, created in November of 2023:

Inundation Depth Summary

"Predicted flooding depths for site conditions were calculated based on the 2D modeling simulation and were mapped within the 2D model area. The mapping reflects depths that are expected to equal or exceed 0.5 ft. Shallower depths were removed from the mapping as is typical for models based on the direct rainfall method, as this method produces depth in every grid cell of the mesh.

The results of the analysis are based on publicly available LiDAR and Kimley-Horn's best engineering judgement of the hydrology that can be expected in the watershed. Development in the watershed has the potential to alter runoff volumes and rates.

The 100-year inundation depths are shown in the 100-Year Inundation Map included in Appendix C. Most of the project site has a maximum inundation depth of 2.0 to 5.0 ft. An approximate 4,000 square foot depression in the lower third of the site saw depths up to 10'.
Onsite Velocity

Maximum flow velocity in existing conditions during the modeled storm event is shown in the 100-Year Velocity Map in Appendix C. Flow velocities typically range between 1 and 2 feet per second (fps) through the site and surrounding area.
Scour Depth Calculation

Kimley-Horn calculated anticipated local pier scour depth for the maximum potential flow velocity and flow depth combinations within the subject tract based on the hydraulic model results. Pier scour was calculated using the U.S. Army Corps of Engineers HEC-RAS 2D v. 6.2 modeling program.

Potential scour for existing conditions is shown in the 100-Year Scour Potential Map in Appendix C. Other than immediately adjacent to the irrigation channel, most of the site will experience maximum scour potential depths between 0.75' and 1.5'."

c) **Less Than Significant Impact:** Overall, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces.

i) *Erosion and Siltation; Less Than Significant Impact:* The extent of potential erosion will vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions. As noted in the Operational Statement & Project Description (H) the relatively flat nature of the site reduces the need for grading which would be limited to access roads, substation, inverter pads, and switchyard. Any soils removed from these areas would be redistributed around and retained elsewhere on the Project site (i.e., along solar panel support rack alignments).[23] The site is and will continue to have a relatively-flat topography after site construction. Also, as noted earlier, a SWPPP will be in place during construction, as described in Impact 10-a. Therefore, construction-related activities will minimally disturb the ground surface resulting in a less than significant impact from erosion and siltation.

ii) *Runoff Resulting in Flooding On- or Off-site; Less Than Significant Impact:* The site will not result in waters capable of flooding either on- or off-site. Although the site lies within Flood Zone A (a special flood hazard area) per the Federal Emergency Management Agency FIRM map[24], the site itself will not generate substantial amounts of runoff that would result in on- or off-site flooding due to the nature of the Project as a renewable energy producer (i.e., solar energy). The Project will avoid runoff type water from dust suppression activities and PV panel washing through implementation of conditions of approval and project design features (elevated structures, effective draining, permeable gravel roads, etc.). As such, the Project would result in a less than significant impact to or from this resource Item.

iii) *Runoff Affecting Stormwater Drainage Systems and Polluted Runoff; No Impact:* See Items 10 c) i) and ii). Also, the Project will not connect to any existing or planned stormwater drainage system, as such it will not provide any additional sources of polluted runoff. As noted earlier, the very nature of the Project (as a renewable energy producer) does not lend itself as a contributor of polluted runoff. Therefore, the Project would result in no impact to this resource. create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and as such, would result in no impact.

iv) *Impede or Redirect Flood Flows; No Impact:* See Items 10 c) i) and ii).

d) **Less Than Significant Impact With Mitigation:** The Project is located on areas that may result in or be impacted by a flood hazard that could result in a risk release of pollutants due to project inundation. As noted in Item 10 c) ii), the Project lies within an area that is subject to flooding within Flood Zone A (area of minimal flooding) per the FEMA FIRM map. The subject parcel is located in a federally identified Special Flood Hazard Area as depicted on said plat. Individual site plan approval is required for any parcel located within or partially within a Special Flood Hazard Area prior to the issuance of any permits. The location of a structure within the special flood hazard area shall require compliance with the National Flood Insurance Program under FEMA and the special provisions of the Tulare County Flood Damage Prevention Ordinance. Although solar panels are mounted on poles above ground level, anything on a concrete pad should be built at an elevation of one foot above base flood elevation (BFE).

The proposed Project it is not exposed to or near any river, reservoirs, pond, or lake subject to seiches from earthquake activity; and it is at least 105 miles east of the nearest coastline that would be subject to tsunami. Therefore, there would be no impact from potential inundation by tsunami or seiches.

e) **No Impact:** The nature of the Project (as a renewable energy producer), and the fact that its anticipated 35-year life would temporarily suspend usage of water for irrigation purposes of agricultural lands, leads to a reasonable conclusion that the Project would not conflict with or obstruct implementation of water quality control plan or sustainable groundwater management plan.

Construction-related activities will adhere to the Tulare County General Plan goals and policies, the Tulare County Zoning Ordinance, and **Mitigation Measure HYD-1.** With implementation of **Mitigation Measures HYD-1** would reduce the impacts from flooding activities to a less than significant impact with mitigation.

[23] Ibid.

[24] Federal Emergency Management Agency FIRM Panel 06107CL300E June 16, 2009. Accessed Feb 2025 at: map https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=119.24027126756349,36.137670866489145,-119.15718716111826,36.17232174266695

Mitigation Measure HYD-1
The location of a structure within the special flood hazard area shall require compliance with the National Flood Insurance Program under FEMA and the special provisions of the Tulare County Flood Damage Prevention Ordinance.

11. LAND USE AND PLANNING

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Federal regulations for land use are not relevant to the Project because it is not a federal undertaking (the Project site is not located on lands administered by a federal agency, and the project applicant is not requesting federal funding or a federal permit).

State

The Project is being evaluated pursuant to CEQA; however, there are no state regulations, plans, programs, or guidelines associated with land use and planning that are applicable to the proposed Project.

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update (Chapter 4 – Land Use, Chapter 8 – Environmental Resources Management and Part II Chapter 1 - Rural Valley Lands Plan) contains the following goals and policies that relate to land use and which have potential relevance to the Project's California Environmental Quality Act (CEQA) review: *LU-2.1 Agricultural Lands* wherein the County shall maintain agriculturally-designated areas for agriculture use and by directing urban development away from valuable agricultural lands to cities, unincorporated communities, hamlets, and planned community areas where public facilities and infrastructure are available; *LU-5.1 Industrial Developments* wherein the County shall encourage a wide range of industrial development activities in appropriate locations to promote economic development, employment opportunities, and provide a sound tax base; and *LU-7.15 Energy Conservation* wherein the County shall encourage the use of solar power and energy conservation building techniques in all new development.

PROJECT IMPACT ANALYSIS

a) and b) No Impact: The Project is in an agricultural area in southwestern Tulare County, approximately 3.8 miles west of the City of Tulare's southernmost boundary (at State Route 99 and Avenue 184). The Project will not physically divide any established community or 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. Therefore, the Project would result in no impact to these resources.

12.	MINERAL RESOURCES				
Would the project:		SIGNIFICANT IMPACT	LESS THAN SIGNIFICANT IMPACT WITH MITIGATION	LESS THAN SIGNIFICANT IMPACT	NO IMPACT
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b)	Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

There are no federal or local regulations pertaining to mineral resources relevant to the proposed project.

State

California Surface Mining and Reclamation Act of 1975

Enacted by the State Legislature in 1975, the Surface Mining and Reclamation Act (SMARA), Public Resources Code Section 2710 et seq., insures a continuing supply of mineral resources for the State. The act also creates surface mining and reclamation policy to assure that:

- Production and conservation of minerals is encouraged;
- Environmental effects are prevented or minimized;
- Consideration is given to recreational activities, watersheds, wildlife, range and forage, and aesthetic enjoyment;
- Mined lands are reclaimed to a useable condition once mining is completed; and
- Hazards to public safety both now and in the future are eliminated.

Areas in the State (city or county) that do not have their own regulations for mining and reclamation activities rely on the Department of Conservation, Division of Mines and Geology, Office of Mine Reclamation to enforce this law. SMARA contains provisions for the inventory of mineral lands in the State of California. The State Geologist, in accordance with the State Board's Guidelines for Classification and Designation of Mineral Lands, must classify Mineral Resource Zones (MRZ) as designated below:

- MRZ-1. Areas where available geologic information indicates that there is minimal likelihood of significant resources.
- MRZ-2. Areas underlain by mineral deposits where geologic data indicate that significant mineral deposits are located or likely to be located.
- MRZ-3. Areas where mineral deposits are found but the significance of the deposits cannot be evaluated without further exploration.

- MRZ-4. Areas where there is not enough information to assess the zone. These are areas that have unknown mineral resource significance.

SMARA only covers mining activities that impact or disturb the surface of the land. Deep mining (tunnel) or petroleum and gas production is not covered by SMARA.

Local

Tulare County General Plan 2030 Update

The Tulare County General Plan 2030 Update: Chapter 8 – Environmental Resources Management contains the following goals and policies that relate to mineral resources and which have potential relevance to the Project's California Environmental Quality Act (CEQA) review: *ERM-2.1 Conserve Mineral Deposits* wherein the County will encourage the conservation of identified and/or potential mineral deposits, recognizing the need for identifying, permitting, and maintaining a 50 year supply of locally available PCC grade aggregate; and *ERM-4.6 Renewable Energy* wherein the County shall support efforts, when appropriately sited, for the development and use of alternative energy resources, including renewable energy such as wind, solar, bio-fuels and co-generation.

PROJECT IMPACT ANALYSIS

a) No Impact: Mineral resources located within Tulare County are predominately sand and gravel resources primarily provided by four streams: Kaweah River, Lewis Creek, Deer Creek, and the Tule River. Deer Creek is the nearest of these four streams to the proposed Project site and is located approximately 14 miles to the south. Due to the distance from these streams, the Project will not result in the loss of an available known mineral resource. The Tulare County General Plan Update (see Figure 8.1 Mineral Resource Zone in the General Plan) indicates the locations of State-designated Mineral Resource Zones. According to the map, the Project site is not located in or within 10 miles of a Mineral Resource Zone. The California Department of Conservation indicates that the nearest, active mining operation (K & G Ranches, open pit sand and gravel) is located approximately 11 miles northeast of the Project site.[25] As such, the Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

b) No Impact: The proposed Project site is not delineated on a local land use plan as a locally important mineral resource recovery site. Therefore, the Project would not result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

13.	**NOISE**				
Would the project result in:		**SIGNIFICANT IMPACT**	**LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b)	Generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a	☐	☐	☐	☒

[25] State of California Department Of Conservation Division of Mine Reclamation, Maps: Mines and Mineral Resources accessed Feb 2025 at: https://maps.conservation.ca.gov/mol/index.html.

	public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Federal Vibration Policies

The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to ground-borne vibration levels of 0.5 PPV without experiencing structural damage. The FTA has identified the human annoyance response to vibration levels as 80 RMS (Root Mean Square = The square root of the arithmetic average of the squared amplitude of the signal).[26]

State

The California Noise Control Act was enacted in 1973 (Health and Safety Code § 46010 et seq.), and states that the Office of Noise Control (ONC) should provide assistance to local communities in developing local noise control programs. It also indicates that ONC staff will work with the OPR to provide guidance for the preparation of the required noise elements in city and county General Plans, pursuant to Government Code § 65302(f). California Government Code § 65302(f) requires city and county general plans to include a noise element. The purpose of a noise element is to guide future development to enhance future land use compatibility.

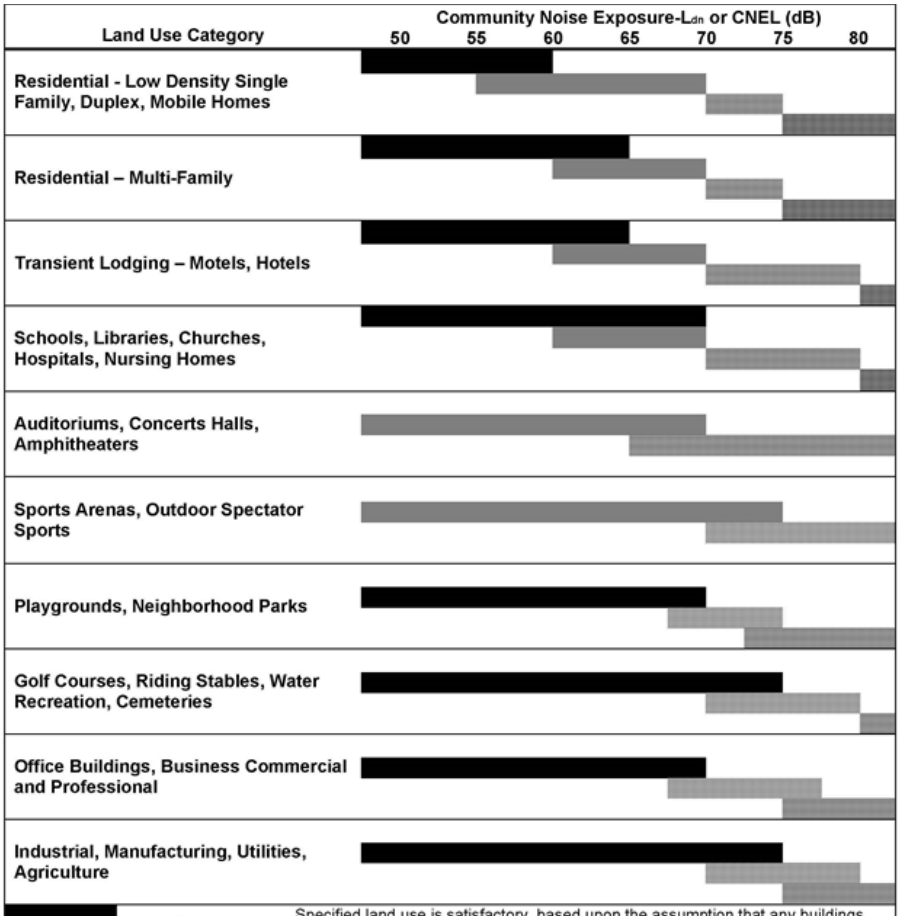
Local

Analytical noise modeling techniques, in conjunction with actual field noise level measurements, were used to develop generalized Ldn or Community Noise Equivalent Level (CNEL) contours for traffic noise sources within Tulare County for existing conditions. Traffic data representing annual average daily traffic volumes, truck mix, and the day/night distribution of traffic for existing conditions (1986) and future were obtained from the Tulare County Public Works Department and used in the Tulare County Noise Element. The Tulare County General Plan 2030 Update Health & Safety Element (2012) includes noise and land use compatibility standards for various land uses. These are shown in **Table NOI-1** Land Use Compatibility for Community Noise Environments[27],:

[26] U.S. Department of Transportation, "The Noise and Vibration Impact Assessment Manual". September 2018. FTA Report No. 0123 Federal Transit Administration Page 113. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

[27] Tulare County General Plan 2030 Update. Goals and Policies Report. Page 10-25.

Table NOI-1



[Source: Figure Noise-1. State Land Use Compatibility Standards for Community Noise Environment: California Governor's Office of Planning and Research, October 2003]

The Tulare County General Plan 2030 Update: Chapter 10 – Health and Safety contains the following goals and policies that relate to noise and which have potential relevance to the Project's California Environmental Quality Act (CEQA) review: *HS-8.4 Airport Noise Contours* wherein the County shall ensure new noise sensitive land uses are located outside the 60 CNEL contours of all public use airports; *HS-8.6 Noise Level Criteria* wherein the County shall ensure noise level criteria applied to land uses other than residential or other noise-sensitive uses are consistent with the recommendations of the California Office of Noise Control (CONC); *HS-8.8 Adjacent Uses* wherein the County shall not permit development of new industrial, commercial, or other noise-generating land uses if resulting noise levels will exceed 60 dB Ldn (or CNEL) at the boundary of areas designated and zoned for residential or other noise-sensitive uses, unless it is determined to be necessary to promote the public health, safety and welfare of the County; *HS-8.11 Peak Noise Generators* wherein the County shall limit noise generating activities, such as construction, to hours of normal business operation (7 a.m. to 7 p.m.). No peak noise generating activities shall be allowed to occur outside of normal business hours without County approval; *HS-8.18 Construction Noise* wherein the County shall seek to limit the potential noise impacts of construction activities by limiting construction activities to the hours of 7 a.m. to 7 p.m., Monday through Saturday when construction activities are located near sensitive receptors. No construction shall occur on Sundays or national holidays without a permit from the County to minimize noise impacts associated with development near sensitive receptors; *HS-8.19 Construction Noise Control* wherein the County shall ensure that construction contractors implement best practices guidelines (i.e. berms, screens, etc.) as appropriate and feasible to reduce construction-related noise-impacts on surrounding land uses.

PROJECT IMPACT ANALYSIS

a) Less Than Significant Impact With Mitigation: The proposed Project site is zoned for agricultural purposes and is dominated by crop production, dairy uses, agricultural-use outbuildings, and scattered rural residences. The Tulare County General Plan Background Report indicates that typical noise levels in noise-sensitive areas of the unincorporated areas of Tulare County are in the range of 29-65 dB Ldn. The proposed Project will increase ambient noise levels, temporarily, intermittently, and in the short-term, during construction-related activities; however, the increase in noise levels will not be permanent in nature or exceed Tulare County's Maximum Acceptable Ambient Noise Exposure for Various Land Uses. The ambient noise environment in the proposed Project vicinity is dominated by agricultural-related uses, including tractor-intensive work. The magnitude and frequency of the existing ambient noise levels may vary considerably over the course of the day and throughout the week. The variation is caused by different reasons, for example, changing weather conditions, the effects of rotation of agricultural crops, and other human activities.

Project Operational Noise Impacts: The Project will largely be self-sufficient upon completion of construction, with only periodic monitoring and maintenance activities required. Once placed in service, the Project will be operated remotely. Project employees will frequent the site for maintenance and panel washing resulting in approximately 420 total trips per year. This estimate includes up to eight (8) trips per day during the 20 total days of panel washing activities per year and approximately five (5) trips per week to address security or maintenance issues, an estimated average of 1.15 trip per day over a typical year. Except for biannual panel washing activities, emergency repair events, and occasional security checks, the facility would not require any full-time employees located on or traveling to the site.

Noise from electrical equipment, such as transformers, is characterized as a discrete low frequency hum. The noise from transformers is produced by alternating current flux in the core that causes it to vibrate. As the pad mounted transformers are housed in metal cabinets and are located a minimum of 200 feet to the interior of the Project, the noise levels produced are anticipated to be at or below existing ambient noise levels that the Project site undergoes during current agricultural activities (which include the use of a tractor for the grading of the site at least four times a year).

The County of Tulare's General Plan 2030 Update Health and Safety Element (2012) sets the standard noise threshold of 60 dB Ldn at the exterior of nearby residences. Exterior noise levels in the range of 45-60 dB Ldn or Community Noise Equivalent Level (CNEL) or below are generally considered acceptable for residential land uses and 45-75 dB Ldn (or CNEL) or below are considered acceptable for industrial, manufacturing utilities, and agriculture land uses. There are rural residences and agricultural outbuildings that surround the Project site. The distance to the existing sensitive receptors from the edge of the Project's solar arrays is approximately 625 feet to the nearest residence.

The Project will employ passive solar power generation through the use of fix-mounted or single axis tracking arrays. Should tracking arrays be used they will be powered by drive motors to track the east/west path of the sun on a single axis

throughout the day. Noise from each tracker motor ranges from 62 dBA to 63 dBA at one meter distance. Due to the dispersed layout of tracker motors, their distance from sensitive receptors, and the intermittent noise generating activity, the noise associated with the tracking arrays is not anticipated to exceed the existing ambient noise levels of the Project site. Therefore, there will be no long term effects on existing ambient noise levels from the operation of the proposed Project.

As discussed earlier, operational noise is anticipated to be below Tulare County General Plan noise standards of 60 dB Ldn (or CNEL) or less at the exterior of nearby residences and 45 dB Ldn (or CNEL) or less within interior living spaces. The impact will be less than significant.

Project Construction Noise Impacts: Project construction will include site preparation, grading, installation of the solar panels, construction of the BESS, and site cleanup work is expected to last for approximately 18 months. Construction-related short-term, intermittent, temporary noise levels will be higher than existing ambient noise levels in the Project area today, but will no longer occur after construction is completed.

Solar generation facility construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise-generating characteristics. These various sequential phases will change the character of the noise generated on the Project site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, there are similarities in the dominant noise sources and their anticipated noise levels. **Table NOI-2** indicates the anticipated noise levels of the typical construction-related equipment (i.e., graders, trenchers, tractors) based on a distance of 50-feet between the equipment and the sensitive noise receptor. Installation of solar panel arrays will involve the installation of steel beams using percussive or vibration equipment in a manner similar to installing freeway guardrails. The solar panel installation will include earthwork, grading, and erosion control, and erection of the panels, supports, and associated electrical equipment.

Installation of solar panel arrays will involve the installation of steel beams using percussive or vibration equipment in a manner similar to installing freeway guardrails. The solar panel installation will include noise generated as a result of construction-related activities such as earthwork, grading, trenching, erosion control, erection of the panels, supports, and associated electrical equipment.

Table NOI-2
Construction Equipment Noise Levels[28]

Equipment	Typical Noise Level (dBA) 50 ft from Source
Air Compressor	80
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Derrick	88
Crane, Mobile	83
Dozer	85
Generator	82
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	85
Pile-driver (Impact)	101
Pile-driver (Sonic)	95
Pneumatic Tool	85

[28] U.S. Department of Transportation, "The Noise and Vibration Impact Assessment Manual". September 2018. FTA Report No. 0123 Federal Transit Administration Page 175. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Pump	77
Rail Saw	90
Rock Drill	95
Roller	85
Saw	76
Scarifier	83
Scraper	85
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	84

The General Plan 2030 Update Health and Safety Element (2012) does not identify short-term, construction-noise-level thresholds. It limits noise generating activities (such as construction) to hours of normal business operation unless specific County approval is given. Construction-related activities will be restricted to daytime hours and will be short-term and temporary in nature.

Construction noise will be similar in character to existing noise in the area resulting from agricultural operations. Construction will occur throughout the Project site, will not be concentrated or confined in the area directly adjacent to sensitive receptors and will result in short-term, temporary periodic increases in noise. Normally, construction-related activities occur in small construction zones with noise emanating from the various points in the area. In several instances, the sensitive receptors located in the Project area are shielded from the construction areas by distance, existing roadways, agricultural vegetation, and agricultural-related structures.

Construction-related activities will adhere to the Tulare County General Plan goals and policies, the Tulare County Zoning Ordinance, and **Mitigation Measures NOI-1** through **NOI-5**. As there will be no long-term, on-going, operational noise (outside of equipment used to spray wash the panels and during maintenance activities (as needed), **Mitigation Measures NOI-1** through **NOI-5**, would reduce the short-term, intermittent, and temporary (approximately 18 months) noise from construction-related activities. Therefore, implementation of **Mitigation Measures NOI-1** through **NOI-5** would reduce the impacts from construction-related activities noise to a less than significant impact with mitigation.

Mitigation Measure NOI-1
Internal combustion engines shall be equipped with a muffler of a type recommended by the manufacturer.

Mitigation Measure NOI-2
Construction activities, excluding activities required to occur without interruption or activities that would pose a significant safety risk to workers or citizens, shall be limited to between the daytime hours of 7:00 a.m. and 7:00 p.m.

Mitigation Measure NOI-3
Portable/stationary equipment (e.g., generators, compressors) shall be located at the furthest distance from the nearest residential dwelling.

Mitigation Measure NOI-4
As directed by the County resident engineer, the contractor shall implement appropriate additional noise abatement measures including, but not limited to, siting the location of stationary construction equipment away from sensitive noise receptors to the greatest extent feasible, turning off idling equipment after no more than five minutes of inactivity, and rescheduling construction activity to avoid noise-sensitive days or times.

Mitigation Measure NOI-5
Use alternative pile installation techniques (e.g., drilled piles) to the extent possible.

b) Less Than Significant Impact: "Vibration is an oscillatory motion that can be described in terms of the displacement, velocity, or acceleration. Because the motion is oscillatory, there is no net movement of the vibration element and the

average of any of the motion metrics is zero. Displacement is the most intuitive metric. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the floor movement and acceleration is the rate of change of the speed. Although displacement is easier to understand than velocity or acceleration, it is rarely used for describing ground-borne vibration. Most transducers used for measuring ground-borne vibration use either velocity or acceleration. Furthermore, the response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration."[29]

"The effects of ground-borne vibration can include perceptible movement of floors in buildings, rattling of windows, shaking of items on shelves or hanging on walls, and low-frequency noise (ground-borne noise). Building damage is not a factor for typical transportation projects, but in extreme cases, such as during blasting or pile-driving during construction, vibration could cause damage to buildings. Although the perceptibility threshold is approximately 65 VdB, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. A vibration level that causes annoyance is well below the damage risk threshold for typical buildings (100 VdB)."[30] "Ground-borne vibration is almost never a problem outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of a building, the motion does not provoke the same adverse human reaction."[31] **Table NOI-3** presents the human response to different levels of ground-borne vibration and noise. "The vibration level (VdB) is presented with the corresponding frequency assuming that the vibration spectrum peaks at 30 Hz or 60 Hz.(xi) The groundborne noise levels (dBA) are estimated for the specified vibration velocity with a peak vibration spectrum of 30 Hz (Low Freq) and 60 Hz (Mid Freq). Note that the human response differs for vibration velocity level based on frequency. For example, the noise caused by vibrating structural components may cause annoyance even though the vibration cannot be felt. Alternatively, a low frequency vibration can cause annoyance while the ground-borne noise level it generates does not."[32]

Table NOI-3
Human Response to Different levels of Ground-Bourne Vibration and Noise[33]

Vibration Velocity Level	Noise Level		Human Response
	Low Freq*	Mid Freq**	
65 VdB	25 dBA	40dBA	Approximate threshold of perception for many humans. Low frequency sound: usually inaudible. Mid-frequency sound: excessive for quiet sleeping areas.
75 VdB	35 dBA	50dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level annoying. Low-frequency noise: tolerable for sleeping areas. Mid-frequency noise: excessive in most quiet occupied
85 VdB	45 dBA	60dBA	Vibration tolerable only if there are an infrequent number of events per day. Low-frequency noise: excessive for sleeping areas. Mid-frequency noise: excessive even for infrequent events for some activities.

**Approximate noise level when vibration spectrum peak is near 30 Hz.*
***Approximate noise level when vibration spectrum peak is near 60 Hz.*

Table NOI-4 presents average source levels in terms of velocity for various types of construction equipment measured under a wide variety of construction activities.

Table N0I-4
Vibration Source Levels for Construction Equipment[34]

Equipment		PPV at 25 ft. in/sec	Approximate Lv * at 25 ft
Pile Driver (impact)	upper range	1.518	112
	typical	0.544	104
Pile Driver (sonic)	upper range	0.734	105

[29] U.S. Department of Transportation, Federal Transit Administration, Transit Noise & Vibration Impact Assessment, September 2018. Page 108.
[30] Ibid. 118
[31] Op. Cit.
[32] Op. Cit. 119.
[33] Op. Cit. 120.
[34] Op. Cit. 184.

	typical	0.17	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.21	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58
**RMS velocity in decibels, VDB re 1 micro-in/sec*			

Typical outdoor sources of perceptible ground borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be transient, random, or continuous. The approximate threshold of vibration perception is 65 VdB, while 85 VdB is the vibration acceptable only if there are an infrequent number of events per day.

Construction Related Vibration Impacts: The use of impact post driving or drilling will be utilized to install the solar arrays and BESS and drilling and cranes for construction of the new transmission line. While these construction-related activities will result in minor amounts of ground borne vibration, such ground borne noise or vibration will attenuate rapidly from the source and will not be generally perceptible outside of the construction areas. As such, impacts to the neighboring sensitive receptors will be less than significant.

Project Operational Vibration Impacts: As described in Impact 13 a), the Project's operations and maintenance will result in minimal maintenance activities. Other than the minimal traffic trips related to maintenance, there will be no vibrational impacts from Project operation. Therefore, the exposure of persons to or generation of excessive ground borne vibration.

Therefore, the Project would result in a less than significant impact and would not generate excessive ground borne vibration or ground borne noise.

c) No Impact: The nearest public airport or public use or airport, Mefford Field Airport (in the City of Tulare) is located approximately four miles northeast of the Project. Therefore, the Project site is located outside of the 55 dB CNEL noise contour. The proposed Project is not within an airport land use plan or within two miles of a public airport or public use airport. The proposed Project will not conflict with Tulare County Airport Land Use Plan policy. The project would not expose people residing or working in the project area to excessive noise levels. Therefore, there will be no impact.

14. POPULATION AND HOUSING

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b)	Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

U.S. Department of Housing and Urban Development (HUD)

"HUD's mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. HUD is working to strengthen the housing market to bolster the economy and protect consumers; meet the need for quality affordable rental homes: utilize housing as a platform for improving quality of life; build inclusive and sustainable communities free from discrimination; and transform the way HUD does business."[35] However, as the Project does not propose any housing, HUD or other federal regulations do not apply to this Project.

State

California Department of Housing and Community Development (HCD)

HCD's mission is to "Promote safe, affordable homes and strong vibrant communities throughout California."[36] "In 1977, the State Department of Housing and Community Development (HCD) adopted regulations under the California Administrative Code, known as the Housing Element Guidelines, which are to be followed by local governments in the preparation of local housing elements. AB 2853, enacted in 1980, further codified housing element requirements. Since that time, new amendments to State Housing Law have been enacted. Each of these amendments has been considered during development of this Housing Element."[37]

California Relocation Assistance Act

The State of California adopted the California Relocation Assistance Act (California Government Code §7260 et seq.) in 1970. This State law, which follows the federal Uniform Relocation Assistance and Real Property Acquisition Act, requires public agencies to provide procedural protections and benefits when they displace businesses, homeowners, and tenants in the process of implementing public programs and projects. This State law calls for fair, uniform, and equitable treatment of all affected persons through the provision of relocation benefits and assistance to minimize the hardship of displacement on the affected persons.

Local

Tulare County Regional Housing Needs Assessment Plan 2023-2031

The Tulare County Association of Governments (TCAG) was responsible for allocating the State's projections to each local jurisdiction within Tulare County including the County unincorporated area, which is reflected in this Housing Element. Tulare County has no control over the countywide population and housing projections provided to TCAG when it prepared the Regional Housing Needs Assessment Plan.

Tulare County Regional Blueprint 2009

This Blueprint includes the following preferred growth scenario principals:[38]

- Increase densities county-wide by 25% over the status quo densities;
- Establish light rail between cities;
- Extend Highway 65 north to Fresno County;
- Expand transit throughout the county;
- Maintain urban separators around cities; and

[35] U.S. Department of Housing and Urban Development, Mission, https://www.hud.gov/about/mission. Accessed May 2019.
[36] California Department of Housing and Community Development, Mission, http://www.hcd.ca.gov/about/mission.shtml. Accessed May 2019.
[37] Tulare County Housing Element 2015 Update. Page 1-3.
[38] TCAG. Tulare County Regional Blueprint. May 2009. Page 18. http://www.tularecog.org/RTPSCS/TulareCountyBluePrint.pdf . Accessed May 2019.

- Growth will be directed toward incorporated cities and communities where urban development exists and where comprehensive services and infrastructure are or will be provided.

Tulare County Housing Authority

"The Housing Authority of the County of Tulare (HATC) has been officially designated as the local public housing agency for the County of Tulare by the Board of Supervisors and was created pursuant to federal and state laws. …HATC is a unique hybrid: a public sector agency with private sector business practices. Their major source of income is the rents from residents. The HATC mission is "to provide affordable, well-maintained rental housing to qualified low- and very low-income families. Priority shall be given to working families, seniors and the disabled. Tenant self sufficiency and responsibility shall be encouraged. Programs shall be self-supporting to the maximum extent feasible."" [39]

"HATC provides rental assistance to very low and moderate-income families, seniors and the handicapped throughout the county. HATC offers many different programs, including the conventional public housing program, the housing choice voucher program (Section 8), the farm labor program for families with farm labor income, senior housing programs, and other programs. They also own or manage some individual subsidized rental complexes that do not fall under the previous categories, and can provide information about other affordable housing that is available in Tulare County. All programs are handicap accessible. Almost all of the complexes have 55-year recorded affordability covenants."[40]

Tulare County General Plan/Housing Element Policies

As this is a renewable energy project (i.e., no housing units are proposed), there are no policies from the Tulare County General Plan/Housing Element that would apply to this Project.

PROJECT IMPACT ANALYSIS

a) No Impact: The proposed Project is the construction and operation of a new solar energy generation facility. Total Project construction will take approximately 18 continuous months and will require approximately 200 construction workers during its peak. Construction workers may be drawn from the local and regional area. No employees will be stationed at the site. Workers will only visit the site for occasional cleaning, maintenance, and repair. The proposed Project will not induce population growth. There will be **no impact**. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)

b) No Impact: The proposed Project is the construction and operation of a new solar energy generation facility. Total Project construction will take approximately 18 continuous months and will require approximately 200 construction workers during its peak. The site would be monitored remotely and will not require any permanent, on-site employees. The workers are anticipated to be drawn from the nearby, local labor and regional workforce. As such, the Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

15.	**PUBLIC SERVICES**				
Would the project		**SIGNIFICANT IMPACT**	**LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**
a)	Result in substantial adverse physical impacts associated with the provision of new or physically				

[39] Tulare County Housing Element 2015 Update. Page 5-12. *http://generalplan.co.tulare.ca.us/documents/GP/001Adopted%20Tulare%20County%20General%20Plan%20Materials/110Part%20I%20Voluntary%20Elements%20Chapters%206,%2012%20and%2015/001CHP%206%20Tulare%20County%20Housing%20Element%20Update%202015/CHP%206%20TULARE%20COUNTY%20HOUSING%20ELEMENT%20UPDATE%202015.pdf*

[40] Ibid.

	altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i) Fire protection?	☐	☐	☒	☐
	ii) Police protection?	☐	☐	☒	☐
	iii) Schools?	☐	☐	☐	☒
	iv) Parks?	☐	☐	☐	☒
	v) Other public facilities?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

None that are applicable to this Project.

State

California Fire Code and Building Code

The purpose of the California Fire Code (Title 24, Part 9 of the California Code of Regulations) is to establish the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations.[41]

Local

Tulare County General Plan 2030 Update

The following Tulare County General Plan 2030 Update, Chapter 14 – Public Facilities and Services, contains the following policies that relate to public services and may apply to this Project: *PFS-7.2 Fire Protection Standards* wherein the County shall require all new development to be adequately served by water supplies, storage, and conveyance facilities supplying adequate volume, pressure, and capacity for fire protection*;PFS-7.5 Fire Staffing and Response Time Standards* wherein the County shall strive to maintain fire department staffing and response time goals consistent with National Fire Protection Association (NFPA) standards; *PFS-7.6 Provision of Station Facilities and Equipment* wherein the County shall strive to provide sheriff and fire station facilities, equipment (engines and other apparatus), and staffing necessary to maintain the County's service goals. The County shall continue to cooperate with mutual aid providers to provide coverage throughout the County*; PFS-7.12 Design Features for Crime Prevention and Reduction* wherein the County shall promote the use of building and site design features as means for crime prevention and reduction; and *PFS-7.9 Sheriff Response Time* wherein the County shall work with the Sheriff's Department to achieve and maintain a response time of:

1. Less than 10 minutes for 90 percent of the calls in the valley region; and
2. 15 minutes for 75 percent of the calls in the foothill and mountain regions.

[41] 2016 California Fire Code (Title 24, Part 9 of the California Code of Regulations). Page 3. Accessed May 2019. https://www.citymb.info/Home/ShowDocument?id=28089

The proposed Project will not rely on the addition or alteration of any public services. The subject site is within the southwestern portion of Tulare County and will utilize existing services provided by Tulare County. There will be a less than significant impact.

PROJECT IMPACT ANALYSIS

a) Less than Significant Impact: Overall, the Project will have a less than significant impact on Public Services.

i) *Fire Protection* **– Less Than Significant Impact:** The County of Tulare will continue to provide fire protection services to the proposed Project site upon development. No residential or office construction is identified with this Project. Vegetation that could present a fire hazard will be removed from the Project site. Additionally, gravel will likely be placed around high voltage equipment to prevent the spread of fire in the unlikely event of an explosion. As a result of these project design features, impacts to fire protection services will be less than significant.

ii) *Police Protection* **- Less than Significant:** The County of Tulare will continue to provide police protection services to the Project site upon development. Emergency response is adequate to the Project site. As discussed in Item 14 a), no residential or office construction is proposed for this Project. Lighting will be installed along the Project perimeter, eight (8)-foot tall fencing with security wire, lighting on motion sensors, and remotely viewed monitoring will be present across the facilities to lessen any potential impacts from theft and vandalism. As a result of these measures, any impact to police services will be less than significant.

iii) *Schools* **– No Impact:** The nearest schools are located in the Tulare Union School District. However, as discussed in Item 14 a), the Project will not include construction of any residential structures that could result in increases of school-aged children, nor change the existing land use. The Project will not result in an increase of population that will require additional school facilities because no employees will be assigned to on-site occupancy. There will be no impact.

iv) *Parks* **– No Impact:** The nearest parks are located in the City of Tulare. Four city park are located within 6 miles of the proposed Project site. As the proposed Project will not induce population growth, the Project will not create a need for additional park or recreational services. No employees will be assigned to on-site occupancy at the Project site. There will be no impact.

v) *Other public facilities* **– No Impact:** There are no other public services (such as wastewater treatment facilities/systems) near the Project site. The nearest public use utility is the Southern California Edison (SCE) substation located adjacent to the Project site at the northwest corner of Avenue 184 and Road 80. SCE limits the amount of direct line taps into transmission lines and requires most projects to connect to a SCE substation or to build a new SCE substation. The proposed Project will connect to the substation and augment the power flow to the SCE Electric Transmission System. As a result of the Project's location, any impact to the electrical transmission systems will be less than significant.

16.	**RECREATION**				
Would the project:		**SIGNIFICANT IMPACT**	**LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

None that apply to this Project.

State

None that apply to this Project.

Local

None that apply to this Project.

PROJECT IMPACT ANALYSIS

a) No Impact: As discussed in Item 15 e), the Project will not increase the demand for recreational facilities nor will it put a strain on existing recreational facilities. No employees will be located at the Project site. Maintenance crews will service the site; however, no population growth will be associated with the Project or necessitated by the Project. The only potential impact on recreational facilities may occur if construction workers (during 18 months of construction), or occasionally visiting maintenance workers, decided to recreate at their own leisure outside of work hours. The nearest park is Woodville County Park approximately four miles south of the proposed Project site. As such, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Therefore, there will be no impact to this resource.

b) No Impact: The Project does not include recreational facilities, As there is no population growth associated with the Project, there will be no need to construct or expand any recreational facilities as there would be no adverse physical effect on the environment; therefore, there would be impact to this resource.

17. TRANSPORTATION

Would the project:		Significant Impact	Less Than Significant Impact With Mitigation	Less Than Significant Impact	No Impact
a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☒	☐
b)	Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☒	☐
c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, (e.g., farm equipment)?	☐	☐	☒	☐
d)	Result in inadequate emergency access?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

Several federal regulations govern transportation issues. They include: Title 49, CFR, Sections 171-177 (49 CFR 171-177) which governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles; 49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations which address safety considerations for the transport of goods, materials, and substances over public highways; and 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, which directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials.

State

Caltrans: Transportation Concept Reports

Each District of the State of California Transportation Department (Caltrans) prepares a Transportation Concept Report (TCP) for every state highway or portion thereof in its jurisdiction. The TCR usually represents the first step in Caltrans' long-range corridor planning process. The purpose of the TCR is to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20-year period, otherwise known as the "route concept" or beyond 20 years, for what is known as the "ultimate concept". However, the Project site is not adjacent to or near any Concept Report facilities. The nearest facility is SR 137 approximately 4.5 north of the Project.

Caltrans Guide for the Preparation of Traffic Impact Studies

The California Department of Transportation (Caltrans) has developed this "Guide for the Preparation of Traffic Impact Studies" to provide a starting point and a consistent basis in which Caltrans evaluates traffic impacts to State highway facilities. The applicability of this guide for local streets and roads (non-State highways) is at the discretion of the effected jurisdiction. Caltrans Guide for the Preparation of Traffic Impact Studies establishes the following criterion as a starting point in determining when a TIS is needed:

1. Generates over 100 peak hour trips assigned to a State highway facility
2. Generates 50 to 100 peak hour trips assigned to a State highway facility – and, affected State highway facilities are experiencing noticeable delay; approaching unstable traffic flow conditions (LOS "C" or "D").
3. Generates 1 to 49 peak hour trips assigned to a State highway facility – the following are examples that may require a full TIS or some lesser analysis
    a. Affected State highway facilities experiencing significant delay; unstable or forced traffic flow conditions (LOS "E" or "F").
    b. The potential risk for a traffic incident is significantly increased (i.e., congestion-related collisions, non-standard sight distance considerations, increase in traffic conflict points, etc.).
    c. Change in local circulation networks that impact a State highway facility (i.e., direct access to State highway facility, a non-standard highway geometric design, etc.).[42]

Based upon the Operation Statement, the Proposed Project site will only have temporary traffic increases during construction-related activities of a maximum of approximately 400 construction vehicle trips per day (assuming arrivals/departures) for one-weeks' time. However, when the Project is running, it is estimated that 420 trips per year (security, maintenance and solar panel washing) will be generated. This is approximately 1.15 trips per day over a typical year when operational; therefore, a traffic impact study is not required.

Local

Tulare County General Plan 2030 Update

[42] Caltrans. Guide for the Preparation of Traffic Impact Studies. A. Trip Generation Thresholds. December 2002. Page 2. Accessed Feb 2025 at: https://www.contracosta.ca.gov/DocumentCenter/View/34121/Caltrans2002-TIS-Guidelines-PDF

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project: *TC-1.16 County Level Of Service (LOS) Standards* wherein the County shall strive to develop and manage its roadway system (both segments and intersections) to meet a LOS of "D" or better in accordance with the LOS definitions established by the Highway Capacity Manual; and *HS-1.9 Emergency Access* wherein the County shall require, where feasible, road networks (public and private) to provide for safe and ready access for emergency equipment and provide alternate routes for evacuation.

PROJECT IMPACT ANALYSIS

a) Less Than Significant Impact: The Project will consist of construction and operation/maintenance of a solar energy generation facility and will not require any new roadway construction. Site grading will take approximately two-to-three weeks. Project constriction will require approximately 150 trips per day for the 18 months of construction-related activities. Level of Service (LOS) standards vary throughout the County and its eight incorporated cities. As noted earlier in Tulare County General Plan PolicyTC-1.16, the minimum LOS standard within the County shall be no lower than LOS D. Project operations and maintenance are anticipated to require approximately 420 vehicle trips per year. This estimate is an average of 1.15 trip per day over a typical year. Except for biannual panel washing activities, emergency repair events, and occasional security checks, the facility would not require any full-time employees located on or traveling to the site. PV panel washing would occur approximately one to two times a year depending on the amount of rainfall in a given year using imported water. Trips associated with the Project operation and maintenance will have a less than significant impact on local roadways. As such, the Project would not 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 and freeways, pedestrian and bicycle paths, and mass transit. Therefore, the Project would result in a less than significant impact.

b) Less Than Significant Impact: The Project does not require construction of any roadways and will generate approximately 1.15 trips per day on average for operation and maintenance. As the Project will not generate significant new traffic, and based on existing conditions, there is no anticipated change in the operating conditions of the roadways from what currently exists. As such, the Project would not conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways. Therefore, the Project would result in a less than significant impact.

c) Less Than Significant Impact: No roadway design features are associated with this Project and the change in the existing land use will not result in incompatible use. Therefore, this and other components of the Project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, (e.g., farm equipment). As such, the Project would result in a less than significant impact to this resource.

d) No Impact: No roads will be modified as a result of this Project, construction-related traffic that could impede emergency responses will be short-term, temporary, and intermittent and would comply with laws requiring yielding right-of-way to emergency response vehicle. Daily operations and maintenance traffic will be limited to approximately 1.15 trips per day. As such, it can be reasonably concluded that the Project would not result in inadequate emergency access. Therefore, there will be no impact to this resource.

18.	**TRIBAL CULTURAL RESOURCES**				
Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is		**SIGNIFICANT IMPACT**	**LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**
a)	Listed or eligible for listing in the California Register of Historical Resources, or in a local register of	☐	☒	☐	☐

	historical resources as defined in Public Resources Code Section 5020.1(k)?				
b)	A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), "*Foxtail Hybrid Solar Project Cultural Resources Technical Report"* (CRTR) prepared by Rincon Consultants, Inc. (Attachment C), and the resources cited in this analysis.

REGULATORY SETTING

Federal

The National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA) established federal regulations for the purpose of protecting significant cultural resources.[43] The legislation established the National Register of Historic Places and the National Historic Landmarks Program.[44] It mandated the establishment of the State Historic Preservation Office (SHPO), responsible for implementing statewide historic preservation programs in each state.[45] A key aspect of SHPO responsibilities include surveying, evaluating and nominating significant historic buildings, sites, structures, districts and objects to the National Register. The NHPA also established requirements for federal agencies to consider the effects of proposed federal Projects on historic properties (Section 106, NHPA).[46] Federal agencies and recipients of federal funding are required to initiate consultation with the State Historic Preservation Officer (SHPO) as part of the Section 106 review process.[47]

State

California State Office of Historic Preservation (OHP)

"The California State Office of Historic Preservation (OHP) is responsible for administering federally and state mandated historic preservation programs to further the identification, evaluation, registration and protection of California's irreplaceable archaeological and historical resources under the direction of the State Historic Preservation Officer (SHPO), a gubernatorial appointee, and the State Historical Resources Commission."[48]

"OHP's responsibilities include identifying, evaluating, and registering historic properties; ensuring compliance with federal and state regulatory obligations; encouraging the adoption of economic incentives programs designed to benefit property owners; encouraging economic revitalization by promoting a historic preservation ethic through preservation education and public awareness and, most significantly, by demonstrating leadership and stewardship for historic preservation in California."[49]

A historical resource may be eligible for inclusion in the California Register of Historical Resources (CRHR) if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

[43] Advisory Council on Historic Preservation. The National Historic Preservation Program. http://www.achp.gov/overview.html
[44] Ibid.
[45] Op. Cit.
[46] Op. Cit.
[47] Op. Cit.
[48] Office of Historic Preservation. Mission and Responsibilities. http://ohp.parks.ca.gov/?page_id=1066
[49] Ibid.

- Is associated with the lives of persons important to our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.[50]

Native American Heritage Commission

"The Native American Heritage Commission (NAHC), created in statute in 1976, is a nine-member body, appointed by the Governor, to identify and catalog cultural resources (i.e., places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands) in California. The Commission is charged with the duty of preserving and ensuring accessibility of sacred sites and burials, the disposition of Native American human remains and burial items, maintain an inventory of Native American sacred sites located on public lands, and review current administrative and statutory protections related to these sacred sites."[51]

Tribal Consultation Requirements: AB 52 (Gatto, 2014)

The Public Resources Code has established that "[a] 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." (Pub. Resources Code, § 21084.2.) To help determine whether a project may have such an effect, the Public Resources Code requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. That consultation must take place prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. (Pub. Resources Code, § 21080.3.1.) If a lead agency determines that a project may cause a substantial adverse change to tribal cultural resources, the lead agency must consider measures to mitigate that impact.[52]

CEQA Guidelines: Archaeological Resources

Section 15064.5(c) of CEQA Guidelines provides specific guidance on the treatment of archaeological resources as noted below. [53]

(1) When a Project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource, as defined in subdivision (a).
(2) If a lead agency determines that the archaeological site is an historical resource, it shall refer to the provisions of Section 21084.1 of the Public Resources Code, and this section, Section 15126.4 of the Guidelines, and the limits contained in Section 21083.2 of the Public Resources Code do not apply.
(3) If an archaeological site does not meet the criteria defined in subdivision (a), but does meet the definition of a unique archeological resource in Section 21083.2 of the Public Resources Code, the site shall be treated in accordance with the provisions of section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the Project location contains unique archaeological resources.
(4) If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the Project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the Initial Study or EIR, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

CEQA Guidelines: Human Remains

Public Resources Code Sections 5097.94 and 5097.98 provide guidance on the disposition of Native American burials (human remains), and fall within the jurisdiction of the Native American Heritage Commission:[54]

[50] Office of Historic Preservation. California Register of Historic Places. http://www.ohp.parks.ca.gov/?page_id=21238
[51] Native American Heritage Commission. Welcome. http://nahc.ca.gov/
[52] Office of Planning and Research. Discussion Draft Technical Advisory: AB 52 and Tribal Cultural Resources in CEQA (May 2015). Page 3. http://opr.ca.gov/docs/DRAFT_AB_52_Technical_Advisory.pdf
[53] California Natural Resources Agency. 15064.5. Determining the Significance of Impacts to Archeological and Historical Resources, Section 15064.5(c). http://resources.ca.gov/ceqa/guidelines/art5.html
[54] Ibid.

(d) When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the Project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any Items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission. Action implementing such an agreement is exempt from:
   (1) The general prohibition on disinterring, disturbing, or removing human remains from any location other than a dedicated cemetery (Health and Safety Code Section 7050.5).
   (2) The requirements of CEQA and the Coastal Act.

(e) In the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery, the following steps should be taken:
   (1) There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
      (A) The coroner of the county in which the remains are discovered must be contacted to determine that no investigation of the cause of death is required, and
      (B) If the coroner determines the remains to be Native American:
         1. The coroner shall contact the Native American Heritage Commission within 24 hours.
         2. The Native American Heritage Commission shall identify the person or persons it believes to be the most likely descended from the deceased Native American.
         3. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
   (2) Where the following conditions occur, the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.
      (A) The Native American Heritage Commission is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 24 hours after being notified by the commission.
      (B) The descendant identified fails to make a recommendation; or
      (C) The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

(f) As part of the objectives, criteria, and procedures required by Section 21082 of the Public Resources Code, a lead agency should make provisions for historical or unique archaeological resources accidentally discovered during construction. These provisions should include an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place

Local

Tulare County General Plan 2030 Update

The General Plan has a number of policies that apply to Projects within Tulare County. General Plan policies that relate to the proposed Project are listed as follows:

The following Tulare County General Plan 2030 Update policies for this resource apply to this Project: *ERM-6.1 Evaluation of Cultural and Archaeological Resources* wherein the County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards; *ERM-6.2 Protection of Resources with Potential State or Federal Designations* wherein the County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources; *ERM-6.3 Alteration of Sites with Identified Cultural Resources* which states that when planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be

permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and Mitigation Measures proposed for any impacts the development may have on the resource; *ERM-6.4 Mitigation* which states that if preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records; *ERM-6.9 Confidentiality of Archaeological Sites* wherein the County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts; and ERM-6.10 Grading Cultural Resources Sites wherein the County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, § 2501 et. seq.

PROJECT IMPACT ANALYSIS

As noted earlier, the intensive use of the Project site has continually been disturbed to the point that there are no evident surface Tribal cultural resources. However, as discussed below, mitigation measures are included in the unlikely event that Tribal cultural resources are encountered. Refer to Cultural Resources and the CRTR.

a) and b) Less Than Significant Impact With Mitigation: As noted earlier, a search of records by the Southern San Joaquin Valley Information Center of the California Historical Resources Information System identified one recorded resources, an historical transmission line; a non-Native American resource. The Native American Heritage Commission (NAHC) conducted a search of the Sacred Lands Inventory on file with the Native American Heritage Commission (NAHC) which concluded negative results (i.e., no sacred lands were identified in the Project site). Lastly, four Native American Tribes were notified consistent with AB 52 requirements; no responses were received. However, as an abundance of caution, in the unlikely event that subsurface resources are located, **Mitigation Measures CUL-1** through **CUL-6** as specified at Item 5 Cultural Resources would be implemented thereby reducing the potential level of impact to this resource as less than significant for resources listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or to a resource consider significant to a California Native American tribe. Therefore, the Project would result in a less than significant impact to this resource.

19.	**UTILITIES AND SERVICE SYSTEMS**				
Would the project:		**SIGNIFICANT IMPACT**	**LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b)	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d)	Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒

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

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

U.S. Environmental Protection Agency (U.S. EPA) - Federal Regulation Tile 40, Part 503

In 1993, the U.S. Environmental Protection Agency (U.S. EPA) promulgated Standards for the Use or Disposal of Sewage Sludge (Code of Federal Regulations Title 40, Part 503), which establish pollutant limitations, operational standards for pathogen and vector attraction reduction, management practices, and other provisions intended to protect public health and the environment from any reasonably anticipated adverse conditions from potential waste constituents and pathogenic organisms.

This part establishes standards, which consist of general requirements, pollutant limits, management practices, and operational standards, for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a treatment works. Standards are included in this part for sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this part are pathogen and alternative vector attraction reduction requirements for sewage sludge applied to the land or placed on a surface disposal site.

In addition, the standards in this part include the frequency of monitoring and recordkeeping requirements when sewage sludge is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this part are reporting requirements for Class I sludge management facilities, publicly owned treatment works (POTWs) with a design flow rate equal to or greater than one million gallons per day, and POTWs that serve 10,000 people or more.[55]

Resource Conservation and Recovery Act (RCRA)[56]

Congress passed RCRA on October 21, 1976 to address the increasing problems the nation faced from our growing volume of municipal and industrial waste. RCRA, which amended the Solid Waste Disposal Act of 1965, set national goals for:

- Protecting human health and the environment from the potential hazards of waste disposal.
- Conserving energy and natural resources.
- Reducing the amount of waste generated.
- Ensuring that wastes are managed in an environmentally-sound manner
- To achieve these goals, RCRA established three distinct, yet interrelated, programs:
  - ✓ The solid waste program, under RCRA Subtitle D, encourages states to develop comprehensive plans to manage nonhazardous industrial solid waste and municipal solid waste, sets criteria for municipal solid waste landfills and other solid waste disposal facilities, and prohibits the open dumping of solid waste.
  - ✓ The hazardous waste program, under RCRA Subtitle C, establishes a system for controlling hazardous waste from the time it is generated until its ultimate disposal — in effect, from "cradle to grave."
  - ✓ The underground storage tank (UST) program, under RCRA Subtitle I, regulates underground storage tanks containing hazardous substances and petroleum products. RCRA banned all open dumping of waste, encouraged source reduction and recycling, and promoted the safe disposal of municipal waste. RCRA also mandated strict controls over the treatment, storage, and disposal of hazardous waste.

[55] Title 40: Protection of Environment Part 503: Standards for the Use of Disposal of Sewage Sludge, http://www.ecfr.gov/cgi-bin/text-idx?SID=faac2040ebd49d57cc2786437545c8cf&node=40:30.0.1.2.42.1.13.1&rgn=div8

[56] United States Environmental Protection Agency, http://www.epa.gov/epawaste/laws-regs/rcrahistory.htm

State

The Integrated Waste Management Act (Assembly Bill 939)

In 1989 the California legislature passed the Integrated Waste Management Act of 1989, known as AB 939. The bill mandates a reduction of waste being disposed: jurisdictions were required to meet diversion goals of 25% by 1995 and 50% by the year 2000. AB 939 also established an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance.

The Regional Water Quality Control Board – Biosolids

In California, the beneficial reuse of treated municipal sewage sludge *(a.k.a.,* biosolids*)* generally must comply with the California Water Code in addition to meeting the requirements specified in Part 503 in Title 40 of the Code of Federal Regulations.

In July 2004, the State Water Resources Control Board adopted Water Quality Order No. 2004-12-DWQ (General Order), and certified a supporting statewide Programmatic Environmental Impact Report (PEIR)

The General Order incorporates the minimum standards established by the Part 503 Rule and expands upon them to fulfill obligations to the California Water Code. However, since California does not have delegated authority to implement the Part 503 Rule, the General Order does not replace the Part 503 Rule. The General Order also does not preempt or supersede the authority of local agencies to prohibit, restrict, or control the use of biosolids subject to their jurisdiction, as allowed by law.

Persons interested in seeking coverage under the General Order should contact the appropriate Regional Water Quality Control Board. Only applicants who submit a complete *Notice of Intent* (NOI), appropriate application fee, and are issued a Notice of Applicability by the executive officer of the appropriate Regional Water Quality Control Board are authorized to land apply biosolids at an agricultural, horticultural, silvicultural, or land reclamation site as a soil amendment under the General Order.

State Water Resources Control Board, Divisions of Drinking Water and Clean Water

Recycled water regulations are administered by both Central RWQCB and the California State Water Resources Control Board (SWRCB). The regulations governing recycled water are found in a combination of sources, including the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations (CCR). Issues related to the treatment and distribution of recycled water are generally under the permitting authority of RWQCB and the Clean Water Division of the SWRCB. .

CalRecycle

CalRecycle governs solid waste regulations on the state level, delegating local permitting, enforcement, and inspection responsibilities to Local Enforcement Agencies (LEA). Regulations authored by CalRecycle (Title 14) were integrated with related regulations adopted by the State Water Resources Control Board (SWRCB) pertaining to landfills (Title 23, Chapter 15) to form CCR Title 27.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies, in addition to authorizing video franchises. In 1911, the CPUC was established by Constitutional Amendment as the Railroad Commission. In 1912, the Legislature passed the Public Utilities Act, expanding the Commission's regulatory authority to include natural gas, electric, telephone, and water companies as well as railroads and marine transportation companies. In 1946, the Commission was renamed the California Public Utilities Commission. It is tasked with ensuring safe, reliable utility service is available to consumers, setting retail energy rates, and protecting against fraud.

Local

Tulare County General Plan 2030 Update

As the Project will not utilize any new or expanded water, wastewater treatment or storm water drainage, natural gas, or telecommunications facilities, the applicable Tulare County General Plan 2030 Update policies for this resource are limited to the following for this resource item: *PFS-5.3 Solid Waste Reduction* wherein the County shall promote the maximum feasible use of solid waste reduction, recycling, and composting of waste, strive to reduce commercial and industrial waste on an annual basis, and pursue financing mechanisms for solid waste reduction programs; *PFS-5.4 County Usage of Recycled Materials and Products* wherein the County shall encourage all industries and government agencies in the County to use recycled materials and products where economically feasible*; PFS-5.5 Private Use of Recycled Products* wherein the County shall work with recycling contractors to encourage businesses to use recycled products and encourage consumers to purchase recycled products; *PFS-5.6 Ensure Capacity* wherein the County shall require evidence that there is adequate capacity within the solid waste system for the processing, recycling, transmission, and disposal of solid waste prior to approving new development; *PFS-5.7 Provisions for Solid Waste Storage, Handling, and Collection* wherein the County shall ensure all new development adequately provides for solid waste storage, screening, handling, and collection prior to issuing building permits*; PFS-5.8 Hazardous Waste Disposal Capabilities* wherein the County shall require the proper disposal and recycling of hazardous materials in accordance with the County's Hazardous Waste Management Plan*;PFS-9.1 Expansion of Gas and Electricity Facilities* wherein the County shall coordinate with gas and electricity service providers to plan the expansion of gas and electrical facilities to meet the future needs of County residents*;PFS-9.2 Appropriate Siting of Natural Gas and Electric Systems* wherein the County shall coordinate with natural gas and electricity service providers to locate and design gas and electric systems that minimize impacts to existing and future residents*; PFS-9.4 Power Transmission Lines* wherein the County shall work with the Public Utilities Commission and power utilities in the siting of transmission lines to avoid interfering with scenic views, historic resources, and areas designated for future urban development; and *PFS-9.3 Transmission Corridors* wherein the County shall work with the Public Utilities Commission and power utilities so that transmission corridors meet the following minimum requirements:

1. Transmission corridors shall be located to avoid health impacts on residential lands and sensitive receptors, and
2. Transmission corridors shall not impact the economic use of adjacent properties.

PROJECT IMPACT ANALYSIS

a) – c) No Impact: The proposed Project involves the leasing of property for the construction and operation/operation of a solar energy generation facility, which will not include any facilities that will generate wastewater. There will be no restroom facilities nor will it require a sewer hookup. The Project does not require or would result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Further, the Project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. The Project would use less water than the amount of water used to irrigate the current agricultural use; as such, the Project would have sufficient water supplies available to serve the project during normal, dry and multiple dry years as water would be imported for washing the solar panels approximately twice per year; and the usage of water to minimize dust during construction-related activities would be short-term, intermittent, and temporary. Other than the renewable energy Project, there is no anticipated foreseeable future development other than the reclamation of the Project site as agricultural land following termination of the 35-year project life. As such, there will be no impact to these resources.

d) and e) No Impact: The Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and it will comply with federal, state, and local management and reduction statutes and regulations related to solid waste as applicable.

20.	**WILDFIRES**				
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:		**SIGNIFICANT IMPACT**	**LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**

a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d)	Expose people or structures to significant risks, including downslope or downstream flooding, or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

The following analysis is based on the information provided in the Tulare County General Plan 2030 Update (General Plan), General Plan 2030 Update Background Report (Background Report), Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report (General Plan RDEIR), and the resources cited in this analysis.

REGULATORY SETTING

Federal

None that apply to the Project.

State

None that apply to the Project.

Local

The Project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project: The following Tulare County General Plan 2030 Update policies could apply to this Project if it were located on sloped areas, fire hazards areas, lands susceptible to landslides, subsidence/settlement, contamination, and/or flooding; potential for wildland fires; etc.: *ERM-7.3 Protection of Soils on Slopes* wherein unless otherwise provided for in this General Plan, building and road construction on slopes of more than 30 percent shall be prohibited, and development proposals on slopes of 15 percent or more shall be accompanied by plans for control or prevention of erosion, alteration of surface water runoff, soil slippage, and wildfire occurrence; *HS-1.5 Hazard Awareness and Public Education* wherein the County shall continue to promote awareness and education among residents regarding possible natural hazards, including soil conditions, earthquakes, flooding, fire hazards, and emergency procedures; *HS-1.11 Site Investigations* wherein the County shall conduct site investigations in areas planned for new development to determine susceptibility to landslides, subsidence/settlement, contamination, and/or flooding; *HS-6.1 New Building Fire Hazards* wherein the County shall ensure that all building permits in urban areas, as well as areas with potential for wildland fires, are reviewed by the County Fire Chief; *HS-6.2 Development in Fire Hazard Zones* wherein the County shall ensure that development in extreme or high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards; *HS-6.3 Consultation with Fire Service Districts* wherein the County shall consult the appropriate fire service district in areas identified as subject to high and extreme fire hazard, for particular regulations or design requirements prior to issuance of a building permit or approval of subdivisions; *HS-6.5 Fire Risk Recommendations* wherein the County shall encourage the County Fire Chief to make recommendations to property owners regarding hazards associated with the use of materials, types of structures, location of structures and subdivisions, road widths, location of fire hydrants, water supply, and other important considerations regarding fire hazard that may be technically feasible but not included in present ordinances or policies; *HS-6.6 Wildland Fire Management Plans* wherein the County shall require the development of wildland fire management plans for projects adjoining significant areas of open space that may have high fuel loads; *HS-6.13 Restoration of Disturbed Land* wherein

the County shall support the restoration of disturbed lands resulting from wildfires; *HS-6.14 Coordination with Cities* wherein the County shall coordinate with cities to develop cohesive fire safety plans with overlapping coverage; and *HS-6.15 Coordination of Fuel Hazards on Public Lands* wherein the County shall work with local and Federal agencies to support efforts to reduce fuel related hazards on public lands.

PROJECT IMPACT ANALYSIS

a) – d) ***No Impact:*** The Project site is not in the State Responsibility Area. The Project does not impair the implementation of any adopted emergency response plan or evacuation plan. The proposed Project would allow a renewable energy facility (solar generation) on a ±475.5-acre parcel in the AE-40 (Exclusive Agriculture–40 acre minimum) Zone. The proposed Project does not propose any other new developments or any changes to the existing surrounding land uses. According to the State Responsibility Area (SRA) Viewer, the proposed Project site is not located in the SRA. The Project does not impair the implementation of any adopted emergency response plan or evacuation plan. The Project will not exacerbate wildfire risks or expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, due to slope, prevailing winds, and other factors. The Project will not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. The Project will not expose people or structures to significant risks, including downslope or downstream flooding, or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, the proposed Project will result in no impact related to this resource. As it is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones high fire, the Project will not exacerbate wildfire risks or expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, due to slope, prevailing winds, and other factors. The Project will not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. The Project will not expose people or structures to significant risks, including downslope or downstream flooding, or landslides, as a result of runoff, post-fire slope instability, or drainage changes. The facility shall comply with all applicable 2022 California Building Code and CFC standards (such as lighting, fire extinguishers, access/egress, etc.). The applicant shall install a Knox Box (key box) as required by the Tulare County Fire Department. Conditions of approval are included. All new construction would require the submittal of plans for fire department review, and would be required to meet construction methods in accordance with Chapter 7A of the 2022 California Building Code. Therefore, there will be no impact to the Wildfires resource.

21.	**MANDATORY FINDINGS OF SIGNIFICANCE**				
		SIGNIFICANT IMPACT	**LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**	**LESS THAN SIGNIFICANT IMPACT**	**NO IMPACT**
a)	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐

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

The following analysis is based on the information provided in the analyses provided in Checklist Items 1 through 20 and the technical documents provided in Attachments A through H of this IS/MND.

PROJECT IMPACT ANALYSIS

The analysis conducted in this Mitigated Negative Declaration results in a determination that the Project will have a less than significant effect on the local environment. The Project includes developing an approximately 475 acre site into a solar energy generation facility.

a) Less Than Significant Impact With Mitigation: The potential for impacts to biological and cultural resources from the construction and operation of the proposed Project will be less than significant with the incorporation of the **Mitigation Measures CUL-1** through **CUL -5** as contained in Item 5 Cultural Resources. The analysis contained in Item 4 Biological Resources concludes that this resource has the potential to be impacted and has included **Mitigation Measures BIO-1** through **BIO-12**. Accordingly, the proposed Project will involve no potential for significant impacts due to degradation of the quality of the environment, substantial reductions in the habitat of a fish or wildlife species, causing a fish or wildlife population to drop below self-sustaining levels, threatening to eliminate a plant or animal community, reduction in the number or restriction of the range of a rare or endangered plant or animal or elimination of important examples of the major periods of California history or prehistory. As such, the impact will be less than significant for biological resources and less than significant with mitigation for cultural and tribal cultural resources.

b) Less Than Significant Impact: Projects considered in a cumulative analysis include those that would be constructed concurrently with the Project and those that would be in operation at the same time as the Project. The cumulative projects considered in this analysis are limited to projects that would result in similar impacts to the Project due to their potential to collectively contribute to significant cumulative impacts, as well as other development projects that would be located in the vicinity of the Project. There are no similar projects under consideration or construction located in and around a 10-mile radius of the Project site. The nearest approved solar facility is located approximately 8 miles northeast of the project, is less than 18 acres in area, and is located within and surrounded by agriculturally productive lands. As such, its physical distance and location would not contribute to a cumulative impact.

Tulare County staff have determined that there are no projects that could have the potential to contribute to cumulative impacts. The Project was determined to have no impacts to Energy, Land Use and Planning, Mineral Resources, Population and Housing, Recreation and Wildfire. Therefore, the Project will not result in considerable impacts in combination with the other similar renewable energy projects (solar energy projects). The following environmental impacts were determined to be less than significant and did not require mitigation: Aesthetics, Agricultural Resources, Air Quality, Biological, Geology and Soils, Greenhouse Gases, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Public Services, Transportation, and Utilities and Service Systems. As discussed earlier, the Project will result in less than significant impacts to cultural resources (including Tribal Cultural Resources) and noise with incorporation/implementation of mitigation measures identified earlier.

The majority of the potential impacts resulting from the Project will be short term, temporary, and intermittent occurring during Project construction-related activities; and with negligible impacts resulting from Project operation as discussed in the earlier environmental analysis. Because construction-related impacts are of a short duration, temporary, intermittent, and localized, they would have to occur concurrently and in proximity of other projects in order to have a cumulative impact. Construction-related impacts (which are primarily associated with air quality, biological resources, noise, and traffic) are not likely to act cumulatively with any other projects in a manner that would result in significant impacts.

This Project (as described in Items 3 and 8) will have short-term impacts with regard to air quality and greenhouse gases during construction-related activities. However, the emissions associated with this Project are minor as compared to

baseline emissions levels as quantified in Items 3 and 8, and are not considered cumulatively considerable pursuant to guidelines from the Air District. (See Impact 3(c) for a complete discussion of the Project's cumulative air quality impacts.) The proposed Project would implement the applicable SJVAPCD Best Performance Standards; therefore, reducing the Project specific and cumulative impacts to a less than significant level. In addition, the Project would lead to cumulatively beneficial reductions in GHG emissions.

As discussed in Item 4, the Project site consists of disturbed agricultural land. Operation of the Project would not result in the loss of sensitive biological habitats or sensitive cultural resources as seen in Attachments B and C. As such, when combined cumulatively with other projects, the Project would not result in impacts to biological or cultural resources that are cumulatively considerable.

Impacts to aesthetics from the proposed Project would be minimal. As noted earlier, the general vicinity of the Project's location consists of a regional viewshed that already includes agriculturally productive lands, agricultural-related structures (e.g., barns, equipment sheds, wells, etc.), scattered rural residences, an electrical substation, rural streets, and seasonally used irrigation ditches. Areas of the related projects are not identified as having sensitive or significant visual resources. However, most of the projects would not be visible in the same viewshed. Further, while the solar projects may change the visual character of the area, in general they do not obstruct scenic vistas. Although the Project may contribute to visual impacts on the area due to the addition of more solar facility uses in an agricultural area, the contribution of the Project would not be cumulatively considerable because the visual quality of the overall area is low and other currently operational solar facilities are scattered throughout out the County. Thus, the proposed Project plus the related solar projects would result in less than significant cumulative impact to Aesthetics.

No archaeological or historic resources were located on the project site. With implementation of the cultural resource mitigation measures called for in Impact 5, the Project would not cause cumulatively considerable cultural resource impacts because impacts to unknown cultural resources would be minimized.

The Project also will not cause cumulatively considerable geology and soils impacts, as Project-specific impacts will be less than significant and will not be anticipated to combine with impacts caused by the cumulative projects identified by the County.

The Project will not cause cumulatively considerable impacts related to hazards and hazardous materials. While small amounts of hazardous materials may be used or transported as a result of the Project, these activities will occur in compliance with applicable laws and regulations, and any impacts resulting from use, transport, disposal, or accident or upset conditions will be localized in nature. As a result, any Project-level impacts will not have the potential to contribute to hazards associated with other projects because these impacts would only occur intermittently, if at all. Similarly, the Project will not contribute to cumulative wildland fire-related impacts because it is located in an area with low wildland fire risk,

The Project will not cause cumulatively considerable hydrology and water quality-related impacts. The Project applicant will be required to implement a SWPPP to reduce impacts and will not cause discharge to any surface or groundwater sources or alter the course of any stream or river. Nor will the Project change runoff patterns in the area.

The Project will not cause cumulatively considerable land use and planning impacts. The Project is consistent with all applicable land use planning policies, and will be required to implement a reclamation plan at the end of the Project's life. The reclamation plan will ensure that the Project does not result in effects on neighboring land uses. As a result, the Project's impacts will not be cumulatively significant.

The Project also will not combine noise-related impacts with that of other projects to cause cumulatively considerable impacts. Construction-related activities will cause short-term, temporary, and intermittent increases in noise in the area, and could occur at the same time as other noise-causing events in the area. However, no other concurrent construction project are anticipated to occur adjacent to or near the Project site, and operational noise will be minimal. As a result, the Project is not anticipated to considerably contribute to cumulative noise impacts during construction or operation.

Because the Project will not cause population growth in the area, it will not lead to construction of new or expanded police or fire protection facilities, or interfere with operation of existing facilities, or create the need for new recreation facilities. The Project will also be designed to minimize fire hazard, and existing emergency response in the area is adequate.

Cumulative projects in the area are similarly situated, in that they will not lead to the new for new or expanded police or fire protection facilities or recreation facilities or cause substantial fire hazards. As a result, the Project will not cause cumulatively considerable public services or recreation impacts.

Finally, the Project will not cause cumulatively considerable traffic, transportation, or utilities-related impacts. The Project's trip generation projections during both construction and operation are low and will not cause substantial increases in traffic on surrounding roads. In addition, Project construction is not anticipated to overlap with other construction projects in a way that will cause combining of traffic impacts. Because the Project and cumulative projects would cause very little runoff and a minimal amount of waste, the Project will not cause cumulatively considerable utilities-related impacts.

Each of the cumulative projects considered in this section would be required to comply with project-specific mitigation measures and/or conditions of approval, as well as applicable General Plans, zoning ordinances, laws and policies. The implementation of the identified Project-specific mitigation measures and compliance with applicable codes, compliance with the Tulare County General Plan, identified Best Management Practices, ordinances, laws and other required regulations will reduce the magnitude of any contribution to cumulative impacts to a less than significant level.

On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, requiring that California utilities reach the 33 percent renewable goal by 2020; subsequently, in 2011 the Legislature enacted SB X1-2, codifying this goal. In the last several months, a series of similarly sized solar generation projects have been approved or are being considered in Kings County as well as neighboring counties. As of the date of this document, four such projects have been approved by Kings County, six in Tulare County. The cumulative benefit to the environment of reduced reliance on fossil fuels is consistent with the goals of the State Executive Order.

c) Less Than Significant Impact: The proposed Project will not result in substantial adverse effect on human beings, either directly or indirectly. Mitigation measures are provided to reduce the Project's potential effects on Cultural Resources and Noise to less than significant (see **BIO-1** thorough **BIO-12**, **CUL-1** through **CUL-2**, and **NOI-1** through **NOI-5**). No additional mitigation measures will be required. The reduction of approximately 38,000 tons of GHG emissions provided by the Project's renewable energy (solar) would result in a benefit to the environment, as such, the Project would result in beneficial impacts on human beings. Therefore, implementation of the proposed Project would result in a less than significant impact.

REFERENCES

California Department of Conservation. California Geological Survey (CGS). Regulatory Maps Portal. Website http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps. Accessed May 2019.

California Department of Conservation. FMMP – Important Farmland Map Categories. ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/ then click on tul16_no.pdf . Accessed May 2019.

California Department of Conservation, Division of Land Resource Protection (DLRP). Farmland Mapping and Monitoring Program (FMMP), California Farmland Conversion Report 2008-2010. Website: https://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2014-2016/field_reports/tul16.pdf. Accessed May 2019.

California Land Conservation Act of 1965 2016 Status Report. December 2016. Pages 38 and 42. Accessed at: https://www.conservation.ca.gov/dlrp/wa/Documents/stats_reports/2016%20LCA%20Status%20Report.pdf Accessed May 2019.

California Department of Conservation, Division of Land Resource Protection. Department of Conservation, Farmland Mapping and Monitoring Program, Table 2012-2014. Table A-44, Part I. http://www.conservation.ca.gov/dlrp/fmmp/Pages/Tulare.aspx. Accessed May 2019.

The California Farmland Conversion Report 2008-2010 can be found at http://www.conservation.ca.gov/dlrp/fmmp/Documents/fmmp/pubs/2008-2010/fcr/FCR%200810%20complete.pdf. Accessed May 2019.

California Department of Conservation, Division of Land Resource Protection, "Williamson Act Status Report (2010)". Page 14. Accessed at: http://www.conservation.ca.gov/dlrp/lca/stats_reports/Pages/index.aspx. Accessed May 2019.

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR). Oil, Gas, and Geothermal Fields in California, 2001. Website: ftp://ftp.consrv.ca.gov/pub/oil/maps/Map_S-1.pdf. Accessed May 2019.

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR). California Department of Conservation, Division of Oil, Gas, and Geothermal Resources Well Finder. Website: http://maps.conservation.ca.gov/doggr/index.html. Accessed May 2019.

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR). Oil and Gas Maps: District 4. Website: https://maps.conservation.ca.gov/. Accessed May 2019.

California Department of Conservation. Office of Mine Reclamation. Website: https://maps.conservation.ca.gov/mol/index.html. Accessed May 2019.

California Department of Forestry and Fire Protection (CAL FIRE). Fire and Resource Assessment Program (FRAP). Fire Hazard Severity Zones in LRA. October 5, 2007. Website: http://frap.fire.ca.gov/webdata/maps/tulare/fhszs_map.54.pdf. Accessed May 2019.

California Department of Forestry and Fire Protection (CAL FIRE). Fire and Resource Assessment Program (FRAP). FRAP Mapping, SRA Viewer. Website: http://www.fire.ca.gov/firepreventionfee/sraviewer_launch. Accessed May 2019.

California Department of Toxic Substances Control (DTSC). *EnviroStor.* Websites: http://www.envirostor.dtsc.ca.gov/public/. Accessed May 2019.

California Department of Toxic Substances Control (DTSC). DTSC's Hazardous Waste and Substances Sites List – Site Cleanup (Cortese List). Websites: https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=Tulare+County%2C+CA. and https://www.envirostor.dtsc.ca.gov/public/map/?global_id=CAL000102751 Accessed May 2019

California Department of Transportation (Caltrans). Transportation Concept Report State Route 190, District 06. October 2015. http://www.dot.ca.gov/d6/planning/tcrs/sr190tcr/sr190_final_october.pdf, accessed May 2019

California Department of Transportation (Caltrans). Guide for the Preparation of Traffic Impact Studies. December 2002. http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf, accessed May 2019.

California Department of Water Resources. Bulletin 118 – Update 2003. October 2003. Website: http://www.water.ca.gov/groundwater/bulletin118.cfm. Accessed March 2, 2017.

California Department of Water Resources. Bulletin 118 – Interim Update 2016, California's Groundwater, Working Toward Sustainability. December 22, 2016. Website: http://www.water.ca.gov/groundwater/bulletin118/docs/Bulletin_118_Interim_Update_2016.pdf. Accessed May 2019.

California Department of Water Resources. Groundwater Basin Boundary Assessment Tool. Website: https://gis.water.ca.gov/app/bbat/. Accessed March 2, 2017.

California Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98. Websites accessed May 2019.

Federal Emergency Management Agency FIRM Panel 06107CL300E June 16, 2009. Accessed May 2019 at: https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-119.24027126756349,36.137670866489145,-119.15718716111826,36.17232174266695.

Five County Seismic Safety Element for Fresno, Kings, Madera, Mariposa & Tulare Counties. 1974.

San Joaquin Valley Unified Air Pollution Control District. Climate Change Action Plan (CCAP). Website accessed May 2019 at: https://www.valleyair.org/Programs/CCAP/CCAP_menu.htm.

San Joaquin Valley Unified Air Pollution Control District. Current District Rules and Regulations. Accessed May 2019 at: http://www.valleyair.org/rules/1ruleslist.htm.

San Joaquin Valley Unified Air Pollution Control District. Draft Policy: CEQA Project Analysis Levels. Accessed in May 2019 at: https://www.valleyair.org/Programs/CCAP/CCAP_menu.htm.

San Joaquin Valley Unified Air Pollution Control District. Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). March 19, 2015. Website: http://www.valleyair.org/transportation/GAMAQI_3-19-15.pdf. Accessed February 6, 2017.

San Joaquin Valley Unified Air Pollution Control District. Small Project Analysis Level (SPAL). June 2012. Website: http://www.valleyair.org/transportation/CEQA%20Rules/GAMAQI-SPAL.PDF. Accessed May 2019.

State Water Resources Control Board. Storm Water Program. http://www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml. Website accessed May 2019.

Tulare County. 2017 Tulare County Annual Crop and Livestock Report, September 2018. https://agcomm.co.tulare.ca.us/ag/index.cfm/standards-and-quarantine/crop-reports1/crop-reports-2011-2020/2017-crop-report/.

Tulare County. Climate Action Plan. August 2012. Website: http://generalplan.co.tulare.ca.us/documents.html. then locate "Climate Action Plan February 2010 Draft" , select "February 2010 Climate Action Plan"

Tulare County. Comprehensive Airport Land Use Plan (CALUP). December 2012. http://www.tularecounty.ca.gov/rma/index.cfm/documents-and-forms/planning-documents/countywide-planning/comprehensive-airport-land-use-plan/tc-calup-adopted-dec-2012/.

Tulare County. General Plan 2030 Update. August 2012. Website accessed May 2019 at: http://generalplan.co.tulare.ca.us/documents.html.

Tulare County. General Plan 2030 Update Background Report. February 2010. Website accessed May 2019 at: http://generalplan.co.tulare.ca.us/documents.html then locate "Background Report February 2010", select "February 2010 Background Report"

Tulare County. General Plan 2030 Update Recirculated Draft Environmental Impact Report (RDEIR). February 2010. Website accessed May 2019 at: http://generalplan.co.tulare.ca.us/documents.html then locate "Recirculated Draft Environmental Impact Report February 2010 Draft", select "Recirculated DEIR"

Tulare County Association of Governments. 2014-2040 Regional Transportation Plan & Sustainable Communities Strategy. June 30, 2014. http://www.tularecog.org/wp-content/uploads/2015/06/Final-2014-Regional-Transportation-Plan-Sustainable-Communities-Strategy-FULL-DOCUMENT.pdf. Accessed May 2019.

Tulare County Farm Bureau. Tulare County Agricultural Facts. October 2018. Accessed May 2019 at: https://www.tulcofb.org/index.php?page=agfacts.

Tulare County Fire Department. Accessed May 2019 at: https://tularecounty.ca.gov/fire/index.cfm/stations-map/

Tulare County Public and Private Airports, California. Website: http://www.tollfreeairline.com/california/tulare.htm. Accessed May 2019.

Tulare County Sheriff's Department. Website: http://www.tularecounty.ca.gov/sheriff/. Accessed May 2019.

United States Department of Agriculture, Forest Service. Sequoia National Forest, Office Addresses. Website: https://www.fs.usda.gov/detail/sequoia/about-forest/offices. Accessed February 21, 2017.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS). Web Soil Survey. Accessed in May 2019 at: https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

United States Department of Transportation, Federal Transit Administration. Construction Noise Handbook, 2006. Websites: http://www.fhwa.dot.gov/environment/noise/constr uction_noise/handbook/handbook09.cfm and http://www.fhwa.dot.gov/environment/noise/construction_noise/special_report/hcn04.cfm#sou. Accessed February 21, 2017.

United States Department of Transportation, Federal Transit Administration. Transit Noise and Vibration Impact Assessment, FTA-VA-90-1003-06; May, 2006. Website: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf. Accessed May 2019.

United States Fish and Wildlife Service. National Wetlands Inventory. Website: http://www.fws.gov/wetlands/Data/Mapper.html. Accessed May 2019.

United States Geological Survey. National Water Information System (NWIS) Mapper: Website: http://maps.waterdata.usgs.gov/mapper/index.html. Accessed May 2019.

United States Geological Survey, 1989. The Severity of an Earthquake. Website: http://pubs.usgs.gov/gip/earthq4/severitygip.html. Accessed May 2019.

ATTACHMENT A

Emissions Report and Prioritization Screening

Project Comparison

Project Component	Deer Creek	Foxtail	% of Deer Creek
Project Size (acres)	378	475	126
energy production (MW)	70	55	79
# of panels (1,000)	200	108	54
Construction (months)	12	18	150
Construction (days)	264	396	150

Project Construction Criteria Pollutant Emissions (Tons Per Year)

		ROG	NOx	CO	SO2	Total PM10	Total PM2.5	Exhaust PM10	Exhaust PM2.5
Deer Creek	unmitigated	0.6798	7.6107	5.2542	0.0130	0.6877	0.4354	0.3178	0.2951
	mitigated	0.2192	4.6099	6.2030	0.0130	0.3948	0.1650	0.0249	0.0246
Foxtail	unmitigated	1.0197	11.4161	7.8813	0.0195	1.0316	0.6531	0.4767	0.4427
	mitigated	0.3288	6.9149	9.3045	0.0195	0.5922	0.2475	0.0374	0.0369

Project Operation Criteria Pollutant Emissions (Tons Per Year)

		ROG	NOx	CO	SO2	Total PM10	Total PM2.5
Deer Creek	unmitigated	0.0025	0.0075	0.0400	0.0001	0.0105	0.00286
	mitigated	0.0025	0.0075	0.0400	0.0001	0.0105	0.0029
Foxtail	unmitigated	0.0038	0.0112	0.0600	0.0002	0.0158	0.0043
	mitigated	0.0038	0.0112	0.0600	0.0002	0.0158	0.0043

DPM (PM10 Exhaust) Emissions Rate

		equip. hrs.	tons/yr	lb/yr	lb/hr
Deer Creek	unmitigated	26,219	0.3178	635.6000	0.0242
	mitigated	26,219	0.0249	49.8000	0.0019
Foxtail	unmitigated	33,036	0.4767	953.4000	0.0364
	mitigated	33,036	0.0374	74.7000	0.0028

GHG (CO2e) Emissions (metric tons)

		Construction	Operation
Deer Creek	unmitigated	1172.3859	9.8341
	mitigated	1172.3850	9.8341
Foxtail	unmitigated	1758.5789	14.7512
	mitigated	1758.5775	14.7512

Appendix A
Air Quality

ESA

Deer Creek Solar

Tulare County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	378.00	User Defined Unit	378.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project site is 378 acres

Construction Phase - Assumed construction phasing is based on information provided by the applicant.

Off-road Equipment - Construction equipment provided by applicant.

Off-road Equipment -

Off-road Equipment - Construction equipment provided by applicant. Other Construction equipment is "Carts/ATVs".

Off-road Equipment - Just concrete truck deliveries

Off-road Equipment - Construction equipment provided by applicant.

Off-road Equipment - Construction equipment provided by applicant.Other Construction equipment is "Carts/ATVs". Tractors are assuned to support post drivers.

Off-road Equipment - Construction equipment provided by applicant. Other Construction equipment is "Carts/ATVs"

Off-road Equipment - Construction equipment provided by applicant.

Off-road Equipment - Just water tankers

Trips and VMT - Assumed work and haul trips based on information provided by the applicant. Aggregate trips based on 28,000 cy estimate.

Grading - Note that acres graded are default calculations based on equipment list and grading days. Refer to page 9 of CalEEMod Apx A.

Vehicle Trips - Assumes 5 workers to clean solar panels over 40 days 4 time per year or 1600 annual trips.

Construction Off-road Equipment Mitigation - Tier 4 engines as mitigation

Fleet Mix - Removed buses, MH, and HHD trucks from fleet mix for workers commuting to site and allocated those pecentages as LDT1 (pick up trucks).

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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	16.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstructionPhase	NumDays	6,200.00	60.00
tblConstructionPhase	NumDays	6,200.00	152.00
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tblFleetMix	LDT1	0.03	0.12
tblFleetMix	MH	7.6100e-004	0.00
tblFleetMix	OBUS	1.8220e-003	0.00
tblFleetMix	SBUS	1.1320e-003	0.00
tblFleetMix	UBUS	1.3110e-003	0.00
tblLandUse	LotAcreage	0.00	378.00
tblOffRoadEquipment	HorsePower	367.00	80.00
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tblOffRoadEquipment	UsageHours	8.00	7.00
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tblTripsAndVMT	HaulingTripNumber	0.00	50.00
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tblTripsAndVMT	HaulingTripNumber	0.00	3,506.00
tblTripsAndVMT	HaulingTripNumber	0.00	472.00
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tblTripsAndVMT	WorkerTripLength	16.80	17.50

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tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	17.50
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.02

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.6798	7.6107	5.2542	0.0130	0.3699	0.3178	0.6877	0.1403	0.2951	0.4354	0.0000	1,166.4868	1,166.4868	0.2360	0.0000	1,172.3859
Maximum	**0.6798**	**7.6107**	**5.2542**	**0.0130**	**0.3699**	**0.3178**	**0.6877**	**0.1403**	**0.2951**	**0.4354**	**0.0000**	**1,166.4868**	**1,166.4868**	**0.2360**	**0.0000**	**1,172.3859**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2192	4.6099	6.2030	0.0130	0.3699	0.0249	0.3948	0.1403	0.0246	0.1650	0.0000	1,166.4859	1,166.4859	0.2360	0.0000	1,172.3850
Maximum	**0.2192**	**4.6099**	**6.2030**	**0.0130**	**0.3699**	**0.0249**	**0.3948**	**0.1403**	**0.0246**	**0.1650**	**0.0000**	**1,166.4859**	**1,166.4859**	**0.2360**	**0.0000**	**1,172.3850**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**67.75**	**39.43**	**-18.06**	**0.00**	**0.00**	**92.16**	**42.59**	**0.00**	**91.65**	**62.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2020	3-31-2020	4.9475	2.6854
2	4-1-2020	6-30-2020	2.1450	1.3340
3	7-1-2020	9-30-2020	1.1265	0.7464
		Highest	4.9475	2.6854

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.3000e-004	3.0000e-005	3.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.7500e-003	6.7500e-003	2.0000e-005	0.0000	7.2000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.1800e-003	7.4600e-003	0.0365	1.1000e-004	0.0104	9.0000e-005	0.0105	2.7700e-003	9.0000e-005	2.8500e-003	0.0000	9.8196	9.8196	2.9000e-004	0.0000	9.8269
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5100e-003**	**7.4900e-003**	**0.0400**	**1.1000e-004**	**0.0104**	**1.0000e-004**	**0.0105**	**2.7700e-003**	**1.0000e-004**	**2.8600e-003**	**0.0000**	**9.8263**	**9.8263**	**3.1000e-004**	**0.0000**	**9.8341**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.3000e-004	3.0000e-005	3.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.7500e-003	6.7500e-003	2.0000e-005	0.0000	7.2000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.1800e-003	7.4600e-003	0.0365	1.1000e-004	0.0104	9.0000e-005	0.0105	2.7700e-003	9.0000e-005	2.8500e-003	0.0000	9.8196	9.8196	2.9000e-004	0.0000	9.8269
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5100e-003**	**7.4900e-003**	**0.0400**	**1.1000e-004**	**0.0104**	**1.0000e-004**	**0.0105**	**2.7700e-003**	**1.0000e-004**	**2.8600e-003**	**0.0000**	**9.8263**	**9.8263**	**3.1000e-004**	**0.0000**	**9.8341**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Staging	Site Preparation	1/1/2020	1/7/2020	5	5	
2	Site Grading	Grading	1/8/2020	4/7/2020	5	65	
3	Water Deliveries	Trenching	1/8/2020	10/27/2020	5	210	
4	Concrete Deliveries	Trenching	1/8/2020	10/27/2020	5	210	
5	Aggregate Delivery	Trenching	1/8/2020	4/7/2020	5	65	
6	Access Road Construction	Paving	1/8/2020	4/7/2020	5	65	
7	Collection Line Construction	Building Construction	1/14/2020	3/18/2020	5	47	
8	Substation Construction	Building Construction	1/14/2020	4/6/2020	5	60	
9	Solar Array Installation	Building Construction	1/21/2020	8/19/2020	5	152	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Staging	Forklifts	1	7.00	89	0.20
Staging	Generator Sets	2	10.00	84	0.74
Staging	Graders	1	7.00	187	0.41
Staging	Off-Highway Trucks	6	5.00	402	0.38
Staging	Other Construction Equipment	8	5.00	172	0.42
Staging	Rubber Tired Dozers	0	8.00	247	0.40
Staging	Scrapers	1	7.00	80	0.38

Staging	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Staging	Trenchers	1	7.00	78	0.50
Water Deliveries	Aerial Lifts	0	1.00	63	0.31
Concrete Deliveries	Aerial Lifts	0	1.00	63	0.31
Site Grading	Excavators	0	8.00	158	0.38
Site Grading	Graders	1	7.00	187	0.41
Site Grading	Off-Highway Trucks	3	2.00	402	0.38
Site Grading	Other Construction Equipment	3	2.00	172	0.42
Site Grading	Rollers	1	7.00	80	0.38
Site Grading	Rubber Tired Dozers	1	7.00	247	0.40
Site Grading	Scrapers	1	7.00	367	0.48
Site Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Access Road Construction	Graders	1	8.00	187	0.41
Access Road Construction	Pavers	0	8.00	130	0.42
Access Road Construction	Paving Equipment	0	8.00	132	0.36
Access Road Construction	Rollers	1	7.00	80	0.38
Access Road Construction	Rubber Tired Dozers	1	7.00	247	0.40
Aggregate Delivery	Aerial Lifts	0	1.00	63	0.31
Collection Line Construction	Aerial Lifts	2	2.00	63	0.31
Collection Line Construction	Cranes	1	4.00	231	0.29
Collection Line Construction	Forklifts	1	7.00	89	0.20
Collection Line Construction	Generator Sets	1	1.00	84	0.74
Collection Line Construction	Off-Highway Trucks	2	2.00	402	0.38
Collection Line Construction	Other Construction Equipment	1	2.00	172	0.42
Collection Line Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Collection Line Construction	Welders	0	8.00	46	0.45
Substation Construction	Aerial Lifts	2	4.00	63	0.31

Substation Construction	Cranes	1	2.00	231	0.29
Substation Construction	Forklifts	1	4.00	89	0.20
Substation Construction	Generator Sets	0	8.00	84	0.74
Substation Construction	Off-Highway Trucks	1	2.00	402	0.38
Substation Construction	Other Construction Equipment	1	2.00	172	0.42
Substation Construction	Tractors/Loaders/Backhoes	4	4.00	97	0.37
Substation Construction	Trenchers	4	2.00	78	0.50
Substation Construction	Welders	0	8.00	46	0.45
Solar Array Installation	Cranes	0	7.00	231	0.29
Solar Array Installation	Forklifts	5	4.00	89	0.20
Solar Array Installation	Generator Sets	4	4.00	84	0.74
Solar Array Installation	Off-Highway Tractors	7	4.00	124	0.44
Solar Array Installation	Off-Highway Trucks	4	2.00	402	0.38
Solar Array Installation	Other Construction Equipment	8	3.00	172	0.42
Solar Array Installation	Skid Steer Loaders	2	4.00	65	0.37
Solar Array Installation	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Solar Array Installation	Trenchers	4	1.00	78	0.50
Solar Array Installation	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Staging	21	25.00	0.00	72.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Water Deliveries	0	0.00	40.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Deliveries	0	0.00	0.00	50.00	16.80	6.60	15.00	LD_Mix	HDT_Mix	HHDT
Site Grading	11	50.00	0.00	72.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Access Road Construction	3	23.00	0.00	0.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Aggregate Delivery	0	0.00	0.00	3,506.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Collection Line Construction	11	23.00	0.00	472.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Substation Construction	14	23.00	0.00	0.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Solar Array Installation	35	23.00	0.00	2,288.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Staging - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4800e-003	0.0000	3.4800e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0184	0.1839	0.1326	2.8000e-004		9.0100e-003	9.0100e-003		8.3800e-003	8.3800e-003	0.0000	24.5267	24.5267	6.9900e-003	0.0000	24.7014
Total	**0.0184**	**0.1839**	**0.1326**	**2.8000e-004**	**3.4800e-003**	**9.0100e-003**	**0.0125**	**3.8000e-004**	**8.3800e-003**	**8.7600e-003**	**0.0000**	**24.5267**	**24.5267**	**6.9900e-003**	**0.0000**	**24.7014**

3.2 Staging - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0101	1.6700e-003	3.0000e-005	6.1000e-004	3.0000e-005	6.5000e-004	1.7000e-004	3.0000e-005	2.0000e-004	0.0000	2.7337	2.7337	9.0000e-005	0.0000	2.7360
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.0000e-004	3.0000e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6851	0.6851	2.0000e-005	0.0000	0.6856
Total	**7.1000e-004**	**0.0104**	**4.6700e-003**	**4.0000e-005**	**1.4200e-003**	**4.0000e-005**	**1.4600e-003**	**3.8000e-004**	**3.0000e-005**	**4.2000e-004**	**0.0000**	**3.4188**	**3.4188**	**1.1000e-004**	**0.0000**	**3.4216**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4800e-003	0.0000	3.4800e-003	3.8000e-004	0.0000	3.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.4900e-003	0.0955	0.1752	2.8000e-004		4.5000e-004	4.5000e-004		4.5000e-004	4.5000e-004	0.0000	24.5267	24.5267	6.9900e-003	0.0000	24.7014
Total	**4.4900e-003**	**0.0955**	**0.1752**	**2.8000e-004**	**3.4800e-003**	**4.5000e-004**	**3.9300e-003**	**3.8000e-004**	**4.5000e-004**	**8.3000e-004**	**0.0000**	**24.5267**	**24.5267**	**6.9900e-003**	**0.0000**	**24.7014**

3.2 Staging - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0101	1.6700e-003	3.0000e-005	6.1000e-004	3.0000e-005	6.5000e-004	1.7000e-004	3.0000e-005	2.0000e-004	0.0000	2.7337	2.7337	9.0000e-005	0.0000	2.7360
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.0000e-004	3.0000e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6851	0.6851	2.0000e-005	0.0000	0.6856
Total	**7.1000e-004**	**0.0104**	**4.6700e-003**	**4.0000e-005**	**1.4200e-003**	**4.0000e-005**	**1.4600e-003**	**3.8000e-004**	**3.0000e-005**	**4.2000e-004**	**0.0000**	**3.4188**	**3.4188**	**1.1000e-004**	**0.0000**	**3.4216**

3.3 Site Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2165	0.0000	0.2165	0.0990	0.0000	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1126	1.2372	0.6932	1.5000e-003		0.0545	0.0545		0.0501	0.0501	0.0000	131.5994	131.5994	0.0426	0.0000	132.6634
Total	**0.1126**	**1.2372**	**0.6932**	**1.5000e-003**	**0.2165**	**0.0545**	**0.2710**	**0.0990**	**0.0501**	**0.1491**	**0.0000**	**131.5994**	**131.5994**	**0.0426**	**0.0000**	**132.6634**

3.3 Site Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0101	1.6700e-003	3.0000e-005	6.1000e-004	3.0000e-005	6.5000e-004	1.7000e-004	3.0000e-005	2.0000e-004	0.0000	2.7337	2.7337	9.0000e-005	0.0000	2.7360
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	7.8600e-003	0.0780	2.0000e-004	0.0210	1.4000e-004	0.0211	5.5700e-003	1.3000e-004	5.7000e-003	0.0000	17.8122	17.8122	5.4000e-004	0.0000	17.8256
Total	**0.0113**	**0.0179**	**0.0797**	**2.3000e-004**	**0.0216**	**1.7000e-004**	**0.0218**	**5.7400e-003**	**1.6000e-004**	**5.9000e-003**	**0.0000**	**20.5459**	**20.5459**	**6.3000e-004**	**0.0000**	**20.5616**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2165	0.0000	0.2165	0.0990	0.0000	0.0990	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0249	0.4501	0.8672	1.5000e-003		2.4500e-003	2.4500e-003		2.4500e-003	2.4500e-003	0.0000	131.5992	131.5992	0.0426	0.0000	132.6633
Total	**0.0249**	**0.4501**	**0.8672**	**1.5000e-003**	**0.2165**	**2.4500e-003**	**0.2189**	**0.0990**	**2.4500e-003**	**0.1015**	**0.0000**	**131.5992**	**131.5992**	**0.0426**	**0.0000**	**132.6633**

3.3 Site Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0101	1.6700e-003	3.0000e-005	6.1000e-004	3.0000e-005	6.5000e-004	1.7000e-004	3.0000e-005	2.0000e-004	0.0000	2.7337	2.7337	9.0000e-005	0.0000	2.7360
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	7.8600e-003	0.0780	2.0000e-004	0.0210	1.4000e-004	0.0211	5.5700e-003	1.3000e-004	5.7000e-003	0.0000	17.8122	17.8122	5.4000e-004	0.0000	17.8256
Total	**0.0113**	**0.0179**	**0.0797**	**2.3000e-004**	**0.0216**	**1.7000e-004**	**0.0218**	**5.7400e-003**	**1.6000e-004**	**5.9000e-003**	**0.0000**	**20.5459**	**20.5459**	**6.3000e-004**	**0.0000**	**20.5616**

3.4 Water Deliveries - 2020

Unmitigated Construction On-Site

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

3.4 Water Deliveries - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0157	0.4910	0.0972	1.1000e-003	0.0251	2.6400e-003	0.0278	7.2600e-003	2.5200e-003	9.7800e-003	0.0000	104.3454	104.3454	5.1400e-003	0.0000	104.4740
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0157**	**0.4910**	**0.0972**	**1.1000e-003**	**0.0251**	**2.6400e-003**	**0.0278**	**7.2600e-003**	**2.5200e-003**	**9.7800e-003**	**0.0000**	**104.3454**	**104.3454**	**5.1400e-003**	**0.0000**	**104.4740**

Mitigated Construction On-Site

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

3.4 Water Deliveries - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0157	0.4910	0.0972	1.1000e-003	0.0251	2.6400e-003	0.0278	7.2600e-003	2.5200e-003	9.7800e-003	0.0000	104.3454	104.3454	5.1400e-003	0.0000	104.4740
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0157**	**0.4910**	**0.0972**	**1.1000e-003**	**0.0251**	**2.6400e-003**	**0.0278**	**7.2600e-003**	**2.5200e-003**	**9.7800e-003**	**0.0000**	**104.3454**	**104.3454**	**5.1400e-003**	**0.0000**	**104.4740**

3.5 Concrete Deliveries - 2020

Unmitigated Construction On-Site

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

3.5 Concrete Deliveries - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	5.8700e-003	9.4000e-004	2.0000e-005	3.2000e-004	2.0000e-005	3.4000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.4969	1.4969	6.0000e-005	0.0000	1.4984
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6000e-004**	**5.8700e-003**	**9.4000e-004**	**2.0000e-005**	**3.2000e-004**	**2.0000e-005**	**3.4000e-004**	**9.0000e-005**	**2.0000e-005**	**1.1000e-004**	**0.0000**	**1.4969**	**1.4969**	**6.0000e-005**	**0.0000**	**1.4984**

Mitigated Construction On-Site

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

3.5 Concrete Deliveries - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6000e-004	5.8700e-003	9.4000e-004	2.0000e-005	3.2000e-004	2.0000e-005	3.4000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.4969	1.4969	6.0000e-005	0.0000	1.4984
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6000e-004**	**5.8700e-003**	**9.4000e-004**	**2.0000e-005**	**3.2000e-004**	**2.0000e-005**	**3.4000e-004**	**9.0000e-005**	**2.0000e-005**	**1.1000e-004**	**0.0000**	**1.4969**	**1.4969**	**6.0000e-005**	**0.0000**	**1.4984**

3.6 Aggregate Delivery - 2020

Unmitigated Construction On-Site

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

3.6 Aggregate Delivery - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0141	0.4898	0.0812	1.4000e-003	0.0299	1.6900e-003	0.0316	8.2200e-003	1.6200e-003	9.8400e-003	0.0000	133.1151	133.1151	4.4700e-003	0.0000	133.2269
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0141**	**0.4898**	**0.0812**	**1.4000e-003**	**0.0299**	**1.6900e-003**	**0.0316**	**8.2200e-003**	**1.6200e-003**	**9.8400e-003**	**0.0000**	**133.1151**	**133.1151**	**4.4700e-003**	**0.0000**	**133.2269**

Mitigated Construction On-Site

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

3.6 Aggregate Delivery - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0141	0.4898	0.0812	1.4000e-003	0.0299	1.6900e-003	0.0316	8.2200e-003	1.6200e-003	9.8400e-003	0.0000	133.1151	133.1151	4.4700e-003	0.0000	133.2269
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0141**	**0.4898**	**0.0812**	**1.4000e-003**	**0.0299**	**1.6900e-003**	**0.0316**	**8.2200e-003**	**1.6200e-003**	**9.8400e-003**	**0.0000**	**133.1151**	**133.1151**	**4.4700e-003**	**0.0000**	**133.2269**

3.7 Access Road Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0521	0.5870	0.2303	5.3000e-004		0.0261	0.0261		0.0240	0.0240	0.0000	46.8479	46.8479	0.0152	0.0000	47.2267
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0521**	**0.5870**	**0.2303**	**5.3000e-004**		**0.0261**	**0.0261**		**0.0240**	**0.0240**	**0.0000**	**46.8479**	**46.8479**	**0.0152**	**0.0000**	**47.2267**

3.7 Access Road Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0500e-003	3.6200e-003	0.0359	9.0000e-005	9.6400e-003	6.0000e-005	9.7100e-003	2.5600e-003	6.0000e-005	2.6200e-003	0.0000	8.1936	8.1936	2.5000e-004	0.0000	8.1998
Total	**5.0500e-003**	**3.6200e-003**	**0.0359**	**9.0000e-005**	**9.6400e-003**	**6.0000e-005**	**9.7100e-003**	**2.5600e-003**	**6.0000e-005**	**2.6200e-003**	**0.0000**	**8.1936**	**8.1936**	**2.5000e-004**	**0.0000**	**8.1998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1600e-003	0.1532	0.2995	5.3000e-004		8.7000e-004	8.7000e-004		8.7000e-004	8.7000e-004	0.0000	46.8478	46.8478	0.0152	0.0000	47.2266
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.1600e-003**	**0.1532**	**0.2995**	**5.3000e-004**		**8.7000e-004**	**8.7000e-004**		**8.7000e-004**	**8.7000e-004**	**0.0000**	**46.8478**	**46.8478**	**0.0152**	**0.0000**	**47.2266**

3.7 Access Road Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0500e-003	3.6200e-003	0.0359	9.0000e-005	9.6400e-003	6.0000e-005	9.7100e-003	2.5600e-003	6.0000e-005	2.6200e-003	0.0000	8.1936	8.1936	2.5000e-004	0.0000	8.1998
Total	**5.0500e-003**	**3.6200e-003**	**0.0359**	**9.0000e-005**	**9.6400e-003**	**6.0000e-005**	**9.7100e-003**	**2.5600e-003**	**6.0000e-005**	**2.6200e-003**	**0.0000**	**8.1936**	**8.1936**	**2.5000e-004**	**0.0000**	**8.1998**

3.8 Collection Line Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0335	0.3427	0.2825	5.2000e-004		0.0179	0.0179		0.0165	0.0165	0.0000	45.7639	45.7639	0.0144	0.0000	46.1228
Total	**0.0335**	**0.3427**	**0.2825**	**5.2000e-004**		**0.0179**	**0.0179**		**0.0165**	**0.0165**	**0.0000**	**45.7639**	**45.7639**	**0.0144**	**0.0000**	**46.1228**

3.8 Collection Line Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9000e-003	0.0659	0.0109	1.9000e-004	4.0300e-003	2.3000e-004	4.2500e-003	1.1100e-003	2.2000e-004	1.3200e-003	0.0000	17.9208	17.9208	6.0000e-004	0.0000	17.9359
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	2.6200e-003	0.0260	7.0000e-005	6.9700e-003	5.0000e-005	7.0200e-003	1.8500e-003	4.0000e-005	1.9000e-003	0.0000	5.9246	5.9246	1.8000e-004	0.0000	5.9291
Total	**5.5500e-003**	**0.0686**	**0.0369**	**2.6000e-004**	**0.0110**	**2.8000e-004**	**0.0113**	**2.9600e-003**	**2.6000e-004**	**3.2200e-003**	**0.0000**	**23.8454**	**23.8454**	**7.8000e-004**	**0.0000**	**23.8649**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.9400e-003	0.1902	0.3414	5.2000e-004		1.2700e-003	1.2700e-003		1.2700e-003	1.2700e-003	0.0000	45.7638	45.7638	0.0144	0.0000	46.1228
Total	**9.9400e-003**	**0.1902**	**0.3414**	**5.2000e-004**		**1.2700e-003**	**1.2700e-003**		**1.2700e-003**	**1.2700e-003**	**0.0000**	**45.7638**	**45.7638**	**0.0144**	**0.0000**	**46.1228**

3.8 Collection Line Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9000e-003	0.0659	0.0109	1.9000e-004	4.0300e-003	2.3000e-004	4.2500e-003	1.1100e-003	2.2000e-004	1.3200e-003	0.0000	17.9208	17.9208	6.0000e-004	0.0000	17.9359
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	2.6200e-003	0.0260	7.0000e-005	6.9700e-003	5.0000e-005	7.0200e-003	1.8500e-003	4.0000e-005	1.9000e-003	0.0000	5.9246	5.9246	1.8000e-004	0.0000	5.9291
Total	**5.5500e-003**	**0.0686**	**0.0369**	**2.6000e-004**	**0.0110**	**2.8000e-004**	**0.0113**	**2.9600e-003**	**2.6000e-004**	**3.2200e-003**	**0.0000**	**23.8454**	**23.8454**	**7.8000e-004**	**0.0000**	**23.8649**

3.9 Substation Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0406	0.4061	0.3418	5.5000e-004		0.0239	0.0239		0.0220	0.0220	0.0000	48.2814	48.2814	0.0156	0.0000	48.6718
Total	**0.0406**	**0.4061**	**0.3418**	**5.5000e-004**		**0.0239**	**0.0239**		**0.0220**	**0.0220**	**0.0000**	**48.2814**	**48.2814**	**0.0156**	**0.0000**	**48.6718**

3.9 Substation Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6600e-003	3.3400e-003	0.0331	8.0000e-005	8.9000e-003	6.0000e-005	8.9600e-003	2.3700e-003	5.0000e-005	2.4200e-003	0.0000	7.5634	7.5634	2.3000e-004	0.0000	7.5690
Total	**4.6600e-003**	**3.3400e-003**	**0.0331**	**8.0000e-005**	**8.9000e-003**	**6.0000e-005**	**8.9600e-003**	**2.3700e-003**	**5.0000e-005**	**2.4200e-003**	**0.0000**	**7.5634**	**7.5634**	**2.3000e-004**	**0.0000**	**7.5690**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0111	0.2219	0.3835	5.5000e-004		1.9700e-003	1.9700e-003		1.9700e-003	1.9700e-003	0.0000	48.2814	48.2814	0.0156	0.0000	48.6717
Total	**0.0111**	**0.2219**	**0.3835**	**5.5000e-004**		**1.9700e-003**	**1.9700e-003**		**1.9700e-003**	**1.9700e-003**	**0.0000**	**48.2814**	**48.2814**	**0.0156**	**0.0000**	**48.6717**

3.9 Substation Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6600e-003	3.3400e-003	0.0331	8.0000e-005	8.9000e-003	6.0000e-005	8.9600e-003	2.3700e-003	5.0000e-005	2.4200e-003	0.0000	7.5634	7.5634	2.3000e-004	0.0000	7.5690
Total	**4.6600e-003**	**3.3400e-003**	**0.0331**	**8.0000e-005**	**8.9000e-003**	**6.0000e-005**	**8.9600e-003**	**2.3700e-003**	**5.0000e-005**	**2.4200e-003**	**0.0000**	**7.5634**	**7.5634**	**2.3000e-004**	**0.0000**	**7.5690**

3.10 Solar Array Installation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3444	3.4352	3.0673	5.2700e-003		0.1802	0.1802		0.1682	0.1682	0.0000	460.9123	460.9123	0.1261	0.0000	464.0653
Total	**0.3444**	**3.4352**	**3.0673**	**5.2700e-003**		**0.1802**	**0.1802**		**0.1682**	**0.1682**	**0.0000**	**460.9123**	**460.9123**	**0.1261**	**0.0000**	**464.0653**

3.10 Solar Array Installation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2000e-003	0.3196	0.0530	9.1000e-004	0.0195	1.1000e-003	0.0206	5.3700e-003	1.0600e-003	6.4200e-003	0.0000	86.8703	86.8703	2.9200e-003	0.0000	86.9433
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	8.4600e-003	0.0839	2.1000e-004	0.0226	1.5000e-004	0.0227	5.9900e-003	1.4000e-004	6.1300e-003	0.0000	19.1605	19.1605	5.8000e-004	0.0000	19.1749
Total	**0.0210**	**0.3281**	**0.1369**	**1.1200e-003**	**0.0421**	**1.2500e-003**	**0.0433**	**0.0114**	**1.2000e-003**	**0.0126**	**0.0000**	**106.0308**	**106.0308**	**3.5000e-003**	**0.0000**	**106.1182**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0815	2.0804	3.6298	5.2700e-003		0.0117	0.0117		0.0117	0.0117	0.0000	460.9117	460.9117	0.1261	0.0000	464.0647
Total	**0.0815**	**2.0804**	**3.6298**	**5.2700e-003**		**0.0117**	**0.0117**		**0.0117**	**0.0117**	**0.0000**	**460.9117**	**460.9117**	**0.1261**	**0.0000**	**464.0647**

3.10 Solar Array Installation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.2000e-003	0.3196	0.0530	9.1000e-004	0.0195	1.1000e-003	0.0206	5.3700e-003	1.0600e-003	6.4200e-003	0.0000	86.8703	86.8703	2.9200e-003	0.0000	86.9433
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0118	8.4600e-003	0.0839	2.1000e-004	0.0226	1.5000e-004	0.0227	5.9900e-003	1.4000e-004	6.1300e-003	0.0000	19.1605	19.1605	5.8000e-004	0.0000	19.1749
Total	**0.0210**	**0.3281**	**0.1369**	**1.1200e-003**	**0.0421**	**1.2500e-003**	**0.0433**	**0.0114**	**1.2000e-003**	**0.0126**	**0.0000**	**106.0308**	**106.0308**	**3.5000e-003**	**0.0000**	**106.1182**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1800e-003	7.4600e-003	0.0365	1.1000e-004	0.0104	9.0000e-005	0.0105	2.7700e-003	9.0000e-005	2.8500e-003	0.0000	9.8196	9.8196	2.9000e-004	0.0000	9.8269
Unmitigated	2.1800e-003	7.4600e-003	0.0365	1.1000e-004	0.0104	9.0000e-005	0.0105	2.7700e-003	9.0000e-005	2.8500e-003	0.0000	9.8196	9.8196	2.9000e-004	0.0000	9.8269

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	6.12	0.00	0.00	27,862	27,862
Total	6.12	0.00	0.00	27,862	27,862

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	17.50	0.00	0.00	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.516727	0.116777	0.172440	0.141085	0.022326	0.005434	0.020884	0.000000	0.000000	0.000000	0.004327	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.3000e-004	3.0000e-005	3.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.7500e-003	6.7500e-003	2.0000e-005	0.0000	7.2000e-003
Unmitigated	3.3000e-004	3.0000e-005	3.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.7500e-003	6.7500e-003	2.0000e-005	0.0000	7.2000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.3000e-004	3.0000e-005	3.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.7500e-003	6.7500e-003	2.0000e-005	0.0000	7.2000e-003
Total	**3.3000e-004**	**3.0000e-005**	**3.4900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.7500e-003**	**6.7500e-003**	**2.0000e-005**	**0.0000**	**7.2000e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.3000e-004	3.0000e-005	3.4900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	6.7500e-003	6.7500e-003	2.0000e-005	0.0000	7.2000e-003
Total	**3.3000e-004**	**3.0000e-005**	**3.4900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**6.7500e-003**	**6.7500e-003**	**2.0000e-005**	**0.0000**	**7.2000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Deer Creek Solar

Tulare County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	378.00	User Defined Unit	378.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	51
Climate Zone	7			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Project site is 378 acres

Construction Phase - Assumed construction phasing is based on information provided by the applicant.

Off-road Equipment - Construction equipment provided by applicant.

Off-road Equipment -

Off-road Equipment - Construction equipment provided by applicant. Other Construction equipment is "Carts/ATVs".

Off-road Equipment - Just concrete truck deliveries

Off-road Equipment - Construction equipment provided by applicant.

Off-road Equipment - Construction equipment provided by applicant.Other Construction equipment is "Carts/ATVs". Tractors are assuned to support post drivers.

Off-road Equipment - Construction equipment provided by applicant. Other Construction equipment is "Carts/ATVs"

Off-road Equipment - Construction equipment provided by applicant.

Off-road Equipment - Just water tankers

Trips and VMT - Assumed work and haul trips based on information provided by the applicant. Aggregate trips based on 28,000 cy estimate.

Grading - Note that acres graded are default calculations based on equipment list and grading days. Refer to page 9 of CalEEMod Apx A.

Vehicle Trips - Assumes 5 workers to clean solar panels over 40 days 4 time per year or 1600 annual trips.

Construction Off-road Equipment Mitigation - Tier 4 engines as mitigation

Fleet Mix - Removed buses, MH, and HHD trucks from fleet mix for workers commuting to site and allocated those pecentages as LDT1 (pick up trucks).

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	16.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	21.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
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tblConstructionPhase	NumDays	240.00	5.00
tblConstructionPhase	NumDays	620.00	65.00
tblConstructionPhase	NumDays	440.00	65.00
tblConstructionPhase	NumDays	6,200.00	47.00
tblConstructionPhase	NumDays	6,200.00	60.00
tblConstructionPhase	NumDays	6,200.00	152.00
tblFleetMix	HHD	0.08	0.00

tblFleetMix	LDT1	0.03	0.12
tblFleetMix	MH	7.6100e-004	0.00
tblFleetMix	OBUS	1.8220e-003	0.00
tblFleetMix	SBUS	1.1320e-003	0.00
tblFleetMix	UBUS	1.3110e-003	0.00
tblLandUse	LotAcreage	0.00	378.00
tblOffRoadEquipment	HorsePower	367.00	80.00
tblOffRoadEquipment	LoadFactor	0.48	0.38
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	5.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	2.00
tblOffRoadEquipment	UsageHours	8.00	7.00
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tblOffRoadEquipment	UsageHours	8.00	4.00
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tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	1.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	HaulingTripLength	20.00	15.00
tblTripsAndVMT	HaulingTripNumber	0.00	72.00
tblTripsAndVMT	HaulingTripNumber	0.00	50.00
tblTripsAndVMT	HaulingTripNumber	0.00	72.00
tblTripsAndVMT	HaulingTripNumber	0.00	3,506.00
tblTripsAndVMT	HaulingTripNumber	0.00	472.00
tblTripsAndVMT	HaulingTripNumber	0.00	2,288.00
tblTripsAndVMT	VendorTripNumber	0.00	40.00
tblTripsAndVMT	WorkerTripLength	16.80	17.50
tblTripsAndVMT	WorkerTripLength	16.80	17.50
tblTripsAndVMT	WorkerTripLength	16.80	17.50

tblTripsAndVMT	WorkerTripLength	16.80	17.50
tblTripsAndVMT	WorkerTripLength	16.80	17.50
tblTripsAndVMT	WorkerTripLength	16.80	17.50
tblTripsAndVMT	WorkerTripNumber	53.00	25.00
tblTripsAndVMT	WorkerTripNumber	28.00	50.00
tblTripsAndVMT	WorkerTripNumber	8.00	23.00
tblTripsAndVMT	WorkerTripNumber	0.00	23.00
tblTripsAndVMT	WorkerTripNumber	0.00	23.00
tblTripsAndVMT	WorkerTripNumber	0.00	23.00
tblVehicleTrips	CC_TL	6.60	0.00
tblVehicleTrips	CNW_TL	6.60	0.00
tblVehicleTrips	CW_TL	14.70	17.50
tblVehicleTrips	CW_TTP	0.00	100.00
tblVehicleTrips	PR_TP	0.00	100.00
tblVehicleTrips	WD_TR	0.00	0.02

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	14.2190	156.5771	104.6919	0.2664	10.2027	6.5216	16.7243	4.0043	6.0370	10.0413	0.0000	26,435.7715	26,435.7715	5.3603	0.0000	26,569.7795
Maximum	**14.2190**	**156.5771**	**104.6919**	**0.2664**	**10.2027**	**6.5216**	**16.7243**	**4.0043**	**6.0370**	**10.0413**	**0.0000**	**26,435.7715**	**26,435.7715**	**5.3603**	**0.0000**	**26,569.7795**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.7535	88.5538	123.4711	0.2664	10.2027	0.4897	10.6924	4.0043	0.4843	4.4886	0.0000	26,435.7715	26,435.7715	5.3603	0.0000	26,569.7795
Maximum	**4.7535**	**88.5538**	**123.4711**	**0.2664**	**10.2027**	**0.4897**	**10.6924**	**4.0043**	**0.4843**	**4.4886**	**0.0000**	**26,435.7715**	**26,435.7715**	**5.3603**	**0.0000**	**26,569.7795**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**66.57**	**43.44**	**-17.94**	**0.00**	**0.00**	**92.49**	**36.07**	**0.00**	**91.98**	**55.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.6200e-003	3.6000e-004	0.0387	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0827	0.0827	2.2000e-004		0.0882
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0205	0.0542	0.3278	9.0000e-004	0.0822	7.0000e-004	0.0829	0.0219	6.5000e-004	0.0226		90.4573	90.4573	2.7000e-003		90.5248
Total	**0.0241**	**0.0546**	**0.3665**	**9.0000e-004**	**0.0822**	**8.4000e-004**	**0.0830**	**0.0219**	**7.9000e-004**	**0.0227**		**90.5401**	**90.5401**	**2.9200e-003**	**0.0000**	**90.6130**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.6200e-003	3.6000e-004	0.0387	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0827	0.0827	2.2000e-004		0.0882
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0205	0.0542	0.3278	9.0000e-004	0.0822	7.0000e-004	0.0829	0.0219	6.5000e-004	0.0226		90.4573	90.4573	2.7000e-003		90.5248
Total	**0.0241**	**0.0546**	**0.3665**	**9.0000e-004**	**0.0822**	**8.4000e-004**	**0.0830**	**0.0219**	**7.9000e-004**	**0.0227**		**90.5401**	**90.5401**	**2.9200e-003**	**0.0000**	**90.6130**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Staging	Site Preparation	1/1/2020	1/7/2020	5	5	
2	Site Grading	Grading	1/8/2020	4/7/2020	5	65	
3	Water Deliveries	Trenching	1/8/2020	10/27/2020	5	210	
4	Concrete Deliveries	Trenching	1/8/2020	10/27/2020	5	210	
5	Aggregate Delivery	Trenching	1/8/2020	4/7/2020	5	65	
6	Access Road Construction	Paving	1/8/2020	4/7/2020	5	65	
7	Collection Line Construction	Building Construction	1/14/2020	3/18/2020	5	47	
8	Substation Construction	Building Construction	1/14/2020	4/6/2020	5	60	
9	Solar Array Installation	Building Construction	1/21/2020	8/19/2020	5	152	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Staging	Forklifts	1	7.00	89	0.20

Staging	Generator Sets	2	10.00	84	0.74
Staging	Graders	1	7.00	187	0.41
Staging	Off-Highway Trucks	6	5.00	402	0.38
Staging	Other Construction Equipment	8	5.00	172	0.42
Staging	Rubber Tired Dozers	0	8.00	247	0.40
Staging	Scrapers	1	7.00	80	0.38
Staging	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Staging	Trenchers	1	7.00	78	0.50
Water Deliveries	Aerial Lifts	0	1.00	63	0.31
Concrete Deliveries	Aerial Lifts	0	1.00	63	0.31
Site Grading	Excavators	0	8.00	158	0.38
Site Grading	Graders	1	7.00	187	0.41
Site Grading	Off-Highway Trucks	3	2.00	402	0.38
Site Grading	Other Construction Equipment	3	2.00	172	0.42
Site Grading	Rollers	1	7.00	80	0.38
Site Grading	Rubber Tired Dozers	1	7.00	247	0.40
Site Grading	Scrapers	1	7.00	367	0.48
Site Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Access Road Construction	Graders	1	8.00	187	0.41
Access Road Construction	Pavers	0	8.00	130	0.42
Access Road Construction	Paving Equipment	0	8.00	132	0.36
Access Road Construction	Rollers	1	7.00	80	0.38
Access Road Construction	Rubber Tired Dozers	1	7.00	247	0.40
Aggregate Delivery	Aerial Lifts	0	1.00	63	0.31
Collection Line Construction	Aerial Lifts	2	2.00	63	0.31
Collection Line Construction	Cranes	1	4.00	231	0.29
Collection Line Construction	Forklifts	1	7.00	89	0.20

Collection Line Construction	Generator Sets	1	1.00	84	0.74
Collection Line Construction	Off-Highway Trucks	2	2.00	402	0.38
Collection Line Construction	Other Construction Equipment	1	2.00	172	0.42
Collection Line Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Collection Line Construction	Welders	0	8.00	46	0.45
Substation Construction	Aerial Lifts	2	4.00	63	0.31
Substation Construction	Cranes	1	2.00	231	0.29
Substation Construction	Forklifts	1	4.00	89	0.20
Substation Construction	Generator Sets	0	8.00	84	0.74
Substation Construction	Off-Highway Trucks	1	2.00	402	0.38
Substation Construction	Other Construction Equipment	1	2.00	172	0.42
Substation Construction	Tractors/Loaders/Backhoes	4	4.00	97	0.37
Substation Construction	Trenchers	4	2.00	78	0.50
Substation Construction	Welders	0	8.00	46	0.45
Solar Array Installation	Cranes	0	7.00	231	0.29
Solar Array Installation	Forklifts	5	4.00	89	0.20
Solar Array Installation	Generator Sets	4	4.00	84	0.74
Solar Array Installation	Off-Highway Tractors	7	4.00	124	0.44
Solar Array Installation	Off-Highway Trucks	4	2.00	402	0.38
Solar Array Installation	Other Construction Equipment	8	3.00	172	0.42
Solar Array Installation	Skid Steer Loaders	2	4.00	65	0.37
Solar Array Installation	Tractors/Loaders/Backhoes	1	1.00	97	0.37
Solar Array Installation	Trenchers	4	1.00	78	0.50
Solar Array Installation	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Staging	21	25.00	0.00	72.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Water Deliveries	0	0.00	40.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Concrete Deliveries	0	0.00	0.00	50.00	16.80	6.60	15.00	LD_Mix	HDT_Mix	HHDT
Site Grading	11	50.00	0.00	72.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Access Road Construction	3	23.00	0.00	0.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Aggregate Delivery	0	0.00	0.00	3,506.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Collection Line Construction	11	23.00	0.00	472.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Substation Construction	14	23.00	0.00	0.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT
Solar Array Installation	35	23.00	0.00	2,288.00	17.50	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

3.2 Staging - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3914	0.0000	1.3914	0.1502	0.0000	0.1502			0.0000			0.0000
Off-Road	7.3762	73.5689	53.0532	0.1120		3.6027	3.6027		3.3538	3.3538		10,814.4241	10,814.4241	3.0816		10,891.4629
Total	**7.3762**	**73.5689**	**53.0532**	**0.1120**	**1.3914**	**3.6027**	**4.9941**	**0.1502**	**3.3538**	**3.5040**		**10,814.4241**	**10,814.4241**	**3.0816**		**10,891.4629**

3.2 Staging - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1143	3.9205	0.6376	0.0116	0.2523	0.0138	0.2660	0.0692	0.0132	0.0824		1,215.9423	1,215.9423	0.0389		1,216.9135
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1860	0.1125	1.4236	3.3300e-003	0.3326	2.1600e-003	0.3348	0.0882	1.9900e-003	0.0902		331.6545	331.6545	0.0102		331.9104
Total	**0.3003**	**4.0330**	**2.0612**	**0.0149**	**0.5849**	**0.0159**	**0.6008**	**0.1574**	**0.0152**	**0.1726**		**1,547.5968**	**1,547.5968**	**0.0491**		**1,548.8238**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3914	0.0000	1.3914	0.1502	0.0000	0.1502			0.0000			0.0000
Off-Road	1.7956	38.1865	70.0851	0.1120		0.1784	0.1784		0.1784	0.1784	0.0000	10,814.4241	10,814.4241	3.0816		10,891.4629
Total	**1.7956**	**38.1865**	**70.0851**	**0.1120**	**1.3914**	**0.1784**	**1.5698**	**0.1502**	**0.1784**	**0.3286**	**0.0000**	**10,814.4241**	**10,814.4241**	**3.0816**		**10,891.4629**

3.2 Staging - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1143	3.9205	0.6376	0.0116	0.2523	0.0138	0.2660	0.0692	0.0132	0.0824		1,215.9423	1,215.9423	0.0389		1,216.9135
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1860	0.1125	1.4236	3.3300e-003	0.3326	2.1600e-003	0.3348	0.0882	1.9900e-003	0.0902		331.6545	331.6545	0.0102		331.9104
Total	**0.3003**	**4.0330**	**2.0612**	**0.0149**	**0.5849**	**0.0159**	**0.6008**	**0.1574**	**0.0152**	**0.1726**		**1,547.5968**	**1,547.5968**	**0.0491**		**1,548.8238**

3.3 Site Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6612	0.0000	6.6612	3.0467	0.0000	3.0467			0.0000			0.0000
Off-Road	3.4630	38.0680	21.3297	0.0461		1.6763	1.6763		1.5422	1.5422		4,463.4919	4,463.4919	1.4436		4,499.5815
Total	**3.4630**	**38.0680**	**21.3297**	**0.0461**	**6.6612**	**1.6763**	**8.3375**	**3.0467**	**1.5422**	**4.5889**		**4,463.4919**	**4,463.4919**	**1.4436**		**4,499.5815**

3.3 Site Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.7900e-003	0.3016	0.0491	8.9000e-004	0.0194	1.0600e-003	0.0205	5.3200e-003	1.0100e-003	6.3400e-003		93.5340	93.5340	2.9900e-003		93.6087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3721	0.2250	2.8473	6.6700e-003	0.6652	4.3200e-003	0.6696	0.1764	3.9800e-003	0.1804		663.3090	663.3090	0.0205		663.8208
Total	**0.3809**	**0.5266**	**2.8963**	**7.5600e-003**	**0.6846**	**5.3800e-003**	**0.6900**	**0.1817**	**4.9900e-003**	**0.1867**		**756.8430**	**756.8430**	**0.0235**		**757.4295**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6612	0.0000	6.6612	3.0467	0.0000	3.0467			0.0000			0.0000
Off-Road	0.7656	13.8505	26.6833	0.0461		0.0754	0.0754		0.0754	0.0754	0.0000	4,463.4919	4,463.4919	1.4436		4,499.5815
Total	**0.7656**	**13.8505**	**26.6833**	**0.0461**	**6.6612**	**0.0754**	**6.7366**	**3.0467**	**0.0754**	**3.1222**	**0.0000**	**4,463.4919**	**4,463.4919**	**1.4436**		**4,499.5815**

3.3 Site Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	8.7900e-003	0.3016	0.0491	8.9000e-004	0.0194	1.0600e-003	0.0205	5.3200e-003	1.0100e-003	6.3400e-003		93.5340	93.5340	2.9900e-003		93.6087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3721	0.2250	2.8473	6.6700e-003	0.6652	4.3200e-003	0.6696	0.1764	3.9800e-003	0.1804		663.3090	663.3090	0.0205		663.8208
Total	**0.3809**	**0.5266**	**2.8963**	**7.5600e-003**	**0.6846**	**5.3800e-003**	**0.6900**	**0.1817**	**4.9900e-003**	**0.1867**		**756.8430**	**756.8430**	**0.0235**		**757.4295**

3.4 Water Deliveries - 2020

Unmitigated Construction On-Site

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

3.4 Water Deliveries - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1470	4.6124	0.8606	0.0106	0.2452	0.0249	0.2701	0.0706	0.0238	0.0944		1,110.6761	1,110.6761	0.0514		1,111.9617
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1470**	**4.6124**	**0.8606**	**0.0106**	**0.2452**	**0.0249**	**0.2701**	**0.0706**	**0.0238**	**0.0944**		**1,110.6761**	**1,110.6761**	**0.0514**		**1,111.9617**

Mitigated Construction On-Site

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

3.4 Water Deliveries - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1470	4.6124	0.8606	0.0106	0.2452	0.0249	0.2701	0.0706	0.0238	0.0944		1,110.6761	1,110.6761	0.0514		1,111.9617
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1470**	**4.6124**	**0.8606**	**0.0106**	**0.2452**	**0.0249**	**0.2701**	**0.0706**	**0.0238**	**0.0944**		**1,110.6761**	**1,110.6761**	**0.0514**		**1,111.9617**

3.5 Concrete Deliveries - 2020

Unmitigated Construction On-Site

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

3.5 Concrete Deliveries - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5300e-003	0.0547	8.5000e-003	1.5000e-004	3.1300e-003	1.7000e-004	3.3000e-003	8.6000e-004	1.7000e-004	1.0300e-003		15.8904	15.8904	6.0000e-004		15.9054
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.5300e-003**	**0.0547**	**8.5000e-003**	**1.5000e-004**	**3.1300e-003**	**1.7000e-004**	**3.3000e-003**	**8.6000e-004**	**1.7000e-004**	**1.0300e-003**		**15.8904**	**15.8904**	**6.0000e-004**		**15.9054**

Mitigated Construction On-Site

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

3.5 Concrete Deliveries - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.5300e-003	0.0547	8.5000e-003	1.5000e-004	3.1300e-003	1.7000e-004	3.3000e-003	8.6000e-004	1.7000e-004	1.0300e-003		15.8904	15.8904	6.0000e-004		15.9054
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**1.5300e-003**	**0.0547**	**8.5000e-003**	**1.5000e-004**	**3.1300e-003**	**1.7000e-004**	**3.3000e-003**	**8.6000e-004**	**1.7000e-004**	**1.0300e-003**		**15.8904**	**15.8904**	**6.0000e-004**		**15.9054**

3.6 Aggregate Delivery - 2020

Unmitigated Construction On-Site

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

3.6 Aggregate Delivery - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4280	14.6850	2.3883	0.0434	0.9449	0.0516	0.9965	0.2592	0.0494	0.3085		4,554.5873	4,554.5873	0.1455		4,558.2250
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4280**	**14.6850**	**2.3883**	**0.0434**	**0.9449**	**0.0516**	**0.9965**	**0.2592**	**0.0494**	**0.3085**		**4,554.5873**	**4,554.5873**	**0.1455**		**4,558.2250**

Mitigated Construction On-Site

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

3.6 Aggregate Delivery - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.4280	14.6850	2.3883	0.0434	0.9449	0.0516	0.9965	0.2592	0.0494	0.3085		4,554.5873	4,554.5873	0.1455		4,558.2250
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4280**	**14.6850**	**2.3883**	**0.0434**	**0.9449**	**0.0516**	**0.9965**	**0.2592**	**0.0494**	**0.3085**		**4,554.5873**	**4,554.5873**	**0.1455**		**4,558.2250**

3.7 Access Road Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6025	18.0623	7.0863	0.0164		0.8039	0.8039		0.7396	0.7396		1,588.9515	1,588.9515	0.5139		1,601.7990
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.6025**	**18.0623**	**7.0863**	**0.0164**		**0.8039**	**0.8039**		**0.7396**	**0.7396**		**1,588.9515**	**1,588.9515**	**0.5139**		**1,601.7990**

3.7 Access Road Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1035	1.3097	3.0700e-003	0.3060	1.9900e-003	0.3080	0.0812	1.8300e-003	0.0830		305.1221	305.1221	9.4200e-003		305.3576
Total	**0.1712**	**0.1035**	**1.3097**	**3.0700e-003**	**0.3060**	**1.9900e-003**	**0.3080**	**0.0812**	**1.8300e-003**	**0.0830**		**305.1221**	**305.1221**	**9.4200e-003**		**305.3576**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2818	4.7152	9.2159	0.0164		0.0268	0.0268		0.0268	0.0268	0.0000	1,588.9515	1,588.9515	0.5139		1,601.7990
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2818**	**4.7152**	**9.2159**	**0.0164**		**0.0268**	**0.0268**		**0.0268**	**0.0268**	**0.0000**	**1,588.9515**	**1,588.9515**	**0.5139**		**1,601.7990**

3.7 Access Road Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1035	1.3097	3.0700e-003	0.3060	1.9900e-003	0.3080	0.0812	1.8300e-003	0.0830		305.1221	305.1221	9.4200e-003		305.3576
Total	**0.1712**	**0.1035**	**1.3097**	**3.0700e-003**	**0.3060**	**1.9900e-003**	**0.3080**	**0.0812**	**1.8300e-003**	**0.0830**		**305.1221**	**305.1221**	**9.4200e-003**		**305.3576**

3.8 Collection Line Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4274	14.5849	12.0205	0.0222		0.7611	0.7611		0.7022	0.7022		2,146.6404	2,146.6404	0.6735		2,163.4770
Total	**1.4274**	**14.5849**	**12.0205**	**0.0222**		**0.7611**	**0.7611**		**0.7022**	**0.7022**		**2,146.6404**	**2,146.6404**	**0.6735**		**2,163.4770**

3.8 Collection Line Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0797	2.7341	0.4447	8.0800e-003	0.1759	9.6100e-003	0.1855	0.0483	9.1900e-003	0.0574		847.9976	847.9976	0.0271		848.6749
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1035	1.3097	3.0700e-003	0.3060	1.9900e-003	0.3080	0.0812	1.8300e-003	0.0830		305.1221	305.1221	9.4200e-003		305.3576
Total	**0.2508**	**2.8376**	**1.7544**	**0.0112**	**0.4819**	**0.0116**	**0.4935**	**0.1294**	**0.0110**	**0.1404**		**1,153.1197**	**1,153.1197**	**0.0365**		**1,154.0324**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4229	8.0935	14.5256	0.0222		0.0539	0.0539		0.0539	0.0539	0.0000	2,146.6404	2,146.6404	0.6735		2,163.4770
Total	**0.4229**	**8.0935**	**14.5256**	**0.0222**		**0.0539**	**0.0539**		**0.0539**	**0.0539**	**0.0000**	**2,146.6404**	**2,146.6404**	**0.6735**		**2,163.4770**

3.8 Collection Line Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0797	2.7341	0.4447	8.0800e-003	0.1759	9.6100e-003	0.1855	0.0483	9.1900e-003	0.0574		847.9976	847.9976	0.0271		848.6749
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1035	1.3097	3.0700e-003	0.3060	1.9900e-003	0.3080	0.0812	1.8300e-003	0.0830		305.1221	305.1221	9.4200e-003		305.3576
Total	**0.2508**	**2.8376**	**1.7544**	**0.0112**	**0.4819**	**0.0116**	**0.4935**	**0.1294**	**0.0110**	**0.1404**		**1,153.1197**	**1,153.1197**	**0.0365**		**1,154.0324**

3.9 Substation Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3530	13.5376	11.3920	0.0183		0.7954	0.7954		0.7318	0.7318		1,774.0383	1,774.0383	0.5738		1,788.3823
Total	**1.3530**	**13.5376**	**11.3920**	**0.0183**		**0.7954**	**0.7954**		**0.7318**	**0.7318**		**1,774.0383**	**1,774.0383**	**0.5738**		**1,788.3823**

3.9 Substation Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1035	1.3097	3.0700e-003	0.3060	1.9900e-003	0.3080	0.0812	1.8300e-003	0.0830		305.1221	305.1221	9.4200e-003		305.3576
Total	**0.1712**	**0.1035**	**1.3097**	**3.0700e-003**	**0.3060**	**1.9900e-003**	**0.3080**	**0.0812**	**1.8300e-003**	**0.0830**		**305.1221**	**305.1221**	**9.4200e-003**		**305.3576**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3702	7.3956	12.7822	0.0183		0.0658	0.0658		0.0658	0.0658	0.0000	1,774.0383	1,774.0383	0.5738		1,788.3823
Total	**0.3702**	**7.3956**	**12.7822**	**0.0183**		**0.0658**	**0.0658**		**0.0658**	**0.0658**	**0.0000**	**1,774.0383**	**1,774.0383**	**0.5738**		**1,788.3823**

3.9 Substation Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1035	1.3097	3.0700e-003	0.3060	1.9900e-003	0.3080	0.0812	1.8300e-003	0.0830		305.1221	305.1221	9.4200e-003		305.3576
Total	**0.1712**	**0.1035**	**1.3097**	**3.0700e-003**	**0.3060**	**1.9900e-003**	**0.3080**	**0.0812**	**1.8300e-003**	**0.0830**		**305.1221**	**305.1221**	**9.4200e-003**		**305.3576**

3.10 Solar Array Installation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.5320	45.1993	40.3596	0.0693		2.3709	2.3709		2.2126	2.2126		6,685.1157	6,685.1157	1.8293		6,730.8472
Total	**4.5320**	**45.1993**	**40.3596**	**0.0693**		**2.3709**	**2.3709**		**2.2126**	**2.2126**		**6,685.1157**	**6,685.1157**	**1.8293**		**6,730.8472**

3.10 Solar Array Installation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1194	4.0982	0.6665	0.0121	0.2637	0.0144	0.2781	0.0723	0.0138	0.0861		1,271.0508	1,271.0508	0.0406		1,272.0660
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1035	1.3097	3.0700e-003	0.3060	1.9900e-003	0.3080	0.0812	1.8300e-003	0.0830		305.1221	305.1221	9.4200e-003		305.3576
Total	**0.2906**	**4.2017**	**1.9763**	**0.0152**	**0.5697**	**0.0164**	**0.5861**	**0.1535**	**0.0156**	**0.1691**		**1,576.1729**	**1,576.1729**	**0.0500**		**1,577.4235**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0719	27.3739	47.7602	0.0693		0.1538	0.1538		0.1538	0.1538	0.0000	6,685.1157	6,685.1157	1.8293		6,730.8472
Total	**1.0719**	**27.3739**	**47.7602**	**0.0693**		**0.1538**	**0.1538**		**0.1538**	**0.1538**	**0.0000**	**6,685.1157**	**6,685.1157**	**1.8293**		**6,730.8472**

3.10 Solar Array Installation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1194	4.0982	0.6665	0.0121	0.2637	0.0144	0.2781	0.0723	0.0138	0.0861		1,271.0508	1,271.0508	0.0406		1,272.0660
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1712	0.1035	1.3097	3.0700e-003	0.3060	1.9900e-003	0.3080	0.0812	1.8300e-003	0.0830		305.1221	305.1221	9.4200e-003		305.3576
Total	**0.2906**	**4.2017**	**1.9763**	**0.0152**	**0.5697**	**0.0164**	**0.5861**	**0.1535**	**0.0156**	**0.1691**		**1,576.1729**	**1,576.1729**	**0.0500**		**1,577.4235**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0205	0.0542	0.3278	9.0000e-004	0.0822	7.0000e-004	0.0829	0.0219	6.5000e-004	0.0226		90.4573	90.4573	2.7000e-003		90.5248
Unmitigated	0.0205	0.0542	0.3278	9.0000e-004	0.0822	7.0000e-004	0.0829	0.0219	6.5000e-004	0.0226		90.4573	90.4573	2.7000e-003		90.5248

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	6.12	0.00	0.00	27,862	27,862
Total	6.12	0.00	0.00	27,862	27,862

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	17.50	0.00	0.00	100.00	0.00	0.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.516727	0.116777	0.172440	0.141085	0.022326	0.005434	0.020884	0.000000	0.000000	0.000000	0.004327	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.6200e-003	3.6000e-004	0.0387	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0827	0.0827	2.2000e-004		0.0882
Unmitigated	3.6200e-003	3.6000e-004	0.0387	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0827	0.0827	2.2000e-004		0.0882

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.6200e-003	3.6000e-004	0.0387	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0827	0.0827	2.2000e-004		0.0882
Total	**3.6200e-003**	**3.6000e-004**	**0.0387**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0827**	**0.0827**	**2.2000e-004**		**0.0882**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	3.6200e-003	3.6000e-004	0.0387	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004		0.0827	0.0827	2.2000e-004		0.0882
Total	**3.6200e-003**	**3.6000e-004**	**0.0387**	**0.0000**		**1.4000e-004**	**1.4000e-004**		**1.4000e-004**	**1.4000e-004**		**0.0827**	**0.0827**	**2.2000e-004**		**0.0882**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Name | **Prioritization Calculator**

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in grey areas.		
Author or updater	Stan Armstrong	*Last Update*	August 30, 2018
Facility: **ID#:** **Project #:** **Unit and Process#**	Deer Creek Solar Project - Unmitigated		

Operating Hours hr/yr	2,080.00		

Receptor Proximity and Proximity Factors		**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**
0< R<100	**1.000**	8.04E+02	5.02E+00	0.00E+00	8.04E+02
100≤R<250	**0.250**	2.01E+02	1.26E+00	0.00E+00	2.01E+02
250≤R<500	**0.040**	3.22E+01	2.01E-01	0.00E+00	3.22E+01
500≤R<1000	**0.011**	8.85E+00	5.52E-02	0.00E+00	8.85E+00
1000≤R<1500	**0.003**	2.41E+00	1.51E-02	0.00E+00	2.41E+00
1500≤R<2000	**0.002**	1.61E+00	1.00E-02	0.00E+00	1.61E+00
2000<R	**0.001**	8.04E-01	5.02E-03	0.00E+00	8.04E-01

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

0

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	3.48E+02	6.07E-01	1.67E-01	8.04E+02	5.02E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**8.04E+02**	**5.02E+00**	**0.00E+00**

Name

Prioritization Calculator

Applicability	Use to provide a Prioritization score based on the emission potency method. Entries required in yellow areas, output in grey areas.		
Author or updater	Stan Armstrong	*Last Update*	August 30, 2018
Facility: **ID#:** **Project #:** **Unit and Process#**	Deer Creek Solar Project - Mitigated		

Operating Hours hr/yr		2,080.00			
Receptor Proximity and Proximity Factors		**Cancer Score**	**Chronic Score**	**Acute Score**	**Max Score**
0< R<100	**1.000**	7.30E+01	4.56E-01	0.00E+00	7.30E+01
100≤R<250	**0.250**	1.82E+01	1.14E-01	0.00E+00	1.82E+01
250≤R<500	**0.040**	2.92E+00	1.82E-02	0.00E+00	2.92E+00
500≤R<1000	**0.011**	8.03E-01	5.01E-03	0.00E+00	8.03E-01
1000≤R<1500	**0.003**	2.19E-01	1.37E-03	0.00E+00	2.19E-01
1500≤R<2000	**0.002**	1.46E-01	9.12E-04	0.00E+00	1.46E-01
2000<R	**0.001**	7.30E-02	4.56E-04	0.00E+00	7.30E-02

Receptor proximity is in meters. Priortization scores are calculated by multiplying the total scores summed below by the proximity factors. Record the Max score for your receptor distance. If the substance list for the unit is longer than the number of rows here or if there are multiple processes use additional worksheets and sum the totals of the Max Scores.

0

Enter the unit's CAS# of the substances emitted and their amounts.

Prioritzation score for each substance generated below. Totals on last row.

Substance	**CAS#**	**Annual Emissions (lbs/yr)**	**Maximum Hourly (lbs/hr)**	**Average Hourly (lbs/hr)**	**Cancer**	**Chronic**	**Acute**
Diesel engine exhaust, particulate matter (Diesel PM)	**9901**	3.16E+01	4.54E-02	1.52E-02	7.30E+01	4.56E-01	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				0.00E+00	0.00E+00	0.00E+00	0.00E+00
				Totals	**7.30E+01**	**4.56E-01**	**0.00E+00**

Displaced Greenhouse Gas Emissions

Parameter	Value	Source/Notes
Deer Creek Solar generational capacity, MW	70	
Total hours per year	8,760	
Operational time, %	23.3%	Annual average solar radiation hours per day per year (5.6hrs)
Operational hours per year	2,044	
Operational life of facilities, years	35	

Parameter	Value	Source/Notes
Coal heat rate, Btu/kWh	10,080	https://www.eia.gov/tools/faqs/faq.cfm?id=667&t=3
Natural gas heat rate, Btu/kWh	10,408	https://www.eia.gov/tools/faqs/faq.cfm?id=667&t=3
Assumed heat rate, Btu/kWh	10,080	Minimum value of coal and natural gas heat rates (conservative)
Coal heat content, MMBtu/ton	20.16	https://www.eia.gov/tools/faqs/faq.cfm?id=72&t=2

California Power Mix

Fuel	Percent	Source/Notes
Natural gas	44%	http://www.energy.ca.gov/almanac/electricity_data/system_power/2014_total_system_power.html
Coal	6%	http://www.energy.ca.gov/almanac/electricity_data/system_power/2014_total_system_power.html
Other	50%	http://www.energy.ca.gov/almanac/electricity_data/system_power/2014_total_system_power.html

Emission Factors	CO2	CH4	N2O	Source/Notes
Natural gas, lb/MMBtu	110	N/A	N/A	AP-42 Section 3.1, Stationary Gas Turbines
Coal, lb/ton	6,040	0.04	0.03	AP-42 Section 1.1, Bituminous and Subbituminous Coal Combustion

Parameter	Deer Creek Solar
Power generated, MWh per year	143,080
Power generated, kWh per year	143,080,000
Fuel equivalent, Btu/year	1,442,246,400,000
Fuel equivalent, MMBtu/year	1,442,246.40
Natural gas equivalent, MMBtu/year	634,588.42
Coal equivalent, MMBtu/year	86,534.78
Coal displaced, tons/year	4,292.40
Equivalent CO2 produced from natural gas, tons/year	34,902.36
Equivalent CO2 produced from coal, tons/year	12,963.05
Equivalent CH4 produced from coal, tons/year	0.09
Equivalent N2O produced from coal, tons/year	0.06
Equivalent CO2e produced from natural gas and coal, tons/year	47,886.74
Equivalent CO2e produced from natural gas and coal, metric tons/year	43,442.14
Project construction emissions, metric tons/year	1,172.39
Project operational emissions, metric tons/year	9.83
Project deconstruction emissions, metric tons/year	1,172.39
Project emissions, metric tons/year	2,354.61
Displaced emissions, metric tons/year	41,087.53

ATTACHMENT B

Biological Resources Technical Reports

Rincon Consultants, Inc.
8825 Aero Drive, Suite 120
San Diego, California 92123
760-918-9444

October 20, 2023
Project No: 23-14116

Jessie Fan, ENV SP
Kimley-Horn
660 South Figueroa Street, Suite 2050
Los Angeles, California 90017
Via email: jessie.fan@kimley-horn.com

Subject: Background and Database Review for the Foxtail Hybrid Solar Project Tulare County, California

Dear Ms. Fan:

This biological due diligence report summarizes potential environmental constraints for the Foxtail Hybrid Solar Project, located in unincorporated Tulare County, California. Rincon performed a desktop background review to identify areas with potential biological constraints that may impact the project timeline and/or costs. This report also identifies additional surveys, reporting, permitting, and/or mitigation that may be required during the environmental review process.

Project Location and Setting

Based on aerial imagery, the Project site is located in an agricultural area of Tulare County, south of the community of Visalia (Figure 1). The proposed solar facility and battery energy storage system (BESS) would be located on approximately 463.8 acres of land cornering Road 72 and Avenue 184 in Tulare, California (APN 228-050-020-000). The property is classified as Field and Row Crop by the Tulare County Office of the Assessor. It is surrounded by tilled agricultural land and active agricultural fields.

Report Purpose

This document provides the findings of the background and database review conducted by Rincon Consultants, Inc. (Rincon) for the proposed Foxtail Hybrid Solar Project. The project consists of the development of a solar facility and BESS, and associated infrastructure on approximately 463.8 acres. The report documents existing conditions on all parcels and assesses the potential constraints to development posed by sensitive biological resources based on desktop research and analysis of aerial photos.

Methodology

This report is focused on biological constraints, which is the resource area generally resulting in the highest associated costs and the greatest impact to schedule. Methodologies for our analyses are provided below.

Data Collection and Analysis

Rincon conducted a desktop assessment to evaluate the potential biological constraints within the study area, which is defined as the proposed project boundary with a 500-ft buffer (Figure 2). The assessment consisted of a review of aerial imagery (Google Earth 2023) and of occurrences of special-status plant and wildlife species records within a 5-mile radius of the study area. Rincon evaluated species occurrence records contained within the California Natural Diversity Databases (CNDDB) and Biogeographic Information and Observation System (BIOS) (California Department of Fish and Wildlife [CDFW] 2023a, 2023b) and the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPAC) system (USFWS 2022a). The online Inventory of Rare and Endangered Plants of California (2022) was also queried to obtain comprehensive information regarding State and federally listed plant species, considered to have potential to occur within the Paige U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle and the surrounding eight quadrangles, Taylor Weir, Tulare, Waukena, Remnoy, Goshen, Visalia, Tipton, and Corcoran. We supplemented the results of the database queries with Rincon's professional biological knowledge to develop a list of special-status species with potential to constrain project development, particularly those species with federal and/or state listing status that may require intensive surveys or costly permitting. We also assessed the potential for waters of the U.S. and/or waters of the state to pose permitting constraints on the project, based on a review of the U.S. Geological Survey (USGS) National Hydrography Dataset (USGS 2022a) and USFWS (2022b) National Wetlands Inventory (NWI) Mapper to identify potential riparian/wetland resources in the study area.

Limitations

This Background and Database Review Memorandum has been created in accordance with professionally accepted biological investigation practices. This biological investigation is limited due to no in-person site surveys taking place. None of the information found or conclusions drawn have been reinforced by on-site surveyance; therefore, the findings and opinions conveyed in this report are based on findings solely derived from a review of aerial images, online database sources, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary regarding accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used.

Findings

Vegetative Communities and Other Land Cover

Based on a review of the aerial imagery (Google Earth Pro 2023), the project site has been historically disturbed for agricultural use. The surrounding area also consists of historically disturbed agricultural land or currently active agricultural land. Additional vegetation present in the project area consists of sparse vegetation occurring in the irrigation canal along the northern site border. Ornamental vegetation surrounds the residence in the northeast part of the parcel, which would remain adjacent to the project site.

Aquatic Features

According to the NWI, the study area contains two freshwater pond habitats. One pond habitat is approximately 0.61-acre and is located onsite, just south of the approximate parcel midpoint. This pond is classified as a human excavated area with semi-permanent flooding, meaning that the surface waters persist throughout the growing season in most years. From the aerial imagery studied, this freshwater pond and/or retention basin was filled with water as of April 2023 and previous years' images show evidence of pond vegetation. The other pond habitat is approximately 0.52-acre and is also classified as a human excavated area with semi-permanent flooding. This feature is located on the boundary of the adjacent parcel, about 75-feet outside of the project area in the southeast part of the buffer. However, aerial images show that the pond was filled in sometime between 2012 and 2014 and is no longer visible on more recent aerials. Along the border of the site running from the northeast corner of the site to the middle of the western border, there is a Riverine habitat or what looks like an irrigation and/or drainage canal. This Riverine habitat is also classified as a human excavated area with semi-permanent flooding. Furthermore, the aerial imagery shows the remnant signature of a potentially historic channel running through the western portion of the site; however, this cannot be confirmed without further review of historical records, which is outside of the current scope.

A formal jurisdictional delineation would be necessary to further identify the extent of jurisdictional features on site that fall under CDFW Fish and Game Code Section 1600, Regional Water Quality Control Board (RWQCB) Porter Cologne Act, and/or the U.S. Army Corps of Engineers purview.

Potential Sensitive Biological Resources

Plant or animal taxa may have "special status" due to vulnerability to habitat change, declining populations, or because they have restricted ranges. Some are listed as threatened or endangered by the USFWS or by the CDFW and are protected by the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). Others have been identified as sensitive or as special status species by the USFWS, the CDFW, or by conservation organizations that track sensitive species, including the California Native Plant Society (CNPS).

This section discusses special status species and sensitive biological resources occurring in the region of project site and preliminarily evaluates the potential for the project site to support sensitive biological resources. For the purpose of this Background and Database Review Memorandum, special status species are those plants and animals listed, proposed for listing, or candidates for listing as Threatened or Endangered by the USFWS under the FESA; those listed or candidates for listing as Rare, Threatened, or Endangered by the CDFW under the CESA or Native Plant Protection Act (NPPA); those identified as Fully Protected (FP) under Sections 3511, 4700, 5050, and 5515 of the CFGC; those recognized as Species of Special Concern (SSC) by the CDFW; and CDFW Special Plants, specifically those occurring on lists 1 through 4 of the CNPS California Rare Plant Ranking (CRPR) system and in the CNPS Inventory of Rare and Endangered Vascular Plants of California occurring of the CNPS CRPR system.

Special Status Plant Species

The study area consists primarily of agricultural fields and associated infrastructure, irrigation canals, unnamed dirt roads and is surrounded by paved roads (Ave 190, Rd 80, Ave 184, and Rd 72). These features are generally unsuitable to support special status plant species. The aerial images from November 2022 and April 2023 (Google Earth 2023) show that the site contains what appears to be fallow agricultural land, however, current conditions may be different. Moreover, the database review

did not find any special-status plant species on the site. See Table 1 for the definitions of Ranks 1 through 4 and Table 2 for the definitions of the Rank Threat Code Extensions (CNPS 2023).

Table 1 California Rare Plant Rank Definitions

Rank	Definition
1A	Presumed Extinct in California
1B	Rare, Threatened, or Endangered in California and elsewhere
2	Rare, Threatened, or Endangered in California, but more common elsewhere
3	Need more information (a Review List)
4	Plants of Limited Distribution (a Watch List)

Table 2 California Rare Plant Rank Threat Code Extensions

Threat Rank	Definitions
.1	Seriously endangered in California (over 78% of occurrences threatened/high degree and immediacy of threat)
.2	Fairly endangered in California (20-78% occurrences threatened)
.3	Not very endangered in California (<20% of occurrences threatened)

Eleven special-status plant species, with CRPR ranks from 1 through 2, have been recorded within the nine USGS 7.5-minute topographic quadrangles examined. One federally endangered (FE) and state endangered (SE) species, California jewelflower (*Caulanthus californicus*) and one federally threatened (FT) and state endangered (SE) species, San Joaquin adobe sunburst (*Pseudobahia peirsonii*) have been recorded in the Tulare quadrangle adjacent to the Paige quadrangle where the site is located. However, special-status plant species are not expected to occur on-site based on the lack of suitable habitat or soils within the study area.

Special Status Wildlife Species

Based on the results of the desktop assessment, seven special-status wildlife species are documented by the CNDDB within five miles of the study area and three species noted by the USFWS IPAC (USFWS 2023) with a potential to occur based on the geographical area and habitats known in the area. Of these 7 species, 5 are not expected to occur due to 1) lack of suitable breeding, foraging, nesting, roosting, wintering, and/or transitory habitat within the study area, and/or 2) a lack of recent occurrence records (> 25 years) documented within five miles of the study area in the CNDDB.

Furthermore, based on data from BIOS, the site contains predicted habitat with high potential for burrowing owls and medium potential for loggerhead shrike.

Three (3) federally, state or CDFW SSC listed bird species, three (3) listed reptile species, two (2) listed invertebrate species, three (3) listed mammals, and one (1) amphibian species have been recorded within the nine USGS 7.5-minute topographic quadrangles examined, but none are expected to occur on site due to lack of suitable habitat (roosting denning, cover), lack of habitat connectivity in the area, and a lack of recent occurrences (>25 years).

One (1) Federally Endangered [FE] and State Endangered [SE] reptile species, blunt-nosed leopard lizard (*Gambelia sila*) was documented based on the nine USGS 7.5-minute topographic quadrangles, and predicted habitat was identified within 5 miles of the study area. This species is a state Fully Protected species under the Fish and Game Code; however, this species is not expected to occur on-site due to the lack of recent occurrences and the lack of suitable habitat directly around the site. The

presence of this species in the larger project vicinity is worth noting, and a field reconnaissance of the site should be completed to fully document a lack of suitable habitat.

Four (4) State Threatened (ST) and/or Special of Special Concern (SSC) bird species, Swainson's hawk (*Buteo swainsoni*; ST), burrowing owl (*Athene cunicularia*; SSC), loggerhead shrike (*Lanius ludovicianus*), and tricolored blackbird (*Agelaius tricolor*; ST, SSC), were determined to have potential to occur within the study area based on a combination of 1) suitable habitat within the study area and greater vicinity of the project site and 2) occurrence records within the last 5 years documented in the CNDDB. Based on the desktop review, suitable nesting habitat for most raptor species (large trees) does not appear to be present on site; however, the large ornamental trees on the immediately adjacent residential parcel have a high potential to support nesting raptors and other nesting birds. A site visit is necessary to fully assess the habitat and determine if additional surveys are recommended.

Recommendations

Based on the results of the desktop assessment, the largest known concern is the Swainson's hawk due to the potential for notable costs associated with protocol-level surveys and associated mitigation. Additionally, the tricolored blackbird and the burrowing owl have potential to occur within the site and additional surveys and mitigation may be required to reduce potential impacts. The following additional studies are recommended to further analyze the proposed project impacts on biological resources:

- Reconnaissance level survey by a biologist to evaluate the on-site conditions of biological resources. Full Biological Resources Technical report to document findings and support CEQA review.
- Formal Jurisdictional Delineation based on the water features found on the NWI.

In addition to a reconnaissance survey and a jurisdictional delineation, the following surveys may be necessary for project implementation:

- Presence/absence burrowing owl, tri-colored blackbird, and/or Swainson's hawk surveys, with expectation that preconstruction surveys for these species and other nesting birds may be required.

If you have any questions regarding this submission or any of the information provided herein, please contact either Andrea Maben (amaben@rinconconsultants.com) or Angie Harbin (aharbin@rinconconsultants.com).

Sincerely,
Rincon Consultants, Inc.





Andrea Maben
Senior Project Manager

Angie Harbin
Director of Natural Resources

Attachments

Attachment A Figures
Attachment B Special-Status Species Potential to Occur Table

References

California Department of Fish and Wildlife (CDFW). 2023. California Natural Diversity Database (CNDDB), Rarefind V. Accessed September 2023.

_____. 2023a. Biogeographic Information and Observation System (BIOS). Available at https://www.wildlife.ca.gov/data/BIOS. Accessed September 2023.

_____. 2023b. Sensitive Natural Communities. Available at: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities.Accessed September 2023.

_____. 2023c. Special Plant and Animal List and State and Federally Listed Endangered and Threatened Animals of California. Available at: https://www.dfg.ca.gov/wildlife/nongame/list.html. Accessed September 2023.

_____. 2023d. State and Federally listed Endangered, Threatened, and Rare Plants of California. Available at https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals. Accessed September 2023.

_____. 2012. Staff Report on Burrowing Owl Mitigation. https://wildlife.ca.gov/Conservation/Survey-Protocols - 377281284-birds. Accessed September 2023.

California Native Plant Society (CNPS).2023. Rare Plant Program - Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.45. Available at http://www.rareplants.cnps.org. Accessed September 2023.

Google Earth Pro. 2023. Earth Version 7.3.4. Available at: https://www.google.com/earth/versions/#download-pro. Accessed September 2023.

Tulare County Office of the Assessor/Clerk-Recorder. 2023. Assessor's Parcel Lookup. Available at: https://tularecounty.ca.gov/assessor/. Accessed September 2023.

United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS). 2021. "Web Soil Survey." https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed September 2023.

United States Fish and Wildlife Service (USFWS). 2023. Information, Planning, and Conservation System (IPAC). https://ecos.fws.gov/ipac. Accessed September 2023.

_____. 2023a. National Wetlands Inventory (NWI). https://www.fws.gov/wetlands/data/mapper.html. Accessed July 2023.

_____. 2023b. Critical Habitat Portal. Available at: https://www.fws.gov/project/critical-habitat. Accessed September 2023.

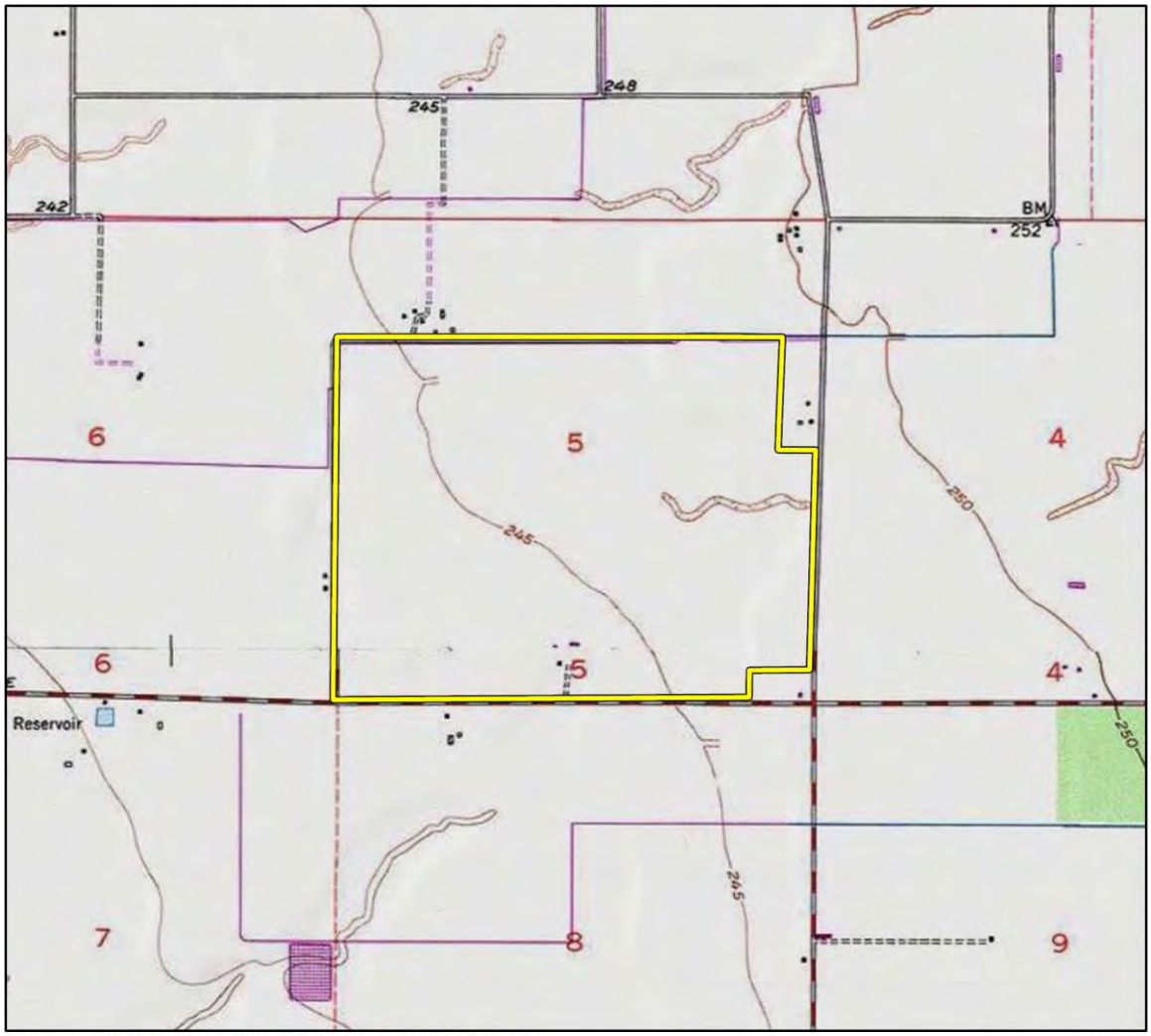
_____. 2023c. Information for Planning and Consultation (IPaC) at: https://ipac.ecosphere.fws.gov/. Accessed September 2023.

U.S. Geological Survey (USGS). 2023. National Hydrography Dataset. Accessed via the National Map. Accessed September 2023.

Attachment A

Figures

Figure 1 Regional Location



Imagery provided by National Geographic Society, Esri and its licensors © 2023. Paige and Taylor Weir Quadrangles. T21S R24E S5. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

23-14815 CR
CR Fig 1 Project Location

Project Location

0 1,000 2,000 Feet

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Figure 2 Study Area



Attachment B

Special-Status Species Potential to Occur Table

Special-Status Species Potential to Occur

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area
Plants and Lichens			
Atriplex cordulata var. *cordulata* heartscale	None/None G3T2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland. Alkaline (sometimes). Elevations: 0-1835ft. (0-560m.) Blooms Apr-Oct.	no potential
Atriplex cordulata var. *erecticaulis* Earlimart orache	None/None G3T1/S1 1B.2	Annual herb. Valley and foothill grassland. Elevations: 130-330ft. (40-100m.) Blooms Aug-Sep(Nov).	no potential
Atriplex depressa brittlescale	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Alkaline, clay. Elevations: 5-1050ft. (1-320m.) Blooms Apr-Oct.	no potential
Atriplex minuscula lesser saltscale	None/None G2/S2 1B.1	Annual herb. Chenopod scrub, playas, valley and foothill grassland. Alkaline, sandy. Elevations: 50-655ft. (15-200m.) Blooms May-Oct.	no potential
Atriplex subtilis subtle orache	None/None G1/S1 1B.2	Annual herb. Valley and foothill grassland. Alkaline. Elevations: 130-330ft. (40-100m.) Blooms (Apr)Jun-Sep(Oct).	no potential
Caulanthus californicus California jewelflower	FE/SE G1/S1 1B.1	Annual herb. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Sandy. Elevations: 200-3280ft. (61-1000m.) Blooms Feb-May.	no potential
Delphinium recurvatum recurved larkspur	None/None G2?/S2? 1B.2	Perennial herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline. Elevations: 10-2590ft. (3-790m.) Blooms Mar-Jun.	no potential
Imperata brevifolia California satintail	None/None G3/S3 2B.1	Perennial rhizomatous herb. Chaparral, coastal scrub, meadows and seeps, mojavean desert scrub, riparian scrub. Mesic sites, alkali seeps, riparian areas. 3-. Elevations: 0-3985ft. (0-1215m.) Blooms Sep-May.	no potential
Lasthenia chrysantha alkali-sink goldfields	None/None G2/S2 1B.1	Annual herb. Vernal pools. Alkaline. Elevations: 0-655ft. (0-200m.) Blooms Feb-Apr.	no potential
Pseudobahia peirsonii San Joaquin adobe sunburst	FT/SE G1/S1 1B.1	Annual herb. Cismontane woodland, valley and foothill grassland. Grassy valley floors and rolling foothills in heavy clay soil. Elevations: 295-2625ft. (90-800m.) Blooms Feb-Apr.	no potential
Puccinellia simplex California alkali grass	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. Elevations: 5-3050ft. (2-930m.) Blooms Mar-May.	no potential
Invertebrates			
Bombus crotchii Crotch bumble bee	None/SCE G2/S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	low potential

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area
Branchinecta lynchi vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	low potential
Amphibians			
Spea hammondii western spadefoot	None/None G2G3/S3S4 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	low potential
Reptiles			
Anniella pulchra Northern California legless lizard	None/None G3/S2S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	no potential
Emys marmorata western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	low potential
Gambelia sila blunt-nosed leopard lizard	FE/SE G1/S2 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; they do not excavate their own burrows.	low potential
Birds			
Agelaius tricolor tricolored blackbird	None/ST G1G2/S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	moderate potential
Athene cunicularia burrowing owl	None/None G4/S2 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	moderate potential
Buteo swainsoni Swainson's hawk	None/ST G5/S4	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	moderate potential
Charadrius montanus mountain plover	None/None G3/S2 SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	no potential
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT/SE G5T2T3/S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	no potential

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area
Lanius ludovicianus loggerhead shrike	None/None G4/S4 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.	moderate potential
Mammals			
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE G3T1T2/S2	Found in saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils for burrowing which do not experience seasonal flooding. Often digs burrows in elevated mounds, including the base of shrubs in densely vegetated areas.	no potential
Eumops perotis californicus western mastiff bat	None/None G4G5T4/S3S4 SSC	Occurs in open, semi-arid to arid habitats, including coniferiferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	low potential
Vulpes macrotis mutica San Joaquin kit fox	FE/ST G4T2/S3	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	no potential

Status Key:
FE = Federal Endangered
FT = Federal Threatened
FP = CDFW Fully Protected
SE = California Endangered
ST = State Threatened
SSC = California Special Concern Species
SCE- State Candidate for Listing as Endangered
SCE = State Candidate for listing as Endangered
SCT = State Candidate for listing as Threatened
WL = CDFW Watch List

California Rare Plant Ranks:
1B = Rare, Threatened or Endangered in California and elsewhere
2B = Rare, Threatened or Endangered in California, but more common elsewhere
.1 = seriously threatened in California
.2 = fairly threatened in California
.3 = not very threatened in California

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December 21, 2023
Project No: 23-14815

Jessie Fan, ENV SP
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660 South Figueroa Street, Suite 2050
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Via email: jessie.fan@kimley-horn.com

Subject: Biological Resources Due Diligence Report for the Foxtail Hybrid Solar Project Tulare County, California

Dear Ms. Fan:

This Biological Resources Due Diligence report summarizes potential environmental constraints for the Foxtail Hybrid Solar Project (project), located in unincorporated Tulare County, California. Rincon Consultants, Inc. (Rincon) performed a desktop background review and reconnaissance level biological survey to identify areas with potential biological constraints that may impact the project timeline and/or costs. This report also identifies additional surveys, reporting, permitting, and/or mitigation that may be required during the environmental review process.

Project Description and Location

The proposed project includes the installation of a new Solar Facility and Battery Energy Storage System (BESS). The project site is located on approximately 463.8 acres of land (Project Area), approximately bordered Avenue 190 to the north, Road 80 to the east, Avenue 184 to the south, and Road 72 to the west. The Project Area is in Tulare County southwest of the city of Tulare, California (Refer to Attachment 1**,** Figure 1 and Figure 2). The property is classified as Field and Row Crop by the Tulare County Office of the Assessor (APN 228-050-020-000). It is subdivided into six distinct fields bordered by dirt agricultural roads. It is surrounded by disced agricultural land, active agricultural fields, and almond and pistachio orchards. Additionally, an irrigation canal (Intermittent Stream 1) is located along the northern border (Avenue 190), and part of the northwestern border (Road 72) of the Project Area. Two human-made detention basins were observed within the Project Area, Detention Basin 1 is located in the southwest corner (at the intersection of Avenue 184 and Road 72) and Detention Basin 2 in the central area of the Project Area, are subject to seasonal flooding. For the purposes of this report, the Project Area will refer to the 463.8-acre area described above, and the Biological Survey Area (BSA) will refer to the Project Area plus a 500-foot buffer (Refer to Attachment 1, Figure 2).

Report Purpose

This document provides the findings of the background and database review, supplemented by a site visit on November 20, 2023, conducted by Rincon for the proposed project. This report documents existing conditions on all parcels and assesses the potential constraints to development posed by sensitive biological resources based on desktop research, analysis of aerial photos, and a reconnaissance survey.

Methodology

This report is focused on biological constraints, which is the resource area generally resulting in the highest associated costs and the greatest impact on the project schedule. Methodologies for our analyses are provided below.

Data Collection and Analysis

Prior to conducting field surveys, Rincon performed a literature and database review to evaluate which sensitive species have been documented within the vicinity of the Project Area. The California Natural Diversity Database (CNDDB) species lists obtained for *Paige* United States Geological Survey (USGS) 7.5-minute quadrangle and the surrounding quadrangles (*Taylor Weir*, *Tulare*, *Waukena*, *Remnoy*, *Goshen*, *Visalia*, *Tipton*, and *Corcoran*) (CDFW 2023a, CDFW 2023b, CDFW 2023c, CDFW 2023d, CDFW 2023e, CDFW 2023f) were reviewed. Rincon also obtained an unofficial species list from United States Fish and Wildlife Service Information Planning and Consultation (IPaC) online system (USFWS 2023a). The unofficial IPaC list reaffirmed the CNDDB records and augmented the number of species for consideration. The results of the database queries were supplemented with professional biological knowledge to develop a list of special-status species with potential to constrain project development, particularly those species with federal and/or state listing status and that may require intensive surveys or permitting. Attachment 2 includes a table of special-status species with the potential to occur in the vicinity and their likelihood to be present within the BSA.

The potential for waters of the United States and/or waters of the state were assessed using the United States Geological Survey (USGS) National Hydrography Dataset (NHD) (USGS 2019) and USFWS (2023b) National Wetlands Inventory (NWI) Mapper to identify potential riparian/wetland resources in the BSA. A jurisdictional delineation was completed on November 20, 2023, and is being reported upon separately (Rincon 2023).

Reconnaissance Survey

A reconnaissance pedestrian/windshield survey was conducted within the BSA on November 20, 2023, by Rincon biologists Michaela Robbins and Michael Hernandez. Rincon biologists paid special attention to the potential presence of state or federally sensitive biological resources that could trigger regulatory requirements. This survey was conducted to document existing conditions and verify the results of the preliminary desktop assessment. Attachment 3 for representative photographs and Attachment 4 for a list of species observed within the BSA.

Limitations

The database review was conducted in accordance with professionally accepted biological investigation practices. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary regarding accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used.

Sensitive plant species with the potential to occur in the Project Area may be annual species that may be difficult to detect following seasons of abnormal rainfall, or during those times of the year when certain plant species do not typically flower. The reconnaissance survey took place outside the blooming period for most plant species.

Sensitive wildlife species with the potential to occur in the BSA may be cryptic (difficult to detect) or transient, migratory species. The population size and locations of sensitive species may fluctuate through time. Because of this, the data collected for this report represents a "snap shot" in time. The reconnaissance survey took place in the fall before substantial winter rainfall had occurred, therefore areas that could potentially hold water and serve as habitat for aquatic plants, animals, or invertebrates were mostly dry. Additionally, the farmland within the Project Area had been recently disced and the roads graded. The Project Area is overall highly disturbed. The recent and regular tilling of the agricultural lands within the Project Area may have obscured signs of burrowing animals.

Nesting bird surveys are time sensitive and are often repeated several times before the onset of construction activities; especially if construction will occur during the typical nesting bird season (typically February 1 to September 1). The reconnaissance survey took place outside of nesting bird season.

Existing Site Conditions

Climate, Topography, and Land Use

The BSA is located within western Tulare County within the San Joaquin Valley. The weather in Tulare County is typical of a Mediterranean climate. Summers are warm and dry, while winters are cool and wet with most of the precipitation falling between November and March (WRCC 2016). The proposed Project Area is generally flat and is primarily 230 to 234 feet above mean sea level (Google Earth 2023). The land use within the vicinity of the proposed Project is primarily agriculture grainland (Refer to Attachment 1, Figure 2 and Figure 3).

Vegetative Communities and Other Land Cover

Based on a review of the aerial imagery (Google Earth Pro 2023), the Project Area has been historically disturbed for agricultural use. The surrounding area also consists of historically disturbed agricultural land or currently active agricultural land. Based on the reconnaissance survey, the Project Area is made up of recently disturbed agricultural fields surrounded by dirt roads. There was some vegetation growing within the fields, but this appeared to be remnants of previous plantings. One natural vegetation community and two land cover types were identified within the BSA. Table 1 provides a summary of land cover types present within the BSA. Figure 3 in Attachment 1 provides an overview of these land cover types. A list of plant species encountered during the field reconnaissance survey is provided in Attachment 3.

Table 1 Summary of Land Cover Types Present within the Biological Study Area

Land Cover Type	CDFW Sensitive Natural Community[1]	Acreage within Biological Study Area
Agricultural Lands	N/A	609.96 acres
Developed/Disturbed	N/A	83.59 acres
Common Plantain/Smartweed Patch	No	0.06 acre
Total Area	--	**693.61 acres**

[1] California Natural Community List (CDFW 2023)

Agricultural Lands

Agricultural land cover consists of areas that have been previously and currently being utilized for agricultural purposes. Within the BSA, these areas consist of six agricultural grain fields that were utilized for growing corn last summer and are now presumed to be planted with barley. Agricultural land cover type is the dominate land cover within the BSA. Agricultural Lands are not classified in the MCV2 classification system (Sawyer et al. 2009) or the Holland (1986) classification system but are included in the CDFW California Wildlife Habitat Relationships (CWHR) database as Agricultural Habitats (Mayer and Laudenslayer 1988).

Developed/Disturbed

Developed/Disturbed land cover consists of areas that have been previously developed or otherwise physically modified to the extent that they no longer contain native soil and habitat conditions and no longer support most vegetation. Within the BSA, these areas consist of buildings, paved areas and roadways, and gravel or hardpacked dirt roadways. This land cover type may also contain areas that are sparsely vegetated, primarily with non-native species. This land cover type occurs throughout the BSA. Developed areas are not classified in the MCV2 classification system (Sawyer et al. 2009) or the Holland (1986) classification system but are included in the CDFW CWHR database as Urban (Mayer and Laudenslayer 1988).

Common Plantain/Smartweed Patch

Common Plantain/Smartweed Patch observed within the BSA can best be described as Smartweed Herbaceous Alliance (Ca Code: 42.207.00, CDFW 2023, Sawyer et al. 2009). Broadleaf plantain (*Plantago major*) is co-dominate in the herbaceous layer with pale smartweed (*Persicaria lapathifolium*) and purple ammannia (*Ammannia coccinea*). Within the BSA, the bottom of Detention Basin 1 contains a small Common Plantain/Smartweed Patch. Common Plantain/Smartweed Patches are not considered sensitive natural communities by CDFW (CDFW 2023).

Summary of Jurisdictional Waters

A formal aquatic jurisdictional delineation was performed as part of this assessment to identify the extent of the jurisdictional features on site that fall under Section 1600 et seq. of the California Fish and Game Code (CFGC), the federal Clean Water Act (Sections 404 and 401) as regulated by the U.S. Army Corps of Engineers (USACE), and Regional Water Quality Control Board (RWQCB) Porter Cologne Act purview. Detailed results of the jurisdictional delineation are provided under a separate cover (Rincon 2023). The features assessed and findings are summarized below. Table 2 quantifies the extent of three potentially state jurisdictional features found within the BSA.

Table 2 Potentially Jurisdictional Waters Delineated within the Study Area

	USACE		RWQCB		CDFW
Jurisdictional Area	Non-Wetland Waters of the US[1] (acres [lin. ft.])	Wetland Waters of the US[1] (acres)	Non-wetland Waters of the State[1] (acres [lin. ft.])	Wetland Waters of the State (acres)	CDFW Jurisdictional Streambed[2] (acres [lin. ft.])
Intermittent Stream 1	--	--	1.75 [6,364]	--	1.75 [6,364]
Detention Basin 1	--	--	0.09 [156]	--	--
Detention Basin 2	--	--	0.35 [252]	--	--
Total	**–**	**–**	**2.22 [6,772]**	**–**	**1.75 [6,364]**

[1]Section 401 of the CWA and Porter-Cologne Water Quality Control Act waters of the State, calculated to top of bank or the edge of riparian habitat, whichever is greater; includes culverted waters of the State.

[2]Streambed calculated to top of bank or edge of riparian, whichever is greater; includes culverted streambed.

Intermittent Stream 1 lacks connectivity to a TNW and is an agricultural canal (irrigation canal) and therefore is not considered waters of the US subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act, neither non-wetland nor wetland waters of the US are present. The irrigation canal (Intermittent Stream 1) is potentially a non-wetland waters of the State and is therefore likely regulated by the Central Valley RWQCB pursuant to the Porter-Cologne; no wetland waters of the State are present. In addition, Intermittent Stream 1 is potentially a CDFW-jurisdictional streambed and therefore will likely be regulated pursuant to Section 1600 et seq. of the CFGC.

Not all of the USACE wetland parameters were met for Detention Basin 1 and Detention Basin 2, these features do not meet the definition of wetland waters of the U.S. or the State. Detention Basin 1 and Detention Basin 2 are potentially non-wetland waters of the State and therefore are likely subject to the Central Valley RWQCB pursuant to Porter-Cologne. In addition, since Detention Basin 1 and Detention Basin 2 are man-made and have low habitat value, these features will likely not be considered jurisdictional by CDFW and therefore are not expected to be regulated pursuant to Section 1600 et seq. of the CFGC.

The findings and conclusions presented in this report, including the location and extent of areas subject to regulatory jurisdiction, represent the professional opinion of the consultant biologists. These findings and conclusions should be considered preliminary and at the final discretion of the applicable resource agency.

Biological Resources

Plant or animal taxa may have “special-status” due to vulnerability to habitat change, declining populations, or because they have restricted ranges. Some are listed as threatened or endangered by the USFWS or by the CDFW and are protected by the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). Others have been identified as sensitive or as special-status species by the USFWS, the CDFW, or by conservation organizations that track sensitive species, including the California Native Plant Society (CNPS).

This section discusses special-status species and sensitive biological resources occurring in the region of the Project Area and preliminarily evaluates the potential for the Project Area to support sensitive biological resources. For the purpose of this report, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as Threatened or Endangered by the USFWS under the FESA; those listed or candidates for listing as Rare, Threatened, or Endangered by the CDFW under the CESA or Native Plant Protection Act (NPPA); those identified as Fully Protected

(FP) under Sections 3511, 4700, 5050, and 5515 of the CFGC; those recognized as Species of Special Concern (SSC) by CDFW; and CDFW Special Plants, specifically those occurring on lists 1 through 4 of the CNPS California Rare Plant Ranking (CRPR) system and in the CNPS Inventory of Rare and Endangered Vascular Plants of California occurring of the CNPS CRPR system.

Special-status Plant Species and Sensitive Natural Communities

The BSA area consists primarily of agricultural fields and associated infrastructure, an irrigation canal, two detention basins, unnamed dirt roads and is surrounded by paved roads (Avenue 190, Road 80, Avenue 184, and Road 72). These features are generally unsuitable to support special-status plant species and sensitive natural communities. The Project Area is active agricultural land. The database review did not find any special-status plant species records within the vicinity of the BSA. The Project Area has a long history of agricultural use and therefore it is unlikely to support special-status plant species. Eleven special-status plant species, with CRPR ranks from 1 through 2, have been recorded within the nine USGS 7.5-minute topographic quadrangles examined. The federally endangered (FE) and state endangered (SE) California jewelflower (*Caulanthus californicus*) and the federally threatened (FT) and state endangered (SE) San Joaquin adobe sunburst (*Pseudobahia peirsonii*) have been recorded in the Tulare quadrangle adjacent to the Paige quadrangle where the Project Area is located. However, special-status plant species are not expected to occur on-site based on the lack of suitable habitat or soils within the BSA. The reconnaissance survey did not encounter any special-status plant species or sensitive natural communities. The reconnaissance survey did find potential alkaline soils within the irrigation canal within the BSA, which is a soil type required for some of the special-status plants recorded nearby, however this soil type is likely the result of herbicide application, and as a result the reconnaissance survey supports the desktop analysis conclusion of no special-status plants expected to occur within the BSA.

Special-status Wildlife Species

Eighteen special-status wildlife species have been recorded within the nine USGS 7.5-minute topographic quadrangles examined (CDFW 2023a) and the unofficial IPaC list (USFWS 2023a). The state Watch List (WL) prairie falcon, and the SSC species, northern harrier were observed on site during the reconnaissance survey and thereby included in this analysis and in the Special-Status Species Potential to Occur in Attachment 2. Additionally, the "other nesting birds" category was added to address the numerous species of birds with potential for occurrence in the BSA that are protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFG Code) Sections §3503 and §3503.5.

Of these special-status species (CDFW 2023a, USFWS 2023a), the following have the potential to occur based on the geographical area and habitats known in the area:

- burrowing owl (*Athene cunicularia*; SSC)
- loggerhead shrike (*Lanius ludovicianus*, SCC)
- prairie falcon (*Falco mexicanus*, WL)
- San Joaquin kit fox (*Vulpes macrotis*, FE, ST)
- Swainson's hawk (*Buteo swainsoni*; ST),
- tricolored blackbird *(Agelaius tricolor*, ST)
- northern harrier (*Circus hudsonius,* SSC)

- Other nesting birds (Class Aves)

The burrowing owl, loggerhead shrike, San Joaquin kit fox, Swainson's hawk, tricolored blackbird, and northern harrier, were determined to have potential to occur within the BSA based on a combination of 1) suitable habitat within the BSA and greater vicinity of the Project Area and 2) occurrence records within the last 5 years documented in the CNDDB. Based on the reconnaissance survey, suitable nesting habitat for most raptor species (large trees) is not present within the Project Area; however, the large ornamental trees on the immediately adjacent residential parcel (within BSA) have a high potential to support nesting raptors and other nesting birds. These species and potential habitats in the BSA are elaborated on below:

- Burrowing owl is a SSC that occupies open, treeless areas within grassland, low density scrub, and desert biomes. This species generally inhabits gently sloping areas, characterized by low, sparse vegetation, and is often associated with high densities of burrowing mammals. Burrowing owls often use relatively disturbed areas such as agricultural fields, golf courses, cemeteries, and vacant urban lots in addition to natural breeding habitats. Nests are most often in fossorial animal burrows, such as squirrels or American badger (*Taxidea taxus*), but atypical nests such as culverts or rubble piles may also be used. During the reconnaissance survey rubble piles, culverts, and animal burrows were located (Cornell Lab of Ornithology 2019). Potential nesting and foraging habitat exists within the BSA. The reconnaissance survey found rubble piles and suitable small mammal burrows near Detention Basin 2 in the south-central portion of the Project Area. There were also culverts in the irrigation canal on the north and northwestern side of the Project Area that could be utilized by burrowing owls. The reconnaissance survey found no sign or observation of burrowing owls.
- Loggerhead shrike is a SSC and is a common resident species that frequents a variety of open and semi-open habitats including grassland, desert scrublands, open woodlands, and riparian areas. The shrike typically nests elevated 2.5-4 feet in thorny shrubs or trees but can also use brush piles or tumbleweeds. This species searches for prey over semi-open habitats and feeds primarily on large insects and rodents. In winter they may hunt a larger variety of small vertebrates including reptiles, amphibians, small mammals, and other birds (Cornell Lab of Ornithology 2019). Potential nesting habitat exists in the trees on the residential area in the northeast corner of the BSA. The agricultural fields within the Project Area may serve as foraging habitat. The reconnaissance survey found no sign nor observation of loggerhead shrikes.
- Prairie falcon is a watch list species, meaning there is concern, but it does not meet SSC criteria (CDFW 2023e). Two individuals were observed flying overhead. The agricultural fields within the BSA are suitable foraging habitat. The prairie falcon nests in cliffsides or bluffs, which are not present within the BSA (Cornell Lab of Ornithology 2019).
- San Joaquin kit fox (SJKF) is a federally endangered and state threatened species. SJKF is endemic to California west of the Sierra Nevada Mountains. This species occurs in the Central Valley generally from the Sacramento area south to the southern end of the San Joaquin Valley, in the Carrizo Plain, the Panoche Valley, and from northern San Luis Obispo County north through the Salinas Valley. Diet consists primarily of kangaroo rats (*Dipodomys* spp.) and other small mammals. The SJKF will also eat insects, reptiles, small birds, bird eggs, and vegetation. SJKF are found in grasslands, scrublands, oak woodland, alkali sink scrubland, vernal pool and alkali meadows. They may also use modified habitat such as agricultural areas and those used for oil exploration (CSU Stanislaus 2021). Small mammal burrows were found near Detention Basin 2 during the reconnaissance survey and could serve as a source of prey. An unidentified small canid track was located at the southwest corner of the BSA. The closest

known occurrence (although dated from 1975) is southeast of the BSA between the Project Area and the wooded riparian area approximately one mile away. Within 5 miles of the BSA, the most recent CNDDB record of SJKF is from 1992 in the city of Tulare to the northeast of the Project Area. The Project Area is documented within the documented range of the San Joaquin kit fox and is modeled as potentially moderate probability of occurrence (Pearce et al. 2015, Cypher et al. 2013). Potential SJKF burrows were not observed during the reconnaissance survey and the species is classified as having low potential to occur within the BSA.

- Swainson's hawk is an ST species that breeds in solitary trees or shelterbelts of trees near agricultural areas or groves near streams. The species winters in South and Central America (Cornell Lab of Ornithology 2019) but nests in California and other open lands of the western United States. The species requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations. Prey species primarily include small mammals and insects but will also eat reptiles and other birds (Cornell Lab of Ornithology 2019). Potential nesting sites exist in large trees on the residential property on the northeast corner of the BSA, and on the power poles that line the property. Potential foraging habitat exists within agricultural fields within the BSA. CNDDB lists an occurrence from 2017 in the riparian area approximately one mile southeast of the BSA. The reconnaissance survey was conducted at a time of year (November) that Swainson's hawk is not present in the Central Valley.
- Tri-colored blackbird is an ST species. It is a colonial species that is largely endemic to, and a year-round resident in California. It requires open water, protected nesting substrate, and foraging areas with insect prey within a few kilometers of the colony. The species preferentially selects breeding sites that include open accessible water with protected areas for nesting. Nesting sites generally need to support flooded nesting vegetation and suitable foraging sites within a few kilometers (Shuford and Gardali 2008). No suitable nesting habitat was observed during the reconnaissance survey. However, there is potential foraging habitat for tri-colored blackbirds within the BSA. The reconnaissance survey found no sign nor observation of tri-colored blackbirds.
- Northern harrier is an SSC species that breeds and forages in a range of habitats that provide vegetation for cover and suitable prey. These areas include desert sinks, grasslands, dry plains, estuaries, and agricultural fields. Diet consists of small and medium-sized vertebrates. California voles (*Microtus californicus*) are an important food source. In California's Central Valley, harriers breed primarily in wetlands or other reserves, but also in agricultural and pasturelands. Nests are constructed on the ground in dense, typically tall, vegetation (Shuford and Gardali 2008). Suitable foraging habitat exists within the BSA. A northern harrier was observed foraging in the northern portion of the BSA during the reconnaissance survey.

Nesting birds have potential to occur within the BSA. Signs of a small cliff swallow (*Petrochelidon pyrrhonota*) colony were observed within the box culvert on the western edge of the Project Area. Signs of black phoebe (*Sayornis nigricans*) nests were observed within the same box culvert and other culverts and human-made structures throughout the Project Area. Nesting birds are protected under the Migratory Bird Treaty Act (MTBA) and under CFG Code (§). Of the 20 total special-status wildlife species known to occur in the region (Refer to Attachment 2, CDFW 2023a and USFWS 2023a), six species have the potential to occur in the vicinity based on the geographical area and habitats known in the area but are not likely to occur within the Project Area. Seven species are not expected to occur in the Project Area due to 1) lack of suitable breeding, foraging, nesting, roosting, wintering, and/or transitory habitat within the Project Area, and/or 2) a lack of recent occurrence records (> 25 years) documented within the nine-quad CNDDB search of the Project Area.

Low potential/Not Likely to occur within the Project Area:

- Crotch bumble bee (*Bombus crotchii*, State Candidate Endangered [SCE])
- vernal pool fairy shrimp (*Branchinecta lynchi*, Federal Candidate [FC])
- mountain plover (*Charadrius montanus*, MTBA, §, SSC)
- western spadefoot (*Spea hammondii*, SSC)
- western pond turtle [northwestern pond turtle] (*Emys marmorata* [*Actinemys marmorata*], Federal Petitioned Threatened [FPT], SSC)
- western mastiff bat (*Eumops perotis californicus*, SSC)

No potential/Not Expected to occur within the Project Area:

- conservancy fairy shrimp (*Branchinecta conservation*, FE)
- monarch butterfly (*Danaus plexippus*, FC)
- Northern California legless lizard (*Anniella pulchra*, SSC)
- blunt-nosed leopard lizard (*Gambelia sila*, FE, SE, FP)
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*, FT, MTBA, SE, §)
- Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*, FE, SE)
- Buena Vista Lake Ornate Shrew (*Sorex ornatus relictus*, FE)

Recommendations

Based on the results of the desktop assessment and reconnaissance survey, the most notable time constraints and costs are associated with protocol-level surveys (CDFW 2010) and associated mitigation for the Swainson's hawk. Additionally, burrowing owl, loggerhead shrike, San Joaquin kit fox, and tricolored blackbird have potential to occur within the site and additional surveys and mitigation may be required to reduce potential impacts. The following additional studies are recommended to further analyze the proposed project impacts on biological resources and may be necessary for project implementation:

- Protocol surveys for Swainson's hawk (CDFW 2010) and focused habitat assessment, with expectation that preconstruction surveys for this species may be required.
- Evaluation of impacts to foraging habitat for Swainson's hawk.
- Focused habitat assessment and protocol surveys for burrowing owl (CDFW 2012), with expectation that pre-construction surveys may be required.
- Preconstruction surveys for loggerhead shrike and tri-colored blackbird and other nesting birds may be required.
- Additional surveys for San Joaquin kit fox that includes camera trapping near the irrigation canal and detention basins.

In addition to CEQA review and described technical studies, the following permits may be necessary for project implementation:

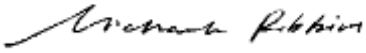
- The Project Area contains three features that are potentially state jurisdictional waters: one intermittent stream and two detention basins. If impacts to CDFW jurisdiction are anticipated, then a Streambed Alteration Agreement, pursuant to Section 1600 et seq. of the CFGC, should be obtained from the CDFW. If impacts to RWQCB jurisdiction are anticipated, then a Report

of Waste Discharge should be filed and an issued Waste Discharge Requirements, pursuant to Porter-Cologne Water Quality Control Act, should be obtained from the Central Valley RWQCB.

If impacts to Swainson's hawk and/or burrowing owl habitat are confirmed, compensatory mitigation may be required by the lead agency and CDFW. Mitigation for impacts to state jurisdictional waters at a 1:1-3:1 ratio is also typically necessary to garner permits from CDFW and RWQCB.

If you have any questions regarding this submission or any of the information provided herein, please contact either Andrea Maben (amaben@rinconconsultants.com) or Angie Harbin (aharbin@rinconconsultants.com).

Sincerely,
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Attachments

Attachment 1 Figures
Attachment 2 Special-Status Species Potential to Occur Table
Attachment 3 Representative Site Photographs
Attachment 4 Species Observed Tables

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References

California Department of Fish and Wildlife (CDFW). 2010. Swainson's Hawk Survey Protocols, Impact Avoidance, and Minimization Measures for Renewable Energy Projects in the Antelope Valley of Los Angeles and Kern Counties, California. June 2, 2010.

_____. 2012. Staff Report on Burrowing Owl Mitigation. State of California Natural Resources Agency Department of Fish and Game https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline=true. Accessed November 2023.

_____. 2018. Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Sensitive Natural Communities. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline. Accessed November 2023.

_____. 2023a. California Natural Diversity Database (CNDDB), Rarefind 5.3.0. Paige, Taylor Weir, Tulare, Waukena, Remnoy, Goshen, Visalia, Tipton, and Corcoran USGS 7.5 minute quadrangle query. Accessed December 2023.

_____. 2023b. California Sensitive Natural Communities. June 1, 2023. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline. Accessed November 2023.

_____. 2023c. California Natural Diversity Database (CNDDB). October 2023. State and Federally Listed Endangered and Threatened Animals of California. California Department of Fish and Wildlife. Sacramento, CA.

_____. 2023d. California Natural Diversity Database (CNDDB), Special Animal List. October 2023. California Department of Fish and Wildlife. Sacramento, CA. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline. Accessed December 2023

_____.2023e. California Natural Diversity Database (CNDDB). State and Federally Listed Endangered, Threatened, and Rare Plants of California. October 2023. California Department of Fish and Wildlife. Sacramento, CA. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline. Accessed December 2023

_____.2023f. California Natural Diversity Database (CNDDB). Special Vascular Plants, Bryophytes, and Lichens List. October 2023. California Department of Fish and Wildlife. Sacramento, CA. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline. Accessed December 2023

California State University, Stanislaus (CSU Stanislaus). 2021. Department of Biological Sciences. Endangered Species Recovery Program website. Updated online and available at: https://esrp.csustan.edu. Accessed December 2023.

Cornell Lab of Ornithology. 2019. All About Birds. Cornell Lab of Ornithology, Ithaca, New York. https://www.allaboutbirds.org. Accessed December 2023.

Cypher, B. L., S. E. Phillips, and P.A. Kelly. (2013). Quantity and distribution of suitable habitat for endangered San Joaquin kit foxes: conservation implications. Canid Biology and Conservation, 16(7), 25-31.

eBird. 2021. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org. Accessed November 2023

Google Earth Pro. 2023. Earth Version 7.3.4. Available at: https://www.google.com/earth/versions/#download-pro. Accessed December 2023.

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California The Resources Agency Non-game Heritage Program Department of Fish and Game, Sacramento, California 1986 Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=75893&inline Accessed December 2023.

Jepson Flora Project (eds.). 2023. Jepson eFlora. Available at: https://ucjeps.berkeley.edu/eflora/. Accessed November 2023.

Mayer, K.E. and W.F. Laudenslayer, Jr. 1988. A Guide to Wildlife Habitats of California. California Department of Fire Protection, Sacramento, 1988.

Pearce, D., S. Young, G. Wesolowski,J. Cowan, and A. Gwin. 2015. San Joaquin Valley Landscape-Scale Planning for Solar Energy and Conservation. Unpublished Master's Thesis. Bren School of Environmental Science and Management, University of California, Santa Barbara.

Rincon Consultants Inc. (Rincon). 2023. Jurisdictional Delineation for the Foxtail Hybrid Solar Project, Tulare County, California

Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, California.

Shuford, W. D., and T. Gardali Editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Tulare County Office of the Assessor/Clerk-Recorder. 2023. Assessor's Parcel Lookup. Available at: https://tularecounty.ca.gov/assessor/. Accessed September 2023.

United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS). 2023. "Web Soil Survey." Custom Soil Resource Report for Tulare County, Western Part, California November 9, 2023. Available at https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed November 2023.

United States Fish and Wildlife Service (USFWS). 2023a. Information, Planning, and Conservation System (IPAC). https://ecos.fws.gov/ipac. Accessed November 2023.

_____. 2023b. National Wetlands Inventory (NWI). https://www.fws.gov/wetlands/data/mapper.html. Accessed November 2023.

United States Geological Survey (USGS). 2019. National Hydrography Dataset. Accessed via the National Map. Accessed November 2023

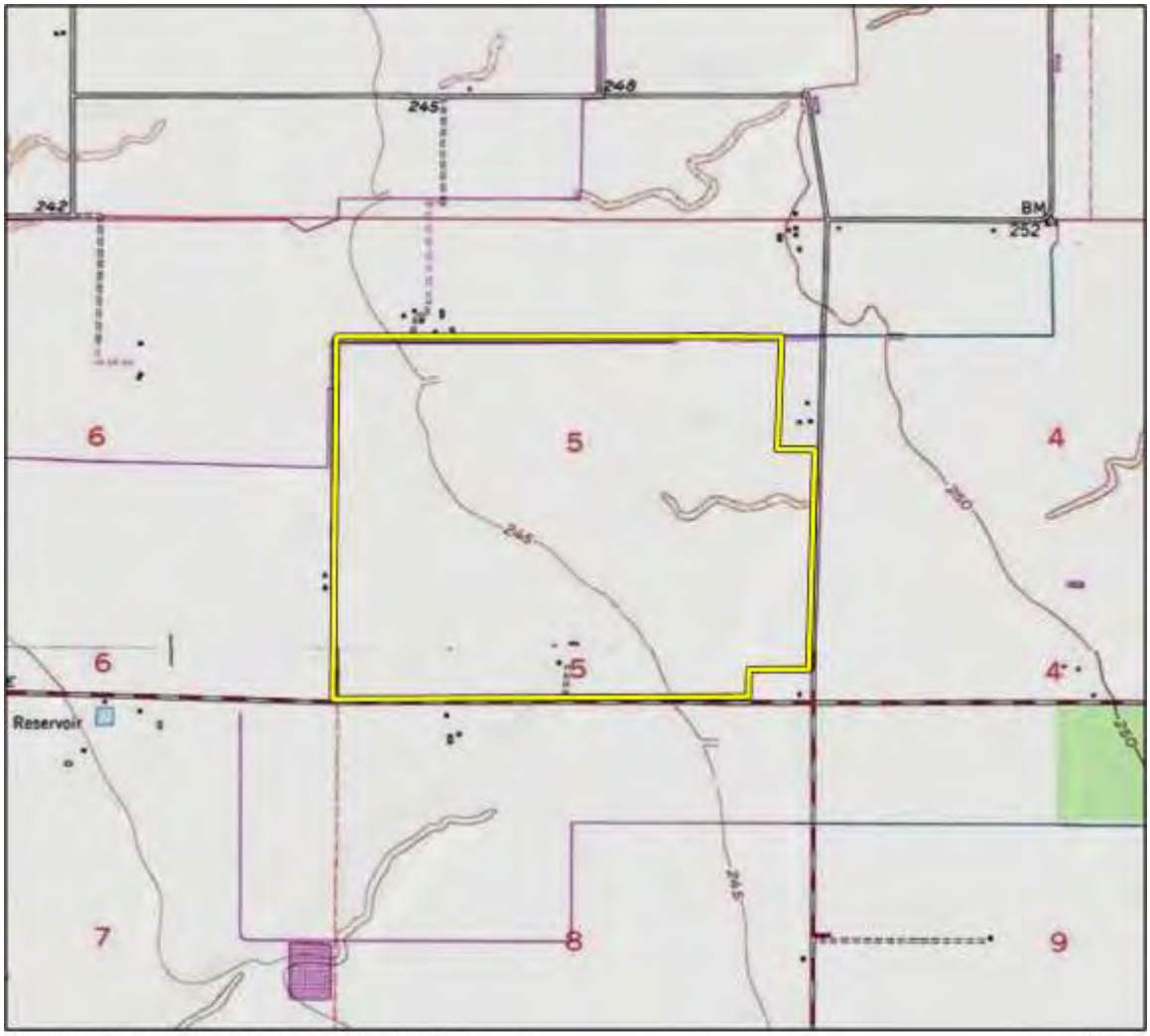
Western Regional Climate Center (WRCC). 2016. Hanford 1 S, California (043747). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3747 Accessed December 2023..

Attachment 1

Figures

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Figure 1 Regional Location



Imagery provided by National Geographic Society, Esri and its licensors © 2023. Paige and Taylor Weir Quadrangles. T21S R24E S5. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

Project Location

0 1,000 2,000 Feet

N



Figure 2 Study Area

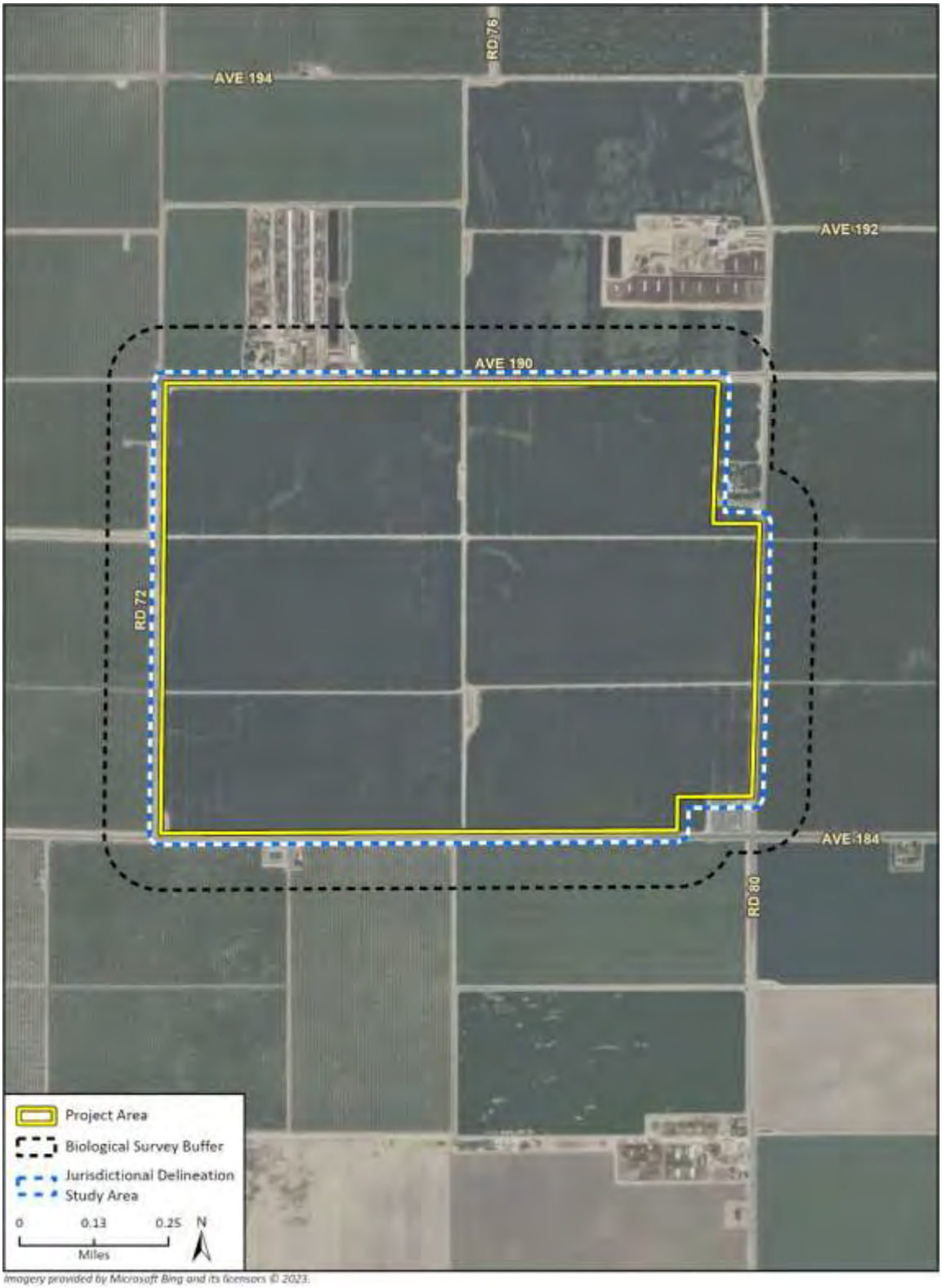
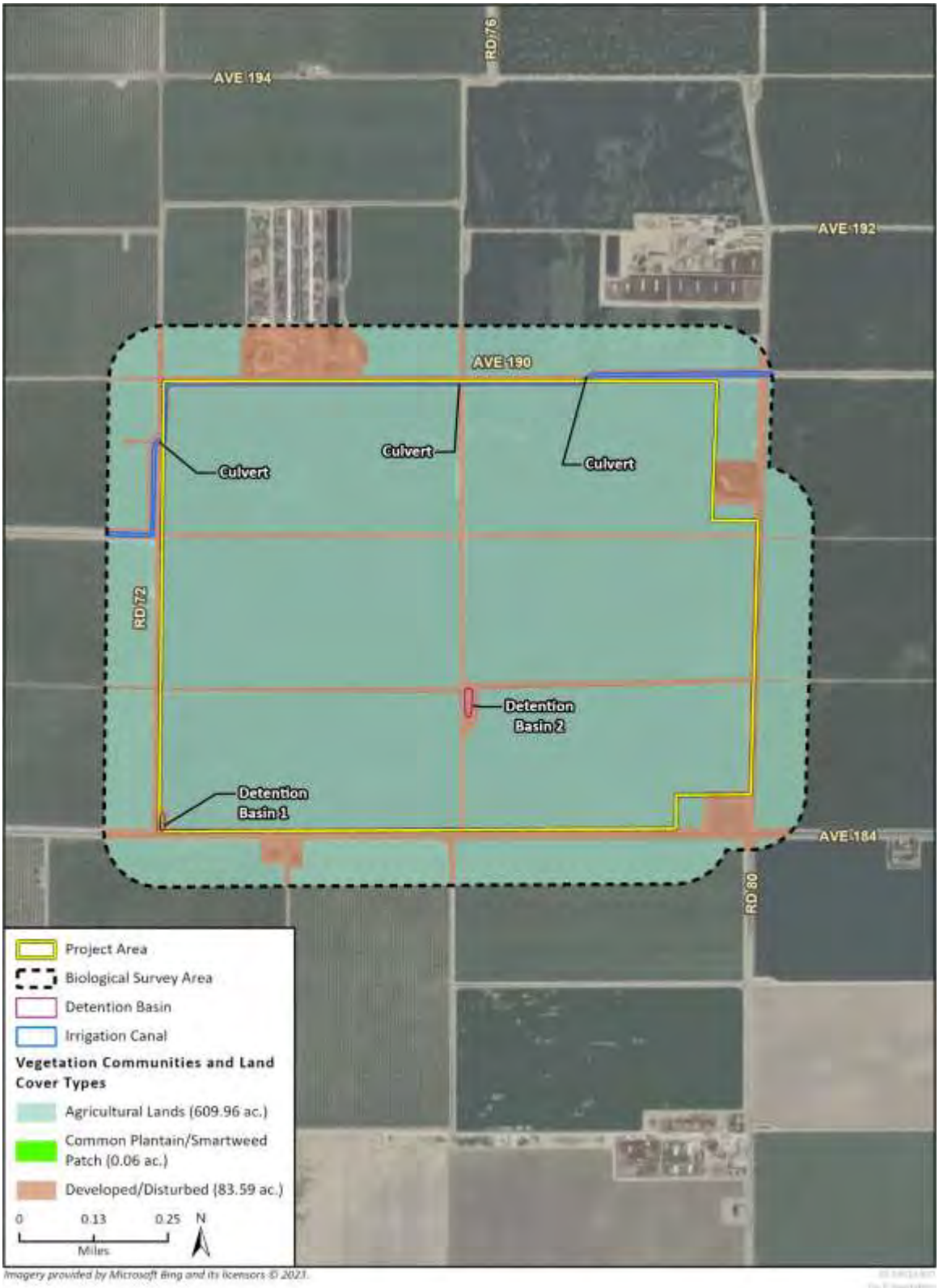


Figure 3 Vegetation and Land Cover Map



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Attachment 2

Special-Status Species Potential to Occur Table

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Special-Status Species Potential to Occur Table

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Biological Survey Area
Plants and Lichens			
Atriplex cordulata var. *cordulata* heartscale	--/--/1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland. Alkaline (sometimes). Elevations: 0-1835ft. (0-560m.) Blooms Apr-Oct.	**Presumed Absent:** Marginally suitable habitat occurs on site, however no Atriplex species were observed within the BSA.
Atriplex cordulata var. *erecticaulis* Earlimart orache	--/--/1B.2	Annual herb. Valley and foothill grassland. Elevations: 130-330ft. (40-100m.) Blooms Aug-Sep(Nov).	**Presumed Absent:** Marginally suitable habitat occurs on site, however no Atriplex species were observed within the BSA.
Atriplex depressa brittlescale	--/--/1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Alkaline, clay. Elevations: 5-1050ft. (1-320m.) Blooms Apr-Oct.	**Presumed Absent:** Marginally suitable habitat occurs on site, however no Atriplex species were observed within the BSA.
Atriplex minuscula lesser saltscale	--/--/1B.1	Annual herb. Chenopod scrub, playas, valley and foothill grassland. Alkaline, sandy. Elevations: 50-655ft. (15-200m.) Blooms May-Oct.	**Presumed Absent:** -Marginally suitable habitat occurs on site, however no Atriplex species were observed within the BSA.
Atriplex subtilis subtle orache	--/--/1B.2	Annual herb. Valley and foothill grassland. Alkaline. Elevations: 130-330ft. (40-100m.) Blooms (Apr)Jun-Sep(Oct).	**Presumed Absent:** Marginally suitable habitat occurs on site, however no Atriplex species were observed within the BSA.
Caulanthus californicus California jewelflower	FE/SE/1B.1	Annual herb. Chenopod scrub, pinyon and juniper woodland, valley and foothill grassland. Sandy. Elevations: 200-3280ft. (61-1000m.) Blooms Feb-May.	**No Potential to Occur/Species Absent:** Suitable habitat does not occur within the BSA.
Delphinium recurvatum recurved larkspur	--/--/1B.2	Perennial herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline. Elevations: 10-2590ft. (3-790m.) Blooms Mar-Jun.	**No Potential to Occur/Species Absent:** Suitable habitat does not occur within the BSA. .
Imperata brevifolia California satintail	--/--/2B.1	Perennial rhizomatous herb. Chaparral, coastal scrub, meadows and seeps, mojavean desert scrub, riparian scrub. Mesic sites, alkali seeps, riparian areas. 3-. Elevations: 0-3985ft. (0-1215m.) Blooms Sep-May.	**No Potential to Occur/Species Absent:** Suitable habitat does not occur within the BSA.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Biological Survey Area
Lasthenia chrysantha alkali-sink goldfields	--/--/1B.1	Annual herb. Vernal pools. Alkaline. Elevations: 0-655ft. (0-200m.) Blooms Feb-Apr.	**No Potential to Occur/Species Absent:** Suitable habitat does not occur within the BSA.
Pseudobahia peirsonii San Joaquin adobe sunburst	FT/SE/1B.1	Annual herb. Cismontane woodland, valley and foothill grassland. Grassy valley floors and rolling foothills in heavy clay soil. Elevations: 295-2625ft. (90-800m.) Blooms Feb-Apr.	**No Potential to Occur/Species Absent:** Suitable habitat does not occur within the BSA.
Puccinellia simplex California alkali grass	--/--/1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. Elevations: 5-3050ft. (2-930m.) Blooms Mar-May.	**No Potential to Occur/Species Absent:** Suitable habitat does not occur within the BSA.
Invertebrates			
Bombus crotchii Crotch bumble bee	--/SCE--	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum*, *Phacelia*, *Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	**Low Potential to Occur:** BSA is within the geographic range and *Erigeron canadensis* was identified during the reconnaissance survey.
Branchinecta conservation conservancy fairy shrimp	FE/--/--	Endemic to the grasslands of the northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June.	**No Potential to Occur/Species Absent:** CNDDB lists no recorded occurrences within 50 miles of the BSA. BSA contains pools but no grasslands.
Branchinecta lynchi vernal pool fairy shrimp	FT/--/--	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**Low Potential to Occur:** Potential low-quality habitat in Detention Basin 1. The closest CNDDB occurrences are approximately 4.5 and 6.8 miles to the southwest and northwest.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Biological Survey Area
Danaus plexippus monarch butterfly	FC/--/--	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**No Potential to Occur/Species Absent:** No suitable habitat occurs within the BSA.
Amphibians			
Spea hammondii western spadefoot	--/--/SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**Low Potential to Occur:** Marginally suitable breeding habitat occurs within Detention Basin 1 and possibly the irrigation canal. Nearby occurrences are all 25+ years old.
Reptiles			
Anniella pulchra Northern California legless lizard	--/--/SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	**No Potential to Occur/Species Absent:** No suitable habitat within the BSA.
Emys marmorata [Actinemys marmorata) western pond turtle [Northwestern pond turtle]	FPT/--/SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Low Potential to Occur:** Irrigation ditches occur within the BSA. A stream is present approximately 1 mile southeast of the BSA, however there are no known occurrences within 10 miles of the BSA.
Gambelia sila blunt-nosed leopard lizard	FE/SE/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; they do not excavate their own burrows.	**No Potential to Occur/Species Absent:** Some mammal burrows occur within the BSA, however there are no known nearby occurrences since 1974 and BSA is highly disturbed due to agricultural practices.
Birds			

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Biological Survey Area
Agelaius tricolor tricolored blackbird	MBTA/ST, §/--	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**Moderate Potential to Occur:** Foraging habitat is potentially present within the BSA, which occurs within the species range. There is a large body of open water approximately 5 miles southwest of the BSA.
Athene cunicularia burrowing owl	MBTA/§/SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Moderate Potential to Occur:** The study area contains marginally suitable nesting habitat for this species. No burrowing owls or sign of burrowing owls were observed during the fall reconnaissance survey.
Buteo swainsoni Swainson's hawk	MBTA/ST, §/--	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent and large bodied insect populations.	**Moderate Potential to Occur:** The study area contains suitable foraging habitat for this species. There is a documented nesting site approximately 1 mile to the southeast in Elk Bayou and another 2.75 miles to the west in Bates Slough (CDFW 2023a). No Swainson's hawks were observed during the fall reconnaissance survey within the study area although they are not expected to be present at this time of year.
Charadrius montanus mountain plover	MBTA/§/SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	**Low Potential to Occur:** Suitable habitat within the BSA, however the closest known occurrence within 25 years is approximately 16.5 miles southwest of the BSA (CDFW 2023a).
Circus hudsonius Northern harrier	MBTA/§/SSC	Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Potential to Occur/Species Present:** Observed flying over and foraging in the northwest corner of the BSA during the reconnaissance survey.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Biological Survey Area
Coccyzus americanus occidentalis western yellow-billed cuckoo	FT, MBTA/SE, §/--	Riparian forest nesting, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**No Potential to Occur/Species Absent:** Suitable habitat does not occur within the BSA.
Falco mexicanus Prairie falcon	MBTA/§/WL	Generally, inhabits dry, open terrain, either level or hilly. Breeding sites are located on cliffs. Forages far afield, even to marshlands and ocean shores. Habitats include Great Basin grassland, Great Basin scrub, Mojavean Desert scrub, Sonoran Desert scrub, and valley and foothill grassland.	**Potential to Occur/Species Present:** Two individuals were observed flying over the Project Area during the reconnaissance survey.
Lanius ludovicianus loggerhead shrike	MBTA/§/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.	**Moderate Potential to Occur:** Suitable foraging habitat may occur within the BSA. Riparian woodlands occur near the BSA.
Class Aves Nesting Birds	MBTA/§/--	Various habitats (nesting).	**Potential to Occur/Species Present:** The study area contains suitable nesting habitat for passerine species. Unoccupied cliff swallow nests and black phoebe nesting were observed. Avoidance and minimization efforts for nesting birds are recommended.
Mammals			
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE/--	Found in saltbush scrub and sink scrub communities in the Tulare Lake Basin of the southern San Joaquin Valley. Needs soft friable soils for burrowing which do not experience seasonal flooding. Often digs burrows in elevated mounds, including the base of shrubs in densely vegetated areas.	**No Potential to Occur/Species Absent**: Suitable habitat does not occur within the study area. No sign of kangaroo rats (burrows, caches, tracks, tail drags) was observed within the study area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Biological Survey Area
Eumops perotis californicus western mastiff bat	--/--/SSC	Occurs in open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	**Low Potential to Occur:** No sign of roosting bats (night/day) were observed within the study area.
Sorex ornatus relictus Buena Vista Lake Ornate Shrew	FE/--/--	Marshlands and riparian areas in the Tulare Basin. Prefers moist soil. Uses stumps, logs and litter for cover.	**No Potential to Occur/Species Absent**: No known occurrences within 10 miles. Riparian areas within BSA contain minimal cover material.
Vulpes macrotis mutica San Joaquin kit fox	FE/ST/--	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	**Low Potential to Occur**: Marginal suitable foraging habitat and movement corridor present. A CNDDB occurrence from 1975 occurs approximately 0.25 mile from the Project Area. A small unidentified canid track was observed within Detention Basin 1. No burrows or suitable prey base observed on site.

Status Key:

FC = Federal Candidate
FE = Federal Endangered
FPT = Federal Petition Threatened
FT = Federal Threatened
FP = CDFW Fully Protected
MBTA = Migratory Bird Treaty Act
§ = CFG Code §3503 and §3503.5
SCE- State Candidate for Listing as Endangered
SCT = State Candidate for listing as Threatened
SE = California Endangered
SSC = California Special Concern Species
ST = State Threatened
WL = CDFW Watch List

California Rare Plant Ranks:
1B = Rare, Threatened or Endangered in California and elsewhere
2B = Rare, Threatened or Endangered in California, but more common elsewhere
.1 = seriously threatened in California
.2 = fairly threatened in California
.3 = not very threatened in California

Other:

BSA = Biological Survey Area

Attachment 3

Representative Site Photographs

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Photograph 1. View northeast across the Project Area from along the western edge of the property, 1/3 the distance from north to south. The visible structures are outside of the Project Area (November 20, 2023).



Photograph 2. View west, from eastern most edge of Project Area (November 20, 2023).



Photograph 3. Taken from the same spot as photographs 1 and 2, looking southeast. The light-colored structure on the horizon is a power station in the southeast corner of the Project Area (November 20, 2023).



Photograph 4. The irrigation canal (Intermittent Stream 1). Photo taken near the vantage point of photograph 1, looking north(November 20, 2023).



Photograph 5. The irrigation canal (Intermittent Stream 1), looking north from the western edge of the Project Area to the northern border(November 20, 2023).



Photograph 6. View north of Detention Basin 1 (November 20, 2023).



Photograph 7. View north-northwest of Detention Basin 2 (November 20, 2023).



Photograph 8. Photo of unidentified fox track found in Detention Basin 1 (November 20, 2023).

Attachment 4

List of Species Observed

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Plant Species Observed

Scientific Name	Common Name	Native	Special Status/Notes
Amaranthus blitoides	procumbent pigweed	Yes	FACU
Ammannia coccinea	purple ammannia	Yes	OBL
Beckmannia syzigachne	American sloughgrass	Yes	OBL
Bryum argenteum	silvery bryum	Yes	
Chenopodium album	lamb's quarters	No	FACU
Dactylis glomerata	orchardgrass	No	Cal-IPC Limited
Erigeron canadensis	Canadian horseweed	Yes	FACU
Erythranthe gutta	seep monkeyflower	Yes	OBL
Hordeum vulgare	common barley	No	
Hypochaeris glabra	smooth cat's ear	No	Cal-IPC Limited, FACU
Hypochaeris radicata	rough cat's ear	No	Cal-IPC Moderate, FACU
Lactuca serriola	prickly lettuce	No	FACU
Leptochloa sp.	strangletop grass	Yes	FACU
Malva parviflora	cheeseweed mallow	No	
Mollugo verticillata	green carpetweed	No	FACU
Nerium oleander	oleander	No	
Persicaria lapathifolia	pale smartweed	Yes	FACW
Plantago major	broadleaf plantain	No	FAC
Polygonum aviculare	prostrate knotweed	No	FAC
Prunus dulcis	domestic almond	No	
Pseudognaphalium luteoalbum	rabbit tobacco	No	FAC
Raphanus raphanistrum	wild radish	No	
Rorippa palustris	bog yellowcress	Yes	OBL
Salsola tragus	tumbleweed	No	Cal-IPC Limited, FACU
Solanum nigrum	black nightshade	No	UPL
Sonchus oleraceus	common sowthistle	No	UPL
Tribulus terrestris	puncturevine	No	Cal-IPC Limited
Urtica urens	dwarf nettle	No	
Youngia japonica	Oriental false hawksbeard	No	FACU
Zea mays	corn	No	

Arid West Region Plant List 2020 (v3.5) (USACE 2020)

OBL (Obligate Wetland) = almost always occur in wetlands
FACW (Facultative Wetland) = usually occur in wetlands, but may occur in non-wetlands
FAC (Facultative) = occur in wetlands and non-wetlands
FACU (Facultative Upland) = usually occur in non-wetlands, but may occur in wetlands
UPL (Obligate Upland) = almost never occur in wetlands

Wildlife Species Observed

Scientific Name	Common Name	Native	Special Status/Notes
Birds			
Anthus rubescens	American pipit	Yes	MBTA/§
Calypte costae	costa's hummingbird	Yes	MBTA/§
Charadrius vociferus	killdeer	Yes	MBTA/§
Chondestes grammacus	lark sparrow	Yes	MBTA/§
Circus hudsonius	northern harrier	Yes	MBTA/§
Columbia livia	rock dove	No	–
Corvus corax	common raven		MBTA/§
Eremophila alpestris	horned lark	Yes	MBTA/§
Falco mexicanus	prairie falcon	Yes	MBTA/§/WL
Haemorhous mexicanus	house finch	Yes	MBTA/§
Passer domesticus	European house sparrow	No	–
Passerculus sandwichensis	savannah sparrow		MBTA/§
Petrochelidon pyrrhonota	cliff swallow	Yes	MBTA/§, multiple old nests observed in box culvert on western portion of study area
Psaltriparus minimus	bushtit	Yes	MBTA/§
Sayornis nigricans	black pheobe		MBTA/§, multiple old nests observed throughout study area
Setophaga coronata	yellow-rumped warbler		MBTA/§
Spinus tristis	American goldfinch	Yes	MBTA/§
Streptopelia decaocto	Eurasian collared dove	No	–
Sturnus vulgaris	European starling	No	–
Tringa melanoleuca	greater yellowlegs	Yes	MBTA/§
Turdus migratorius	American robin	Yes	MBTA/§
Zenaida macroura	mourning dove		MBTA/§
Zonotrichia leucophrys	white-crowned sparrow	Yes	MBTA/§
Reptiles			
Sceloporus occidentalis	western fence lizard	Yes	
Mammals			
Canis latrans	coyote	Yes	tracks
Canis lupus familiaris	domestic dog	No	tracks
Equus caballus	domestic horse	No	tracks
Felis catus	domestic cat	No	tracks
Lynx rufus	bobcat	Yes	tracks, scat
Mephitis mephitis	striped skunk	Yes	tracks
Procyon lotor	American raccoon	Yes	tracks
Thomomys bottae	Botta's pocket gopher	Yes	burrows
Vulpes sp.	fox	Yes	Small unidentified fox track
Invertebrates			
Apis mellifera	Honeybee	No	
Musca domestica	house fly	No	
Schistocerca sp.	grasshopper	–	
Vanessa annabella	west coast lady	Yes	
Fish			
Cyprinus sp.	carp	No	Partially decomposed approximately 15 fish.

§ = CA Fish and Game Code §3503 and §3503.5
MBTA = Federal Migratory Bird Treaty Act
WL = Watch List

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January 12, 2024
Project Number: 23-14815

Jessie Fan, ENV SP
Kimley-Horn
660 South Figueroa Street, Suite 2050
Los Angeles, California 90017
Via email: jessie.fan@kimley-horn.com

Subject: Jurisdictional Delineation for the Foxtail Hybrid Solar Project, Tulare County, California

Dear Ms. Fan,

This Jurisdictional Delineation (JD) Report has been prepared by Rincon Consultants, Inc. (Rincon) to support the Foxtail Hybrid Solar Project (Project) located in unincorporated Tulare County, California. This JD Report has been prepared and is suitable for use by the United States Army Corps of Engineers (USACE) to confirm extent of potential jurisdiction under Section 404 of the Clean Water Act (CWA), the Central Valley Regional Water Quality Control Board (RWQCB) to confirm extent of potential jurisdiction pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act, and the California Department of Fish and Wildlife (CDFW) to confirm jurisdiction pursuant to California Fish and Game Code (CFGC) Section 1600 et seq. This JD identified three features that are potentially jurisdictional waters, including an irrigation canal that borders the Project site to the north and northwest and two anthropogenic detention basins.

Project Description and Location

The Project Area, comprised of a proposed solar facility and battery energy storage system (BESS), is located in an agricultural area of Tulare County, south of the community of Tulare (Refer to Attachment 1, Figure 1). The Project Area would be located on approximately 463.8 acres of land, approximately bordered by (clockwise from North) Avenue 190, Road 80, Avenue 184, and Road 72 in Tulare County, California (APN 228-050-020-000). The property is classified as Field and Row Crop by the Tulare County Office of the Assessor. It is subdivided into six distinct fields. It is surrounded by tilled agricultural land, active agricultural fields, and orchards. Additionally, the northern border (Avenue 190), and part of the western border (Road 72), of the Project Area contains an irrigation canal. For the purposes of this report, the Study Area includes the Project Area plus a 100-foot buffer (Refer to Attachment 1, Figure 2). The Project components analyzed in this JD are located within the *Paige* and *Taylor Weir,* California United States Geological Survey (USGS) 7.5-minute topographic quadrangle.

Methods

A literature review and a field delineation were conducted to identify, describe, and map all potential jurisdictional waters within the Jurisdictional Delineation Survey Area. For the purposes of this report, the Jurisdictional Delineation Survey Area (Study Area) includes the Project Area plus a 100-foot buffer and the Biological Survey Area (BSA) includes the Project Area plus a 500-foot buffer. The literature review and field delineation were conducted in accordance with USACE, RWQCB, and CDFW guidelines as outlined below and presented in Attachment 2 Regulatory Framework.

Literature Review

Prior to the field survey, Rincon reviewed aerial imagery of the Study Area (ESRI 2023a, ESRI 2023b, ESRI 2023c, Google Earth Pro 2023), the Web Soil Survey (United States Department of Agriculture, Natural Resources Conservation Service [NRCS] 2023a), and the National Hydric Soils List by State: California (NRCS 2023b). These resources were reviewed to better characterize the site and its surroundings from a hydrologic, geologic, and topographic perspective and to determine if any soil units mapped in the Study Area were classified as hydric. Additionally, the National Wetlands Inventory (NWI; United States Fish and Wildlife Service [USFWS] 2023) and the National Hydrography Dataset (NHD; USGS 2019) were reviewed to determine if any wetlands or other waters were mapped in or near the Study Area.

Field Delineation

On November 20, 2023, Rincon Biologists Michaela Robbins and Michael Hernandez surveyed the Study Area on foot for potential wetland and non-wetland jurisdictional waters. Current federal and State policies, methods, and guidelines were used to identify and delineate potential jurisdictional waters and are summarized in the subsections below and in detail in Attachment 2 Regulatory Framework.

During the field delineation, Rincon took photographs of potential jurisdictional waters and the surrounding areas (Refer to Attachment 3). General site characteristics were noted, and vegetation present on-site was documented (Refer to Attachment 4). Data collection was focused on potential jurisdictional waters and was performed in areas that represented the conditions of each hydrologic feature.

The extent of potential jurisdictional waters, culverts, wetland and ordinary high water mark (OHWM) sample points, and vegetation community boundaries were collected in the field using a Juniper Systems Inc. Global Positioning System (GPS) unit with sub-meter accuracy, tablet and were subsequently transferred to Rincon's Geographic Information System (GIS) software program (i.e., ArcGIS Pro) to produce a delineation figure.

Wetland Waters of the United States

Potential USACE wetland waters of the United States (US) were evaluated for the presence of wetland indicators; specifically, hydrophytic vegetation, hydric soils, and wetland hydrology, according to routine delineation procedure within the *Wetlands Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a). The USACE Arid West 2020 Regional Wetland Plant List was used to determine the indicator status of the examined vegetation by the following indicator status categories: Upland (UPL), Facultative Upland (FACU), Facultative (FAC), Facultative Wetland (FACW), and Obligate Wetland (OBL) (Lichvar et al. 2020). Representative sample points were taken in areas most likely to exhibit wetland characteristics (i.e., the prevalence of hydrophytic vegetation and suitable landform) and examined in the field for potential wetland indicators. Sample points were not conducted in areas with an obvious prevalence of upland vegetation or in areas where the landform would not support wetland features. Adjacent wetlands are "waters of the U.S" only if there is a continuous surface connection between the potential wetland and a navigable water body or relatively permanent tributary (USACE 2023).

Non-Wetland Waters of the United States

The lateral limits of potential USACE jurisdiction for non-wetland waters was determined by the presence of physical characteristics indicative of the OHWM. The OHWM was identified in accordance with the applicable Code of Federal Regulations (CFR) sections (33 CFR 328.3 and 33 CFR 328.4) and

Regulatory Guidance Letter 05-05 (USACE 2005), as well as in reference to various relevant technical publications, including, but not limited to, A *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). The regulations were also reviewed in the determination of non-jurisdictional waters (e.g., roadway ditches excavated in uplands). Due to the homogeneity of the intermittent stream channel within the Project Area, one OHWM data point was evaluated utilizing the *Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2010).

Additionally, Rincon evaluated sources of water, streamflow period, potential connections, and distances to Traditional Navigable Waters (TNWs), and other factors that affect whether waters qualify as "waters of the US" pursuant to *United States Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (USACE 2007).

CDFW-Streambed

The extent of potential streambeds, streambanks, and riparian habitat subject to CDFW jurisdiction under Section 1600 et seq. of the CFGC was delineated by reviewing the topography and morphology of potentially jurisdictional waters to determine the outer limit of riparian vegetation, where present, or the tops of banks for stream features.

Waters of the State

The limits of "waters of the State," as defined under the Porter-Cologne Water Quality Control Act (Porter-Cologne), are any surface water or groundwater, including saline waters, within the boundaries of the state. In those areas where an OHWM was not present, but a bed and bank was present and the capacity to hold surface water was present, i.e., detention basins, agricultural ditches, and roadside ditches that are hydrologically connected to tributaries and TNWs, the limits of waters of the State were determined to be coterminous with the top of slope or top of "bank." Roadside ditches that may periodically convey ephemeral surface waters but are hydrologically isolated from tributaries and/or traditional navigable waters, were determined to be non-jurisdictional as they did not exhibit an OHWM.

Potential State wetland features were evaluated pursuant to the State Water Resources Control Board (SWRCB) *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*. Potential state wetlands were evaluated following the SWRCB's definition, which relies on the same three parameters as the USACE definition (hydrophytic vegetation, wetland hydrology, and hydric soils) but allows for naturally unvegetated areas meeting the other two parameters to be considered wetlands.

When a discharge is proposed to waters outside of federal jurisdiction, the Water Boards regulate the discharge under Porter-Cologne through the issuance of Waste Discharge Requirements.

Vegetation Communities and Land Cover Types

Vegetation communities were classified using A Manual of California Vegetation, Second Edition (Sawyer et al. 2009) and land cover types were classified using A Guide to Wildlife Habitats of California (Mayer and Laudenslayer 1988). Each vegetation mapping unit was analyzed for characteristics to define the applicable vegetation community, such as dominant or co-dominant plant species and community rules. For those vegetated areas that could not be classified per A Manual of California Vegetation, Second Edition, industry-standard vegetation community names were used (e.g., agricultural lands). Additionally, land covers were characterized in areas that lacked vegetation (e.g., developed). A list of dominant, abundant, and conspicuous plant species within the Study Area was compiled during the surveys (Attachment 3).

Existing Site Conditions

Climate, Topography, and Land Use

The Study Area is located within western Tulare County within the San Joaquin Valley. The weather in Tulare County is typical of a Mediterranean climate. Summers are warm and dry, while winters are cool and wet with most of the precipitation falling between November and March (WRCC 2016). The proposed Project Site is generally flat and is primarily 230 to 234 feet above mean sea level (Google Earth 2023). The land use within the vicinity of the proposed Project is primarily agriculture grainland (Refer to Attachment 1, Figure 2). The Project Site is south of and outside of the Tulare Irrigation District boundary.

Hydrology

The Study Area is located within the Bates Slough Subwatershed (Hydrologic Unit Code [HUC] 12-1803000060901) South Fork Deep Creek-Deep Creek Subwatershed (HUC 12-1803000060902) and (USGS 2019) (Refer to Attachment 1, Figure 3).

The NWI identifies a riverine intermittent streambed seasonally flooded (R5UBFx) feature along the northern side of proposed Project Area. The irrigation canal or intermittent stream, hereinafter referred to as "Intermittent Stream 1," flows through the northeastern portion of the Project Area and flows parallel to Avenue 190 then Intermittent Stream 1 flows south along the western portion of the Project Area, parallel to Road 72. The drainage flows west and eventually back into Bates Slough. Remnants of Bates Slough to the northwest and remnants of Elk Bayou to the southeast. The irrigation canal is part of the Tulare Irrigation Canal system and conveys water west and southwest to Tule River.

From the confluence, the Tule River flows about 10 miles (16 km) south and west, still following State Route 190, to Lake Success. Before emptying into the lake, it is joined by Campbell Creek from the north, and Graham Creek from the east. The South Fork of the Tule River joins the river in Lake Success. The Tule River then exits the Success Dam and flows west into Porterville, and winds west to the former bed of Tulare Lake. It passes the cities of Tipton and Corcoran, and splits into many channels, eventually disappearing into multiple agricultural irrigation and drainage channels. The river terminates about 9 miles (14 km) east-northeast of Kettleman City in Kings County at a junction with a canal carrying water from the Kings River.

Within the Study Area, Intermittent Stream 1 is an irrigation canal and runs along the border of the project site running from the northeast corner of the site to the middle of the western border. Within the Study Area, two detention basins were observed. The first detention basin (Detention Basin 1) located on the very southwestern corner of the project site. The second detention basin (Detention Basin 2) is located within the project site, just south of the approximate parcel midpoint.

Soils

The United States Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey depicts two soil map units within the Study Area. The site-specific soil observations observed during the field delineation were generally consistent with those mapped by the Web Soil Survey[1]. The hydric soil Biggriz-Biggriz, saline-Sodic, complex, 0 to 2 percent slopes (104) and non-hydric soil Colpien loam, 0 to 2 percent slopes (108) are mapped on-site by the USDA (NRCS 2023a,

[1] Published soil surveys are documented at a broad scale, and they may not match the level of detail or refinement captured during formal jurisdictional delineation surveys.

NRCS 2023b). Descriptions of the soil map units found within the Study Area are provided below and their locations are depicted in Attachment 1, Figure 4.

Biggriz-Biggriz, saline-Sodic, complex, 0 to 2 percent slopes (104)

The Biggriz series consists of very deep, somewhat poorly drained soils that formed in alluvium mainly derived from granitic rock sources. Biggriz soils are found on terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 7 inches, and the mean annual air temperature is about 65 degrees Fahrenheit (F). It is formed from alluvium derived from sandstone and acidic shale and a typical soil profile contains three distinct horizons. The first horizon occurs between 0 to 6 inches and contains loam; the second horizon occurs to a depth of 14 inches and contains loam, and the third horizon occurs to a depth of 25 inches and contains loam. Available water storage is somewhat poorly drained (about 80 inches), and the runoff class is negligible. This soil is prone to flooding or ponding and it is considered hydric class C and is listed as hydric soil (NRCS 2023b).

Colpien loam, 0 to 2 percent slopes (108)

The Colpien series consists of very deep, moderately well drained soils on terraces that formed in alluvium derived mainly from granitic rocks. This soil type has fine-loamy, mixed, super active, thermic Calcic Pachic Haploxerolls These soils are moderately well drained; runoff is negligible to low; moderately slow permeability due to high content of mica in the soil. Slopes are 0 to 2 percent. The average annual precipitation is about 10 inches, and the average annual temperature is about 63 degrees F. The first horizon occurs between 0 to 6 inches and contains loam; the second horizon occurs to a depth of 13 inches and contains clay loam, and the third horizon occurs to a depth of 14 inches and contains clay loam. Available water storage is high (about 10.6 inches), and the runoff class is low. This soil is not prone to flooding or ponding and it is not considered hydric (NRCS 2023b).

Vegetation Communities and Land Cover Types

One natural vegetation community and two land cover types were identified within the BSA. Table 1 provides a summary of land cover types present within the BSA. Figure 5 in Attachment 1 provides an overview of these land cover types. A list of plant species encountered during the field reconnaissance survey is provided in Attachment 3.

Table 1 Summary of Land Cover Types Present within the Biological Study Area

Land Cover Type	CDFW Sensitive Natural Community[1]	Acreage within Biological Study Area
Agricultural Lands	N/A	609.96 acres
Developed/Disturbed	N/A	83.59 acres
Common Plantain/Smartweed Patch	No	0.06 acre
Total Area	--	**693.61 acres**

[1] California Natural Community List (CDFW 2023)

Agricultural Lands

Agricultural land cover consists of areas that have been previously and currently being utilized for agricultural purposes. Within the BSA, these areas consist of six agricultural grain fields that were utilized for growing corn last summer and are now presumed to be planted with barley. Agricultural land cover type is the dominate land cover within the BSA. Agricultural Lands are not classified in the MCV2 classification system (Sawyer et al. 2009) or the Holland (1986) classification system but are

included in the CDFW California Wildlife Habitat Relationships (CWHR) database as Agricultural Habitats (Mayer and Laudenslayer 1988).

Developed/Disturbed

Developed/Disturbed land cover consists of areas that have been previously developed or otherwise physically modified to the extent that they no longer contain native soil and habitat conditions and no longer support most vegetation. Within the BSA, these areas consist of buildings, paved areas and roadways, and gravel or hardpacked dirt roadways. This land cover type may also contain areas that are sparsely vegetated, primarily with non-native species. This land cover type occurs throughout the BSA. Developed areas are not classified in the MCV2 classification system (Sawyer et al. 2009) or the Holland (1986) classification system but are included in the CDFW CWHR database as Urban (Mayer and Laudenslayer 1988).

Common Plantain/Smartweed Patch

Common Plantain/Smartweed Patch observed within the BSA can best be described as Smartweed Herbaceous Alliance (Ca Code: 42.207.00, CDFW 2023, Sawyer et al. 2009). Broadleaf plantain (*Plantago major*) is co-dominate in the herbaceous layer with pale smartweed (*Persicaria lapathifolium*) and purple ammannia (*Ammannia coccinea*). Within the BSA, the bottom of Detention Basin 1 contains a small Common Plantain/Smartweed Patch. Common Plantain/Smartweed Patches are not considered sensitive natural community by CDFW (CDFW 2023).

Field Results and Discussion

Based on the field delineation, there is one intermittent stream/irrigation canal and two detention basins within the Study Area that are potentially state jurisdictional waters subject to natural resource agency permitting. The representative photographs are included in Attachment 4 and completed Arid West OHWM datasheets and Arid West Wetland Determination datasheets are included in Attachment 5.

Intermittent Streams

There is one intermittent stream identified within the Project Area: Intermittent Stream 1. Intermittent Stream 1 is irrigation canal and is classified as an intermittent stream by the NWI (USFWS 2023a). Intermittent Stream 1 flows along the northern and northwestern border of the Project Area (Refer to Attachment 1, Figure 3). Intermittent Stream 1 receives water from Elks Bayou (or Elks Bayou Ditch), which becomes a matrix of irrigation canals northeast of the proposed Project Area, and then eventually flows west and southwest into Bates Slough. To the southwest, Bates Slough then eventually connects with Tule River and eventually joins other irrigation canals at what is left of the Tulare Lake bed, its terminus. Within the Study Area, Intermittent Stream 1 flows parallel to Avenue 190, along the entire norther border of the Project Area, then continuing due south along Road 72 for approximately 0.26-mile (1,400 feet) where it flows due west. The irrigation canal channel is generally homogeneous in size and appears to have been anthropogenically realigned from its historic pathway. There is evidence of regular and heavy anthropogenic disturbance throughout Intermittent Stream 1.

Within the Study Area, Intermittent Stream 1 has an identifiable bed and the OHWM was apparent through a break in bank slope and change of vegetation that was approximately 10 feet wide. The Arid West OHWM data form was used to collect data at Sample Point IS1. No indicators of wetland hydrology were present within the irrigation canal channel (hydrophytic vegetation, hydrology), therefore no soil pit was excavated at this location (Refer to Attachment 5). The banks, trapezoidal in nature, were steeply sloped (i.e., approximately 80 degrees) and were approximately 12 feet wide and approximately 5 feet deep. No water was observed within the channel during the field delineation.

Based on the well-defined nature of the bed and banks and the visible presence of inundation in historic imagery (Google Earth 2023) and the presence of dead fish, Intermittent Stream 1 was determined to have an intermittent hydroperiod (i.e., conveying flows from precipitation events and groundwater discharge but drying down in the summer months). The NHD identifies Intermittent Stream 1 as a riverine intermittent streambed seasonally flooded (USGS 2019). The NWI identifies Intermittent Stream 1 as unknow perennial riverine system (R5UBFx, USFWS 2023).

The stream channel is sparsely vegetated and with only a few plants growing within the Project Area. Dominant plant species within the disturbed portion of the channel, and mostly above OHWM, included the hydrophytic plants American sloughgrass (*Beckmannia syzigachne,* OBL), purple ammannia (OBL), pale smartweed (FACW), bog yellowcress (*Rorippa palustris*, OBL), and seep monkeyflower (*Erythranthe gutta*, OBL) (Refer to Attachment 3 for photographs). Detailed descriptions of the vegetation communities of Intermittent Stream 1 are included in the Vegetation Communities and Land Cover section above.

Intermittent Stream 1 is an intermittent stream that does not have direct connectivity to a Traditionally Navigable Water (TNW, i.e., the Pacific Ocean) and does not meet the criteria for wetland waters of the US under the Clean Water Act. Therefore, Intermittent Stream 1 is not subject to USACE jurisdiction. However, Intermittent Stream 1 is potentially non-wetland waters of the State and is likely under the regulation of the Central Valley RWQCB. In addition, Intermittent Stream 1 meets the definition of a CDFW-jurisdictional streambed and the extent of the top of bank and likely falls under CDFW jurisdiction.

Detention Basins

There are two detention basins identified within the Project Area. Locations are illustrated in Figure 3 in Attachment 1.

Detention Basin 1

Detention Basin 1 is an anthropogenic feature located in the southwestern corner of the proposed Project Area. The banks were steeply sloped (i.e., approximately 70 degrees) and the basin was approximately 0.09 acre in size and approximately 10 feet deep. The detention basin was dominated with hydrophytic vegetation, including broadleaf plantain (FAC), pale smartweed (FACW), and purple ammannia (OBL), with a prominent biotic crust. Hydrology indicators included the presence of included redox concentrations along root matrices, and soil surface cracks, biotic crust, and salt crust (Refer to Attachment 1, Figure 3 and Attachment 5 for delineation forms). Detention Basin 1 meets two of the USACE wetland parameters, hydrophytic vegetation and hydrology, and lacks surface connection to a navigable water body or relatively permanent tributary. Therefore, Detention Basin 1 is not considered a wetland water of the US under the Clean Water Act, neither is it a non-wetland water of the US. Additionally, due to only two wetland parameters being present, the basin is not wetland waters of the State under RWQCB jurisdiction. Detention Basin 1 does meet the criteria of non-wetland waters of the State and will likely be regulated by the RWQCB pursuant to Porter-Cologne.

Detention Basin 2

Detention Basin 2 is an anthropogenic feature located in the south-central portion of the proposed Project Area. This feature has been altered due to agricultural use and to have been recently graded. The banks were sloped (i.e., approximately 50 degrees) and the basin was approximately 0.35 acre in size and approximately 4 feet deep. The detention basin was predominately bare soil and vegetated with orchard grass orchard grass (*Dactylis glomerata*), a FACU species. Detention Basin 2 had only one USACE defined wetland parameter, hydrology, present (Refer to Attachment 1, Figure 3 and Attachment 5 for delineation forms). Detention Basin 2 meets only one USACE wetland parameter

(hydrology) and lacks surface connection to a navigable water body or relatively permanent tributary. Therefore, Detention Basin 2 is not considered a wetland water of the US under USACE jurisdiction, neither is it a non-wetland water of the US. Additionally, due to only two wetland parameters being present, the basin is not wetland waters of the State under RWQCB jurisdiction. Detention Basin 2 meets the criteria of non-wetland waters of the State and therefore will likely be regulated by the RWQCB pursuant to Porter-Cologne.

Summary of Jurisdictional Waters

Potentially jurisdictional waters are summarized below:

Table 2 Potentially Jurisdictional Waters Delineated within the Study Area

	USACE		RWQCB		CDFW
Jurisdictional Area	Non-Wetland Waters of the US[1] (acres [lin. ft.])	Wetland Waters of the US[1] (acres)	Non-wetland Waters of the State[1] (acres [lin. ft.])	Wetland Waters of the State (acres)	CDFW - Jurisdictional Streambed[2] (acres [lin. ft.])
Intermittent Stream 1	--	--	1.75 [6,364]	--	1.75 [6,364]
Detention Basin 1	--	--	0.09 [156]	--	--
Detention Basin 2	--	--	0.35 [252]	--	--
Total	**--**	**--**	**2.22 [6,772]**	**--**	**1.75 [6,364]**

[1]Section 401 of the CWA and Porter-Cologne Water Quality Control Act waters of the State, calculated to top of bank or the edge of riparian habitat, whichever is greater; includes culverted waters of the State.

[2]Streambed calculated to top of bank and includes culverted streambed.

Intermittent Stream 1 lacks connectivity to a TNW and is an agricultural canal (irrigation canal) and therefore is not considered waters of the US subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act, neither non-wetland nor wetland waters of the US are present. The irrigation canal (Intermittent Stream 1) is potentially a non-wetland waters of the State and is therefore likely regulated by the Central Valley RWQCB pursuant to the Porter-Cologne; no wetland waters of the State are present. In addition, Intermittent Stream 1 is potentially a CDFW-jurisdictional streambed and therefore will likely be regulated pursuant to Section 1600 et seq. of the CFGC.

Not all of the USACE wetland parameters were met for Detention Basin 1 and Detention Basin 2, these features do not meet the definition of wetland waters of the US or the State. Detention Basin 1 and Detention Basin 2 are potentially non-wetland waters of the State and therefore are likely subject to the Central Valley RWQCB pursuant to Porter-Cologne. In addition, since Detention Basin 1 and Detention Basin 2 are anthropogenically made and have low habitat value, these features will likely not be considered jurisdictional by CDFW and therefore are not anticipated to be regulated pursuant to Section 1600 et seq. of the CFGC.

The findings and conclusions presented in this report, including the location and extent of areas subject to regulatory jurisdiction, represent the professional opinion of the consultant biologists. These findings and conclusions should be considered preliminary and at the final discretion of the applicable resource agency.

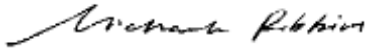
Conclusions and Recommendations

The Study Area contains three features that are potentially jurisdictional waters: one intermittent stream and two detention basins. The following actions are recommended to minimize and avoid adverse impacts on aquatic resources:

- To avoid direct and indirect impacts to any potentially jurisdictional water, an avoidance buffer of at least 50 feet will be utilized. If all potentially jurisdictional waters can be avoided, then no further action should be required.
- If impacts to CDFW jurisdiction are anticipated, then a Streambed Alteration Agreement, pursuant to Section 1600 et seq. of the CFGC, should be obtained from the CDFW.
- If impacts to RWQCB jurisdiction are anticipated, then a Report of Waste Discharge should be filed and a WDR, pursuant to Porter-Cologne Water Quality Control Act, should be obtained from the Central Valley RWQCB.

Thank you for the opportunity to assist with this project. If you have any questions regarding this submission or any of the information provided herein, please contact either Andrea Maben (amaben@rinconconsultants.com) or Angie Harbin (aharbin@rinconconsultants.com).

Sincerely,
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Senior Biologist



Andrea Maben
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Angie Harbin
Director of Natural Resources

Attachments

Attachment 1 Figures
Attachment 2 Regulatory Framework
Attachment 3 Floral Compendium
Attachment 4 Representative Photographs
Attachment 5 OHWM and Wetland Determination Datasheets

References

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition. University of California Press, Berkeley, CA.

California Department of Fish and Wildlife (CDFW). 2023. California Natural Community List June 1, 2023. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline. Accessed November 2023.

California Invasive Plant Council. 2023. Cal-IPC Inventory. Central Valley. Available at: https://www.cal-ipc.org/plants/inventory/ Accessed November 2023.

Environmental Systems Research Institute (ESRI). 2023a. "World Street Map" [basemap]. Scale Not Given. "World Street Map". https://www.arcgis.com/apps/mapviewer/index.html?layers=3b93337983e9436f8db950e38a8629af

____. 2023b. National Geographic Society. "World Topo Map" [basemap]. Scale Not Given. "World Topo Map". https://www.arcgis.com/apps/mapviewer/index.html?layers=b9b1b422198944fbbd5250b3241691b6

____. 2023c. "USA Topo Map" [basemap]. Scale Not Given. "USA Topo Map". https://www.arcgis.com/apps/mapviewer/index.html?layers=99cd5fbd98934028802b4f797c4b1732

Google Earth Pro. 2023. Available at: https://earth.google.com/web Accessed November 2023.

Holland, R. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California The Resources Agency Non-game Heritage Program Department of Fish and Game, Sacramento, California 1986 Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=75893&inline Accessed December 2023

Jepson Flora Project (eds.). 2023. Jepson eFlora. Available at: https://ucjeps.berkeley.edu/eflora/. Accessed November 2023.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. The Updated National Wetland Plant List: 2020 wetland ratings. Federal Register Volume 86, Issue 209: 29689-29691. Published 18 May 2020.

Mayer, K.E. and W.F. Laudenslayer, Jr. 1988. A Guide to Wildlife Habitats of California. California Department of Fire Protection, Sacramento, 1988.

Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, California.

State Water Resources Control Board (SWRCB). 2019. *Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State.* Adopted April 2, 2019. Available at: https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf. Accessed November 2023.

United States Army Corps of Engineers (USACE), Environmental Laboratory. 1987. Technical Report Y-97-1. In: United States Army Corps of Engineers Wetlands Delineation Manual. United States Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.

_____. 2004. Review of Ordinary High Water Mark Indicators for Delineating Arid Streams in the Southwest United States. Technical Report ERDC TR-04-1. United States Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire.

_____. 2005. Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification. United States Army Corps of Engineers. Washington, D.C.

_____. 2007. United States Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. United States Army Corps of Engineers and United States Environmental Protection Agency. Washington, D.C. Available at: https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll11/id/2310. Accessed November 2023.

_____. 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). United States Army Corps of Engineers Research and Development Center. Vicksburg, MS. September.

_____. 2008b. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. Technical Report ERDC/CRREL TR-08-12. UNITED STATES Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire.

_____. 2008c. Clean Water Act Jurisdiction Following the Supreme Court's Decisions in Rapanos v. United States & Carabell v. United States. United States Army Corps of Engineers and UNITED STATES Environmental Protection Agency. Washington, D.C. Available at: https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll5/id/1411. Accessed November 2023.

_____. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. Technical Report ERDC/CRREL TN-10-1. UNITED STATES Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire.

_____. 2020. National Wetlands Plant List (Version 3.5). United States Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. Hanover, New Hampshire. Available at: http://wetland-plants.usace.army.mil/. Accessed November 2023.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS). 2023a. Web Soils Survey: Custom Area of Interest in the *Tulare County, Western Part, California Survey Area.* Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed November 2023.

_____. 2023b. State Soils Data Access (SDA) Hydric Soils List: California. Available at: https://www.nrcs.usda.gov/publications/query-by-state.html. Accessed December 2023.

United States Geological Survey (USGS). 2019. National Hydrography Dataset. Accessed via the National Map. Accessed November 2023.

United States Fish and Wildlife Service (USFWS). 2023. National Wetlands Inventory (NWI). Available at: https://www.fws.gov/wetlands/data/mapper.html. Accessed November 2023.

Western Regional Climate Center (WRCC). 2016. Hanford 1 S, California (043747). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3747 Accessed December 2023.

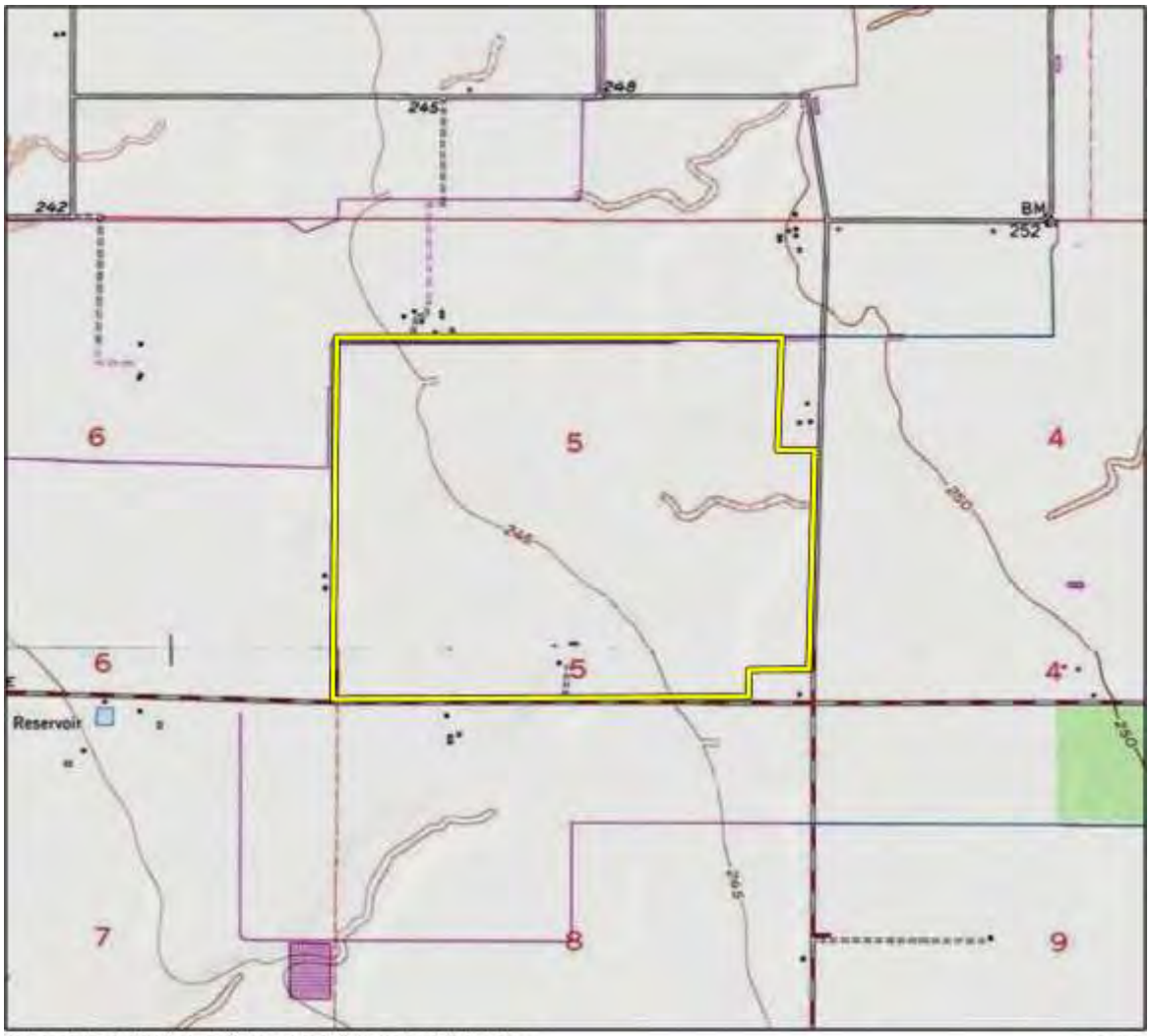
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Attachment 1

Figures

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Figure 1 Regional Location



Imagery provided by National Geographic Society, Esri and its licensors © 2023. Paige and Taylor Weir Quadrangles. T21S R24E S5. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

Project Location

0 1,000 2,000 Feet

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Figure 2 Project Location

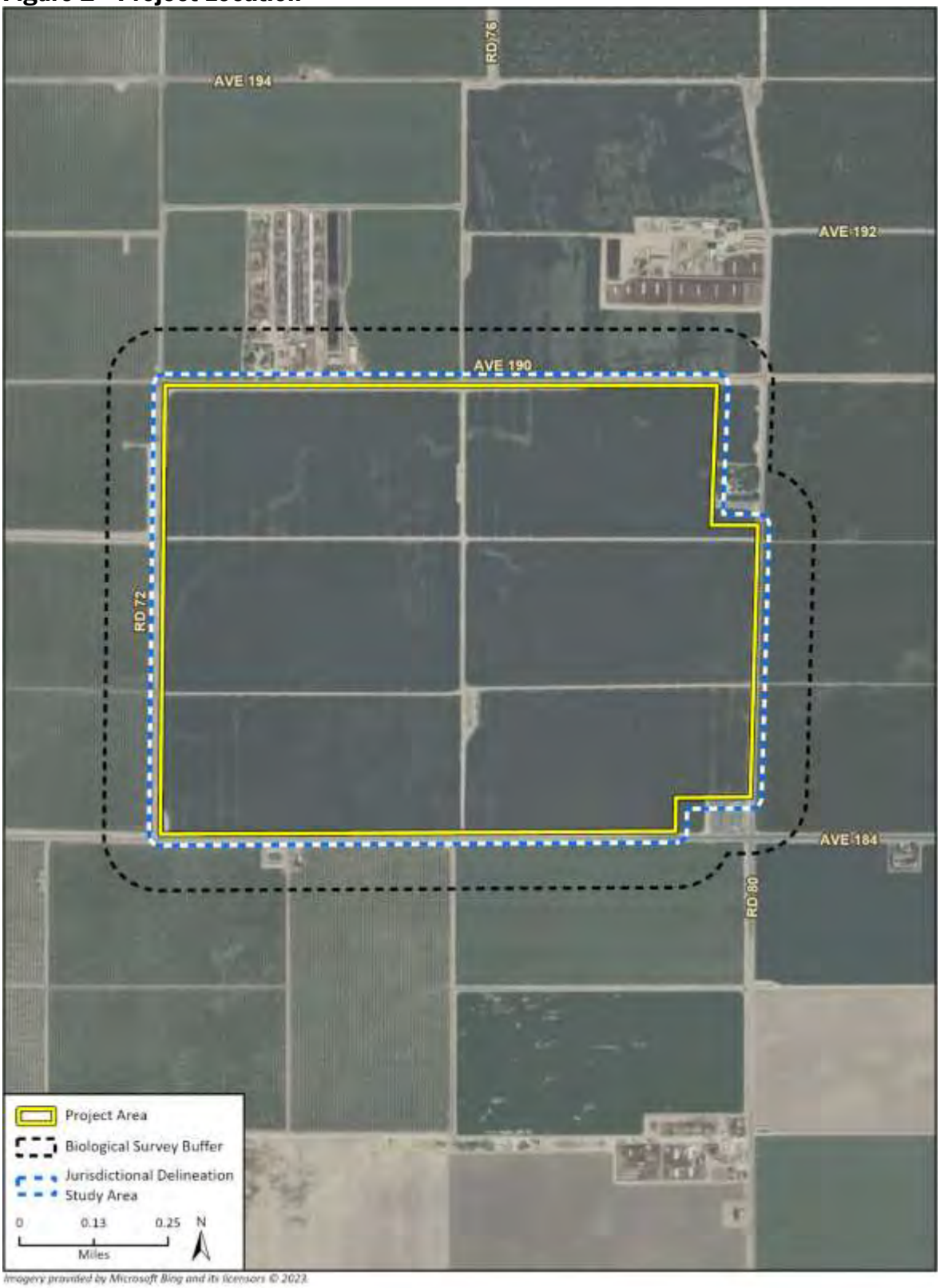


Figure 3 Jurisdictional Features



Figure 4 Soils

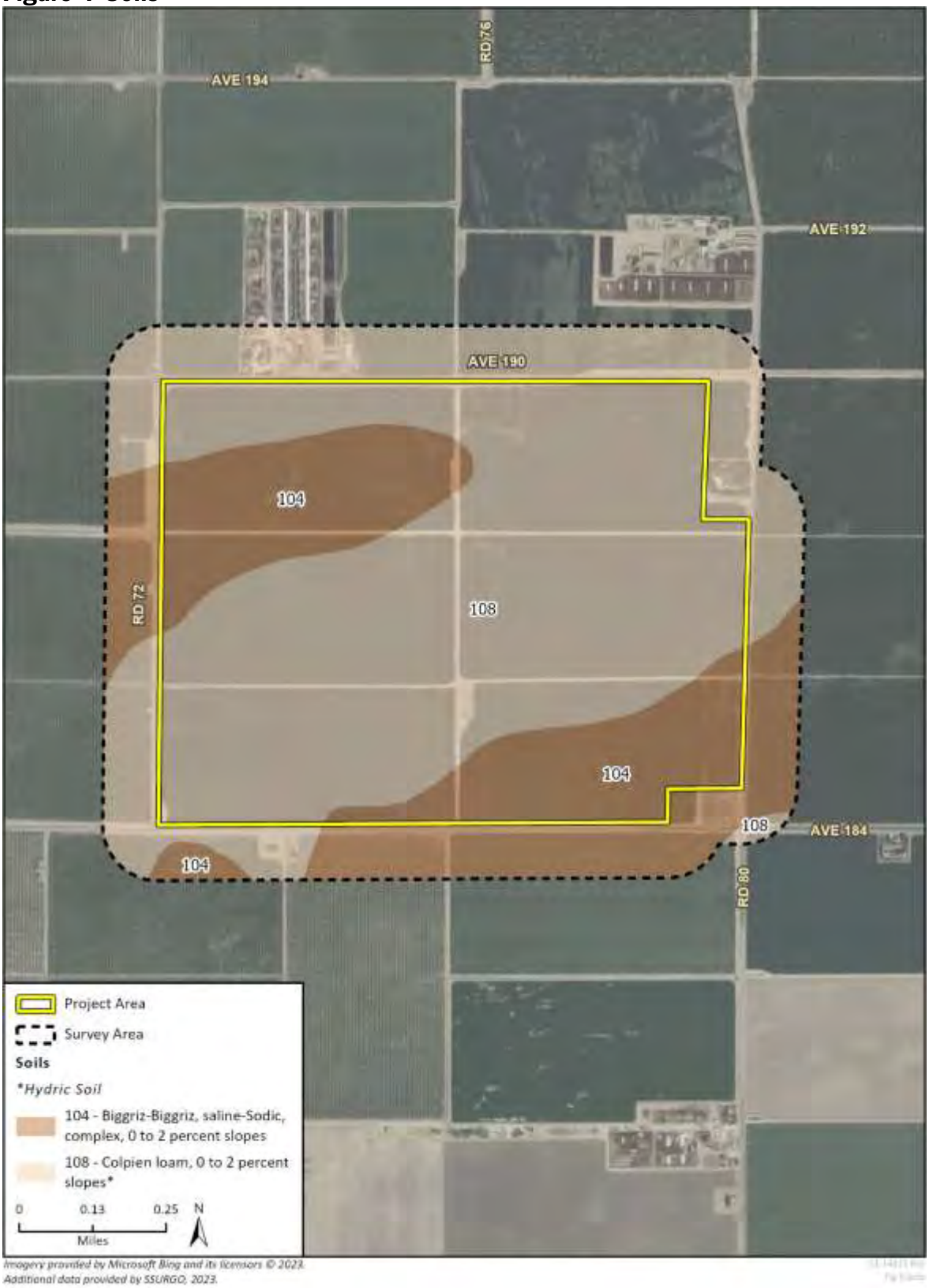
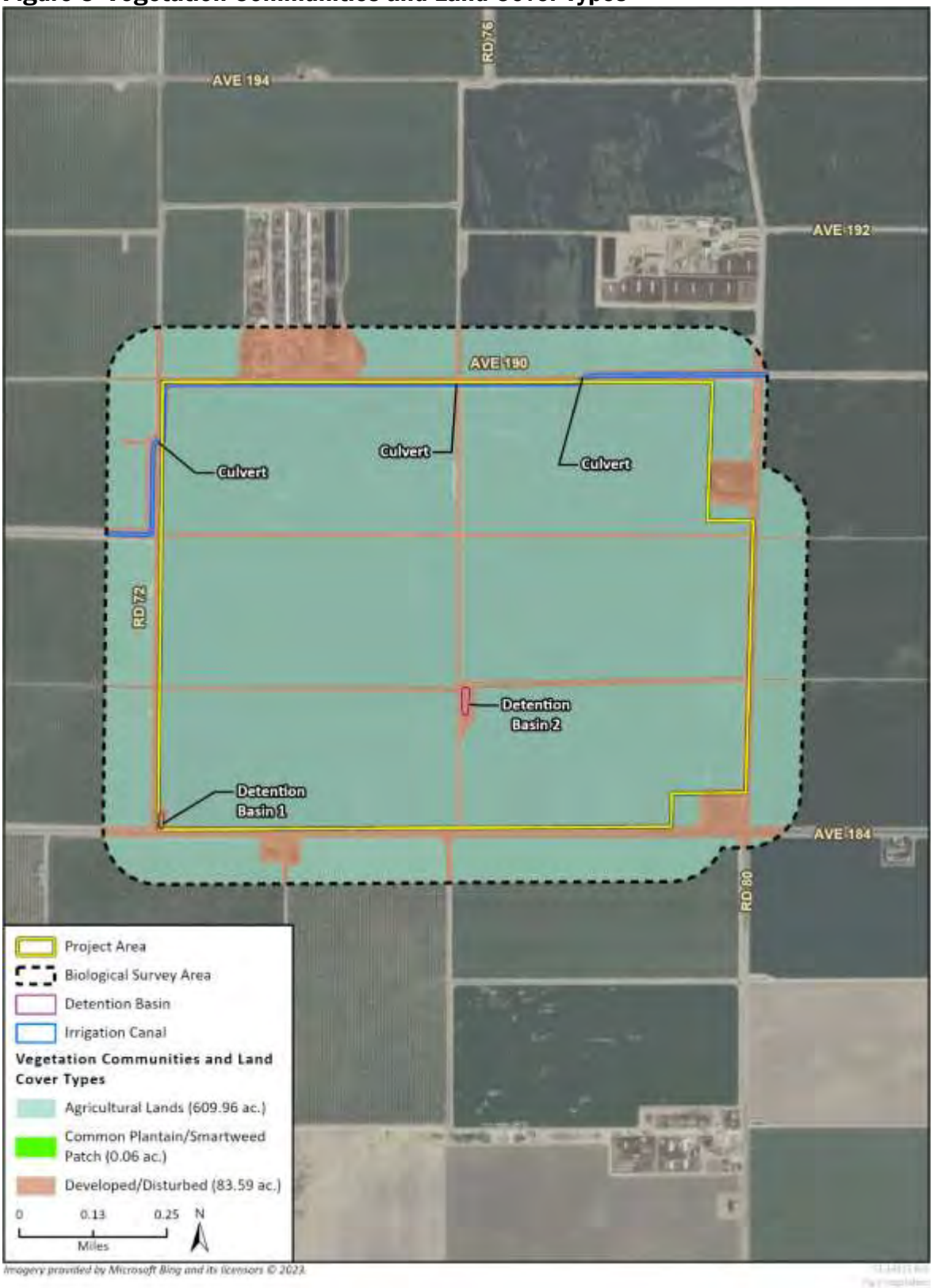


Figure 5 Vegetation Communities and Land Cover Types



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Attachment 2

Regulatory Framework

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Regulatory Framework

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, State, and local levels. A number of federal and State statutes provide a regulatory structure which guide the protection of jurisdictional features. Agencies with the responsibility for protection of jurisdictional features within the project site include:

- United States Army Corps of Engineers (non-wetland waters and wetlands of the United States)
- Regional Water Quality Control Board (waters of the State)
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes)

United States Army Corps of Engineers Jurisdiction

The United States Army Corps of Engineers (USACE) is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites."

Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including the territorial seas." "Waters of the United States" are broadly defined at 33 CFR Part 328.3 to include navigable, tidal, and interstate waters and certain impoundments, tributaries, and wetlands. The agencies' most recent regulatory definition of the term was promulgated in January 2023, following failed attempts in prior years that had been frustrated by legal challenges. However, in May 2023 the UNITED STATES Supreme Court issued its ruling in *Sackett v. Environmental Protection Agency,* which invalidated portions of the updated regulations. To address this ruling, in September 2023 the agencies issued a "conforming rule" (88 FR 61964-61969) modifying their definition of "waters of the United States" to comport with the Court's ruling. This definition is described in detail below.

WATERS OF THE UNITED STATES

Current USACE and USEPA regulations, reflecting of the January 2023 definition as modified by the September 2023 Conforming Rule, define "waters of the United States" as follows (33 CFR 328.3; see also 88 FR 61964-61969):

(1) Waters which are:

  (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

  (ii) The territorial seas; or

  (iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent to the following waters:

(i) Waters identified in paragraph (a)(1) of this section; or

(ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds, not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

The definition specifies that the following features are not “waters of the United States” even where they otherwise meet the terms of provisions (2) through (5) above:

(1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act;

(2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA;

(3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water;

(4) Artificially irrigated areas that would revert to dry land if the irrigation ceased;

(5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing;

(6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons;

(7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and

(8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

The lateral limits of USACE jurisdiction in non-tidal waters is defined by the "ordinary high-water mark" (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3(c)(1)). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the

OHWM to the outer edge of the wetlands (33 CFR 328.4 (c)). The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 FR 41217).

WETLANDS

The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3(c)(1)). The USACE's delineation procedures identify wetlands in the field based on indicators of three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

HYDROPHYTIC VEGETATION

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE published the National Wetland Plant List (USACE 2018), which separates vascular plants into the following four basic categories based on plant species frequency of occurrence in wetlands:

- Obligate Wetland (OBL). Almost always occur in wetlands
- Facultative Wetland (FACW). Usually occur in wetlands, but occasionally found in non-wetlands
- Facultative (FAC). Occur in wetlands or non-wetlands
- Facultative Upland (FACU). Usually occur in non-wetlands, but may occur in wetlands
- Obligate Upland (UPL). Almost never occur in wetlands

The USACE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on the United States Fish and Wildlife Service's list is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5% vegetative cover to be considered as a vegetated wetland.

HYDRIC SOILS

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying (indicates reducing conditions by a blue-grey color), or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

WETLAND HYDROLOGY

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands.

LIMITATIONS ON JURISDICTION BASED ON SACKETT V. USEPA SUPREME COURT DECISION

On May 25, 2023, the Supreme Court issued its decision on the petition from the Sacketts, a family in Idaho that was subject to a compliance order from the USEPA for backfilling their lot near Priest Lake, which the USEPA claimed contained federally regulated wetlands. The wetlands in question were adjacent to a ditch that fed a creek that ultimately drained into Priest Lake, a navigable water body. The USEPA asserted that the Sacketts had violated the law by filling the wetlands on their property without a permit. The Court's decision addressed controversy over whether, and under what conditions, the CWA reaches navigable waters' tributaries or adjacent wetlands. The Supreme Court's decision in *Sackett* provides definitive guidance to the agencies in determining the limits of their Clean Water Act authority. Major tenets of the decision have been incorporated into the agencies' current regulations through the September 2023 Conforming Rule.

The Court decided:

"Adjacent wetlands" are WOTUS only if there is a continuous surface connection between the wetland and a navigable or relatively permanent water body, such that it is difficult to determine the boundary between the wetland and the water body. The opinion notes that "temporary interruptions to surface connection may sometimes occur because of phenomena like low tides or dry spells." The agencies addressed this element by defining the term "adjacent" to mean "having a continuous surface connection" in the Conforming Rule.

The Significant Nexus Standard, introduced by the Court in prior decisions, is not mentioned in the Clean Water Act and should not be used. The Court determined that the standard applies ecological factors whose use in determining jurisdiction is not supported by the statute. The Conforming Rule removed significant nexus considerations from the definition.

Although jurisdiction over tributaries was not addressed by the Court, the decision stated that "…the [Clean Water Act's] use of "waters" encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes." The Conforming Rule makes clear that only relatively permanent tributaries qualify as "waters of the United States."

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other

modification of a navigable water of the United States and applies to all structures and work. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g. riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. It is important to note that Section 10 applies only to navigable waters, and thus does not apply to work in non-navigable wetlands or tributaries. In some cases, Section 10 authorization is issued by the USACE concurrently with CWA Section 404 authorization, such as when certain Nationwide Permits are used.

Regional Water Quality Control Board Jurisdiction

The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code sec. 13050(e)). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide state certification that the proposed activity will not violate state and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects. The process begins when an applicant requests a pre-application meeting with the RWQCB, waits no less than 30 days, and then submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. Under current regulations, once initiated, the reasonable period of time cannot be stopped or paused. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401 Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 *et seq*.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected.
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason.

- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation.

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020, make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs, and largely mirror the existing review requirements for CWA Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the state except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020. The SWRCB defines an area as wetland if, under normal circumstances:

1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;
2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and
3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (2020), states that waters of the UNITED STATES and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

California Department of Fish and Wildlife Jurisdiction

California Fish and Game Code section 1602 states that it is unlawful for any person to "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" without first notifying the California Department of Fish and Wildlife (CDFW) of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFW determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term "stream" for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

- **The plain language of Section 1602 of CFGC** establishes the following general concepts:
  - References "river," "stream," and "lake"
  - References "natural flow"
  - References "bed," "bank," and "channel"
- **Applicable court decisions**, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987), which interpreted Section 1602's use of "stream" to be as defined in common law. The Court indicated that a "stream" is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM

- **CDFW regulations** defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation
- **Guidance documents**, *including A Field Guide to Lake and Streambed Alteration Agreements* (CDFG 1994) and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically
  - A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
  - Width of a stream course can reasonably be identified by physical or biological indicators
  - A stream may have one or more channels (single thread vs. compound form)
  - Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
  - Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
  - Biologic components of a stream may include aquatic and riparian vegetation, all aquatic animals including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
  - The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. The importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

Attachment 3

Floral Compendium

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Plant Species Observed Within the Study Area on November 20, 2023

Scientific Name[1]	Common Name	Native	Invasive Status[2]	NWI Status[3]
Amaranthus blitoides	procumbent pigweed	Yes		FACU
Ammannia coccinea	purple ammannia	Yes		OBL
Beckmannia syzigachne	American sloughgrass	Yes		OBL
Bryum argenteum	silvery bryum	Yes		UPL
Chenopodium album	lamb's quarters	No		FACU
Dactylis glomerata	orchard grass	No	Limited	FACU
Erigeron canadensis	Canadian horseweed	Yes		FACU
Erythranthe gutta	seep monkeyflower	Yes		OBL
Hordeum vulgare	common barley	No		UPL
Hypochaeris glabra	smooth cat's ear	No	Limited	FACU
Hypochaeris radicata	rough cat's ear	No	Moderate	FACU
Lactuca serriola	prickly lettuce	No		FACU
Leptochloa sp.	strangletop grass	Yes		FACU
Malva parviflora	cheeseweed mallow	No		UPL
Mollugo verticillata	green carpetweed	No		FACU
Nerium oleander	oleander	No		UPL
Persicaria lapathifolia	pale smartweed	Yes		FACW
Plantago major	broadleaf plantain	No		FAC
Polygonum aviculare	prostrate knotweed	No		FAC
Prunus dulcis	domestic almond	No		UPL
Pseudognaphalium luteoalbum	rabbit tobacco	No		FAC
Raphanus raphanistrum	wild radish	No		UPL
Rorippa palustris	bog yellowcress	Yes		OBL
Salsola tragus	tumbleweed	No	Limited	FACU
Solanum nigrum	black nightshade	No		UPL
Sonchus oleraceus	common sowthistle	No		UPL
Tribulus terrestris	puncturevine	No	Limited	UPL
Urtica urens	dwarf nettle	No		UPL
Youngia japonica	Oriental false hawksbeard	No		FACU
Zea mays	corn	No		UPL

[1]eFlora. Jepson Flora Project 2023
[2]California Invasive Plant Council (Cal-IPC 2023)
[3]Arid West Region Plant List 2020 (v3.5) (USACE 2020)

OBL (Obligate Wetland) = almost always occur in wetlands
FACW (Facultative Wetland) = usually occur in wetlands, but may occur in non-wetlands
FAC (Facultative) = occur in wetlands and non-wetlands
FACU (Facultative Upland) = usually occur in non-wetlands, but may occur in wetlands
UPL (Obligate Upland) = almost never occur in wetlands

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Attachment 4

Representative Photographs

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Photograph 1. View north of Intermittent Stream 1, just east of double box culvert along the western border of the Project Area (November 20, 2023).



Photograph 2. View west of Intermittent Stream 1, at double box culvert along the western border of the Project Area. Note area where dead fish were observed in foreground (November 20, 2023).



Photograph 3. View east of Intermittent Stream 1 along the norther border of the Project Area. Location of Ordinary Highwater Mark Transect (IS1) (November 20, 2023).



Photograph 4. View east of Intermittent Stream 1 at culvert along the norther border of the Project Area. Note riprap placed as rock slope protection (November 20, 2023).



Photograph 5. View north of Detention Basin 1 within broadleafed plantain, pale smartweed, and purple ammannia with tumble weed surrounding the upper banks of the basin annual in the proposed Project Area (November 20, 2023).



Photograph 6. View of Detention Basin 1 test pit DB1 soil sample (November 20, 2023).



Photograph 7. View north of Detention Basin 2 (November 20, 2023).



Photograph 8. View DB2 soil sample in the proposed Project Area (November 20, 2023).

Attachment 5

OHWM and Wetland Determination Datasheets

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Foxtail Hybrid Solar Project City/County: Tulare County Sampling Date: 11/20/2023
Applicant/Owner: Samsung State: CA Sampling Point: DB1
Investigator(s): Michaela Robbins and Michael Hernandez Section, Township, Range: MDM, T21S ,R24E
Landform (hillslope, terrace, etc.): Remnant Fan Local relief (concave, convex, none): convex Slope (%): 3
Subregion (LRR): C-17—San Joaquin Valley Lat: 36.123708 Long: -119.411450 Datum: NAD83
Soil Map Unit Name: Colpien loam, 0 to 2 percent slopes (108) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔	No ☐	Is the Sampled Area within a Wetland? Yes ☐ No ✔
Hydric Soil Present?	Yes ☐	No ✔	
Wetland Hydrology Present?	Yes ✔	No ☐	

Remarks:
Detention Basin 1 is a detention basin.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 0.09 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 0.09 acre)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 0.09 acre)			
1. broadleaf plantain (Plantago major)	20	yes	FAC
2. pale smartweed (Persicaria lapathifolia)	5	yes	OBL
3. purple ammannia (Ammannia coccinea)	5	yes	OBL
4. tumble weed (Salsola tragus)	3	no	FACU
5.			
6.			
7.			
8.			
	33	= Total Cover	
Woody Vine Stratum (Plot size: 0.09 acre)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 42 % Cover of Biotic Crust 25

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	3	x 4 =	12
UPL species		x 5 =	
Column Totals:	33 (A)		82 (B)

Prevalence Index = B/A = 2.48

Hydrophytic Vegetation Indicators:
✔ Dominance Test is >50%
✔ Prevalence Index is ≤3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✔ No ☐

Remarks:
Moss believed to be silvery bryum (Bryum argenteum).
Evidence that detention basin appears to be routinely maintained.
Passes FAC-neutral test with 2:0 (2/2)

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SOIL

Sampling Point: DB1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
1-3	10 YR 2/1	100					Clay	
3-5.5	10 YR 3/1	100					Clay Loam	
5.5-14	10 YR 3/3	100	10 YR 4/6	5	CS	M	Sandy Loam	Sandy Loam with Gleyed Matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Evidence that detention basin appears to be routinely maintained.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☑ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☑ Surface Soil Cracks (B6)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☑ Salt Crust (B11)
- ☑ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches):

Water Table Present? Yes ☐ No ☑ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches):

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

Evidence that detention basin appears to be routinely maintained.

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Foxtail Hybrid Solar Project City/County: Tulare County Sampling Date: 11/20/2023
Applicant/Owner: Samsung State: CA Sampling Point: DB2
Investigator(s): Michaela Robbins and Michael Hernandez Section, Township, Range: MDM, T21S ,R24E
Landform (hillslope, terrace, etc.): Remnant Fan Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRR): C-17—San Joaquin Valley Lat: 36.126682 Long: -119.402269 Datum: NAD83
Soil Map Unit Name: Colpien loam, 0 to 2 percent slopes (108) NWI classification: PUBFx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No ☐ (If no, explain in Remarks.)
Are Vegetation ✔, Soil ✔, or Hydrology ✔ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No ☐
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐	No ✔	Is the Sampled Area within a Wetland? Yes ☐ No ✔
Hydric Soil Present?	Yes ☐	No ✔	
Wetland Hydrology Present?	Yes ✔	No ☐	

Remarks:
Detention Basin 2 is a detention basin. Evidence of recent grading/disturbance.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 0.35 acre)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 0.35 acre)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 0.35 acre)			
1. Orchard grass (Dactylis glomerata)	7	yes	FACU
2. prostrate knotweed (Polygonum aviculare)	1	no	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	8 = Total Cover		
Woody Vine Stratum (Plot size: 0.35 acre)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 92 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	1	x 3 =	3
FACU species	7	x 4 =	21
UPL species		x 5 =	
Column Totals:	8 (A)		24 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:
✔ Dominance Test is >50%
✔ Prevalence Index is ≤3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
✔ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ✔

Remarks:
Evidence of recent grading/disturbance.
FAC-neutral test 0:1 is negative.
1) Use of herbicides appears to be common within the region.

US Army Corps of Engineers Arid West – Version 2.0

SOIL

Sampling Point: DB2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10 YR 2/1	100					Clay	muck layer present
4-12	10 YR 3/1	100					Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) **(LRR C)**
- ☐ 1 cm Muck (A9) **(LRR D)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☑ 1 cm Muck (A9) **(LRR C)**
- ☐ 2 cm Muck (A10) **(LRR B)**
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ☐ No ☑

Remarks:

Evidence of recent grading/disturbance.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☑ Water Marks (B1) **(Nonriverine)**
- ☐ Sediment Deposits (B2) **(Nonriverine)**
- ☐ Drift Deposits (B3) **(Nonriverine)**
- ☑ Surface Soil Cracks (B6)
- ☑ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☑ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) **(Riverine)**
- ☐ Sediment Deposits (B2) **(Riverine)**
- ☐ Drift Deposits (B3) **(Riverine)**
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches):

Water Table Present? Yes ☐ No ☑ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches):

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

Evidence of recent grading/disturbance.

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Foxtail Hybrid Solar Project
Project Number: 22-19815
Stream: Irrigation Canal (Bates Slough)
Investigator(s): Michaela Robbins + Michael Hernandez (Attachment 4)
Date: 11/20/2023 **Time:** 12 pm
Town: Tulare County **State:** CA
Photo begin file#: 1 **Photo end file#:** 4

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details:
Foxtail Hybrid Solar Project - IS 1

Projection: 36.134352 **Datum:** NAD88
Coordinates: -119.402949

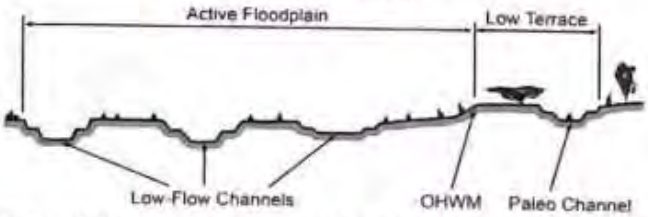
Potential anthropogenic influences on the channel system:
Irrigation canal appears to be regularly maintained.

Brief site description:
The intermittent stream is an irrigation canal that borders the Project Area to the north and west. The drainage feature appears to originate from and then reconnect to Bates Slough to the northeast and then the west.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates: Airbus, Maxar Tech 2023
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☒ Other studies NWI (USFWS 2023)
- ☐ 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:

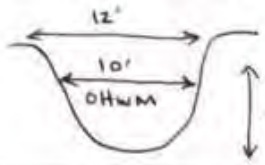
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	Gravel
2.56	64	Cobble	
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	Sand
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	Silt
1/16 0.0012	0.031	Medium 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: 22-19815 **Cross section ID:** **Date:** 11/20/2023 **Time:** 1pm

Cross section drawing:



Irrigation canal / Drainage ditch remains homogeneous throughout

OHWM

GPS point: 36.134352, -119.402449

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: _____
- ☐ Other: _____

Comments:

*Drainage ditch remains homogenous through Project Area. OHWM is approximately 10' wide, visible w/ change in vegetation species & cover and staining. Anthropogenic feature, trapizoidal in shape.

N/A

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: 36.134352, -119.402449

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: ____ % Tree: 0 % Shrub: 0 % 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:

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA 93277
PHONE (559) 624-7000
FAX (559) 615-3002

Reed Schenke Director
Michael Washam Associate Director
Aaron R. Bock Assistant Director

ECONOMIC DEVELOPMENT PLANNING PUBLIC WORKS

TECHNICAL MEMORANDUM

DATE: 2/11/2025

TO: Gary Mills, Chief Planner

FROM: Brenda Alcantar, Planner I

SUBJECT: Foxtail Solar Biological Memo Update

Project Details

APN: 228-050-020
Zone:AE-40
Project number: PSP 24-065, CEQ 24-013 - 55MWac solar PV facility with battery storage
Site location: 18839 80 RD Tulare CA

The following is a request to update the biological resources for the Foxtail Solar project, initially provided by Rincon Consultants, Inc. on December 21, 2023. The project area spans across two 7.5-minute quadrangles, Paige and Taylor Weir. In the Paige quadrangle, which covers approximately 38,600 acres, three species were identified, while in the Taylor Weir quadrangle, seven special status species were recorded, resulting in a total of 10 species according to the RareFind 5 database (see Attachment A).

The project site is located on the southeastern portion of the Paige quadrangle and the northeastern portion of the Taylor Weir quadrangle. No special status species have been identified within the project site, which, according to the project report, covers an area of approximately 463.8 acres.

While the exact locations of special status species sightings are kept confidential to the public as a precaution, a buffer zone for the San Joaquin kit fox (*Vulpes macrotis mutica*) was mapped near a wooded riparian area approximately a mile southeast of the project area, consistent with the original biological report from Rincon, which indicated a sighting of the species in 1975. According to the California Natural Diversity Database (CNDDB), the species is presumed extant, meaning it is considered to still be in existence unless evidence to the contrary is presented. Additionally, directly to the east of the San Joaquin kit fox buffer zone, a sighting of a Swainson's hawk (*Buteo swainsoni*) was recorded on June 17, 2017, and, like the kit fox, it is also considered 'Presumed Extant.'

The following Mitigation Measures will be required prior to any construction-related activities to ensure the Project will have a less than significant impact on special status plant and animal species within the Project vicinity.

Pre-construction Surveys and Education

BIO-1: ***(Pre-construction Survey – Special Status Plant Species)*** A qualified biologist/botanist will conduct pre-construction surveys for special status plant species in accordance with the California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (2009). This protocol includes identification of reference populations to facilitate the likelihood of field investigation occurring during the appropriate floristic period. Surveys should be timed to coincide with flowering periods for species that could occur (March-May)..In the absence of protocol-level surveys being performed, additional surveys may be necessary.

- If special status plant species are not identified during pre-construction surveys, no further action is required.
- •If special status plant species are detected during preconstruction surveys, plant population sh Field Office of CDFW shall be contacted immediately to identify the appropriate minimization actions to be taken as appropriate for the species identified and to determine permitting needs.

BIO-2: ***(Pre-construction Survey – San Joaquin Kit Fox and Nesting Raptors/Migratory Birds)*** If Project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct preconstruction surveys for active raptor and migratory bird nests within 30 days of the onset of these activities. The survey will include the proposed work area(s) and surrounding lands within 500 feet for all nesting raptors and migratory birds save Swainson's hawk; the Swainson's hawk survey will extend to ½-mile outside of work area boundaries. If no nesting pairs are found within the survey area, no further mitigation is required.

BIO-3: ***(Employee Education Program***) Prior to the start of construction, the applicant shall retain a qualified biologist/botanist to conduct a tailgate meeting to train all construction staff that will be involved with the project on the special status species that occur, or may occur, on the project site. This training will include a description of the species and its habitat needs; a report of the occurrence of the species in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.

San Joaquin kit fox

BIO-4: **(Avoidance)** A standardized pre-construction/pre-activity survey shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any Project activity likely to impact the San Joaquin kit fox. Surveys shall identify kit fox habitat features on the Project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens shall be determined and mapped.

Written results of pre-construction/pre-activity surveys must be received by the USFWS within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

BIO-5: ***(Minimization)*** Construction activities shall be carried out in a manner that minimizes disturbance to kit fox. Minimization measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash

BIO-6: ***(Mortality Reporting)*** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during Project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information. core avoidance areas. Any unauthorized take of Special Status species will be immediately reported to DFW by the monitor. The monitor will also notify the Project Coordinator who will stop work until corrective measures are implemented.

Nesting Raptors and Migratory Birds, including loggerhead shrike and tricolor blackbird

BIO-7: ***(*Avoidance*)*** In order to avoid impacts to nesting birds, construction will occur, where possible, outside the nesting season, or between September 16 and January 31

BIO-8: ***(*Buffers*)*** If active nests are found within the survey areas a qualified biologist will establish appropriate no-disturbance buffers based on species tolerance of human disturbance, baseline levels of disturbance, and barriers that may separate the nest from construction disturbance. These buffers will remain in place until the breeding season has ended or until the qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

BIO-9: ***(*Mortality reporting*)*** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury of a special status nesting raptor or migratory bird during Project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information. core avoidance areas. Any unauthorized take of Special Status species will be immediately reported to DFW by the monitor. The monitor will also notify the Project Coordinator who will stop work until corrective measures are implemented.

Attachment A. Paige and Taylor Weir Quad Species List

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Paige (3611924) OR Taylor Weir (3611914))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S2	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S4	
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2	SSC
Dipodomys nitratoides nitratoides Tipton kangaroo rat	AMAFD03152	Endangered	Endangered	G2T1T2	S2	
Gambelia sila blunt-nosed leopard lizard	ARACF07010	Endangered	Endangered	G1	S2	FP
Lasthenia chrysantha alkali-sink goldfields	PDAST5L030	None	None	G2	S2	1B.1
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G2	S2	1B.2
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S3	

Record Count: 10

ATTACHMENT C

CHRIS Report and Tribal Consultation Process

Cultural Resources Technical Report (Confidential and Not for Publication)

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE CHAIRPERSON
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Yokayo Pomo, Yuki, Nomlaki

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Pauma-Yuima Band of Luiseño Indians

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Raymond C. Hitchcock
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710

December 3, 2024

Danielle Folk
Tulare County

Via Email to: DFolk@tulareconty.ca.gov

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, Foxtail Hybrid Solar Project, Tulare County

Dear Ms. Folk:

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: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

California Historical Resources Information System



Fresno
Inyo
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
Email: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

To: Gary A. Mills
Tulare County Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Record Search 24-519

Date: December 9, 2024

Re: Foxtail Hybrid Solar Project (PSP 24-065)

County: Tulare

Map(s): Paige, Taylor Weir 7.5'

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, the OHP Built Environment Resources Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the OHP 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.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there have been no previous cultural resource studies completed within the project area. There have been three studies conducted within the one-half mile radius: TU-00223, TU-01423, and TU-01426.

Record Search 24-519

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there are no recorded cultural resources within the project area or within the one-half mile radius, and it is not known if any exist there.

There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand this project consists of the construction and operation of a 55-megawatt photovoltaic solar generation facility and a 55-megawatt battery energy storage system on land that is currently used for agricultural purposes. Please note that agriculture does not constitute previous development, as it does not destroy cultural resources, but merely moves them around within the plow zone. Because this project area has not been previously studied for cultural resources, it is not known if any exist there. Therefore, prior to any ground disturbance activities, we recommend a qualified, professional consultant conduct a field survey to determine if any cultural resources are present. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:



Celeste M. Thomson, Coordinator **Date**: December 9, 2024

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE FOXTAIL HYBRID SOLAR PROJECT (PSP 24-065)													
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**		**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
	AB 52	**SB 18**	**Sec 106**	**Project Notification Form/Letter**	**Maps**	**SLF Search Results**	**CHRIS Results**	**Other**	**E-mail**	**Certified US Mail**	**Return Receipt**	**Period Ends**	**Summary**
SACRED LAND FILE (SLF) REQUEST													
Native American Heritage Commission NAHC@nahc.ca.gov	X			X	X			Search Request Form	11/22/24				12/3/25, SLF results letter and tribal listing received with Negative results
CONSULTATION REQUEST LETTERS													
Big Sandy Rancheria of Western Mono Indians Elizabeth D. Kipp, Chairperson PO. Box 337 Auberry, CA 93602 chairman@bsrnnation.com	X			X	X				11/27/24	11/27/24 7020 2450 0001 9280 1919	12/06/24	01/05/25	Follow up email 2/21/25
Big Sandy Rancheria of Western Mono Indians Joel Marvin, Vice Chairperson PO. Box 337 Auberry, CA 93602 jmarvin@bsrnation.com	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2391	12/06/24	01/05/24	Follow up email 2/21/25
Big Sandy Rancheria of Western Mono Indians Tom Zizzo, Tribal Administrator PO. Box 337 Auberry, CA 93602 tzizzo@bsrnation.com	X			X	X				11/27/24	11/27/24 7016 1370 0001 2601 8654	12/06/24	01/05/25	Follow up email 2/21/25
Dunlap Band of Mono Indians Benjamin Charley Jr., Tribal Chair P.O. Box 14 Dunlap, CA 93621 ben.charley@yahoo.com	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2384	12/11/24	01/10/25	Follow up email 2/21/25
Dunlap Band of Mono Indians Dirk Charley, Tribal Liaison 5509 E. McKenzie Avenue Fresno, CA 93727 dcharley2016@gmail.com	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2377	12/06/24	01/05/25	Follow up email 2/21/25
Kern Valley Indian Community Robert Robinson, Co-Chairperson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2360	12/10/24	01/09/24	Follow up email 2/21/25

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE FOXTAIL HYBRID SOLAR PROJECT (PSP 24-065)													
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**		**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
	AB 52	**SB 18**	**Sec 106**	**Project Notification Form/Letter**	**Maps**	**SLF Search Results**	**CHRIS Results**	**Other**	**E-mail**	**Certified US Mail**	**Return Receipt**	**Period Ends**	**Summary**
Kern Valley Indian Community Julie Turner, Secretary P. Box 1010 Lake Isabella, CA 93240 meindiangirl@sbcglobal.net	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2353	12/10/24	01/09/25	Follow up email 2/21/25
Kern Valley Indian Community Brandi Kendricks 30741 Foxridge Court Tehachapi, CA 93561 krazykendricks@hotmail.com	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2346	12/06/24	01/05/25	Follow up email 2/21/25
North Fork Mono Tribe Ron Goode, Chairperson 13396 Tollhouse Road Clovis, CA 93619 rwgoode911@hotmail.com	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2339	12/06/24	01/05/25	Follow up email 2/21/25 2/21/25, response received – no comment
North Fork Mono Tribe Anna Phipps, Tribal Secretary 6051 Bear Creek Rd. Garden Valley, CA, 95633 Aphipps01@att.net	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2322	12/30/24	01/29/25	Follow up email 2/21/25 Mail 'unclaimed'
North Fork Mono Tribe Jesse Valdez, Council Member - Archaeological Dir. 120 Monte Vista St. Lindsey, CA, 93247 ariesgoathead@gmail.com	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2308	12/06/24	01/05/25	Follow up email 2/21/25
Santa Rosa Rancheria Tachi Yokut Tribe Leo Sisco, Chairperson 16835 Alkali Drive Lemoore, CA 93245 LSisco@tachi-yokut-nsn.gov	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2315	12/06/24	01/05/25	Follow up email 2/21/25
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Shana Powers, Director 16835 Alkali Drive Lemoore, CA 93245 SPowers@tachi-yokut-nsn.gov	X			X	X				11/27/24	11/27/24 7020 2450 0001 9280 1902	12/06/24	01/05/24	Per email from Nichole Escalon on 2/10/25 (for a different project), Shana no longer works for the tribe.

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE FOXTAIL HYBRID SOLAR PROJECT (PSP 24-065)													
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**		**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
	AB 52	**SB 18**	**Sec 106**	**Project Notification Form/Letter**	**Maps**	**SLF Search Results**	**CHRIS Results**	**Other**	**E-mail**	**Certified US Mail**	**Return Receipt**	**Period Ends**	**Summary**
Santa Rosa Rancheria Tachi Yokut Tribe Cultural Department Staff Samantha McCarty SMcCarty@tachi-yokut-nsn.gov Nicole Escalon NEscalon@tachi-yokut-nsn.gov	X			X	X				11/27/24	---	---	---	Follow up email 2/21/25
Tubatulabals of Kern Valley Robert L. Gomez, Jr., Chairperson P.O. Box 833 Weldon, CA 93283-0833 rgomez@tubatulabal.org	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2407	12/06/24	01/05/24	Follow up email 2/21/25
Tule River Indian Tribe Charmaine McDarment, Chairperson P. O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2414	12/06/24	01/05/25	Follow up email 2/21/25
Tule River Indian Tribe Dept. of Environmental Protection Kerri Vera, Director P. O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com keri.vera@tulerivertribe-nsn.gov	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2421	12/06/24	01/05/25	Follow up email 2/21/25
Tule River Indian Tribe Felix Christman, Council Member P. O. Box 589 Porterville, CA 93258 tuleriverarchmon1@gmail.com felix.christman@tulerivertribe-nsn.gov	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2438	12/06/24	01/05/25	Follow up email 2/21/25
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow, Chairperson 1179 Rock Haven Ct. Salinas, CA 93906 kwood8934@aol.com	X			X	X				11/27/24	11/27/24 7022 2410 0000 2081 2445	12/06/24	01/05/25	Follow up email 2/21/25
Kitanemuk & Yowlumne Tejon Indians Delia Dominguez, Chairperson 115 Radio Street Bakersfield, CA 93305 2deedominguez@gmail.com									12/3/24	12/3/24 7020 2450 0001 9280 1636	12/09/24	01/08/25	Follow up email 2/21/25

TRIBAL CONSULTATION NOTICE AND TRACKING TABLE FOXTAIL HYBRID SOLAR PROJECT (PSP 24-065)													
TRIBE CONTACTED	**REQUEST TYPE**			**ITEMS & DOCUMENTS SUBMITTED**					**DELIVERY METHOD**		**CONSULTATION PERIOD**		**CONSULTATION / ACTIONS**
	AB 52	**SB 18**	**Sec 106**	**Project Notification Form/Letter**	**Maps**	**SLF Search Results**	**CHRIS Results**	**Other**	**E-mail**	**Certified US Mail**	**Return Receipt**	**Period Ends**	**Summary**
Table Mountain Rancheria Michelle Heredia-Cordova, Chairperson P.O. Box 410 Friant, CA, 93626 mhcordova@tmr.org									12/3/24	12/3/24 7020 2450 0001 9280 1629	12/09/24	01/08/25	Letter received 2/15/25- No comment

From:	Danielle Folk
To:	lkipp@bsrnation.com; jmarvin@bsrnation.com; tzizzo@bsrnation.com
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Wednesday, November 27, 2024 12:18:00 PM
Attachments:	Project Notification and Consult Request_AB52_Foxtail Solar.pdf CA_Paige.pdf CA_Taylor_Weir.pdf Foxtail Solar_Tribal_AB52 + SB18_Consultation_Letter_BSRWMI_Kipp.pdf PSP24-065_SitePlans.pdf

---

Good afternoon.

Pursuant to AB 52, please find attached the cover letter, Project Notification and Tribal Consultation Request form, project vicinity map, project site plan, and Taylor Weir &Paige Topo maps for the Foxtail Hybrid Solar Project (PSP 24-065) The hard copies of these documents were sent to you via Certified Mail on Wednesday, November 27, 2024.

Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ben Charley; Dirk Charley
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Wednesday, November 27, 2024 12:21:00 PM
Attachments:	Project Notification and Consult Request_AB52_Foxtail Solar.pdf Foxtail Solar_Tribal_AB52 + SB18_Consultation_Letter_DBMI_DCharley.pdf PSP24-065_SitePlans.pdf CA_Paige.pdf CA_Taylor_Weir.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	2deedominguez@gmail.com
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Tuesday, December 3, 2024 4:40:00 PM
Attachments:	Foxtail Solar_Tribal_AB52_ Consultation_Letter_KYTI_Dominguez.pdf CA_Paige.pdf CA_Taylor_Weir.pdf Project Notification and Consult Request_AB52_Foxtail Solar.pdf PSP24-065_SitePlans.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	rwgoode911@hotmail.com; aphipps01@att.net; ariesgoathead@gmail.com
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Wednesday, November 27, 2024 12:26:00 PM
Attachments:	Foxtail Solar_Tribal_AB52 + SB18_Consultation_Letter_NFMT_Goode.pdf Project Notification and Consult Request_AB52_Foxtail Solar.pdf PSP24-065_SitePlans.pdf CA_Paige.pdf CA_Taylor_Weir.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Shana Powers (SPowers@tachi-yokut-nsn.gov); Leo Sisco (LSisco@tachi-yokut-nsn.gov); Nichole Escalon; Samantha McCarty; Paige Berggren
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Wednesday, November 27, 2024 12:27:00 PM
Attachments:	Foxtail Solar_Tribal_AB52 + SB18_Consultation_Letter_SRRTYT_Powers.pdf Project Notification and Consult Request_AB52_Foxtail Solar.pdf PSP24-065_SitePlans.pdf CA_Paige.pdf CA_Taylor_Weir.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Robert L. Gomez (rgomez@tubatulabal.org)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Wednesday, November 27, 2024 12:29:00 PM
Attachments:	Foxtail Solar_Tribal_AB52 + SB18_Consultation_Letter_TKV_Gomez.pdf Project Notification and Consult Request_AB52_Foxtail Solar.pdf PSP24-065_SitePlans.pdf CA_Paige.pdf CA_Taylor_Weir.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	mhcordova@tmr.org
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Tuesday, December 3, 2024 4:41:00 PM
Attachments:	Foxtail Solar_Tribal_AB52 + SB18_Consultation_Letter_TMR_Heredia-Cordova.pdf PSP24-065_SitePlans.pdf CA_Paige.pdf CA_Taylor_Weir.pdf Project Notification and Consult Request_AB52_Foxtail Solar.pdf

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	charmaine.mcdarment@tulerivertribe-nsn.gov; Kerri Vera (tuleriverenv@yahoo.com); Felix Christman (tuleriverarchmon1@gmail.com)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Wednesday, November 27, 2024 12:31:00 PM
Attachments:	Foxtail Solar_Tribal_AB52 + SB18_Consultation_Letter_TRIT_McDarment.pdf Project Notification and Consult Request_AB52_Foxtail Solar.pdf PSP24-065_SitePlans.pdf CA_Paige.pdf CA_Taylor_Weir.pdf

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Good afternoon.

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Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

From:	Danielle Folk
To:	Ken Woodrow (Kwood8934@aol.com)
Cc:	Jessica R Willis
Subject:	Project Notification and Tribal Consultation for Foxtail Hybrid Solar Project
Date:	Wednesday, November 27, 2024 12:32:00 PM
Attachments:	Foxtail Solar_Tribal_AB52 + SB18_Consultation_Letter_WIT_Woodrow.pdf Project Notification and Consult Request_AB52_Foxtail Solar.pdf PSP24-065_SitePlans.pdf CA_Paige.pdf CA_Taylor_Weir.pdf

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Please feel free to contact me by phone or email if you would like to begin the consultation process. Also, if your tribe would like to decline the opportunity to consult or defer to another tribe, an email stating so would be greatly appreciated.

Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

TABLE MOUNTAIN RANCHERIA
TRIBAL GOVERNMENT OFFICE

January 28, 2025

Jessica Willis
Planner IV
Resource Management Agency
5961 South Mooney Blvd
Visalia, CA 93277

RE: Foxtail Hybrid Solar Project proposing Solar Generation Facility near the City of Tulare, Tulare County (PSP 24-065)

To: Jessica Willis,

This is in response to your letter dated, December 3, 2024, regarding, Foxtail Hybrid Solar Project proposing Solar Generation Facility near the City of Tulare, Tulare County (PSP 24-065).

We appreciate receiving notice; however, this project site is beyond our area of interest.

Sincerely,

Robert Pennell
Cultural Resources Director

Michelle Heredia-Cordova
Tribal Chairperson

Richard L. Jones
Tribal Vice-Chairperson

Jenna Gosselaar
Tribal Secretary/Treasurer

Samantha Toles-Rodriguez
Tribal Council Member-At-Large

Mark Martinez
Tribal Council Member-At-Large

23736
Sky Harbour Road
Post Office
Box 410
Friant
California
93626
(559) 822-2587
Fax
(559) 822-2693

Tulare County
Resource Management Agency
FEB 10 2025

From:	Jessica R Willis
To:	Ron W. Goode; Danielle Folk; aphipps01@att.net; ariesgoathead@gmail.com
Subject:	RE: Follow up for consultation request for Foxtail Hybrid Solar Project
Date:	Saturday, February 22, 2025 11:33:00 AM

Chairman Goode,

Thank you for your response. It is much appreciated.

Jessica R. Willis
Jessica Willis, Planner IV
Environmental Planning
Phone: 559-624-7122
jwillis@tularecounty.ca.gov

From: Ron W. Goode <rwgoode911@hotmail.com>
Sent: Friday, February 21, 2025 5:13 PM
To: Danielle Folk <DFolk@tularecounty.ca.gov>; aphipps01@att.net; ariesgoathead@gmail.com
Cc: Jessica R Willis <JWillis@tularecounty.ca.gov>
Subject: Re: Follow up for consultation request for Foxtail Hybrid Solar Project

This Message Is From an External Sender
This message came from outside your organization.

No Comment
Chairman Goode

From: Danielle Folk <DFolk@tularecounty.ca.gov>
Sent: Friday, February 21, 2025 12:50 PM
To: Ron W. Goode <rwgoode911@hotmail.com>; aphipps01@att.net <Aphipps01@att.net>; ariesgoathead@gmail.com <ariesgoathead@gmail.com>
Cc: Jessica R Willis <JWillis@tularecounty.ca.gov>
Subject: Follow up for consultation request for Foxtail Hybrid Solar Project

Good morning,

The County of Tulare (County) previously submitted a Project Notification, dated November 26, 2024, requesting consultation with your Tribe pursuant to the provisions of AB 52. The County did not receive a written response for consultation from your Tribe within the 30-day request period.

As such, the County of Tulare hereby extends the invitation to consult on the California Environmental Quality Act (CEQA) review of the Foxtail Hybrid Solar Project (PSP 24-065) in order to assist with identifying and/or preserving and/or mitigating project impacts to Native American cultural resources.

The County requested a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC) for the Treehouse California Almonds Expansion Project. The SLF search was

returned on December 3, 2024 with negative results (see attached). A California Historical Resources Information System (CHRIS) search for the project area was requested through the Southern San Joaquin Valley Information Center (SSJVIC). The results of the CHRIS search was returned on December 9, 2024 (see attached).
Also, as a reminder, please see attached Project Notification for the Foxtail Hybrid Solar Project.

Thank you for your consideration on this matter and please do not hesitate to contact me by phone or e-mail should you have any questions or need additional information. If your Tribe does not desire to consult with the County on the review of this project, please send a quick email stating that your Tribe declined to consult for this project. Thank you.

Danielle Folk

Planner III
Environmental Planning
Tulare County Resource Management Agency
(559) 624-7029
Dfolk@tularecounty.ca.gov

ATTACHMENT D

Geotechnical Engineering Report

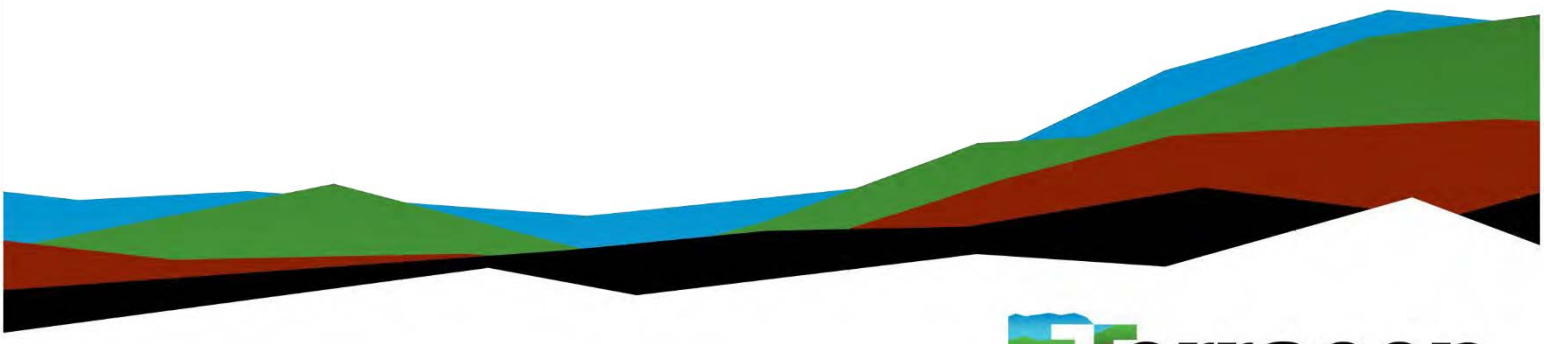
Foxtail Solar

Preliminary Geotechnical Engineering Report

January 12, 2024 | Terracon Project No. LA235086

Prepared for:

Samsung C&T
5601 E Slauson Ave Ste 200
Commerce, CA 90040



Terracon
Explore with us

Nationwide
Terracon.com

- Facilities
- Environmental
- Geotechnical
- Materials

January 12, 2024

Samsung C&T
5601 E Slauson Ave Ste 200
Commerce, CA 90040

Attn: Ms. Nayeong Kim
P:(267) 559-4430
E:nayeongkim@samsung.com

Re: Preliminary Geotechnical Engineering Report
Foxtail Solar
Tulare, California
Terracon Project No. LA235086

Dear Ms. Kim:

We have completed the scope of Preliminary Geotechnical Engineering Report services for the above referenced project in general accordance with Terracon Proposal No. PLA235086 dated June 21, 2023, between Terracon and Samsung C&T. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of access roads and foundations for the proposed solar facility.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon

Janna Valdez, E.I.T.
Staff Engineer

REGISTERED PROFESSIONAL ENGINEER
JOSHUA R. MORGAN
C 86032
CIVIL
STATE OF CALIFORNIA

Joshua R. Morgan, P.E.
Regional Geotechnical Manager

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Attachments

Field Exploration Results
Laboratory Test Results
Field Soil Electrical Resistivity Results
Test Pile Driving Data
Pile Load Test Results
Supporting Information

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon logo will bring you back to this page. For more interactive features, please view your project online at **client.terracon.com**.

Refer to each individual Attachment for a listing of contents.

Geohazards

Item	Overview Statement [1]
Pile Drivability	All piles were driven to target depths with no refusals encountered. Pile driving difficulty is not a concern at the site.
Shallow Bedrock	We anticipate shallow bedrock is not a concern at the site.
Shallow Groundwater	Shallow groundwater was not observed at the site. Historical groundwater data from nearby monitoring well data indicates groundwater is greater than 100 feet below ground surface.
Liquefaction	Based on the depth to groundwater and subsurface conditions encountered, liquefaction hazard potential is considered low at this site.
Karst	Karst is not a concern at this site.
Collapsible Soils	Based on results of consolidation/collapse tests, collapsible soils are not a concern at the site.
Expansive Soils	Based on results of Atterberg limit tests, potentially expansive soils are present on-site. However, based on the results of consolidation/swell tests, the potential for volume changes with changes in moisture for the near surface clay soils under a confining pressure of 2,000 psf is considered low. Recommendations within this report address ways to mitigate potential effects of expansive soils, such as excessive cracking in the concrete structure/foundations associatedwith the proposed development. Effects of expansive soils are not anticipated to affect the performance of driven steel piles.

1. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.

Introduction

This report presents the results of our subsurface exploration and Preliminary Geotechnical Engineering Report services performed for the proposed Foxtail Solar project bounded by Ave 184, Ave 190, Rd 72, and Rd 80 in Tulare, California. The purpose of these services was to provide information and geotechnical engineering recommendations relative to the proposed solar development. Sections included in this report are:

- Subsurface soil conditions
- Groundwater conditions
- Seismic site classification per California Building Code (CBC)
- Site preparation and earthwork
- Foundation design and construction
- Access Roads Design and construction

The geotechnical engineering Scope of Services for this project included soil borings, field electrical resistivity testing, pile testing, laboratory thermal resistivity testing, laboratory corrosion testing, and pile load testing. Additional details can be found in the See **Exploration and Testing Procedures** section of this report. The geotechnical engineering Scope of Services for our current scope of work included the following:

- Two (2) soil test boring to an approximate depth of 46.5 feet below ground surface (bgs) in the substation and Battery Energy Storage System
- Ten (10) soil test borings to an approximate depth of 21.5 to feet bgs in the photovoltaic (PV) array areas
- Seven (7) field electrical resistivity testing
- Six (6) pile load testing targeting approximate depth of 6 to 9 feet embedment depths. Pile testing included two axial tension and lateral tests, and one axial compression test at each location.
- Corrosion testing on soil samples obtained from seven (7) locations
- Lab thermal resistivity testing on soil samples obtained from five (5) locations

Project Description

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	An email request for a proposal was provided to us on June 14, 2023, by Nayeong Kim. A Google Earth cluster kmz with site boundary layouts of the proposed site was provided in time of the request. In addition, a CUP site plan showing the proposed locations of the substation and BESS was provided in the subsequent week. A revised CUP site plan which reduced the proposed PV array area and relocated the proposed substation and BESS facility was provided by Samsung during the duration of the project. Terracon adjusted the exploration locations in according to the revised plans for the substation and BESS facility prior to field mobilization. However, the quantity of exploration points remained the same for the solar arrays as requested by the client, presuming that the design reverts back to the original design area of arrays.
Project Description	The project includes construction of an approximately 90 MW solar facility. The project encompasses an approximate area of 470 acres.
Proposed Structures	The project will include the construction of multiple arrays of solar PV panels on single-axis trackers. We anticipate that the panels will be installed on ground-mounted systems likely supported on driven piles. Equipment pads will likely be slab-on-grade or reinforced mat-type foundations. We anticipate that the proposed BESS will consist of battery storage units and ancillary structures supported by short-drilled piers, driven piles or mat foundations, and other appurtenant electrical equipment will be supported on drilled shaft foundations. We anticipate the substation will include control room building, self-contained structures, and other substation elements to be supported on shallow spread footings, equipment slabs-on-grade/mat foundations, and/or short drilled shafts.
Maximum Loads (Assumed)	Structural loads were not provided, but have been estimated based on our experience: ▪ PV Module Downward: 2-4 kips ▪ PV Module Uplift: 1-3 kips ▪ PV Module Lateral: 2-4 kips ▪ BESS enclosure pads: 1000 to 1200 psf contact pressure ▪ BESS Axial Load: 75 kips

Item	Description
Maximum Loads (Assumed)	▪ BESS Shear Load: 5 kips ▪ Transformers: 500 – 1,000 psf contact pressure
Grading/Slopes	We anticipate the solar array final grade will follow the existing site grades with minimum grading required to bring the site to finished grade. We anticipate final grades to be within one to two feet of existing grade for the BESS and substation area.
Access Roads	We anticipate low-volume access roads that will have a maximum vehicle load of 75,000 lbs. and will travel over the access roads only once per week. The final design and construction of the access roads may be adjusted by the design team and owner; however, Terracon should be notified so that additional recommendations or maintenance consideration may be provided to the owner

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially the grading limits, as modifications to our recommendations may be necessary.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project site is located in Tulare, Tulare County, California and is approximately 470 acres in size. Coordinates near the approximate center of the project site is 36.1288°N, 119.4053°W. See **Site Location**
Existing Improvements	The site is being utilized as agricultural field for crops. A small substation is located at the southeast corner of the site. In addition, a residential property is located northeast of the site.
Current Ground Cover	Earthen cover with sparse to dense crop vegetation.
Existing Topography	The site is relatively flat with approximate elevations ranging from 227 feet at the north boundary to 239 feet at the south boundary.

Geotechnical Characterization

Subsurface Conditions

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of the site. Conditions observed at each exploration point are indicated on the individual logs. The GeoModel and individual logs can be found in the **Exploration Results** attachment of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	Density/Consistency
01	**Lean Clay with Sand / Sandy Lean Clay**	Medium stiff to hard
02	**Clayey Sand/ Silty Clayey Sand**	Loose to medium dense
03	**Poorly Graded Sand with Silt**	Loose to medium dense
04	**Sandy Lean Clay/Lean Clay with Sand**	Stiff to very stiff
05	**Poorly Graded Sand with Silt**	Medium dense to dense
06	**Sandy Lean Clay**	Medium stiff to very stiff

Lab Results

Laboratory tests were conducted on selected soil samples and the test results are presented in the **Exploration Results** section and on the boring logs. Atterberg limit test results indicate that the on-site soils generally have medium plasticity. Maximum density/optimum moisture content testing conducted in accordance with ASTM D1557(Modified Proctor) indicate that near surface soils have a maximum dry density range of of 119.5 and 129.2 pounds per cubic feet (pcf) and optimum water content of range 9.1 and 13 percent. Direct shear test performed on samples taken at a depth of 2.5 and 5 feet bgs indicate that these soils have effective cohesion values of 130 and 200 psf and an effective friction angle of 27° and 28°, respectively. Consolidation tests performed

on samples taken at 2.5 and 5 feet bgs indicates that the sandy lean clay soils encountered have a low collapse potential when saturated under normal footing loads of 2,000 psf.

Groundwater

Groundwater was not encountered observed during drilling to the approximate depth of 46.5 feet bgs. In clayey soils with low permeability, the accurate determination of groundwater level may not be possible without long term observation. Long term observation after drilling could not be performed as borings were backfilled immediately upon completion due to safety concerns. Groundwater levels can best be determined by implementation of a groundwater monitoring plan.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

According to data collected from the Water Data Library for the State of California from a nearby well, located northeast of the site in the State Well Number 21S24E05H002M, historic groundwater levels between March 5, 2020, to March 15, 2023, were recorded at greater than 100 feet below ground surface.[1]

Seismic Site Class

The 2022 California Building Code (CBC) Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool. This web-based software application calculates seismic design parameters in accordance with ASCE 7-16 and 2022 CBC. The 2022 CBC requires that a site-specific ground motion study be performed in accordance with Section 11.4.8 of ASCE 7-16 for Site Class D sites with a mapped S_1 value greater than or equal 0.2.

However, Section 11.4.8 of ASCE 7-16 includes an exception from such analysis for specific structures on Site Class D sites. The commentary for Section 11 of ASCE 7-16

[1] Water Data Library. https://wdl.water.ca.gov/WaterDataLibrary/GroundWaterLevel.aspx?StateWellNumber=21S24E05H002M&SiteCode=361319N1193938W001

(Page 534 of Section C11 of ASCE 7-16) states that "In general, this exception effectively limits the requirements for site-specific hazard analysis to very tall and or flexible structures at Site Class D sites." Based on our understanding of the proposed structures, it is our assumption that the exception in Section 11.4.8 applies to the proposed structure. However, the structural engineer should verify the applicability of this exception.

Based on this exception, the spectral response accelerations presented below were calculated using the site coefficients (F_a and F_v) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2022 CBC.

Description	Value
2022 California Building Code Site Classification (CBC)[1]	D[2]
Site Latitude (°N)	36.1278°
Site Longitude (°W)	119.4037°
S_s Spectral Acceleration for a 0.2-Second Period	0.661
S_1 Spectral Acceleration for a 1-Second Period	0.249
F_a Site Coefficient for a 0.2-Second Period	1.271
F_v Site Coefficient for a 1-Second Period	2.104

1. Seismic site classification in general accordance with the *2022 California Building Code*.
2. The 2022 California Building Code (CBC) requires a site soil profile determination extending to a depth of 100 feet for seismic site classification. The current scope does not include the 100-foot soil profile determination. Borings were extended to a maximum depth of 46½ feet, and this seismic site class definition considers that similar or denser soils continue below the maximum depth of the subsurface exploration.

Faulting and Estimated Ground Motions

The site is located in the southern California, which is a seismically active area. The type and magnitude of seismic hazards affecting the site are dependent on the distance to causative faults, the intensity, and the magnitude of the seismic event. As calculated using the USGS Unified Hazard Tool, the unnamed fault segment located at coordinates 36.159, -119.404, which is considered to have the most significant effect at the site from a design standpoint, has a maximum credible earthquake magnitude of 5.69 and is located approximately 6.10 kilometers from the site.

Based on the USGS Design Maps Summary Report, using the American Society of Civil Engineers (ASCE 7-16) standard, the peak ground acceleration (PGA_M) at the project site is expected to be 0.55g. Based on the USGS Unified Hazard Tool, the project site has a mean magnitude of 6.26. Furthermore, the site is not located within an Alquist-Priolo

Earthquake Fault Zone based on our review of the California Geologic Survey Fault Hazard Maps[2].

Corrosivity

The table below lists the results of laboratory soluble sulfate, soluble chloride, electrical resistivity, and pH testing. The values may be used to estimate potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials which will be used for project construction.

Corrosivity Test Results Summary

Boring	Sample Depth (feet)	Soil Description	Soluble Sulfate (%)	Soluble Chloride (mg/kg)	Electrical Resistivity (Ω-cm)	pH
B-1	0-5	Sandy Lean Clay	<0.01	67	1,675	8.6
B-4	0-2.5	Sandy Lean Clay	0.01	35	2,278	8.65
B-5	0-5	Sandy Lean Clay	0.01	17	1,206	8.98
B-6	0-2.5	Silty Clayey Sand	0.01	47	3,852	8.43
B-9	0-5	Sandy Lean Clay	<0.01	50	2,110	8.86
SUB-1	0-5	Sandy Lean Clay	0.01	52	2,278	9.14
BESS-1	0-5	Sandy Lean Clay	<0.01	22	3,115	8.64

Results of soluble sulfate testing indicate samples of the on-site soils tested possess negligible sulfate concentrations when classified in accordance with Table 19.3.1.1 of the ACI Design Manual. Concrete should be designed in accordance with the exposure class S0

[2] California Geological Survey. https://maps.conservation.ca.gov/cgs/informationwarehouse.

provisions of the ACI Design Manual, Section 318, Chapter 19.

Electrical Resistivity Testing

Terracon performed field measurements of soil electrical resistivity for the support of grounding design. Soil resistivity data was obtained from one perpendicular arrays at five (5) locations in the proposed PV array area and one (1) location each at the substation and BESS area for a total of seven (7) tests. The approximate location of the tests are shown in the **Exploration Plan**. The testing was performed in general accordance with Wenner Array (4-pin) method per ASTM G57. This method was performed in with IEEE Standard 81, IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Ground System. The test in the proposed array locations included perpendicular arrays with "a" spacings 1, 2, 5, 10, 25, 75, 100 and 150 feet. The test in the proposed substation and BESS locations included perpendicular arrays with "a" spacings 1, 2, 5, 10, 25, 75, 100, 150 and 300 feet. The "a" spacing is generally considered to be the depth of influence of the test. The electrical resistivity test results are presented in **Exploration Results**.

Thermal Resistivity Testing

Terracon subcontracted Geotherm USA to perform laboratory thermal resistivity testing. Testing was conducted on three (3) bulk samples from the array areas and (1) bulk sample each at the BESS and substation areas for a total of five (5) samples. Samples were taken from a depth of 1 to 5 feet bgs. The bulk samples collected for the array areas were conducted on soil samples remolded to 85% and the bulk samples collected for the BESS and substation areas were conducted on soil samples remolded to 95% compaction effort (as determined by ASTM D1557) of the material's maximum dry density for a total of five (5) tests. Dry out curves targeted the higher of either the in-situ moisture content of the optimum moisture content as determined by ASTM D1557, totally dry condition, and two intermediate points. The thermal resistivity test results are presented in **Exploration Results**.

Liquefaction

Liquefaction is a mode of ground failure that results from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. The California Geological Survey (CGS) has designated certain areas as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table.

The site has not been mapped for liquefaction hazard by the California Geologic Survey. According to Tulare County's General Plan Library and from Section 8 Safety, published in December of 2007, countywide assessments identifying liquefaction potential in Tulare County has not been performed. However, soil conditions are not conducive to liquefaction due to soils high clay content and the expected depth to groundwater.[3]

Based on the clayey nature of the subsurface soils encountered and anticipated groundwater depth, liquefaction hazard potential at the site is considered to be low. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also considered low.

Pile Load Testing

Test Pile Installation

Terracon subcontracted Sunstall, Inc. to install W-section steel piles for the pile load tests. Gayk HRE equipment with a hydraulic attachment was utilized for installation. A total of eighteen (18) piles were installed under Terracon supervision at six (6) test locations (three piles per location). All eighteen (18) piles were installed directly into existing ground.

The test locations are indicated in the **Exploration Plan** section of this report. The approximate GPS coordinates of the center piles of each group are documented on the pile load testing plots.

Driven piles targeted embedment depths of 6 to 9 feet bgs. All piles were driven within an approximate total drive time ranging between 13 and 41 second seconds. The time required to drive the pile per incremental foot of embedment, was recorded during installation. The table provided in the **Exploration Results** section of this report includes the incremental driving time (in seconds) per foot of pile embedment.

[3] Tulare County General Plan Update.
https://generalplan.co.tulare.ca.us/documents/GeneralPlan2008/Background%20Report%20(Part%205).pdf

Test Pile Details

Terracon provided the steel piles to the job site. The piles were driven to facilitate performing tension (pull-out), lateral, and compression tests. The bare steel sections have the following properties[4]:

Parameter	W6x9
Depth	5.900 in
Flange Width, b_f	3.940 in
Flange Thickness, t_f	0.215 in
Web Thickness, t_w	0.170 in
Moment of Inertia, I_x	16.40 in^4
Section Area, A	2.68 in^2
Young's Modulus, E_s	29,000 ksi
Yield Stress, F_y	50 ksi
Hot Dip Galvanization	None

Pile Load Testing

The pile load testing was performed in general accordance with ASTM D3689 Test Methods for Deep Foundations under Static Axial Tensile Load, ASTM D3966 Test Methods for Deep Foundations under Lateral Load, and ASTM D 1143, Standard Test Method for Deep Foundations under Static Axial Compressive Load.

Axial-Tension (Pull-Out) Load Testing: Our scope of services included testing (2) of the test piles at each location (for a total of 12 test piles) were load tested under axial tensile load by Terracon a minimum of 72 hours after installation.

Terracon's proprietary tripod system was used to develop the vertical tension reaction. A locking "E"- plate clamp was used to grip the top of the web for the tension tests. A load cell was used to record the applied load, and deflections were recorded using a pair of calibrated indicators (dial or digital) secured to each flange of the test pile with magnetic mounting brackets. The indicators rested on reference beams supported at least five feet

[4]American Institute of Steel Construction (AISC), *"Steel Construction Manual – Fourteenth Edition"* February 2012.

from the pile. Terracon applied loads in approximately 500-lb. increments up to 10,000 lbs. (our equipment's maximum safe working load) or to the target ultimate failure criteria of 0.75-inch. Yield deflection was recorded at 0.25-inch. Terracon recorded deflections after the load was brought back to zero from the target load.

Lateral Load Testing: Our scope of services included testing (2) piles at each location (for a total of 12 test piles) for lateral capacity a minimum of 72 hours after installation. The test piles were connected to a reaction force using a system of appropriately rated shackles and chain. The load displacement testing occurred along the strong axis direction of the test pile. A hydraulic jack was placed along with the load cell between the test pile and the reaction force. The system was connected to the test piles using a flange clamp at approximately 24 inches above ground surface. Two calibrated dial gauges were used to measure the deflection of each pile near the ground surface (approximately 6 inches above grade). Terracon applied loads cyclically in approximately 500-lb. increments up to the target load of 7,000 pounds or to the target failure criteria of 1-inch of lateral displacement measured at 6 inches above grade. Deflections were recorded at each increment. The target yield deflection was 0.5-inch at 6 inches above grade. Terracon recorded deflections after the load was brought back to zero from the target load.

Axial Compression Load Testing: Our scope of services included testing (1) pile at each of the six (6) locations for axial compressive capacity.

The test was performed on a pile embedded at the same depth as the shortest embedment depth for that location. Axial compression pile testing was performed using load increments of 500 lbs. up to a maximum compressive load of 13,000 lbs. or the limits of the soil capacity, whichever occurred first. The limit of soil capacity during a compression test was defined as movement in excess of 0.75-inch. Yield deflection was recorded at 0.25-inch. Elastic deflection was measured at each load increment. In addition, permanent deflection was measured by unloading and allowing the pile to rebound after the maximum achieved load/deflection.

For axial and lateral tests, the deflections were measured at each load increment until pile movements were stabilized. The final deflection measurements recorded during the pile load tests are presented on the data reports included in the attachments.

Geotechnical Overview

The site appears suitable for the proposed construction based upon geotechnical conditions encountered in the test borings, provided that the findings and recommendations presented in this report are incorporated into project design and construction.

By nature of clayey soils, expansive soils are present on this site. This report provides recommendations to help mitigate the effects of soil shrinkage and expansion in concrete structures or foundations; however, even if these procedures are followed, some

movement and at least minor cracking in the structure should be anticipated. The severity of cracking and other cosmetic damage such as uneven slabs will probably increase if any modification of the site results in excessive wetting or drying of the expansive soils. Eliminating the risk of movement and cosmetic distress may not be feasible, but it may be possible to further reduce the risk of movement if significantly more expensive measures are used during construction. We would be pleased to discuss other construction alternatives with you upon request. Effects of expansive soils are not anticipated to affect the performance of driven steel piles or drilled piers. We anticipate that the panels will be installed on ground-mounted systems likely supported on driven piles. Equipment pads will likely be slab-on-grade or reinforced mat-type foundations.

We anticipate that the proposed BESS will consist of battery storage units and ancillary structures supported by short-drilled piers, driven piles or mat foundations, and other appurtenant electrical equipment will be supported on drilled shaft foundations.

We anticipate the substation will include control room building, self-contained structures, and other substation elements to be supported on shallow spread footings, equipment slabs-on-grade/mat foundations, and/or short drilled shafts.

Due to the expansion potential of the near surface soils, shallow foundations bearing on engineered fill are recommended for support of the proposed structures. Engineered fill should extend to a minimum depth of 3 feet below the bottom of foundations, or 5 feet below existing grades, whichever is greater.

Grading for the proposed structures should incorporate the limits of the overexcavation plus a lateral distance of 2 feet beyond the outside edge of perimeter footings. Overexcavation and replacement is not required for support of drilled shaft or driven steel pile foundations.

Estimated movements described in this report are based on effective drainage for the life of the structure and cannot be relied upon if effective drainage is not maintained. Exposed ground, extending at least 10 feet from the perimeter, should be sloped a minimum of 5% away from the BESS/substation/array structures to provide positive drainage away from the structure, lower grades adjacent to the structure may be used based on BESS manufacturer specifications. Terracon should review grading plans and to evaluate these changes. Grades around the structure should be periodically inspected and adjusted as part of the structure's maintenance program.

Geotechnical engineering recommendations for trenching and other earth connected phases of the project are outlined below. The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the **Exploration Results**), engineering analyses, and our current understanding of the proposed project. The **General Comments** section provides an understanding of the report limitations

Earthwork

The following presents recommendations for site preparation, excavation, subgrade preparation, and placement of engineered fills on the project. The recommendations presented are for the design and construction of foundations contingent upon following the recommendations outlined in this section.

Earthwork on the project should be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

Site Preparation

Strip and remove existing vegetation, debris, and other deleterious materials from proposed foundation and roadway areas. Exposed surfaces within these areas should be free of mounds and depressions which could prevent uniform compaction. The site should be initially graded to create a relatively level surface to receive fill and provide for a relatively uniform thickness of fill beneath proposed structures.

We recommend stripping topsoil to depths that expose soils with less than 3 percent organics and no roots having a diameter greater than 1/8 inch. While the depth of the unsuitable soils should be expected to vary, the thickness of the topsoil layer may be estimated to range between 6 and 12 inches for construction budgeting purposes. The thickness of the topsoil layer was not determined during our field exploration. Therefore, the actual depth of stripping should be verified by engineering observations made during the grading operations at the project. Exposed surfaces should be free of mounds and depressions which could prevent uniform compaction.

Stripped materials consisting of vegetation and organic materials should be wasted from the site or used to revegetate landscaped areas or exposed slopes after completion of grading operations. If it is necessary to dispose of organic materials on site, they should be placed in non-structural areas, and in fill sections not exceeding 5 feet in height.

Although no evidence of fills, utilities, or underground facilities such as septic tanks, cesspools, basements, and utilities was observed during the site reconnaissance, such features could be encountered during construction. If unexpected fills, utilities, or underground facilities are encountered, such features should be removed, and the excavation thoroughly cleaned prior to backfill placement and/or construction.

Subgrade Preparation

The proposed structures may be supported by a shallow concrete foundation system. Due to the low bearing capacity of the near surface soils, shallow foundations bearing on engineered fill are recommended for support of the proposed structures bearing on engineered fill extending to a minimum depth of 2 feet below the bottom of foundations or 4 feet below existing site grades, whichever is greater. Alternatively, the proposed structures may be supported by drilled shafts or driven steel piles.

Subgrade soils beneath exterior slabs and roadways should be scarified to a minimum depth of 12 inches, moisture conditioned, and compacted. The moisture content and compaction of subgrade soils should be maintained until slab or roadway construction.

Structures supported on either drilled shafts or driven piles may be constructed without the above recommended remedial grading.

All exposed areas which will receive fill, once properly cleared and benched where necessary, should be scarified to a minimum depth of 10 inches, moisture conditioned as necessary, and compacted per the compaction requirements in this report. Compacted structural fill soils should then be placed to the proposed design grade and the moisture content and compaction of subgrade soils should be maintained until foundation or roadway construction.

Based upon the subsurface conditions determined from the geotechnical exploration, subgrade soils exposed during construction are anticipated to be relatively workable; however, the workability of the subgrade may be affected by precipitation, repetitive construction traffic or other factors. If unworkable conditions develop, workability may be improved by scarifying and drying.

Excavation

It is anticipated that excavations for the proposed construction can be accomplished with conventional earthmoving equipment.The bottom of excavations should be thoroughly cleaned of loose soils and disturbed materials prior to backfill placement and/or construction.

Individual contractors are responsible for designing and constructing stable, temporary excavations. Excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current OSHA excavation and trench safety standards.

Fill Materials and Placement

All fill materials should be inorganic soils free of vegetation, debris, and fragments larger than six inches in size. Pea gravel or other open-graded materials should not be used as fill or backfill without the prior approval of the geotechnical engineer.

On-site soil may be used as fill materials for the following:

- general site grading
- foundation areas
- exterior non-structural slab areas
- roadway areas

Imported soils for use as fill material within proposed structure areas should conform to low volume change materials as indicated in the following specifications:

Gradation	**Percent Finer by Weight (ASTM C 136)**
6"	100
3"	90-100
No. 4 Sieve	50-100
No. 200 Sieve	10-30

- Liquid Limit ..... 30 (max)
- Plasticity Index ..... 15 (max)
- Maximum Expansion Index* ..... 20 (max)

*ASTM D4829

The contractor shall notify the Geotechnical Engineer of import sources sufficiently ahead of their use so that the sources can be observed and approved as to the physical characteristic of the import material. For all import material, the contractor shall also submit current verified reports from a recognized analytical laboratory indicating that the import has a "not applicable" (Class S0) potential for sulfate attack based upon current ACI criteria and is "mildly corrosive" to ferrous metal and copper. The reports shall be accompanied by a written statement from the contractor that the laboratory test results are representative of all import material that will be brought to the job.

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. Fill lifts should not exceed 10 inches loose thickness.

Compaction Requirements

Recommended compaction and moisture content criteria for engineered fill materials are as follows:

Material Type and Location	Per the Modified Proctor Test (ASTM D 1557)		
	Minimum Compaction Requirement	Range of Moisture Contents for Compaction Above Optimum	
		Minimum	Maximum
On-site soils and low volume change imported fill:			
Beneath foundations:	90%	0%	+4%
Exterior Slabs:	90%	+2%	+5%
Miscellaneous backfill:	85%	+2%	+5%
Utility trenches (structural areas)*:	90%	0%	+4%
Utility trenches (nonstructural areas areas)*:	85%	+2%	+5%
Aggregate base:	95%	0%	+4%
Fill greater than 5 feet in depth:	95%	0%	+4%

1. Upper 12 inches should be compacted to 95% within structural areas. Compaction requirements within utility trenches should be verified with electrical engineer based on thermal resistivity and may be modified accordingly. Low-volume change imported soils should be used in structural areas

Grading and Drainage

All grades must provide effective drainage away from the proposed structures during and after construction and should be maintained throughout the life of the structure. Water retained next to the structures can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential foundation movements, cracked slabs and walls, and roof leaks.

Backfill against footings and in utility trenches should be well compacted and free of all construction debris to reduce the possibility of moisture infiltration.

We recommend a minimum horizontal setback distance of 10 feet from the perimeter of any structures and the high-water elevation of the nearest storm-water retention basin.

Trees or other vegetation whose root systems have the ability to remove excessive moisture from the subgrade and foundation soils should not be planted next to the structure. Trees and shrubbery should be kept away from the exterior of the structures a distance at least equal to their expected mature height.

Utility Trenches

It is anticipated that the on-site soils will provide suitable support for underground utilities and piping that may be installed. Any soft and/or unsuitable material encountered at the bottom of excavations should be removed and be replaced with an adequate bedding material.

A nonexpansive granular material with a sand equivalent greater than 30 should be used for bedding and shading of utilities, unless allowed or specified otherwise by the utility manufacturer.

On-site materials are considered suitable for backfill of utility and pipe trenches from one foot above the top of the pipe to the final ground surface, provided the material is free of organic matter and deleterious substances.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. If trenches are placed beneath footings, the backfill should satisfy the gradation and expansion index requirements of engineered fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended.

Exterior Slab Design and Construction

Compacted subgrade composed of on-site clayey soils will expand with increasing moisture content; therefore, exterior concrete slabs may heave, resulting in cracking or vertical offsets. The potential for damage would be greatest where exterior slabs are constructed adjacent to the building or other structural elements. To reduce the potential for damage caused by movement, we recommend:

- exterior slabs should be supported directly on subgrade fill (not ABC) with no, or very low expansion potential;
- strict moisture-density control during placement of subgrade fills;
- maintain proper subgrade moisture until placement of slabs;
- placement of effective control joints on relatively close centers and isolation joints between slabs and other structural elements;
- provision for adequate drainage in areas adjoining the slabs;
- use of designs which allow vertical movement between the exterior slabs and adjoining structural elements.

Earthwork Construction Considerations

Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction of roadways. Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be

graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become desiccated, saturated, or disturbed, the affected material should be removed, or these materials should be scarified, moisture conditioned, and recompacted prior to roadway construction.

On-site clayey soils may pump, and unstable subgrade conditions could develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. The use of light construction equipment would aid in reducing subgrade disturbance. The use of remotely operated equipment, such as a backhoe, would be beneficial to perform cuts and reduce subgrade disturbance.

Should unstable subgrade conditions develop stabilization measures will need to be employed. Stabilization measures may include placement of aggregate base and multi-axial geogrid. Use of lime, fly ash, kiln dust or cement could also be considered as a stabilization technique. Laboratory evaluation is recommended to determine the effect of chemical stabilization on subgrade soils prior to construction.

We recommend that the earthwork portion of this project be completed during extended periods of dry weather if possible. If earthwork is completed during the wet season (typically November through April) it may be necessary to take extra precautionary measures to protect subgrade soils. Wet season earthwork operations may require additional mitigative measures beyond that which would be expected during the drier summer and fall months. This could include diversion of surface runoff around exposed soils and draining of ponded water on the site. Once subgrades are established, it may be necessary to protect the exposed subgrade soils from construction traffic.

The individual contractor(s) is responsible for designing and constructing stable, temporary excavations as required to maintain stability of both the excavation sides and bottom. Excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current Occupational Safety and Health Administration (OSHA) excavation and trench safety standards.

Construction Observation and Testing

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation, proof-rolling, placement and compaction of controlled compacted fills, backfilling of excavations to the completed subgrade.

The exposed subgrade and each lift of compacted fill should be tested, evaluated, and reworked as necessary until approved by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the structural areas and 5,000 square feet in roadway areas. One density and water content test for every 50

linear feet of compacted utility trench backfill. This testing frequency criteria may be adjusted during construction as specified by the geotechnical engineer of record.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. In the event that unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

Shallow Foundations

Recommendations for foundations for the proposed structures and related structural elements are presented in the following paragraphs.

We anticipate that the panels' equipment pads, battery storage units and other BESS and substation elements may be supported by shallow foundations.

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

Foundation Design Recommendations

Item	Description
Foundation System	Spread footings, mat foundation, slab-on grade
Maximum Allowable Bearing pressure[1,2]	2,000 psf up to 7 feet wide 1,000 psf up to 17 feet wide
Required Bearing Stratum	Engineered fill extending to a minimum depth of 2 feet below the bottom of foundations, or 4 feet below existing grades, whichever is greater
Design Modulus of Subgrade Reaction, k[3]	200 pounds per square inch per inch (psi/in). The modulus was obtained based on estimates obtained from NAVFAC 7.1 design charts. This value is for a small-loaded area (1 Sq. ft or less) such as for forklift wheel loads or point loads and should be adjusted for larger loaded areas.
Modulus Correction Factor[3]	$k_c = k/B$

Minimum Embedment Below Finished Grade	18 inches
Minimum Dimensions	Square footings and mats: 24 inches Strip footings: 18 inches
Ultimate Passive Resistance[4]	305 pcf
Ultimate Coefficient of Sliding Friction[5]	0.30
Estimated Total Settlement from Structural Loads	About 1-inch
Estimated Differential Settlement	About ½ of total settlement over a horizontal distance of 40 feet

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. These bearing pressures can be increased by 1/3 for transient loads unless those loads have been factored to account for transient conditions.
2. Unsuitable or soft soils should be overexcavated and replaced per the recommendations presented in Earthwork.
3. k values should be reduced to account for dimensional effects of largely loaded areas. Where kc is the corrected or design modulus value and B is the mat width in feet.
4. Use of passive earth pressures requires the footing forms be removed and compacted structural fill be placed against the vertical footing face. A factor of safety of 2.0 is recommended.
5. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions. A factor of safety of 1.5 is recommended.

Settlement calculations were performed utilizing Westergaard and Hough's methods[5] to estimate the static settlement for various foundation widths with an allowable settlement of 1-inch.

Finished grade is defined as the lowest adjacent grade within five feet of the foundation for perimeter (or exterior) footings.

The allowable foundation bearing pressure applies to dead loads plus design live load conditions. The design bearing pressure may be increased by one-third when considering total loads that include wind or seismic conditions. The weight of the foundation concrete below grade may be neglected in dead load computations.

Foundations should be reinforced as necessary to reduce the potential for distress caused by differential foundation movement. Foundation excavations should be observed by the

[5] FHWA Geotechnical Engineering Circular No. 6 – Shallow Foundations, FHWA-SA-02-054.

geotechnical engineer. If the soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

Driven Pile Foundation

Driven Pile Design Recommendations

We anticipate that the PV panels will be installed on ground-mounted systems likely supported on driven piles.

We anticipate that the proposed BESS will consist of battery storage units and ancillary structures that may be supported by driven pile foundation.

Lateral Capacity Recommendations

The L-PILE analyses considered pile tests performed at select locations. The analyses considered test piles with their top at the load application height of 24 inches and the embedded pile depths of up to 9 feet based on field installation. Subsurface conditions were modeled as "Stiff Clay w/o Free Water," Cohesion was determined based on the subsurface conditions encountered in our borings. Unit weights were based on results of laboratory testing. The results of pile tests were reviewed and based on the range of results, the lowest lateral result (PLT-1B was selected for LPILE modeling to determine the p-multiplier).

The L-PILE analyses were performed by applying the field test load at the point of load application that resulted in the approximately ½ inch of lateral deflection measured at 6 inches above the ground surface. The p-multiplier was then adjusted (by trial-and-error method) such that the applied load resulted with the approximately ½ inch deflection value that matched the in-situ test results.

Since no lateral deflections were measured below the ground surface during the testing, we have assumed in our analyses that the soil-structure interaction is simulated by a long slender pile and that the pile behaves in a flexural manner as depicted on the LPILE Lateral Deflection versus Depth curve generated and included in the **Supporting Information** section of this report. Actual lateral deflections of the test and production piles below the ground surface may vary from the results depicted from our analyses.

The following table provides the soil characteristics modeled from the current load tests on-site.

Depth (feet bgs)	L-Pile Soil Type[1]	Effective Unit Weight (pcf)	Cohesion (psf)	p-multiplier
0-9	Stiff Clay w/o Free Water	115	880	1.7

A depth of neglect should be considered to account for utilities and anticipated disturbance around piles. This depth of neglect should be provided by the pile designer and verified by the civil engineer.

Axial Capacity Recommendations

The allowable axial resistance coefficient of a straight-sided pile at the site was determined based on the axial load test results. Based on the results of the pile load testing program, the below table of values is recommended for use in the areas of the designated pile load tests:

Allowable Axial Resistance	
Tension	**F_{ST} (lbs) =340 x P x h**
Compression	**F_{SC} (lbs) = 750 x P x h**

Where:
F_{ST} = Allowable Axial Resistance (lbs) Tension
F_{SC} = Allowable Axial Resistance (lbs) Compression
P = Pile perimeter = 2 * Flange Width + 2 * Depth (ft)
h = depth of embedment of pile (ft)

The allowable axial resistance parameters utilize a minimum factor of safety of 1.5. The above skin resistance values are applicable for piles that are driven a minimum of 6 feet embedment using equipment similar to a GAYK Model HRE 1000 hydraulic hammer. If a smaller or larger drive hammer is used, we recommend Terracon be consulted to determine the minimum drive time based on the proposed equipment to be used for driving of the piles.

Deep Foundations

Drilled Shaft Design Recommendations

We anticipate that the proposed BESS equipment will consist of battery storage units that may be supported by short drilled piers and other appurtenant electrical equipment supported on drilled shaft foundations.

We anticipate the substation will include control room building, self-contained structures, and other substation elements that may be supported on drilled shafts.

Drilled Shaft Axial Loading

Total required embedment of the drilled shaft should be determined by the structural engineer based on structural loading and parameters provided in this report.

Allowable skin friction and total capacity charts are attached to our **Supporting Information** section at the end of this report. The values presented for allowable side friction and end bearing include a factor of safety of 2.5.

Drilled piers should have a minimum (center-to-center) spacing of three diameters. Closer spacing may require a reduction in axial load capacity. Axial capacity reduction can be determined by comparing the allowable axial capacity determined from the sum of individual piers in a group versus the capacity calculated using the perimeter and base of the pier group acting as a unit. The lesser of the two capacities should be used in design.

The allowable uplift capacities should only be based on the side friction of the shaft; however, the weight of the foundation should be added to these values to obtain the actual allowable uplift capacities for drilled shafts. Tensile reinforcement should extend to the bottom of shafts subjected to uplift loading.

Drilled Shaft Lateral Loading

Based on our review of the subsurface conditions in the area of the substation/BESS, our laboratory testing, and the Standard Penetration Test (SPT) results, engineering properties have been estimated for the soils conditions as shown in the following table. Due to potential for disturbance within the upper soils around the shaft, lateral and axial capacity of soils within the upper 2 feet should be neglected.

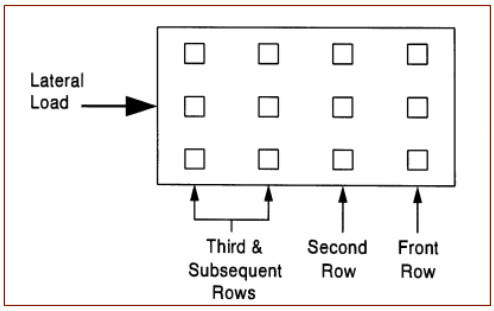
Recommended geotechnical parameters for lateral load analyses by others of drilled shaft foundations have been developed for use in the LPILE computer program. The following table summarizes input values for use in LPILE analyses. LPILE estimated values of k_h may be used. Since deflection or a service limit criterion will most likely control lateral capacity design, no safety/resistance factor is included with the parameters.

Stratigraphy[1]		L-Pile Soil Model	ϕ[2] (°)	Cohesion (psf)	γ' (pcf)[2]
Layer	Depth Below Finished Grade (feet)				
1	2	Stiff Clay w/o Water	--	800	115
	10				
2	10	Sand	29	--	115
	20				
3	20	Sand	31	--	120
	25				
4	25	Stiff Clay w/o Water	--	1,500	120
	35				
5	35	Sand	30	--	120
	40				
6	40	Stiff Clay w/o Water	--	1,900	120
	45				

1. See Subsurface Profile in **Geotechnical Characterization** for more details on Stratigraphy.
2. Definition of Terms:
   ϕ: Internal friction angle
   γ': Effective unit weight
3. Default K and E_{50} values may be utilized.

The load capacities provided herein are based on the stresses induced in the supporting soil strata. The structural capacity of the shafts/piles should be checked to assure they can safely accommodate the combined stresses induced by axial and lateral forces. Lateral deflections of shafts/piles should be evaluated using an appropriate analysis method, and will depend upon the pile's diameter, length, configuration, stiffness and "fixed head" or "free head" condition. We can provide additional analyses and estimates of lateral deflections for specific loading conditions upon request. The load-carrying capacity of shafts/piles may be increased by increasing the diameter and/or length.

When piers are used in groups, the lateral capacities of the piers in the second, third, and subsequent rows of the group should be reduced as compared to the capacity of a single, independent pier. Guidance for applying p-multiplier factors to the p values in the p-y curves for each row of pier foundations within a pier group are as follows:



1. Front row: P_m = 0.8;
2. Second row: P_m = 0.4
3. Third and subsequent row: P_m = 0.3.

For the case of a single row of piers supporting a laterally loaded grade beam, group action for lateral resistance of piers would need to be considered when spacing is less than five pier diameters (measured center-to-center). However, spacing closer than 3D (where D is the diameter of the pier) is not recommended due to the potential for the installation of a new pier disturbing an adjacent installed pier, likely resulting in axial capacity reduction.

Drilled Shaft Construction Considerations

The Geotechnical Engineer should observe the installation of drilled piers to verify the soil conditions and the diameter and depth of piers. Drilled piers should be constructed true and plumb.

Drilling for the proposed drilled shafts to design depths should be possible with conventional single flight power augers. We do not anticipate drilled shafts to extend below the depth of groundwater. However, if foundation concrete cannot be placed in dry conditions, a tremie should be used for concrete placement.

Temporary steel casing may be required to properly drill and clean shafts prior to concrete placement. The drilling speed should be reduced as necessary to minimize vibration and caving of the silty sand materials. The contractor should be prepared to use casing or other approved means to prevent caving. The contractor should review the boring logs to make sure they are familiar with the anticipated subsurface conditions prior to beginning construction of the deep foundations.

In the event drilled hole walls slough during drilling, we recommend the use of slurry drilling methods with polymers to keep the solids in suspension during the drilling. Drilled shaft foundation concrete should be placed within 6 inches of the shaft base of the slurry-filled excavation immediately after completion of drilling and cleaning. The tremie should remain inserted several feet into the fresh concrete as it displaces the slurry upward and until placement is complete. The slurry should have a sand content no greater than 1% at the time concrete placement commences. The maximum unit weight

of the slurry should be established in consultation with Terracon. Due to potential sloughing and raveling, foundation concrete quantities may exceed calculated geometric volumes.

Drilled shaft foundation concrete should be placed immediately after completion of drilling and cleaning. If foundation concrete cannot be placed in dry conditions, a tremie should be used for concrete placement. Due to potential sloughing and raveling, foundation concrete quantities may exceed calculated geometric volumes.

If casing is used for drilled shaft construction, it should be withdrawn in a slow continuous manner maintaining a sufficient head of concrete to prevent infiltration of water or the creation of voids in shaft concrete. Shaft concrete should have a relatively high fluidity when placed in cased shaft holes or through a tremie. Shaft concrete with slump in the range of 6 to 8 inches is recommended.

We recommend that all drilled shaft installations be observed on a full-time basis by an experienced geotechnical engineer in order to evaluate that the soils encountered are consistent with the recommended design parameters. If the subsurface soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required. The Geotechnical Engineer should observe the installation of drilled piers to verify the soil conditions and the diameter and depth of piers. Drilled piers should be constructed true and plumb.

Free-fall concrete placement in drilled piers will only be acceptable if provisions are taken to avoid striking the concrete on the sides of the hole or reinforcing steel. The use of a bottom-dump hopper, or an “elephant's trunk” discharging near the bottom of the hole where concrete segregation will be minimized, is recommended.

Drilled pier end bearing surfaces must be thoroughly cleaned prior to concrete placement. A representative of the Geotechnical Engineer should inspect the bearing surface and foundation pier configuration. If the subsurface soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

Closely spaced piers should be drilled and filled alternately, allowing the concrete to set at least eight hours before drilling the adjacent pier. All excavations should be filled with concrete as soon after drilling as possible. In no event should pier holes be left open overnight. To prevent concrete from striking the walls of the pier and causing caving, the concrete should be placed with appropriate equipment so that the concrete is not allowed to fall freely more than 5 feet. All loose materials should be thoroughly cleaned from the bottom of the pier excavation. This is especially important because end bearing has been considered in determining the provided pier capacities. If casing is necessary and is utilized, then the casing should be withdrawn concurrently with the concrete placement.

Access Roadways

Compacted Native Soils Access Road Design Recommendations

Based upon the soil conditions encountered in the test borings, the use of on-site soils for construction of on-site roads is considered acceptable. Without the use of asphalt concrete or other hardened material to surface the roadways, there is an increased potential for erosion and rutting of the roadway to occur.

If high traffic loading is anticipated during wet seasons or when the upper soils are in saturated conditions, the proposed compacted soils road may experience wheel path rutting and depression on the order of 3 inches deep.

Construction of the un-surfaced roadways should consist of a minimum 12-inches of compacted on-site soils. More specifically, the upper ten inches of subgrade soils beneath existing grade, and any fill required to raise site grades should be moisture conditioned and compacted in accordance with **Fill Compaction Requirements**. The upper 12 inches beneath finish native soils road grade should also be compacted in accordance with **Fill Compaction Requirements**.

Positive drainage should be provided during construction and maintained throughout the life of the roadways. Proposed roadway design should maintain the integrity of the road and eliminate ponding. The un-surfaced roads are expected to function with periodic maintenance.

Aggregate Surface Roadway Design Recommendations

It is our understanding that aggregate surfaced roads will be utilized during the construction of this project.

Aggregate surface roadway design was conducted in general accordance with the Army Corps of Engineers (ACOE) Technical Manual TM-5-822, Design of Aggregate Surface Roads and Airfields (1990). The design was based on Category III, traffic containing as much as 15% trucks, but with not more than 1% of the total traffic composed of trucks having three or more axles (Group 3 vehicles), and Road Class G (Under 70 vehicles per day). Based on the Category and Road Class, a Design Index of 1 was utilized. Terracon should be contacted if significant changes in traffic loads or in the characteristics described are anticipated.

As a minimum, the aggregate surface course should have a minimum thickness of 6 inches and should be constructed over a minimum of 12 inches of scarified, moisture conditioned, and compacted native soils to 95% of the maximum dry density using ASTM D1557. The recommended thicknesses should be measured after full compaction. The width of the roadway should extend a minimum distance of 1 foot on each side of the desired surface width.

Aggregate materials should conform to the specifications of Class II aggregate base in accordance with the requirements and specifications of the State of California Department of Transportation (Caltrans), or other approved local governing specifications.

Positive drainage should be provided during construction and maintained throughout the life of the roadways. Proposed roadway design should maintain the integrity of the road and eliminate ponding.

Roadway Design and Construction Considerations

Regardless of the design, un-surfaced roadways will display varying levels of wear and deterioration. We recommend an implementation of a site inspection program at a frequency of at least once per year to verify the adequacy of the roadways. Preventative measures should be applied as needed for erosion control and re-grading. An initial site inspection should be completed approximately three months following construction.

Preventative maintenance should be planned and provided for through an on-going management program to enhance future roadway performance. Preventative maintenance activities are intended to slow the rate of deterioration, and to preserve the roadway investment.

Surfacing materials should not be placed when the surface is wet. Surface drainage should be provided away from the edge of roadways to reduce lateral moisture transmission into the subgrade.

If rut depths become excessive as construction work progresses, re-grading and re-compaction should be performed as necessary. Care should be taken to reduce or eliminate trafficking of the unpaved access road when the subgrade is wet as this will result in accelerated rutting conditions. Scarification, moisture treatment as necessary, and re-compaction of the roadways will likely be necessary as the roadways deteriorate.

Materials and construction of roadways for the project should be in accordance with the requirements and specifications of the California Department of Transportation or the applicable local governing body.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during

pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly effect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Attachments

Site and Exploration Plans

Contents:

Site Location Plan
Exploration Location Plan – Borings

Site Plan



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration Location Plan – Borings

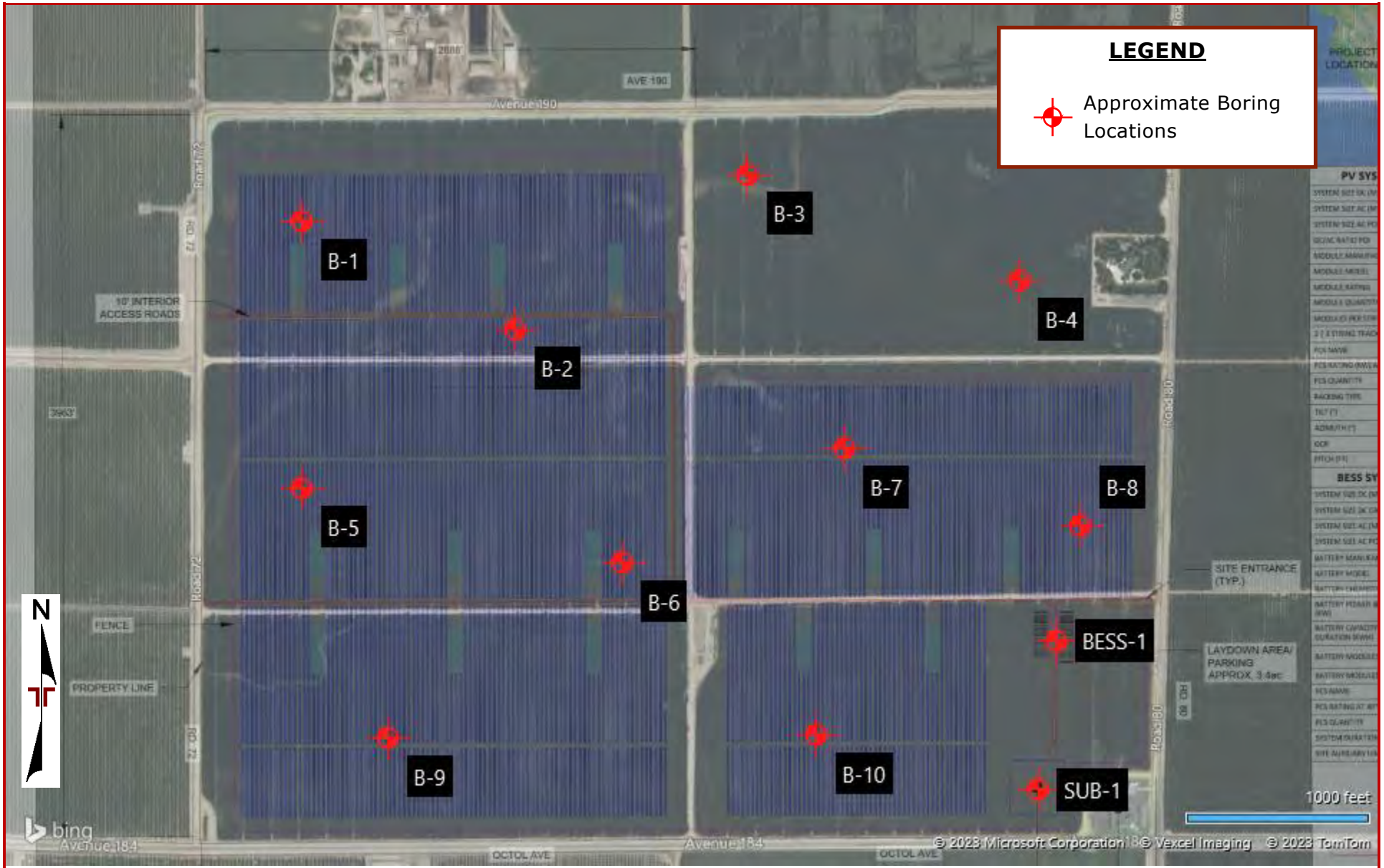


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration and Testing Procedures

Field Exploration

The following table provides a summary of our geotechnical exploration completed at the site.

Number of Explorations	Depth (bgs)	Location
2	46½ feet	BESS and substation area
10	21½ feet	PV array area

Boring Layout and Elevations: Terracon personnel provided the boring layout using handheld GPS equipment (estimated horizontal accuracy of about ±10 feet) and referencing existing site features. Approximate ground surface elevations were estimated using Google Earth.

Subsurface Exploration Procedures: We advanced the borings with a truck-mounted drill rig using continuous hollow stem flight. Four samples were obtained in the upper 10 feet of each boring. Test samples were collected during drilling in general accordance with the appropriate ASTM methods using Standard Penetration Testing (SPT) and sampling using standard split-spoon. A sampling spoon was driven into the ground by a 140 pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18 inch penetration was recorded as the Standard Penetration Test (SPT) resistance value, also referred to as N-values. The N-values are indicated on the boring logs at the test depths. The samples were placed in appropriate containers, taken to our soil laboratory for testing, and classified by a geotechnical engineer.

We also observed the boreholes while drilling and at the completion of drilling for the presence of groundwater. Groundwater was not observed over the course of drilling. For safety purposes, all borings were backfilled with auger cuttings after their completion.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials observed during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Field Exploration Results

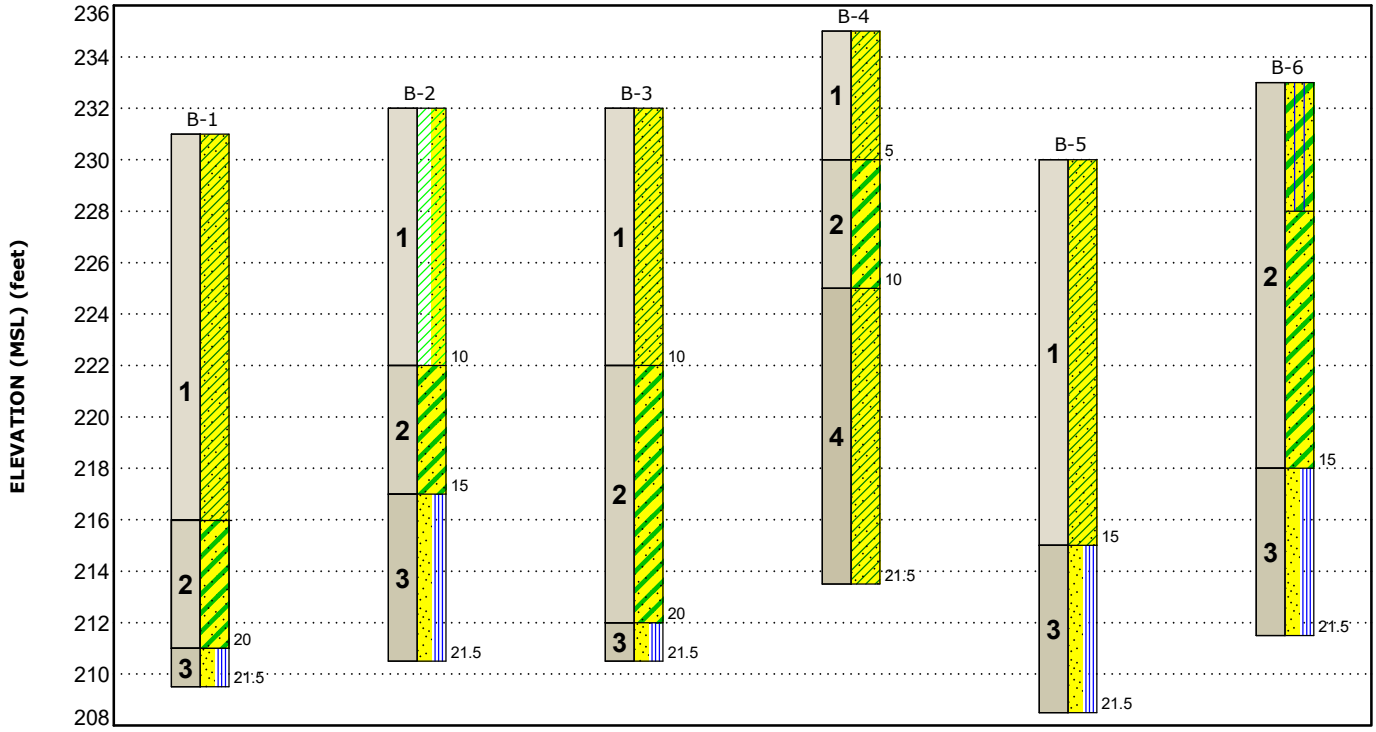
Contents:

GeoModel
Boring Logs (B-1 to B-10, SUB-1 and BESS-1)

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

145 W Walnut St
Carson, CA

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	CL	Sandy Lean Clay / Lean Clay with Sand
2	SC / SC-SM	Clayey Sand / Silty Clayey Sand
3	SP-SM	Poorly Graded Sand with Silt
4	CL	Sandy Lean Clay / Lean Clay with Sand
5	SP-SM	Poorly Graded Sand with Silt
6	CL	Sandy Lean Clay

Legend

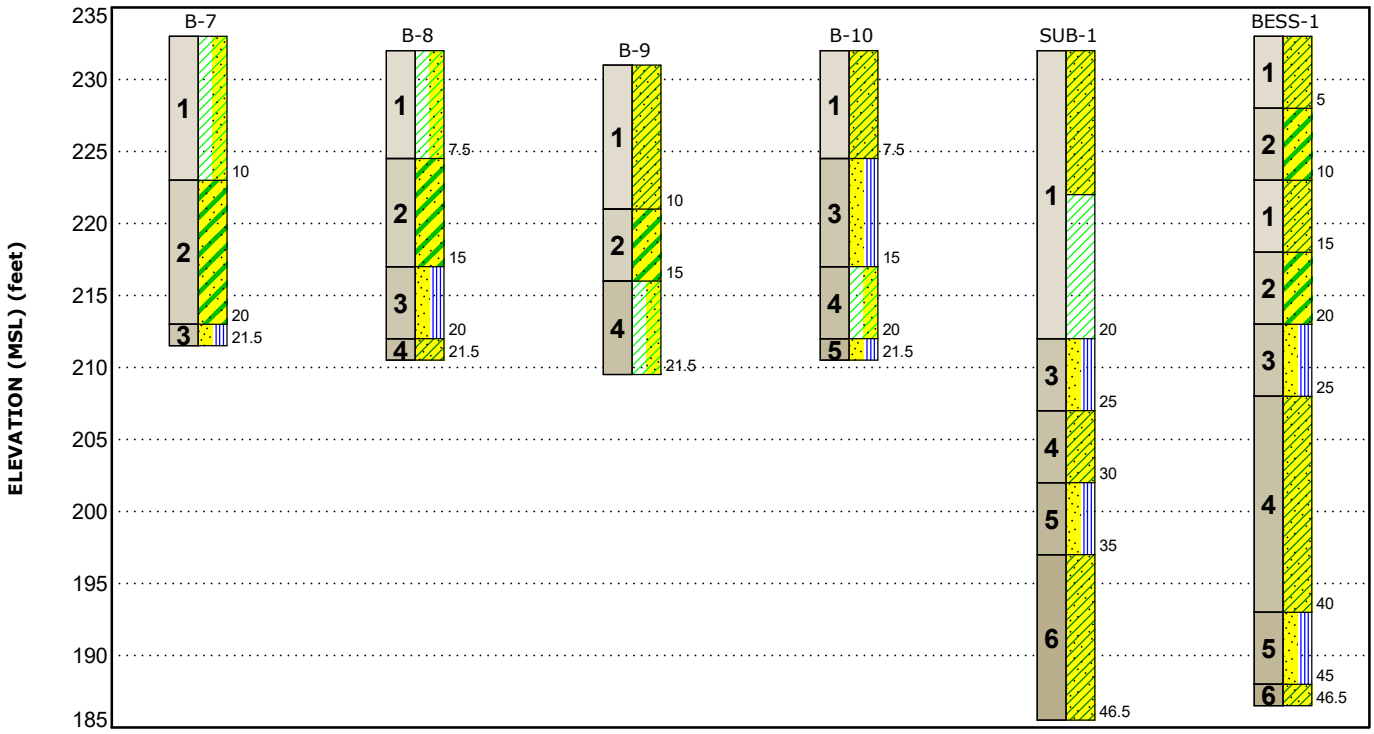
- Sandy Lean Clay
- Clayey Sand
- Poorly-graded Sand with Silt
- Lean Clay with Sand
- Silty Clayey Sand

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

145 W Walnut St
Carson, CA

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	CL	Sandy Lean Clay / Lean Clay with Sand
2	SC	Clayey Sand / Silty Clayey Sand
3	SP-SM	Poorly Graded Sand with Silt
4	CL	Sandy Lean Clay / Lean Clay with Sand
5	SP-SM	Poorly Graded Sand with Silt
6	CL	Sandy Lean Clay

Legend

- Lean Clay with Sand
- Clayey Sand
- Poorly-graded Sand with Silt
- Sandy Lean Clay
- Lean Clay

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.

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Terracon Project No. LA235086

Terracon
145 W Walnut St
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Boring Log No. B-1

Location: See Exploration Plan

Latitude: 36.1327° Longitude: -119.4097°

Model Layer	Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1			**SANDY LEAN CLAY (CL)**, brown					16.4		35-14-21	69
			very stiff				8-11-16	17.2	110		
			medium stiff	5			3-4-4 N=8				
			very stiff				3-8-12	17.2	104		
			stiff	10			3-5-8 N=13				52
2		15.0	**CLAYEY SAND (SC)**, brown, medium dense	15			6-8-15	15.1	113		
3		20.0	**POORLY GRADED SAND WITH SILT (SP-SM)**, brown, medium dense	20			9-11-13 N=24				
		21.5	***Boring Terminated at 21.5 Feet***								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-2

Location: See Exploration Plan

Latitude: 36.1311° Longitude: -119.4057°

Model Layer	Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1			**LEAN CLAY WITH SAND (CL)**, dark gray, stiff				3-3-6 N=9			29-17-12	75
			brown, very stiff	5			5-8-13	16.4	111		
			stiff				3-4-8 N=12			34-16-18	71
		10.0		10							
2			**CLAYEY SAND (SC)**, brown, medium dense				4-10-15	15.4	99		
		15.0		15							
3			**POORLY GRADED SAND WITH SILT (SP-SM)**, brown, medium dense				6-8-13 N=21				
				20			10-17-22	13.2	96		
		21.5	***Boring Terminated at 21.5 Feet***								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-3

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 36.1334° Longitude: -119.4014° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		**SANDY LEAN CLAY (CL)**, brown stiff				3-6-8	20.2	96		
		medium stiff	5			3-3-4 N=7			32-13-19	53
		very stiff				6-8-11	19.6	103		
		10.0	10							
2		**CLAYEY SAND (SC)**, brown to tan, medium dense loose				4-7-8 N=15				
		20.0	15			2-5-7	16.9	97		
3		**POORLY GRADED SAND WITH SILT (SP-SM)**, tan, wet, medium dense 21.5	20			6-7-8 N=15				
		Boring Terminated at 21.5 Feet								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-4

Location: See Exploration Plan

Latitude: 36.1318° Longitude: -119.3963°

Model Layer	Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1			**SANDY LEAN CLAY (CL)**, brown stiff				5-5-6 N=11				
		5.0		5							
2			**CLAYEY SAND (SC)**, brown, medium dense				4-6-15	11.2	104		
							2-4-8 N=12				
		10.0		10							
4			**SANDY LEAN CLAY (CL)**, brown, very stiff stiff				4-5-10	19.8	107		
				15			4-6-7 N=13				
			very stiff	20			7-9-17	23.0	99		
		21.5	***Boring Terminated at 21.5 Feet***								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-5

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 36.1287° Longitude: -119.4097° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		**SANDY LEAN CLAY (CL)**, brown very stiff				8-11-15	18.1	104		
			5			6-10-13 N=23			29-13-16	63
						3-9-14	21.0	100		
		stiff	10			2-3-6 N=9				
		15.0	15							
3		**POORLY GRADED SAND WITH SILT (SP-SM)**, brown, medium dense				6-8-12				
		loose	20			2-3-6 N=9				
		21.5								
		Boring Terminated at 21.5 Feet								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-6

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 36.1276° Longitude: -119.4037° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
		SILTY CLAYEY SAND (SC-SM), brown								
		loose				4-3-2 N=5			21-17-4	42
		5.0	5							
2		**CLAYEY SAND (SC)**, brown to tan, medium dense				12-9-10	12.1	86		
		loose				3-4-5 N=9				
			10			4-5-9	17.0	98		
		15.0	15							
3		**POORLY GRADED SAND WITH SILT (SP-SM)**, brown, medium dense				4-5-8 N=13				
			20			4-5-8	20.4	102		
		21.5								
		Boring Terminated at 21.5 Feet								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-7

Location: See Exploration Plan

Latitude: 36.1293° Longitude: -119.3996°

Model Layer	Depth (Ft.)	Graphic Log	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1	0	**LEAN CLAY WITH SAND (CL)**, brown				17.0		29-17-12	70
		stiff			4-5-7	19.5	95		
	5				6-7-8 N=15				
		very stiff			3-8-19	18.4	110		
	10				3-4-4 N=8				
2		loose			3-5-12	21.0	106		
	15								
	20				3-5-12 N=17				
3	20.0	**POORLY GRADED SAND WITH SILT (SP-SM)**, brown to tan, medium dense							
	21.5	***Boring Terminated at 21.5 Feet***							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-8

Location: See Exploration Plan

Latitude: 36.1281° Longitude: -119.3952°

Model Layer	Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1			**LEAN CLAY WITH SAND (CL)**, brown							37-19-18	79
			stiff				4-5-7 N=12				
			very stiff	5			10-10-14	15.5	110		
		7.5									
2			**CLAYEY SAND (SC)**, brown, medium dense				4-6-7 N=13				
				10			5-9-18				
		15.0									
3			**POORLY GRADED SAND WITH SILT (SP-SM)**, brown and tan, medium dense	15			7-10-10 N=20				
		20.0									
4			**SANDY LEAN CLAY (CL)**, brown, very stiff	20			5-12-20	16.2	113		
		21.5									
			Boring Terminated at 21.5 Feet								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-9

Location: See Exploration Plan

Latitude: 36.1249° Longitude: -119.4081°

Model Layer	Depth (Ft.)	Graphic Log	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1	0	**SANDY LEAN CLAY (CL)**, brown				15.1			
		very stiff			8-8-11	16.7	109		
	5	medium stiff			2-2-5 N=7				
		stiff			4-6-12	16.3	108		
2	10	10.0 **CLAYEY SAND (SC)**, brown, medium dense			4-7-7 N=14			29-10-19	47
4	15	15.0 **LEAN CLAY WITH SAND (CL)**, brown, very stiff			2-7-16	22.7	104		
	20	stiff			7-5-5 N=10				
		21.5 ***Boring Terminated at 21.5 Feet***							

Depth (Ft.)

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Foxtail Solar
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Terracon
145 W Walnut St
Carson, CA

Boring Log No. B-10

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 36.1250° Longitude: -119.4001° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		**SANDY LEAN CLAY (CL)**, brown							29-14-15	63
		stiff				3-5-8 N=13				
		hard	5			12-21-27	14.4	113		
		7.5								
3		**POORLY GRADED SAND WITH SILT (SP-SM)**, brown to tan, loose				4-4-5 N=9				
		medium dense	10			6-8-14	4.0	98		
		15.0								
4		**LEAN CLAY WITH SAND (CL)**, brown, very stiff	15			7-8-19 N=27				
		20.0								
5		**POORLY GRADED SAND WITH SILT (SP-SM)**, orangish brown, medium dense	20			7-12-21	8.8	103		
		21.5								
		Boring Terminated at 21.5 Feet								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
10-31-2023

Boring Completed
10-31-2023

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Foxtail Solar
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Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. SUB-1

Location: See Exploration Plan

Latitude: 36.1248° Longitude: -119.3945°

Model Layer	Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.0	**SANDY LEAN CLAY (CL)**, brown stiff				11-6-8 N=14	12.3			61
			hard	5			30-25-25	16.9	109		
			stiff				3-4-6 N=10				
		10.0	**LEAN CLAY (CL)**, trace sand, brown, very stiff	10			11-10-13	23.2	99		
			medium stiff	15			3-3-4 N=7				
		20.0		20							
3			**POORLY GRADED SAND WITH SILT (SP-SM)**, brown, medium dense				6-14-24	14.9	110		
		25.0		25							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
11-01-2023

Boring Completed
11-01-2023

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. SUB-1

Location: See Exploration Plan

Latitude: 36.1248° Longitude: -119.3945°

Model Layer	Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
4			**SANDY LEAN CLAY (CL)**, brown, stiff				5-6-9 N=15				
		30.0		30							
5			**POORLY GRADED SAND WITH SILT (SP-SM)**, brown, dense				9-16-19 N=35				
		35.0		35							
6			**SANDY LEAN CLAY (CL)**, brown, medium stiff				2-3-5 N=8				
			stiff	40			3-3-7 N=10				
			very stiff	45			6-8-12 N=20				
		46.5	***Boring Terminated at 46.5 Feet***								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
11-01-2023

Boring Completed
11-01-2023

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Boring Log No. BESS-1

Location: See Exploration Plan

Latitude: 36.1257° Longitude: -119.3945°

Model Layer	Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
1		0.0	**SANDY LEAN CLAY (CL)**, brown very stiff					12.3			
							10-13-17	12.3	116		
		5.0		5							
2			**CLAYEY SAND (SC)**, brown, medium dense				3-5-6 N=11				26
							9-11-18	16.5	112		
		10.0		10							
1			**SANDY LEAN CLAY (CL)**, brown, stiff				3-6-8 N=14			25-11-14	63
		15.0		15							
2			**CLAYEY SAND (SC)**, brown, medium dense				8-14-17	10.0	115		
		20.0		20							
3			**POORLY GRADED SAND WITH SILT (SP-SM)**, brown to tan, medium dense				8-9-11 N=20				
		25.0		25							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
11-01-2023

Boring Completed
11-01-2023

Foxtail Solar
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Carson, CA

Boring Log No. BESS-1

Location: See Exploration Plan

Latitude: 36.1257° Longitude: -119.3945°

Model Layer	Graphic Log	Depth (Ft.)	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI	Percent Fines
4			**SANDY LEAN CLAY (CL)**, brown, stiff				5-5-7 N=12				
				30			3-5-8 N=13				
				35			3-4-8 N=12				
		40.0									
5			**POORLY GRADED SAND WITH SILT (SP-SM)**, brown, medium dense	40			7-9-14 N=23				
		45.0									
6			**SANDY LEAN CLAY (CL)**, brown, very stiff	45			6-9-19 N=28				
		46.5	***Boring Terminated at 46.5 Feet***								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Notes

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
CME-75

Hammer Type
Automatic

Driller
CalPac Drilling

Logged by
CG

Boring Started
11-01-2023

Boring Completed
11-01-2023

Laboratory Test Results

Contents:

Laboratory Testing Procedures
Atterberg Limits
Swell-Consolidation Test
Modified Proctor Compaction Test
Direct Shear Results
Laboratory Corrosion Series Test Results
Laboratory Thermal Resistivity Test Results

Laboratory Testing Procedures

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

- Moisture Content
- Dry Unit Weight
- Atterberg Limits
- Percent Finer Than No. 200 Sieve
- Swell-Consolidation Test
- Modified Proctor Compaction Test
- Direct Shear

The laboratory testing program also included review of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

Thermal Resistivity: Thermal resistivity tests were analyzed by Geotherm USA. Terracon collected bulk samples of subsurface materials obtained within the proposed stuctural areas. Each bulk sample had a Modified Proctor test performed, and each bulk sample was tested for thermal resistivity tests on samples remolded to 85% or 95% relative density. The percent compaction is based on comparing to the material's maximum dry density as determined by test method ASTM D1557 (Modified Proctor). Tests included a minimum of 4 readings, including optimum moisture content or as-received moisture (whichever is higher), totally dry condition, and 2 intermediate moisture contents.

Corrosivity Testing: Bulk samples of near surface soils were tested in the laboratory for the following properties in general accordance with the corresponding standards:

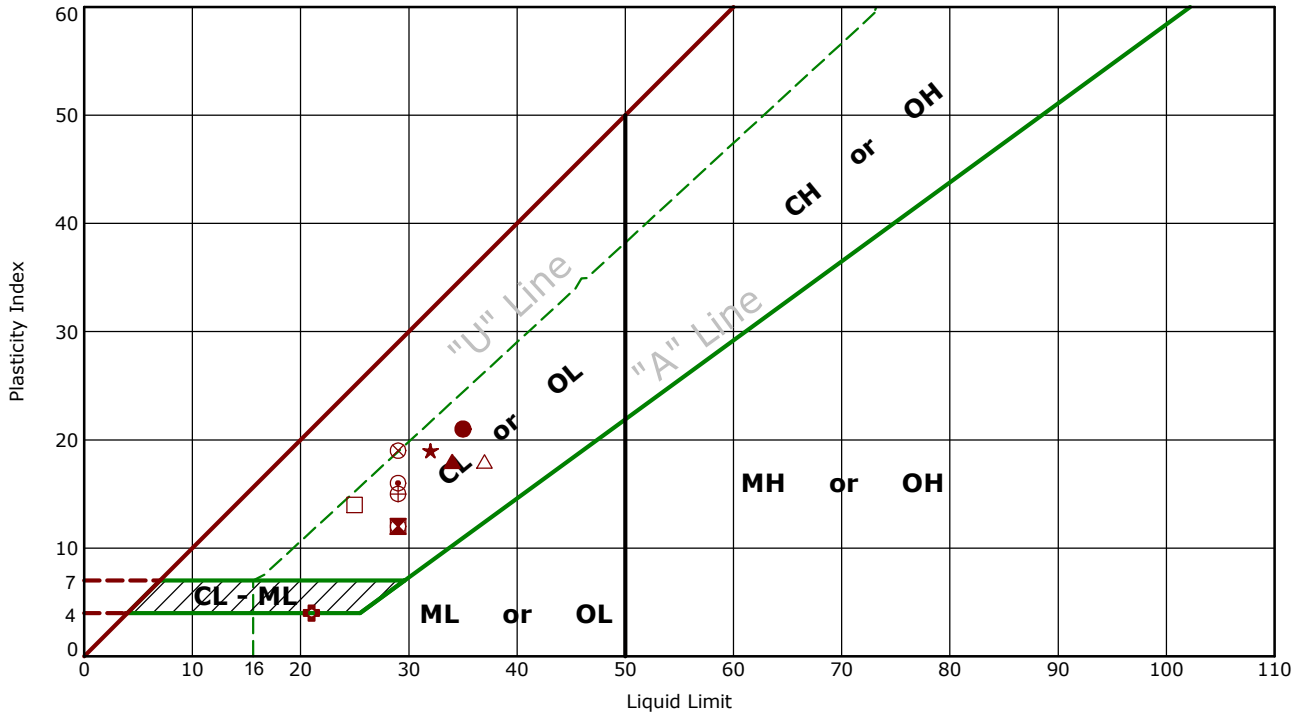
- pH Analysis (ASTM G51)
- Chloride (ASTM D512)
- Sulfate (ASTM C1580)
- Sulfide Content (AWWA 4500-S D)
- Oxidation-Reduction Potential (ASTM G200)
- Electrical Resistivity Testing (ASTM G187)

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Carson, CA

Atterberg Limit Results

ASTM D4318



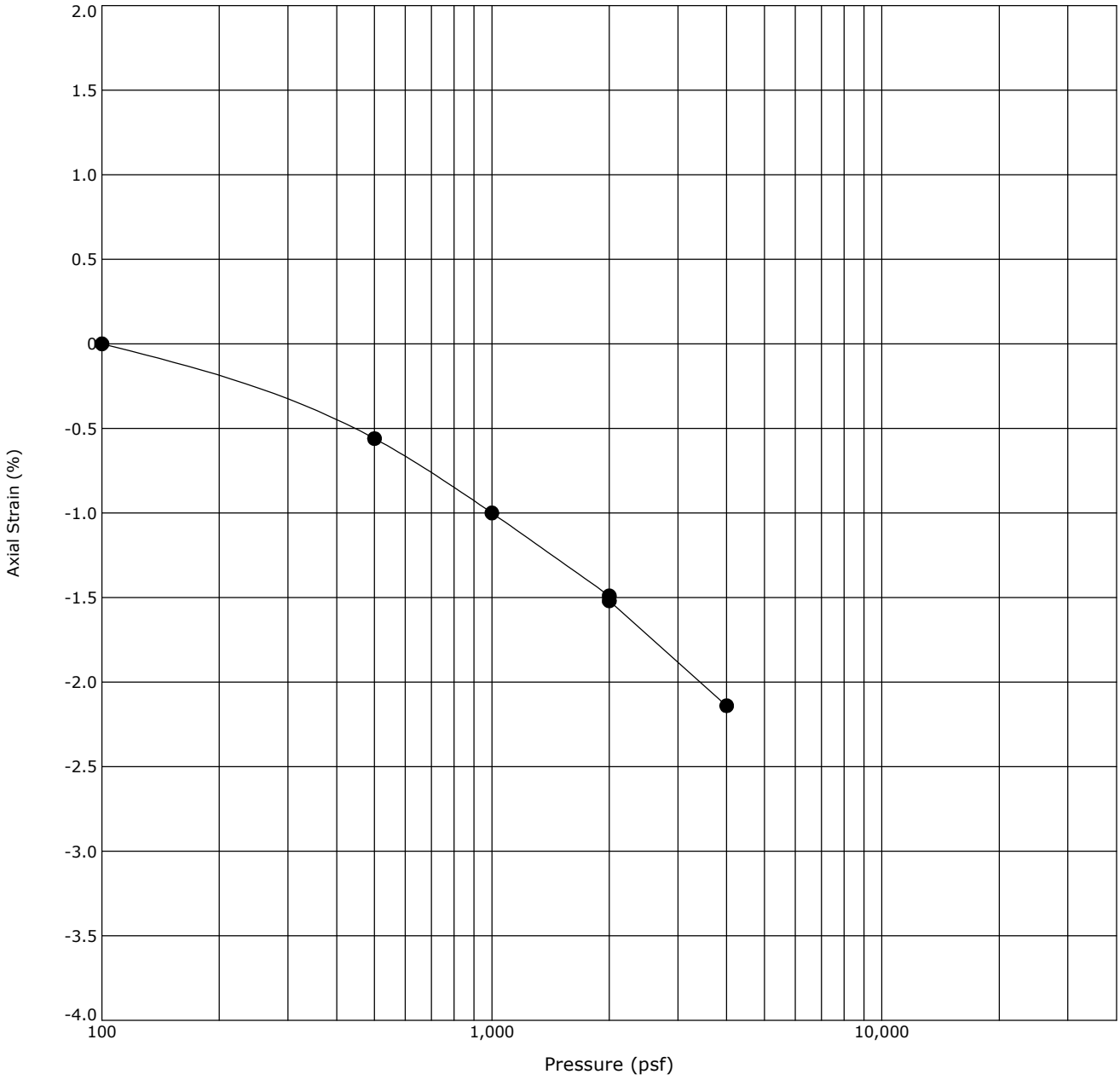
	Boring ID	Depth (Ft)	LL	PL	PI	Fines	USCS	Description
○	B-1	0 - 2.5	35	14	21	69.5	CL	SANDY LEAN CLAY
⊠	B-2	0 - 5	29	17	12	75.3	CL	LEAN CLAY WITH SAND
△	B-2	7.5 - 9	34	16	18	71.1	CL	LEAN CLAY WITH SAND
☆	B-3	5 - 6.5	32	13	19	52.8	CL	SANDY LEAN CLAY
⊙	B-5	5 - 6.5	29	13	16	62.7	CL	SANDY LEAN CLAY
✿	B-6	2.5 - 4	21	17	4	41.9	SC-SM	SILTY CLAYEY SAND
○	B-7	0 - 2.5	29	17	12	70.1	CL	LEAN CLAY WITH SAND
△	B-8	0 - 2.5	37	19	18	79.1	CL	LEAN CLAY WITH SAND
⊗	B-9	10 - 11.5	29	10	19	46.8	SC	CLAYEY SAND
◐	B-10	0 - 2.5	29	14	15	63.1	CL	SANDY LEAN CLAY
	BESS-1	10 - 11.5	25	11	14	62.7	CL	SANDY LEAN CLAY

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Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Swell Consolidation Test

ASTM D2435



Boring ID		Depth (Ft)	Description	USCS	γ_d(pcf)	WC (%)
●	SUB-1	5 - 6.5	SANDY LEAN CLAY	CL	109	16.9

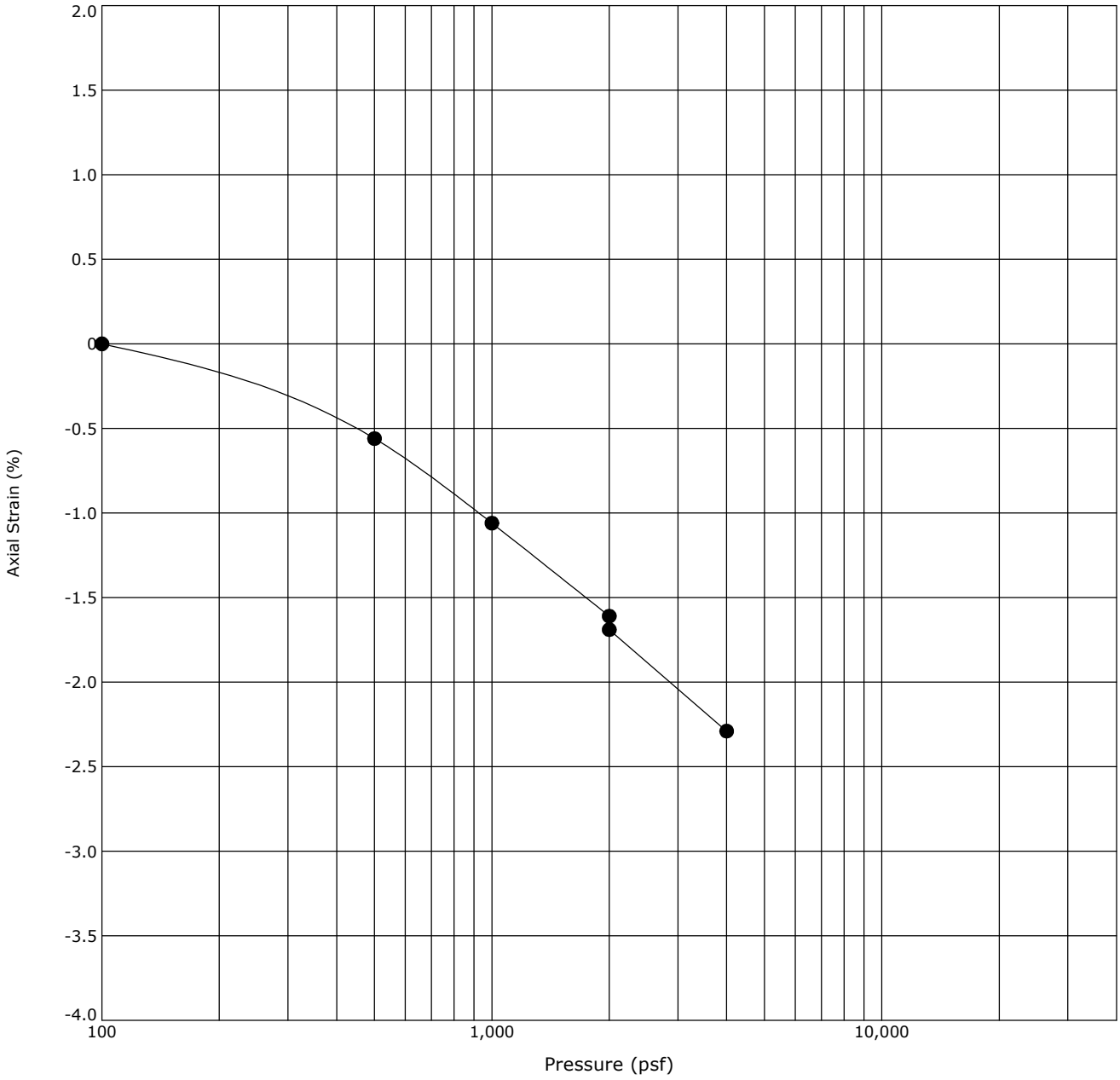
Notes: water added at 2000 psf

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Tulare | Tulare County, CA
Terracon Project No. LA235086

145 W Walnut St
Carson, CA

Swell Consolidation Test

ASTM D2435



Boring ID		Depth (Ft)	Description	USCS	γ_d(pcf)	WC (%)
●	BESS-1	2.5 - 4	SANDY LEAN CLAY	CL	116	12.3

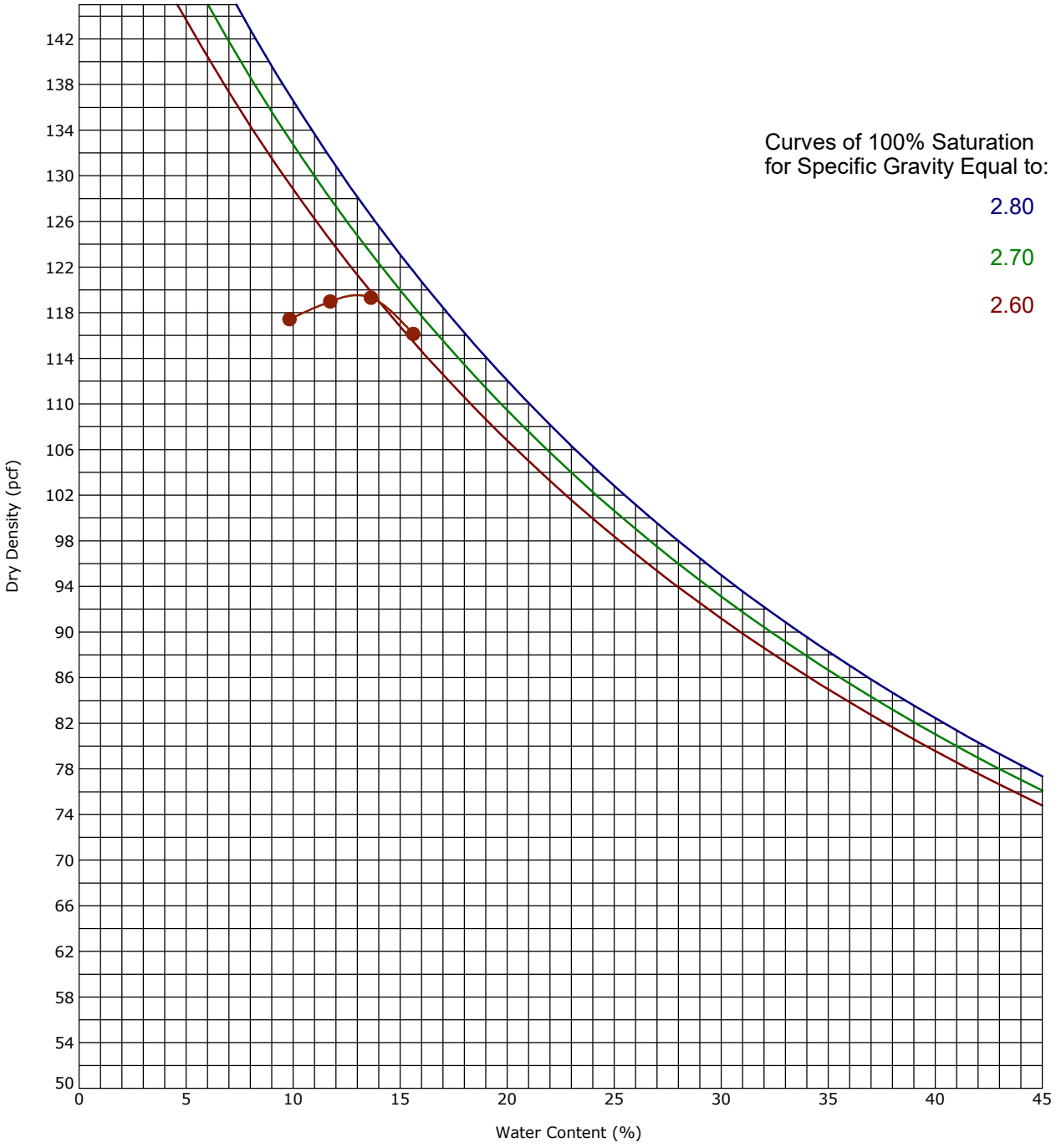
Notes: water added at 2000 psf

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Moisture-Density Relationship

ASTM D1557-Method A



Boring ID	Depth (Ft)	Description of Materials
B-1	0 - 2.5	SANDY LEAN CLAY

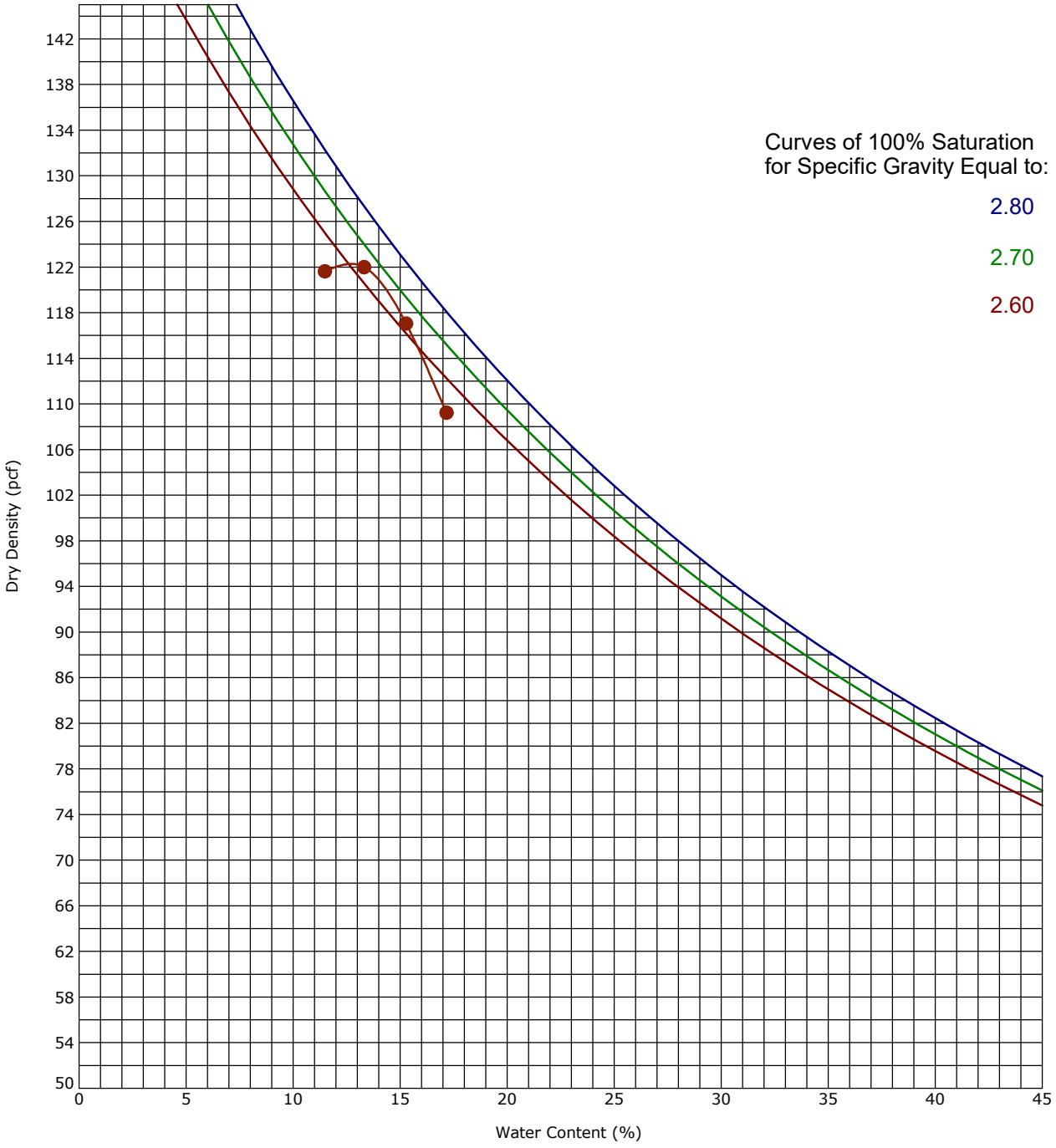
Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
69		35	14	21	ASTM D1557-Method A	119.5	13.0

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Moisture-Density Relationship

ASTM D1557-Method A



Boring ID	Depth (Ft)	Description of Materials
B-7	0 - 2.5	LEAN CLAY WITH SAND

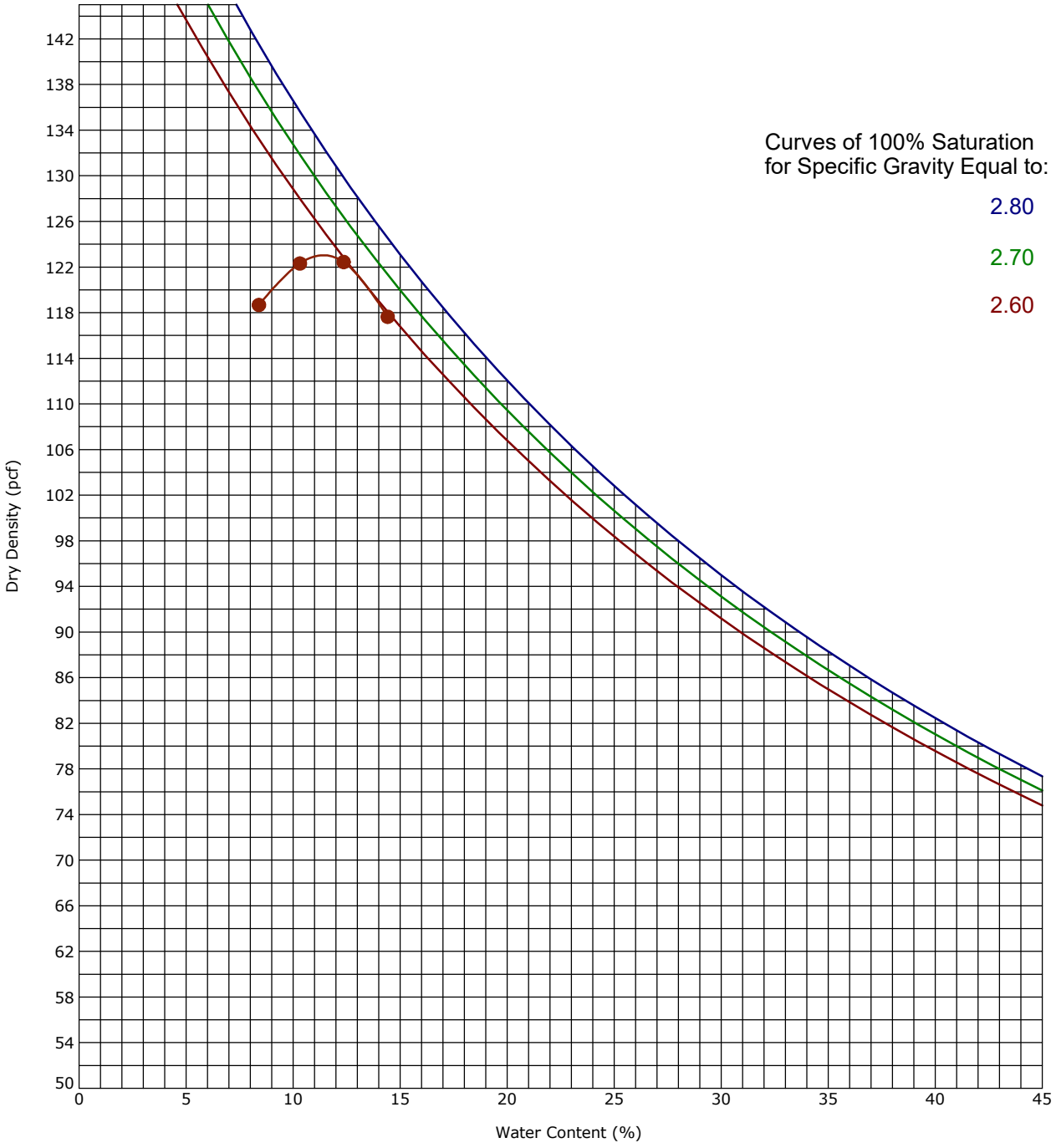
Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
70	0.0	29	17	12	ASTM D1557-Method A	122.3	12.7

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

145 W Walnut St
Carson, CA

Moisture-Density Relationship

ASTM D1557-Method A



Boring ID	Depth (Ft)	Description of Materials
B-9	0 - 2.5	SANDY LEAN CLAY

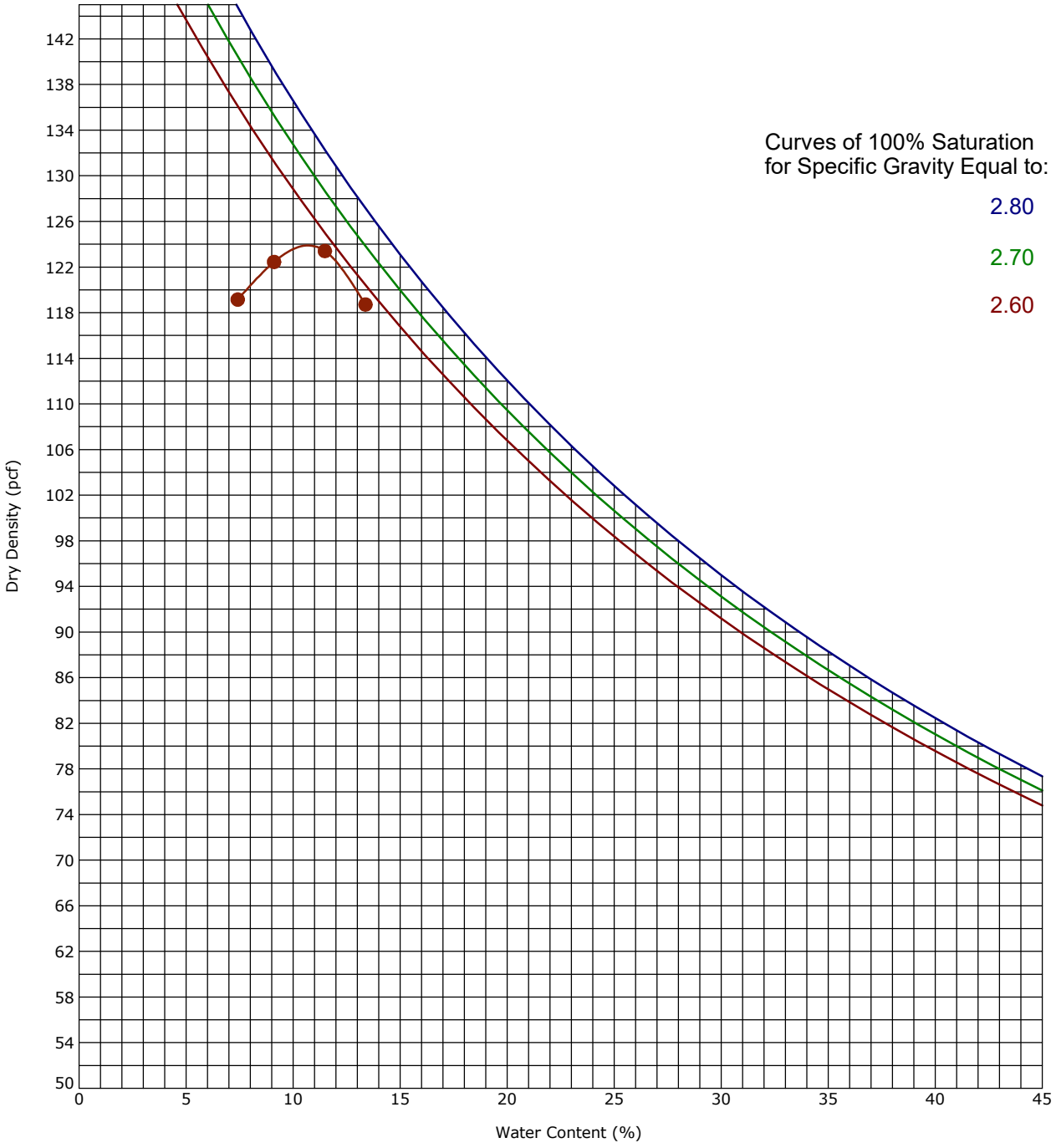
Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
					ASTM D1557-Method A	123.0	11.4

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

Terracon
145 W Walnut St
Carson, CA

Moisture-Density Relationship

ASTM D1557-Method A



Boring ID	Depth (Ft)	Description of Materials
SUB-1	0 - 5	SANDY LEAN CLAY

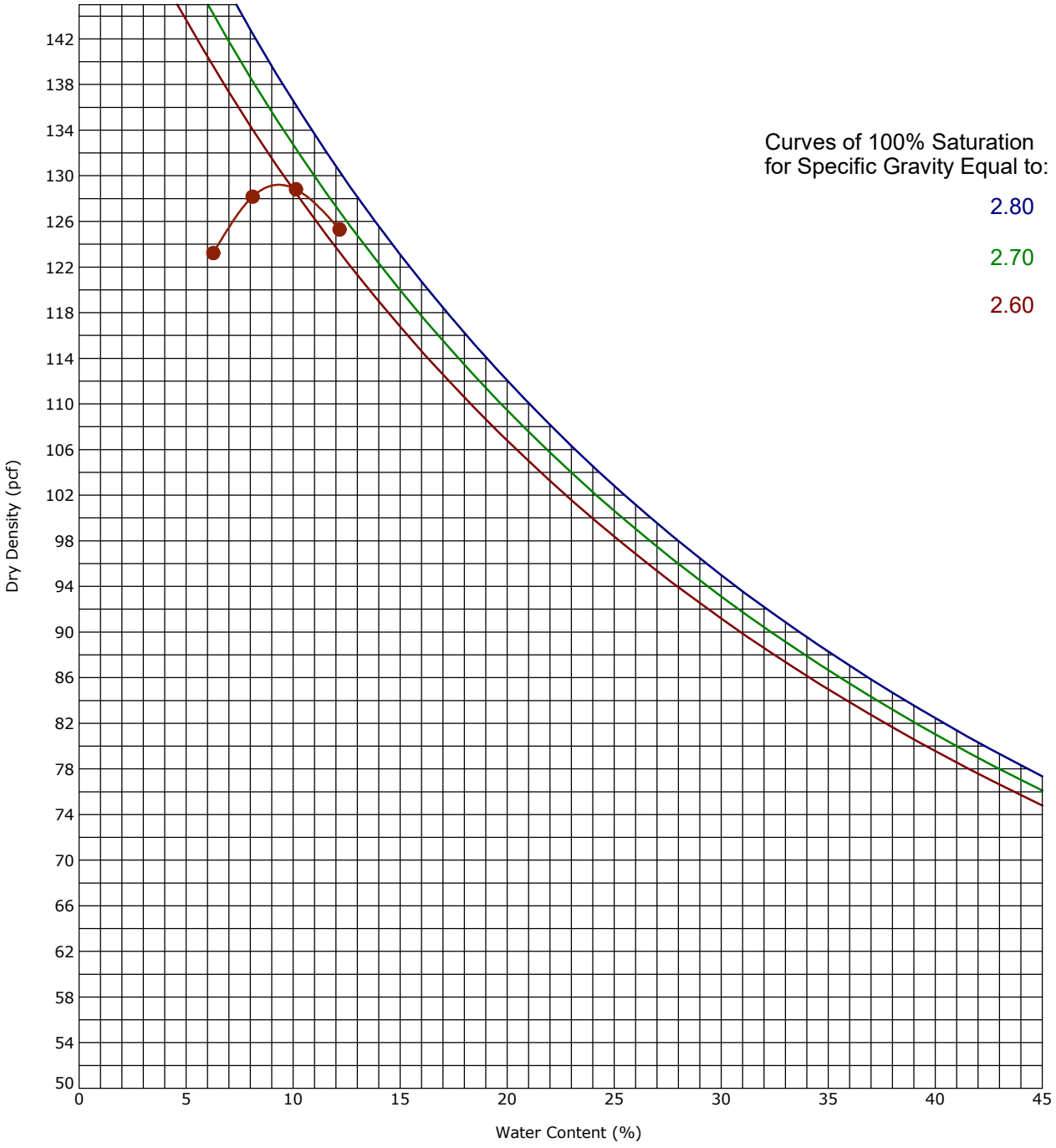
Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
					ASTM D1557-Method A	123.9	10.7

Foxtail Solar
Tulare | Tulare County, CA
Terracon Project No. LA235086

145 W Walnut St
Carson, CA

Moisture-Density Relationship

ASTM D1557-Method A



Boring ID	Depth (Ft)	Description of Materials
BESS-1	0 - 2.5	SANDY LEAN CLAY

Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
					ASTM D1557-Method A	129.2	9.4

Laboratory tests are not valid if separated from original report.

Foxtail Solar
Tulare, CA
Terracon Project No.: LA235086

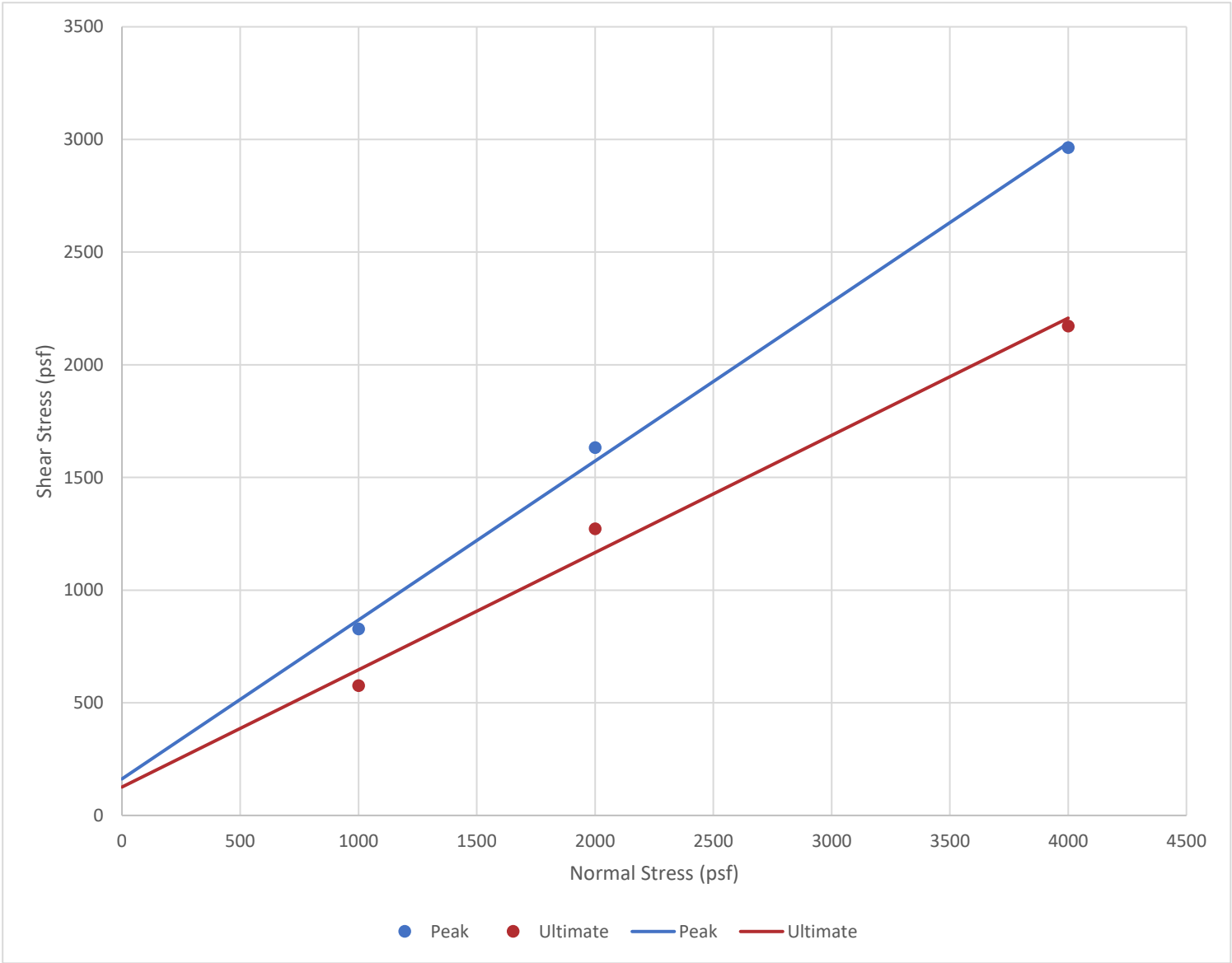
Terracon
145 W Walnut St.
Gardena, CA

Direct Shear Test

ASTM D3080

Boring ID	Depth (ft)	Description	USCS	γ_d (pcf)	W(%)
BESS-1	2.5	Sandy Lean Clay	CL	116	12.3

Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)	Peak		Ultimate	
			φ°	C (psf)	φ°	C (psf)
1000	828	576	**35.0**	**160**	**27.0**	**130**
2000	1632	1272				
4000	2964	2172				



Foxtail Solar
Tulare,CA
Terracon Project No.: LA235086

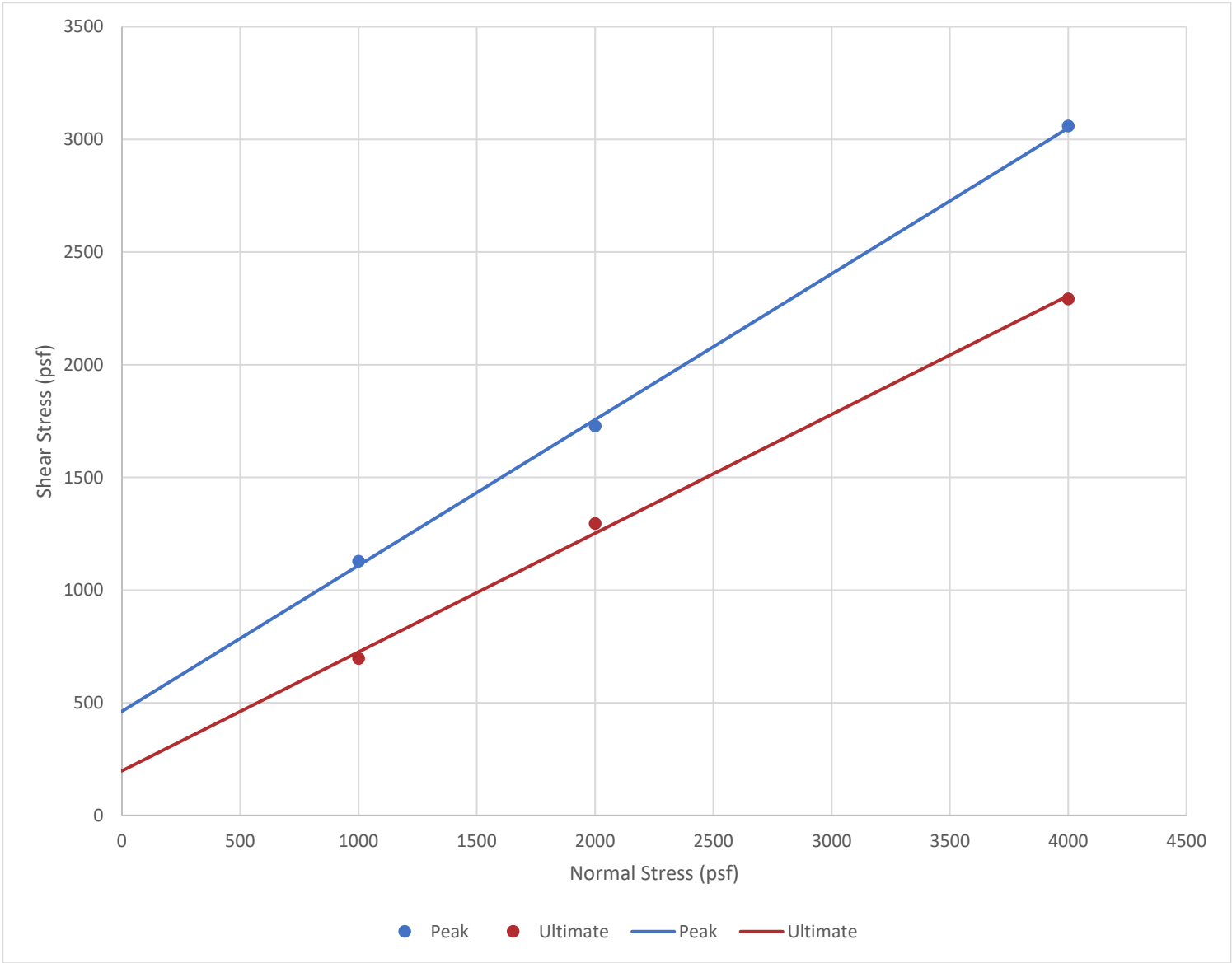
Terracon
145 W Walnut St.
Gardena, CA

Direct Shear Test

ASTM D3080

Boring ID	Depth (ft)	Description	USCS	γ_d (pcf)	W(%)
SUB-1	5	Sandy Lean Clay	CL	109	16.9

Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)	Peak		Ultimate	
			φ°	C (psf)	φ°	C (psf)
1000	1128	696	**33.0**	**460**	**28.0**	**200**
2000	1728	1296				
4000	3060	2292				



750 Pilot Road, Suite F
Las Vegas, Nevada 89119
(702) 597-9393

Client
Samsung C&T Renewables LLC

Project
Foxtail Solar

Sample Submitted By: Terracon (LA) Date Received: 11/15/2023 Lab No.: 23-0606

Results of Corrosion Analysis

Sample Number	--	--	--	--
Sample Location	B-1	B-4	B-5	B-6
Sample Depth (ft.)	0.0-5.0	0.0-2.5	0.0-5.0	0.0-2.5
pH Analysis, ASTM G51	8.60	8.65	8.98	8.43
Water Soluble Sulfate (SO4), ASTM C 1580 (Percent %)	<0.01	0.01	0.01	0.01
Sulfides, AWWA 4500-S D, (mg/Kg)	Nil	Nil	Nil	Nil
Chlorides, ASTM D512, (mg/kg)	67	35	17	47
Red-Ox, ASTM G200, (mV)	+734	+730	+727	+735
Total Salts, AWWA 2520 B, (mg/Kg)	210	395	712	158
Saturated Minimum Resistivity, ASTM G-187, (ohm-cm)	1675	2278	1206	3852

Analyzed By _____
Nathan Campo
Laboratory Coordinator

The tests were performed in general accordance with applicable ASTM and AWWA test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

750 Pilot Road, Suite F
Las Vegas, Nevada 89119
(702) 597-9393

Client
Samsung C&T Renewables LLC

Project
Foxtail Solar

Sample Submitted By: Terracon (LA) Date Received: 11/15/2023 Lab No.: 23-0606

Results of Corrosion Analysis

Sample Number	--	--	--
Sample Location	B-9	Sub-1	BESS-1
Sample Depth (ft.)	0.0-5.0	0.0-5.0	0.0-5.0
pH Analysis, ASTM G51	8.86	9.14	8.64
Water Soluble Sulfate (SO4), ASTM C 1580 (Percent %)	<0.01	0.01	<0.01
Sulfides, AWWA 4500-S D, (mg/Kg)	Nil	Nil	Nil
Chlorides, ASTM D512, (mg/kg)	50	52	22
Red-Ox, ASTM G200, (mV)	+734	+733	+734
Total Salts, AWWA 2520 B, (mg/Kg)	201	272	151
Saturated Minimum Resistivity, ASTM G-187, (ohm-cm)	2110	2278	3115

Analyzed By _____
Nathan Campo
Laboratory Coordinator

The tests were performed in general accordance with applicable ASTM and AWWA test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

21239 FM529 Rd., Bldg. F
Cypress, TX 77433
Tel: 281-985-9344
Fax: 832-427-1752
info@geothermusa.com
http://www.geothermusa.com

December 19, 2023

Terracon
145 W. Walnut Street
Gardenia, CA 90248
Attn: Janna Valdez

Re: Thermal Analysis of Native Soil Samples
Foxtail Solar – Tulare, CA (Project No. LA235086)

The following is the report of thermal dryout characterization tests conducted on five (5) native soil samples from the referenced project sent to our laboratory.

Thermal Resistivity Tests: The samples were tested at the 'In-situ' moisture content and at 85% or 95% of the modified Proctor dry density ***provided by Terracon***. The tests were conducted in accordance with the IEEE standard 442-2017. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 5.**

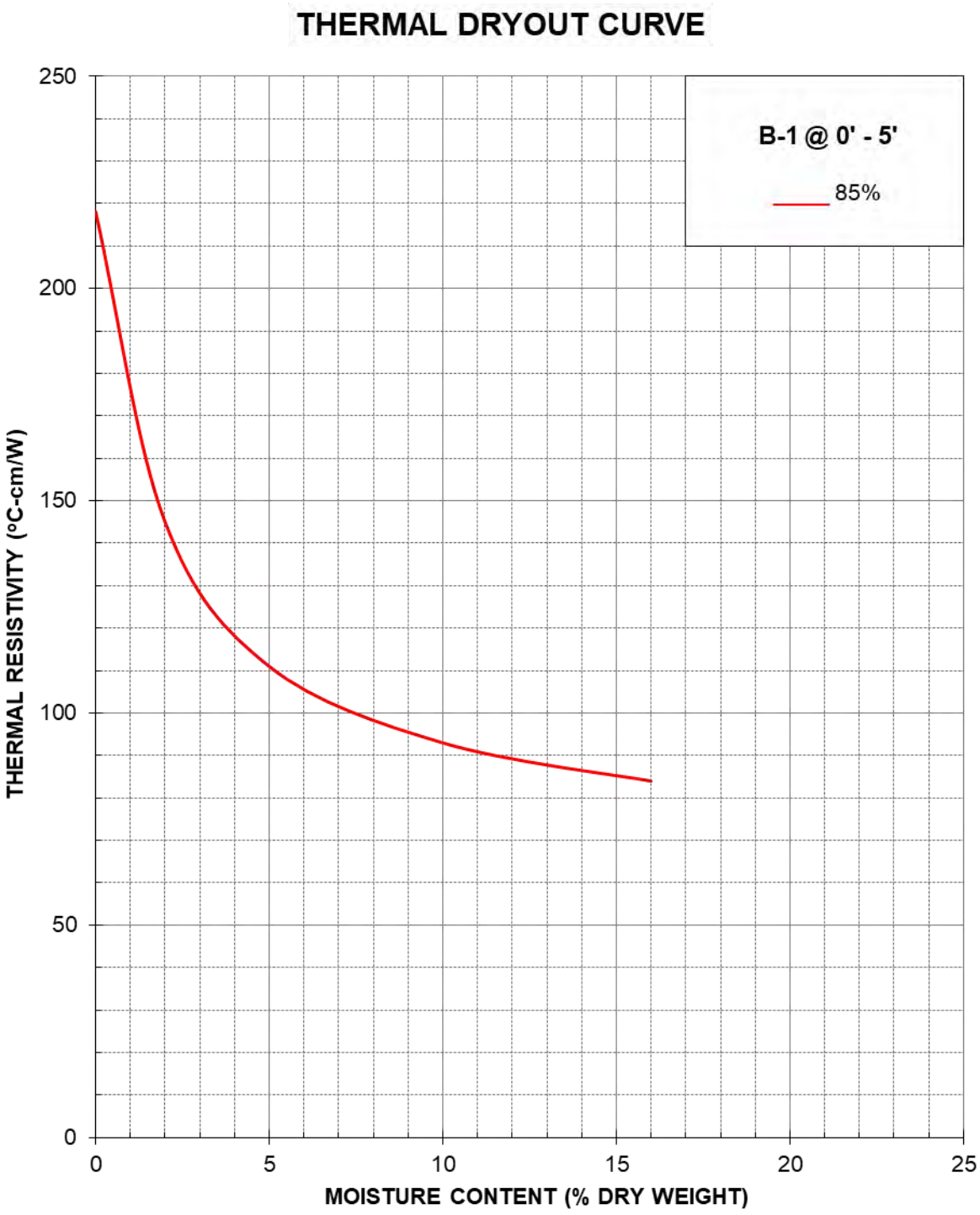
Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Depth (ft)	Effort (%)	Description (Terracon)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
				Wet	Dry		
B-1	0 - 5	85	Silt (ML)	84	218	16	102
B-7	0 - 5	85	Silt (ML)	80	197	17	104
B-9	0 - 5	85	Silt (ML)	76	189	15	105
Sub-01	0 - 5	95	Silt (ML)	69	132	16	118
BESS-01	0 - 5	95	Silt (ML)	59	125	12	123

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

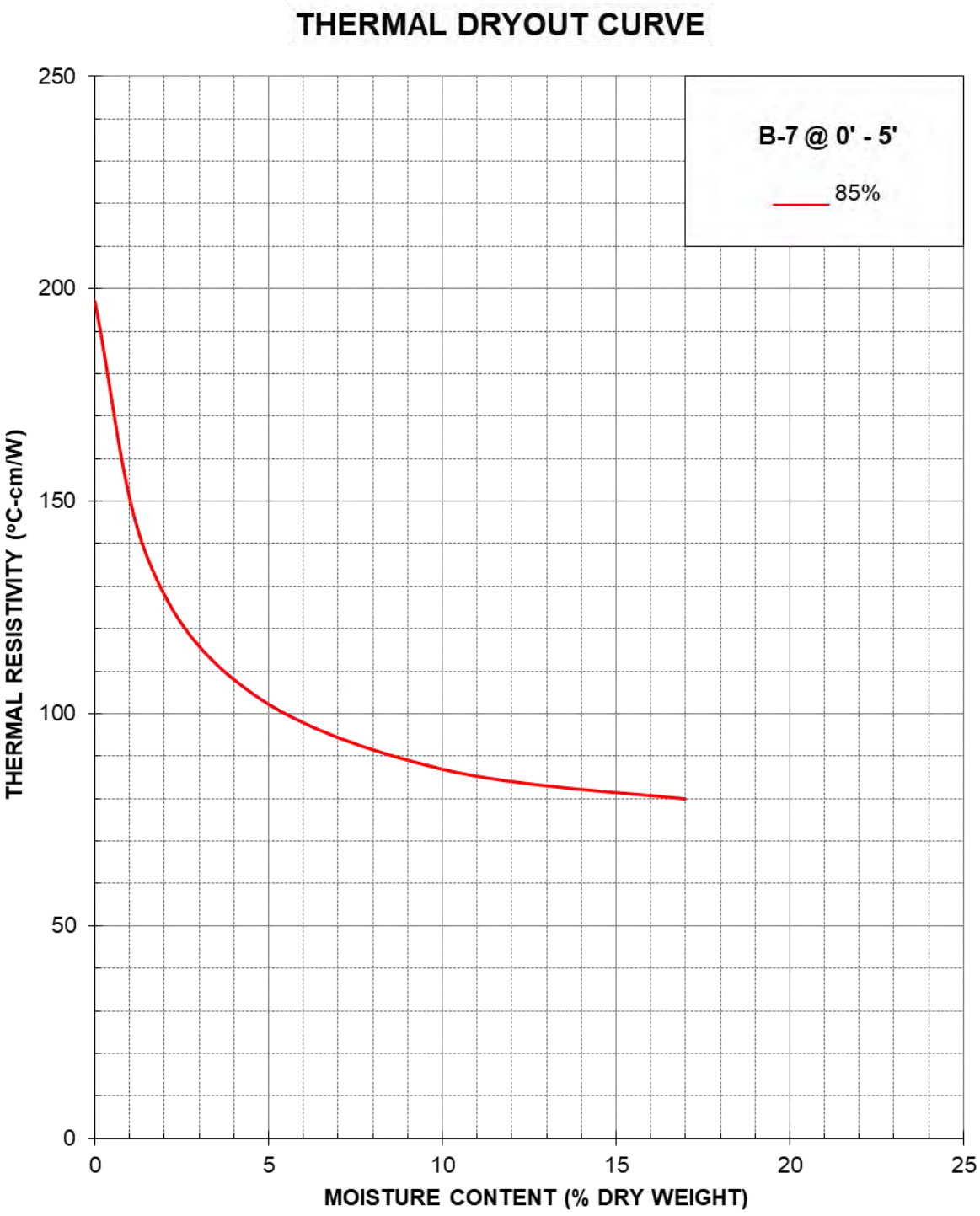


Terracon (Project No. LA235086)

Foxtail Solar – Tulare, CA

Thermal Analysis of Native Soil Samples

December 2023 **Figure 1**

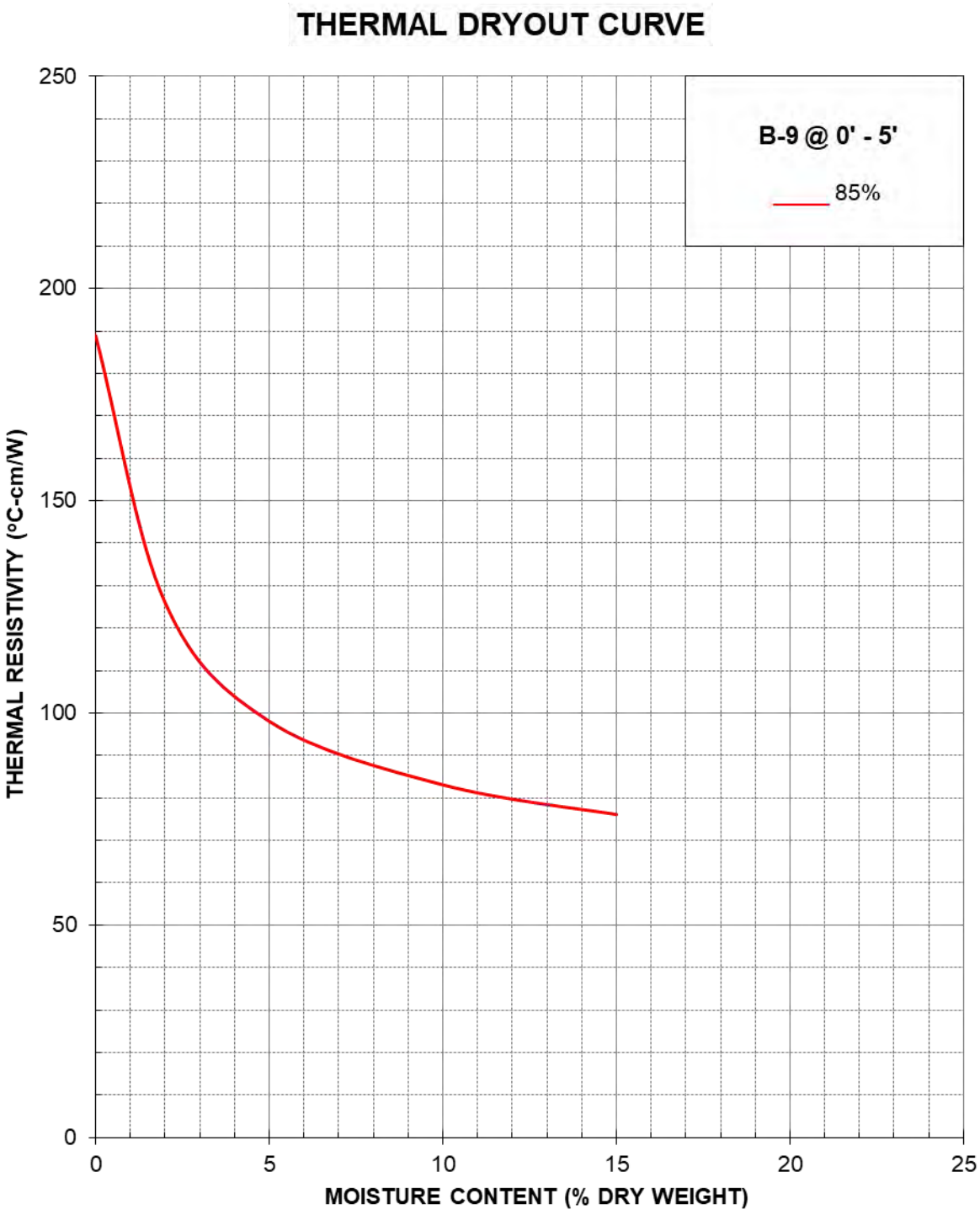


Terracon (Project No. LA235086)

Foxtail Solar – Tulare, CA

Thermal Analysis of Native Soil Samples

December 2023 **Figure 2**



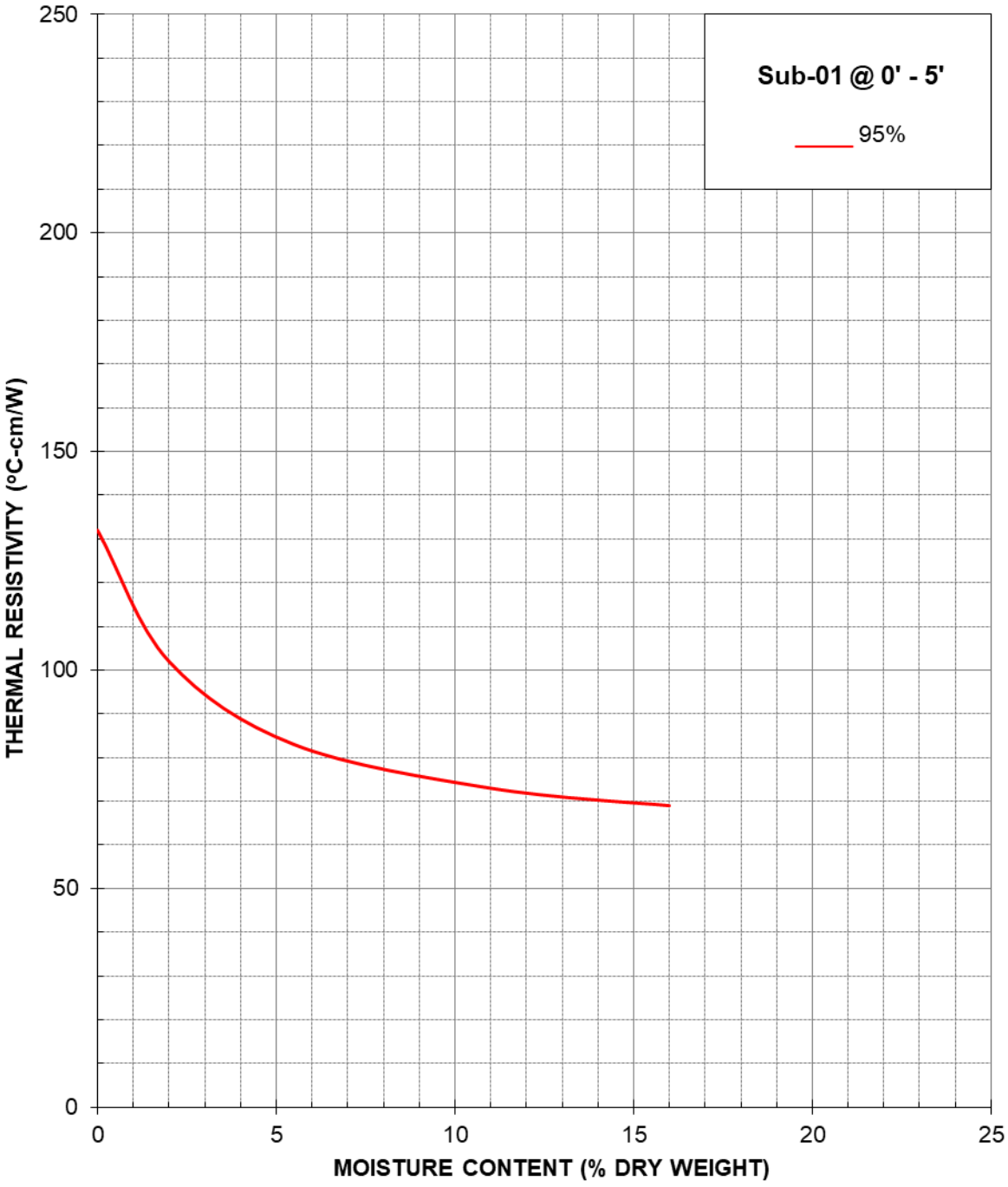
Terracon (Project No. LA235086)

Foxtail Solar – Tulare, CA

Thermal Analysis of Native Soil Samples

December 2023 **Figure 3**

THERMAL DRYOUT CURVE

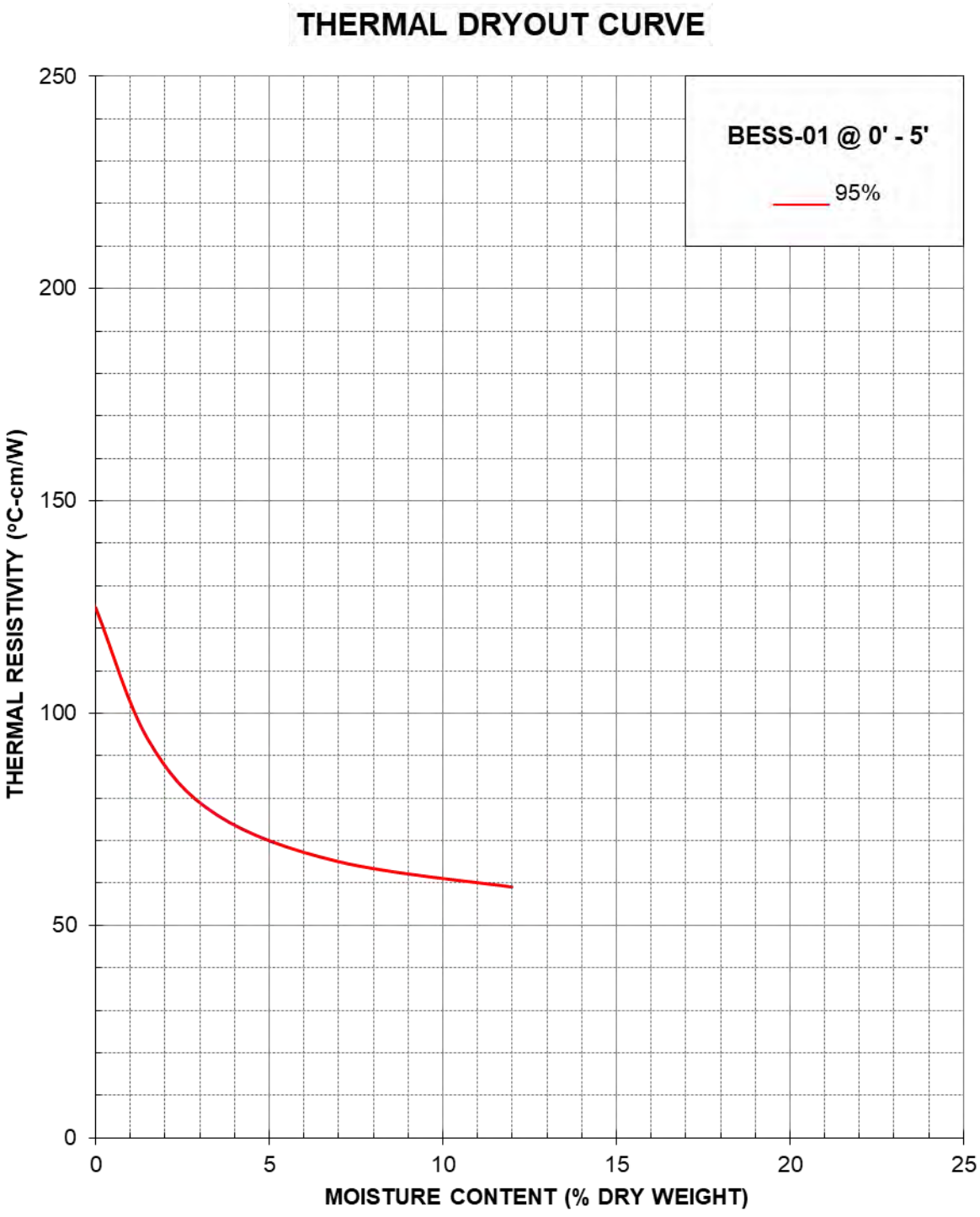


Terracon (Project No. LA235086)

Foxtail Solar – Tulare, CA

Thermal Analysis of Native Soil Samples

December 2023 **Figure 4**



Terracon (Project No. LA235086)

Foxtail Solar – Tulare, CA

Thermal Analysis of Native Soil Samples

December 2023 **Figure 5**

Field Soil Electrical Resistivity Test Results

Contents:

Electrical Resistivity Test Procedures
Electrical Resistivity Test Location Plan
Electrical Resistivity Results

Field Electrical Resistivity Test Procedures

Electrical Resistivity Testing: Soil electrical resistivity data was be obtained in accordance with ASTM G57 Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method. At the test location, two near perpendicular lines was tested. Electrode "a" spacings are summarized in the following table. Electrode spacing was adjusted to conform to site conditions.

No. of Test Locations	**Electrode "a" Spacing** (feet)	Location
5	1, 2, 5, 10, 25, 75, 100 and 150 feet	PV Array Areas
1	1, 2, 5, 10, 25, 75, 100, 150 and 300 feet	BESS Areas
1	1, 2, 3, 6, 10, 18, 30, 40, 50, 70, 100, 150 and 300 feet	Substation Areas

Exploration Location Plan – Electrical Resistivity

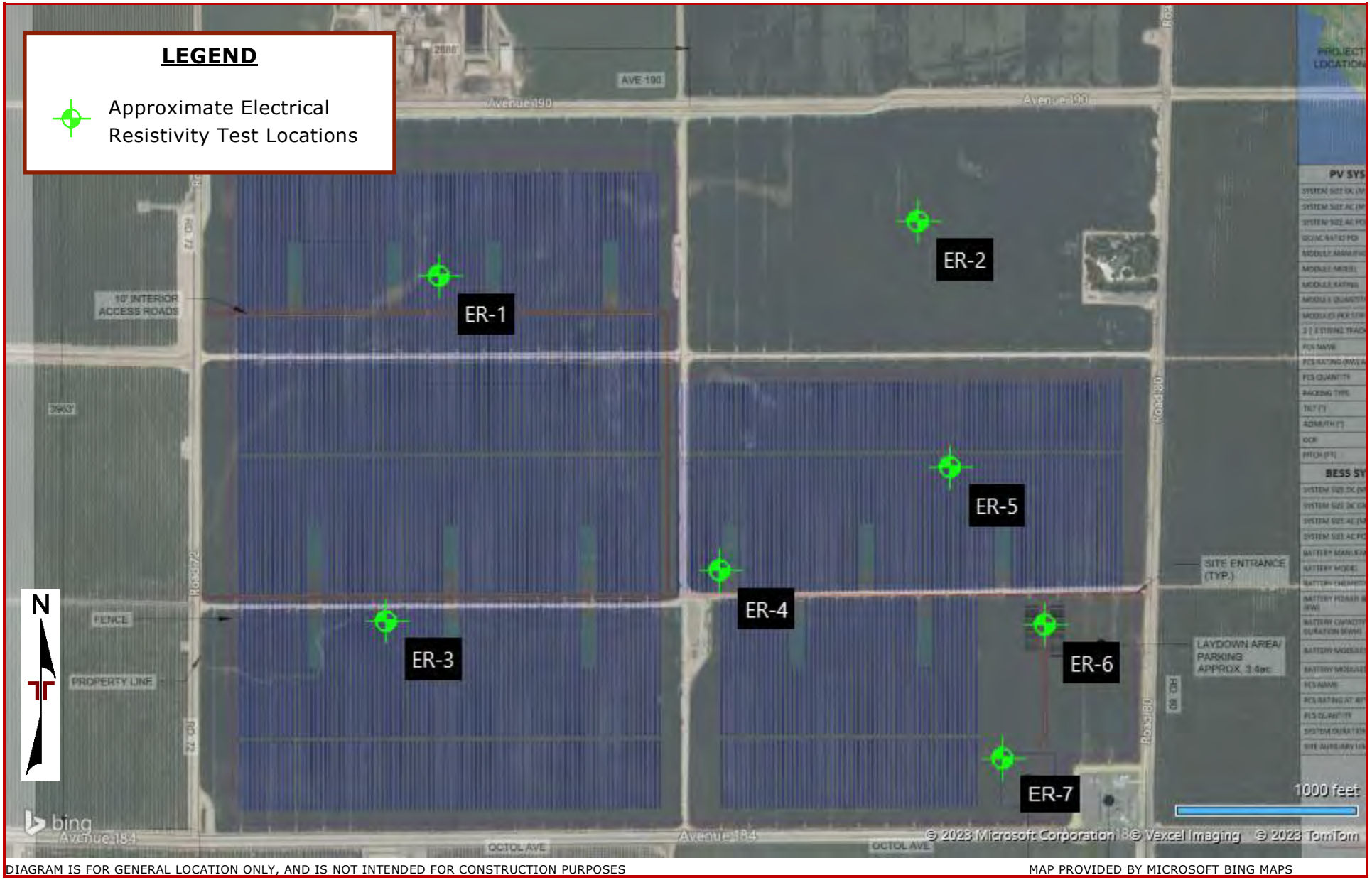


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

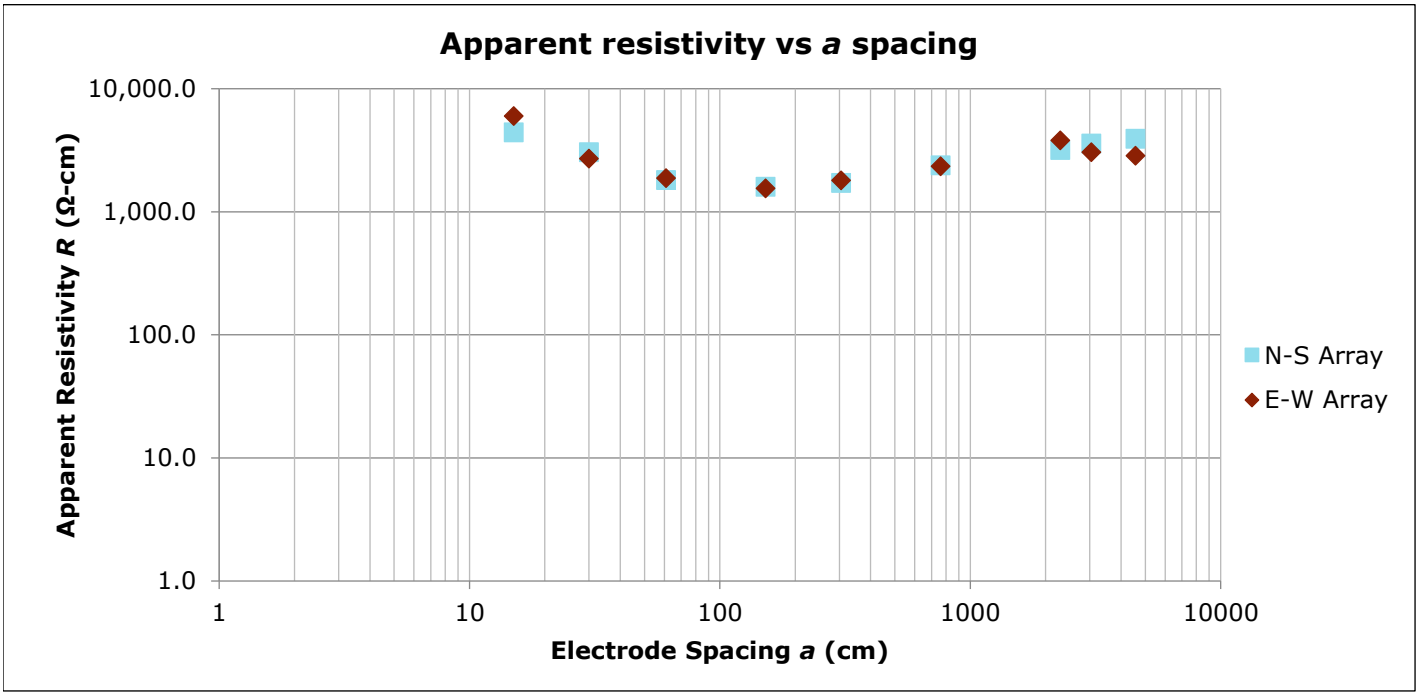
MAP PROVIDED BY MICROSOFT BING MAPS

FIELD ELECTRICAL RESISTIVITY TEST DATA
Foxtail Solar | Tulare, California
January 12, 2024 | Terracon Project No. LA235086

Array Loc.	ER-1 (36.1318, -119.4070)		
Instrument	MiniSting	**Weather**	Sunny
Serial #	S2107129	**Ground Cond.**	Exposed Soils
Cal. Check	July 14, 2021	**Tested By**	DM/CG
Test Date	October 18, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi a R}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-cm)	Ω	(Ω-cm)
0.5	15	2	5	40	4400	55	5990
1	30	2	5	15	3040	14	2700
2	61	2	5	4.7	1810	4.8	1870
5	152	2	5	1.7	1590	1.6	1550
10	305	2	5	0.89	1710	0.94	1800
25	762	3	8	0.50	2380	0.49	2330
75	2286	4	10	0.22	3170	0.26	3790
100	3048	6	15	0.19	3580	0.16	3040
150	4572	6	15	0.136	3910	0.10	2850

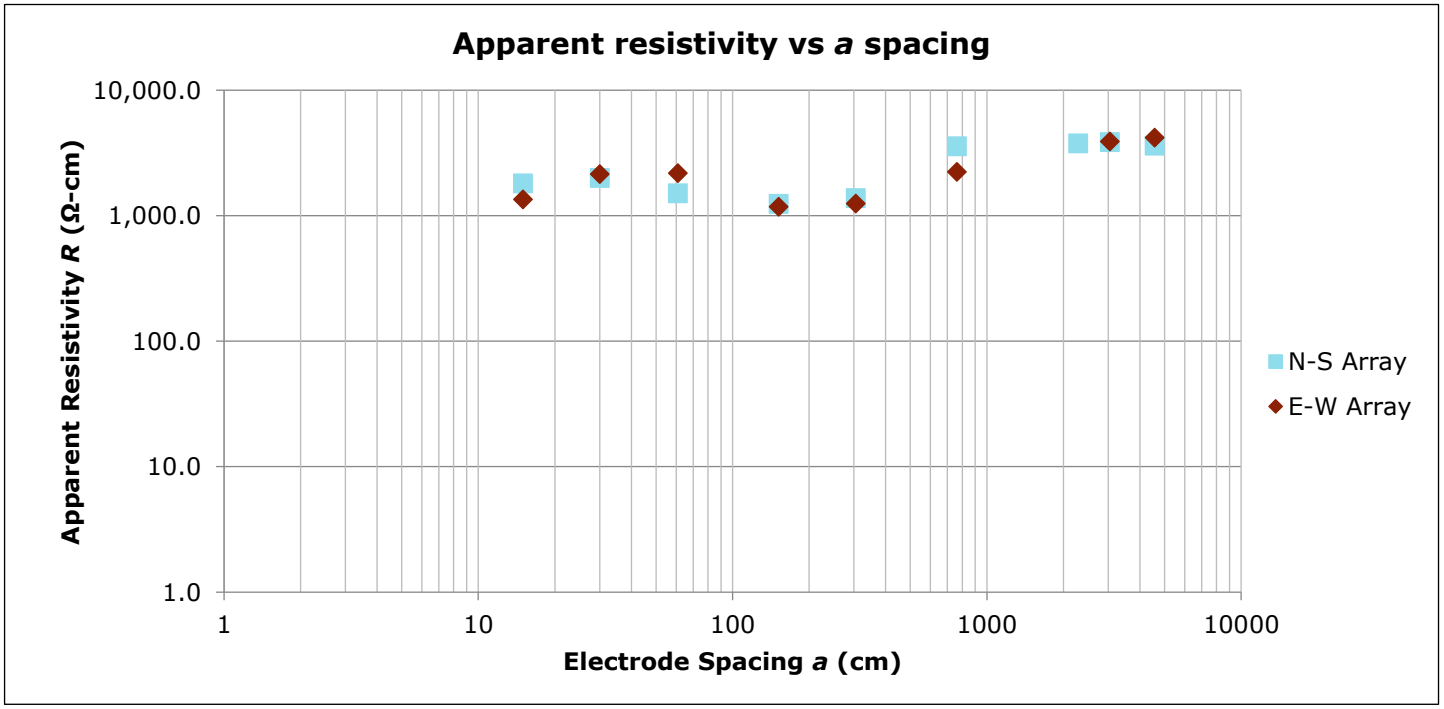


FIELD ELECTRICAL RESISTIVITY TEST DATA
Foxtail Solar | Tulare, California
January 12, 2024 | Terracon Project No. LA235086

Array Loc.	ER-2 (36.1327, -119.3981)		
Instrument	MiniSting	**Weather**	Sunny
Serial #	S2107129	**Ground Cond.**	Exposed Soils
Cal. Check	July 14, 2021	**Tested By**	DM/CG
Test Date	October 17, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	Due to site conditions, we were unable to collect a reliable reading at spacing 75 feet of the E-W array. At this spacing, we were unable to achieve enough conductivity between the electrode and soil, which can be the result of dry, loose or rocky resistive soil.		

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi a R}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-cm)	Ω	(Ω-cm)
0.5	15	2	5	16	1810	12	1350
1	30	2	5	10	2000	11	2150
2	61	2	5	4	1510	5.6	2180
5	152	2	5	1.3	1240	1.2	1180
10	305	2	5	0.7	1380	0.65	1250
25	762	3	8	0.7	3570	0.47	2240
75	2286	4	10	0.26	3780		0
100	3048	6	15	0.20	3860	0.20	3900
150	4572	6	15	0.13	3620	0.15	4200

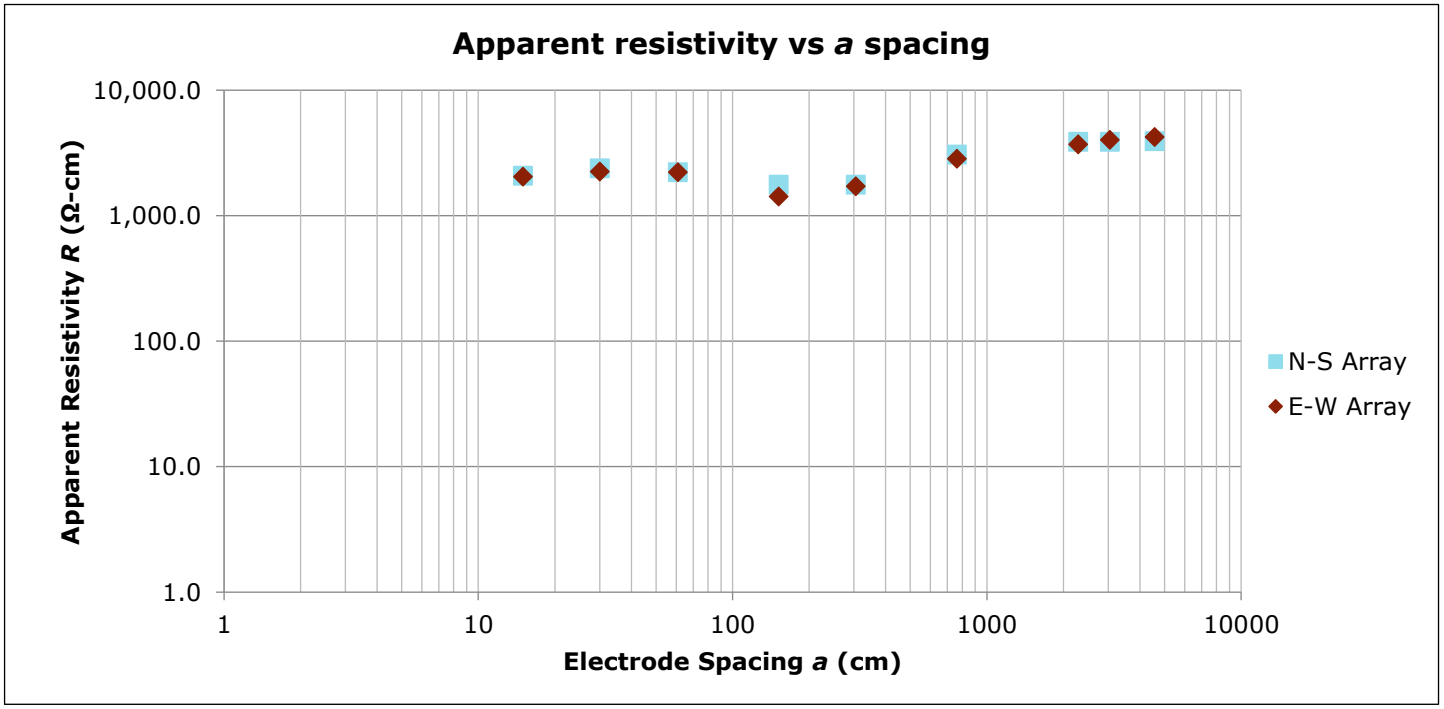


FIELD ELECTRICAL RESISTIVITY TEST DATA
Foxtail Solar | Tulare, California
January 12, 2024 | Terracon Project No. LA235086

Array Loc.	ER-3 (36.1266, -119.4080)		
Instrument	MiniSting	**Weather**	Sunny
Serial #	S2107129	**Ground Cond.**	Exposed Soils
Cal. Check	July 14, 2021	**Tested By**	DM/CG
Test Date	October 17, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi a R}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing *a*		**Electrode Depth *b***		**N-S Test**		**E-W Test**	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-cm)	Ω	(Ω-cm)
0.5	15	2	5	19	2080	19	2050
1	30	2	5	12	2390	11	2250
2	61	2	5	5.7	2230	5.7	2230
5	152	2	5	1.9	1770	1.5	1420
10	305	2	5	0.9	1770	0.9	1720
25	762	3	8	0.6	3070	0.59	2840
75	2286	4	10	0.27	3890	0.26	3710
100	3048	6	15	0.20	3880	0.21	4030
150	4572	6	15	0.14	3940	0.15	4240

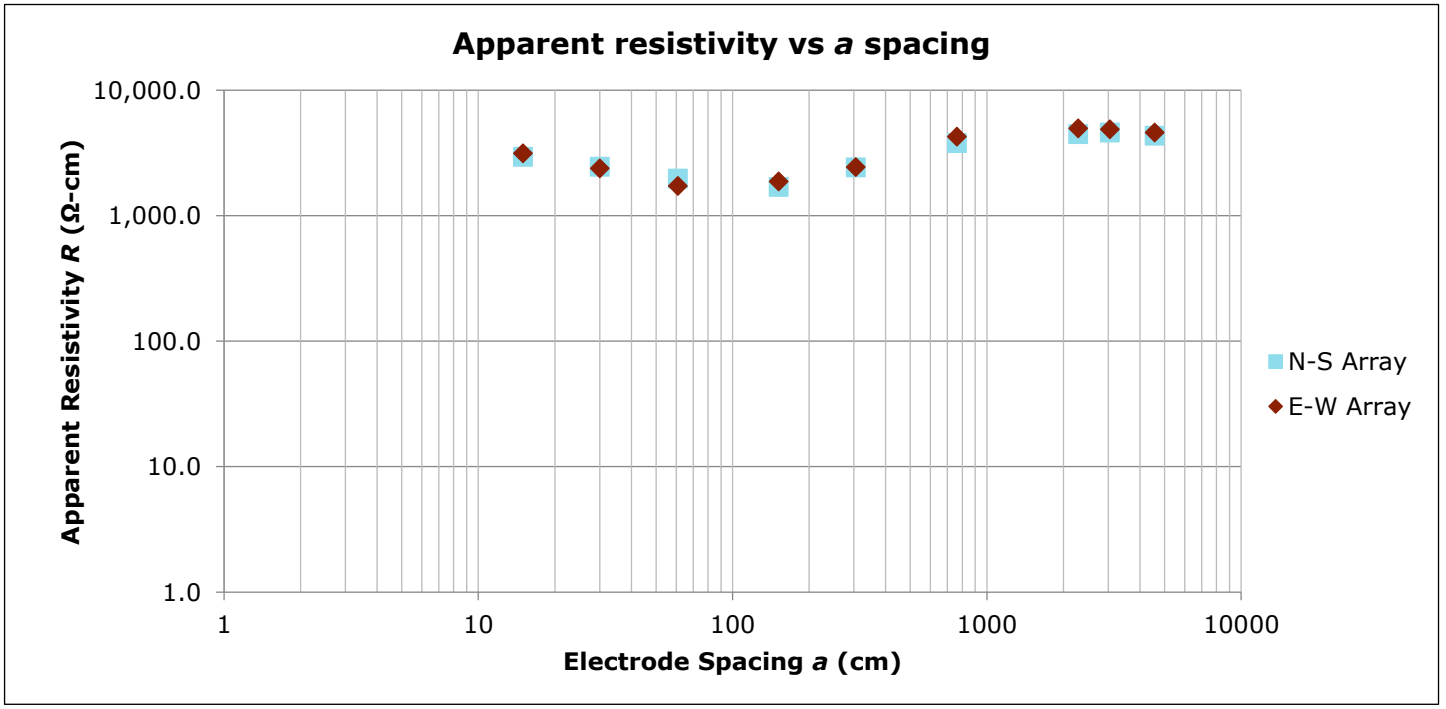


FIELD ELECTRICAL RESISTIVITY TEST DATA
Foxtail Solar | Tulare, California
January 12, 2024 | Terracon Project No. LA235086

Array Loc.	ER-4 (36.1274, -119.4018)		
Instrument	MiniSting	**Weather**	Sunny
Serial #	S2107129	**Ground Cond.**	Exposed Soils
Cal. Check	July 14, 2021	**Tested By**	DM/CG
Test Date	October 18, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi a R}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing *a*		**Electrode Depth *b***		**N-S Test**		**E-W Test**	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-cm)	Ω	(Ω-cm)
0.5	15	2	5	27	2950	29	3150
1	30	2	5	12	2450	12	2390
2	61	2	5	5.1	1980	4.5	1730
5	152	2	5	1.8	1700	2.0	1870
10	305	2	5	1.3	2430	1.3	2440
25	762	3	8	0.79	3790	0.89	4260
75	2286	4	10	0.31	4480	0.35	4980
100	3048	6	15	0.24	4610	0.25	4870
150	4572	6	15	0.15	4330	0.16	4610

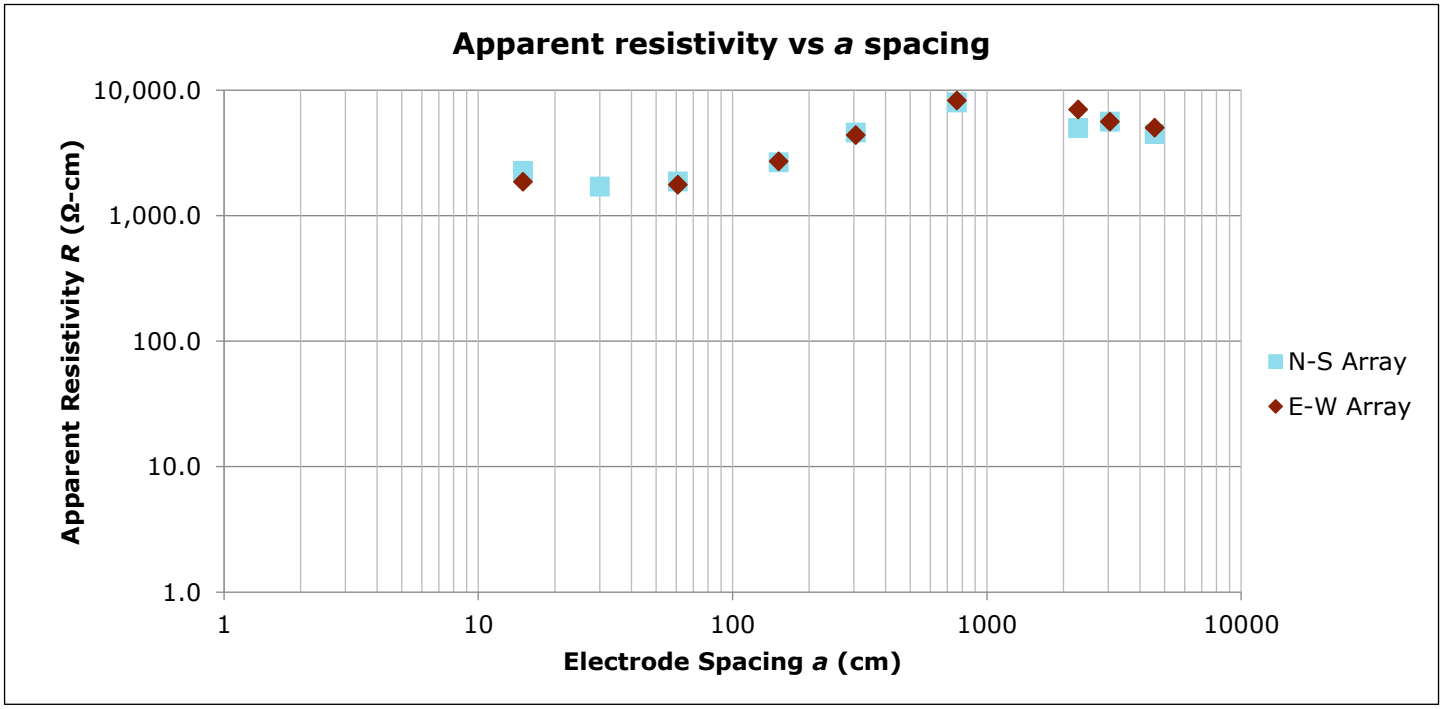


FIELD ELECTRICAL RESISTIVITY TEST DATA
Foxtail Solar | Tulare, California
January 12, 2024 | Terracon Project No. LA235086

Array Loc.	ER-5 (36.1389, -119.3974)		
Instrument	MiniSting	**Weather**	Sunny
Serial #	S2107129	**Ground Cond.**	Exposed Soils
Cal. Check	July 14, 2021	**Tested By**	DM/CG
Test Date	October 17, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	Due to site conditions, we were unable to collect a reliable reading at spacing 1 feet of the E-W array. At this spacing, we were unable to achieve enough conductivity between the electrode and soil, which can be the result of dry, loose or rocky resistive soil.		

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi a R}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-cm)	Ω	(Ω-cm)
0.5	15	2	5	21	2270	17	1860
1	30	2	5	8.7	1710		0
2	61	2	5	4.9	1880	4.6	1770
5	152	2	5	2.8	2670	2.8	2720
10	305	2	5	2.4	4600	2.3	4400
25	762	3	8	1.7	8020	1.7	8260
75	2286	4	10	0.35	5000	0.49	7040
100	3048	6	15	0.29	5630	0.29	5630
150	4572	6	15	0.16	4470	0.18	5030

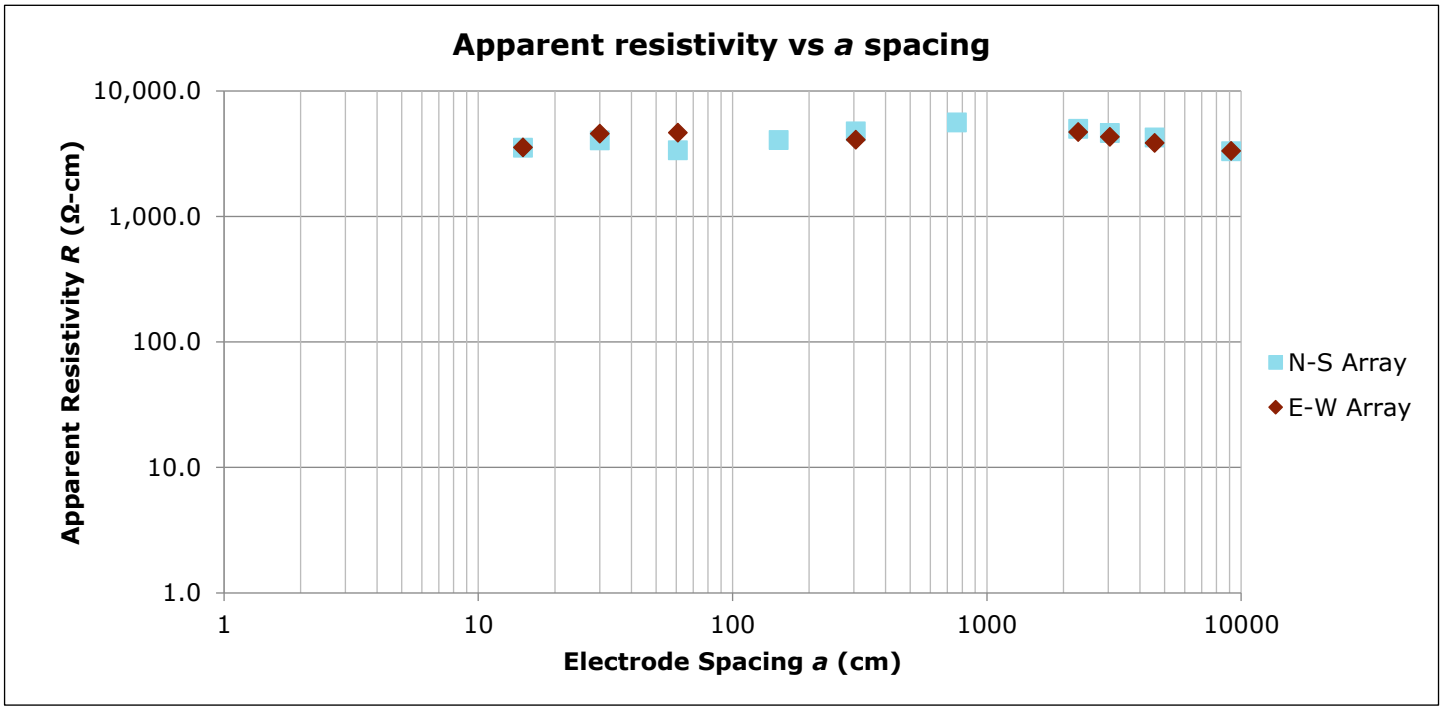


FIELD ELECTRICAL RESISTIVITY TEST DATA
Foxtail Solar | Tulare, California
January 12, 2024 | Terracon Project No. LA235086

Array Loc.	ER-6 (36.1266, -119.3957)		
Instrument	MiniSting	**Weather**	Sunny
Serial #	S2107129	**Ground Cond.**	Exposed Soils
Cal. Check	July 14, 2021	**Tested By**	DM/CG
Test Date	October 16, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	Due to site conditions, we were unable to collect a reliable reading at spacings 5 and 25 feet of the E-W array. At these spacings, we were unable to achieve enough conductivity between the electrode and soil, which can be the result of dry, loose or rocky resistive soil.		

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi a R}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-cm)	Ω	(Ω-cm)
0.5	15	2	5	32	3540	32	3560
1	30	2	5	20	4040	23	4580
2	61	2	5	8.7	3380	12	4660
5	152	2	5	4.2	4060		0
10	305	2	5	2.5	4780	2.1	4090
25	762	3	8	1.2	5630		0
75	2286	4	10	0.35	5010	0.33	4710
100	3048	6	15	0.24	4640	0.23	4320
150	4572	6	15	0.15	4270	0.13	3870
300	9144	7	18	0.06	3310	0.06	3340

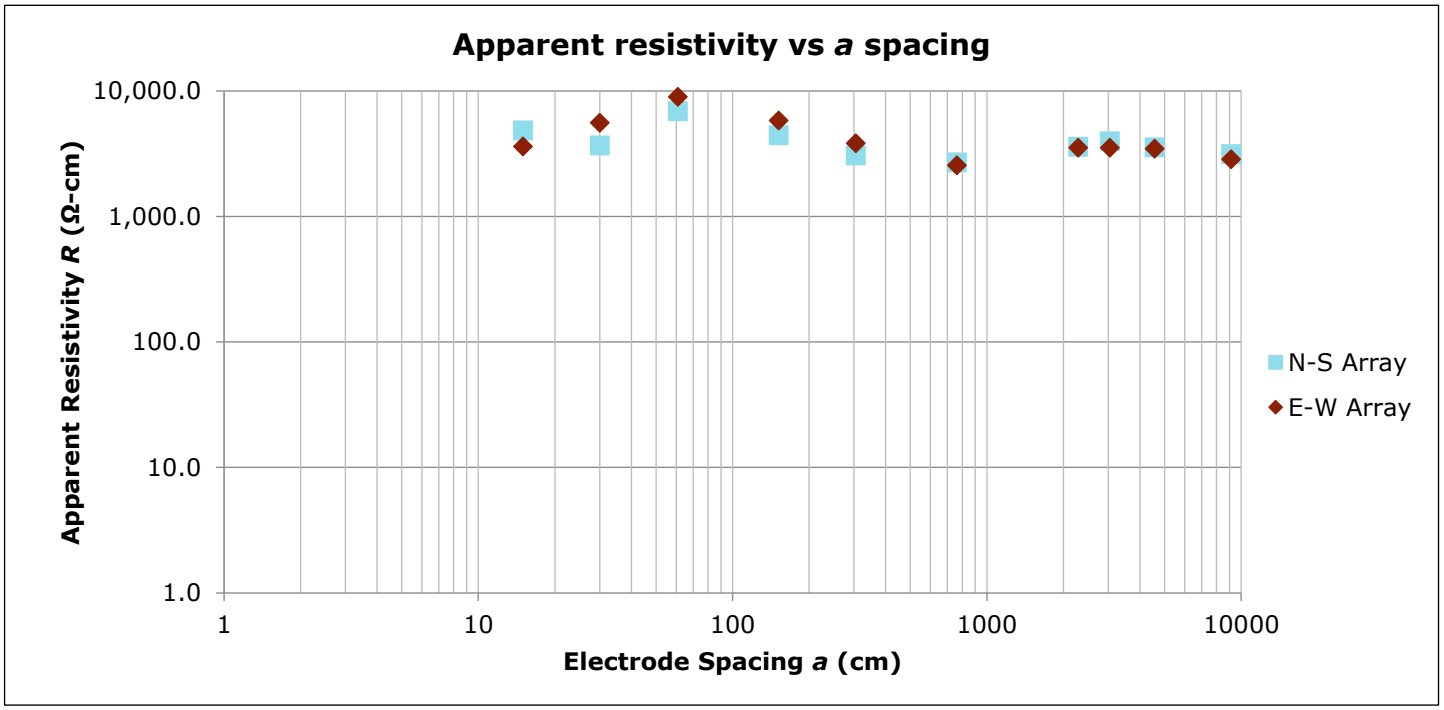


FIELD ELECTRICAL RESISTIVITY TEST DATA
Foxtail Solar | Tulare, California
January 12, 2024 | Terracon Project No. LA235086

Array Loc.	ER-7 (36.1245, -119.3965)		
Instrument	MiniSting	**Weather**	Sunny
Serial #	S2107129	**Ground Cond.**	Exposed Soils
Cal. Check	July 14, 2021	**Tested By**	DM/CG
Test Date	October 18, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi a R}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-cm)	Ω	(Ω-cm)
0.5	15	2	5	44	4850	33	3630
1	30	2	5	19	3690	28	5580
2	61	2	5	18	6900	23	8990
5	152	2	5	4.6	4450	6.1	5820
10	305	2	5	1.6	3080	2.0	3830
25	762	3	8	0.6	2700	0.5	2560
75	2286	4	10	0.25	3590	0.25	3530
100	3048	6	15	0.21	3980	0.18	3540
150	4572	6	15	0.12	3550	0.12	3470
300	9144	7	18	0.05	3140	0.05	2870



Test Pile Driving Data

Contents:

Test Pile Installation Details
Pile Load Test Location Plan
Test Pile Driving Records

Pile Testing Procedures

Our PLT program included supplying 18 total piles between 6-ft to 12-ft long W6x9 steel piles, pile installation, vertical (compression and tension) load testing, lateral testing, and extraction. The pile summary provided by Terracon are summarized in the table below.. This program included 2 test piles for tension and lateral testing at 5 locations and 1 test pile for compression testing at 5 locations in the array areas and 1 location at the BESS areas.

Pile Load Test Areas	Pile Load Test Locations	Proposed Embedment Depth (feet)
Array Areas	5 (Compression Test)	Ranging from 6 to 12
	5 (Tension Test)	Ranging from 6 to 12
	5 (Lateral Test)	Ranging from 6 to 12
BESS Areas	1 (Compression Test)	Ranging from 6 to 12
	1 (Tension Test)	Ranging from 6 to 12
	1 (Lateral Test)	Ranging from 6 to 12

The test locations were established in the field by using a hand-held GPS (accurate to about 10 feet) and existing site features as reference points. The mapped test locations should be considered accurate only to the degree implied by the means and methods used to define them.

Exploration Location Plan – Pile Testing



DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Pile Embedment Drive Time: Foxtail Solar - LA235086

Pile Location	Pile Size	Pile ID	Pile Length (ft)	Embed Depth (ft)	Total Drive Time (s)	Incremental Drive Time per Foot of Depth (seconds)								
						1	2	3	4	5	6	7	8	9
PLT-1	W6x9	A	10	7	29	1	1	3	5	6	7	6	-	-
	W6x9	B	12	9	41	1	1	3	4	6	6	5	7	8
	W6x9	C	9	7	22	1	1	3	4	4	4	5	-	-
PLT-2	W6x9	A	9	6	18	1	1	3	4	4	5	-	-	-
	W6x9	B	11	8	24	1	1	2	2	4	5	4	5	-
	W6x9	C	8	6	18	1	1	3	4	3	6	-	-	-
PLT-3	W6x9	A	10	7	18	1	1	1	2	4	4	5	-	-
	W6x9	B	12	9	30	1	1	2	3	4	4	4	5	6
	W6x9	C	9	7	13	1	1	1	1	1	4	4	-	-
PLT-4	W6x9	A	9	6	18	1	1	2	3	5	6	-	-	-
	W6x9	B	11	8	31	1	1	2	3	4	5	7	8	-
	W6x9	C	8	6	15	1	1	1	3	4	5	-	-	-
PLT-5	W6x9	A	10	7	15	1	1	1	1	3	4	4	-	-
	W6x9	B	12	9	21	1	1	2	1	2	2	3	4	5
	W6x9	C	9	7	15	1	1	1	1	2	4	5	-	-
PLT-6	W6x9	A	9	6	17	1	1	2	3	4	6	-	-	-
	W6x9	B	11	8	27	1	1	2	4	5	4	5	5	-
	W6x9	C	8	6	20	1	2	3	5	5	4	-	-	-

Pile Load Test Results

Contents:

Axial Tension Test Summary
Axial Tension Test Results
Lateral Test Summary
Lateral Test Results
Axial Compression Test Summary
Axial Compression Test Results

Axial Tension Test

Axial Tension

Pile No.		Pile Type	Embedment Depth, ft	Pile Drive Time, sec	Yield Deflection, in[1]	Load, lb	Ultimate Deflection[2]	Load, lb
PLT-1	A	W6x9	7	29	0.24	8,500	0.46	10,000
	B	W6x9	9	41	0.23	10,000	--	--
PLT-2	A	W6x9	6	18	0.26	10,000	--	--
	B	W6x9	8	24	0.21*	10,000	--	--
PLT-3	A	W6x9	7	18	0.16*	10,000	--	--
	B	W6x9	9	30	0.10*	10,000	--	--
PLT-4	A	W6x9	6	18	0.12*	10,000	--	--
	B	W6x9	8	31	0.10*	10,000	--	--
PLT-5	A	W6x9	7	15	0.25*	9,000	0.4	10,000
	B	W6x9	9	21	0.25**	7,600	0.53	10,000
PLT-6	A	W6x9	6	17	0.24	8,000	0.46	10,000
	B	W6x9	8	27	0.06*	10,000	--	--

[1] Yield deflection is defined near ¼"

[2] Ultimate deflection is defined as the final deflection reading prior to unloading

* Maximum load reached prior to deflection criteria

**Load interpolated from graph.

Tension Load Test Result for PLT-1A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

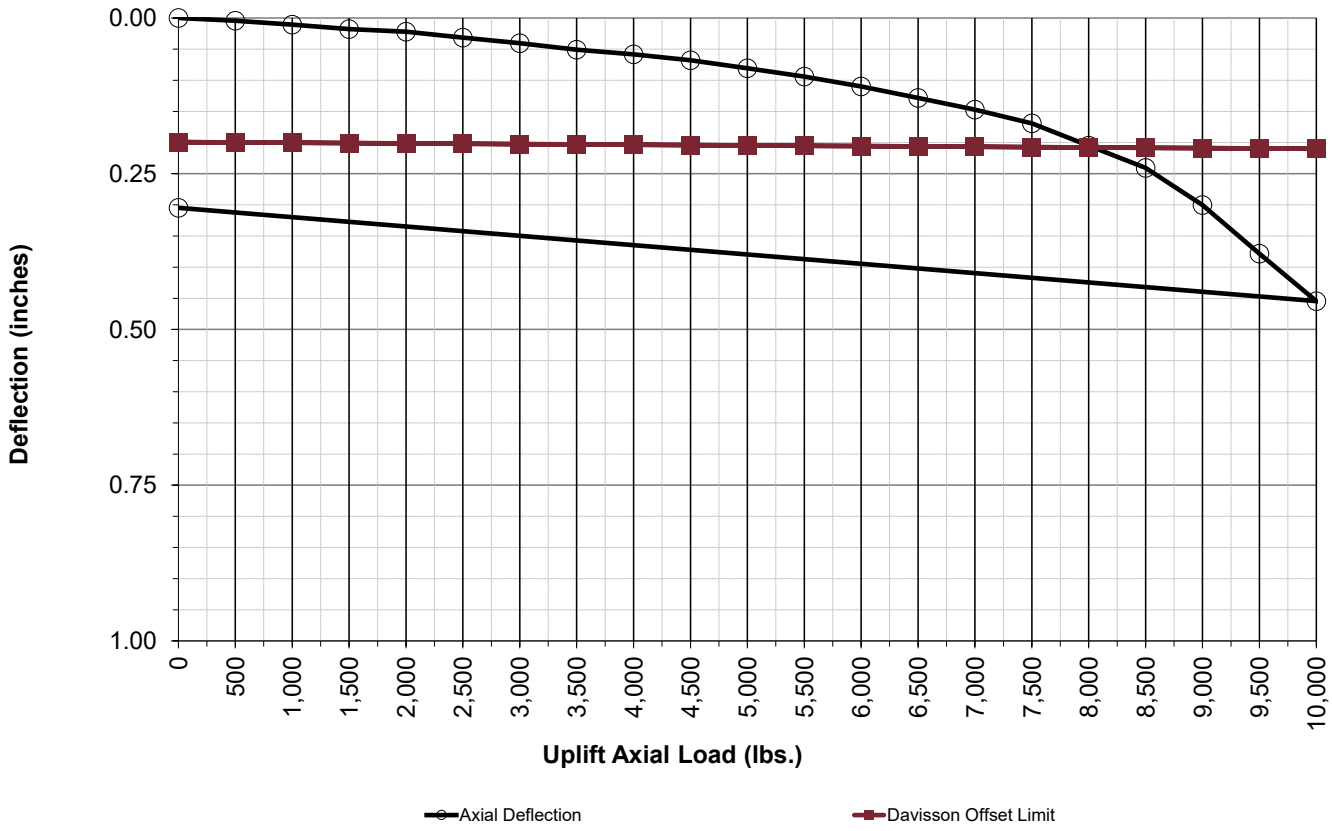
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-1A
Group Latitude [deg.]:	36.132683°
Group Longitude[deg.]:	-119.4096
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	29

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.005	0.001	0.200	
10%	1000	0.011	0.001	0.200	
15%	1500	0.018	0.002	0.201	
20%	2000	0.022	0.002	0.201	
25%	2500	0.032	0.003	0.202	
30%	3000	0.041	0.003	0.202	
35%	3500	0.051	0.004	0.203	
40%	4000	0.058	0.004	0.203	
45%	4500	0.068	0.005	0.204	
50%	5000	0.081	0.005	0.205	
55%	5500	0.094	0.006	0.205	
60%	6000	0.110	0.006	0.206	
65%	6500	0.128	0.007	0.206	
70%	7000	0.147	0.008	0.207	
75%	7500	0.169	0.008	0.207	
80%	8000	0.205	0.009	0.208	
85%	8500	0.241	0.009	0.208	
90%	9000	0.300	0.010	0.209	
95%	9500	0.378	0.010	0.209	
100%	10000	0.455	0.011	0.210	
0%	0	0.305	0.000	0.199	



Tension Load Test Result for PLT-1B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

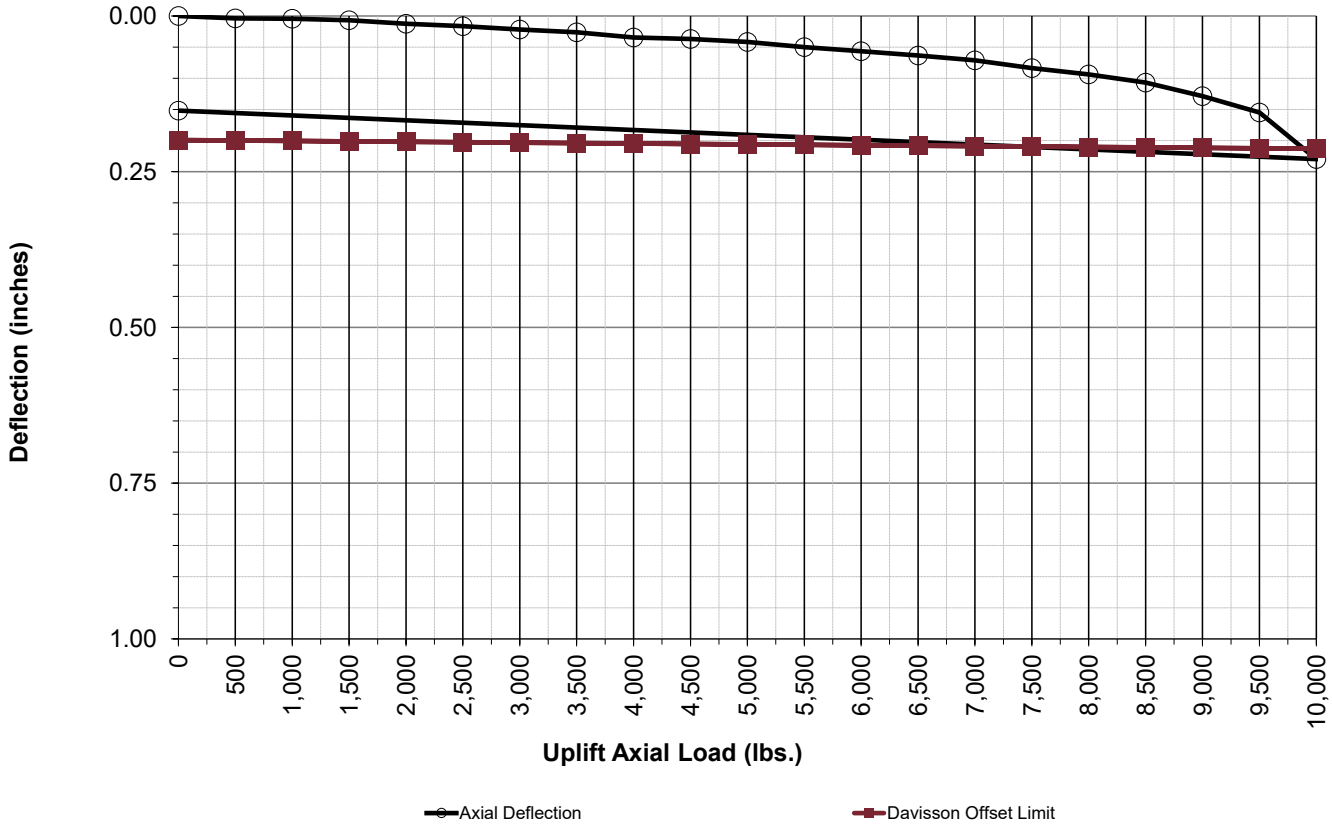
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-1B
Group Latitude [deg.]:	36.132683°
Group Longitude[deg.]:	-119.4096
Pile Type:	W6x9
Pile Embedment Depth [in.]:	108
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	41

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.004	0.001	0.200	
10%	1000	0.004	0.001	0.201	
15%	1500	0.007	0.002	0.201	
20%	2000	0.013	0.003	0.202	
25%	2500	0.016	0.003	0.203	
30%	3000	0.022	0.004	0.203	
35%	3500	0.026	0.005	0.204	
40%	4000	0.035	0.006	0.205	
45%	4500	0.037	0.006	0.205	
50%	5000	0.042	0.007	0.206	
55%	5500	0.050	0.008	0.207	
60%	6000	0.057	0.008	0.208	
65%	6500	0.064	0.009	0.208	
70%	7000	0.071	0.010	0.209	
75%	7500	0.084	0.010	0.210	
80%	8000	0.094	0.011	0.210	
85%	8500	0.107	0.012	0.211	
90%	9000	0.129	0.013	0.212	
95%	9500	0.155	0.013	0.212	
100%	10000	0.230	0.014	0.213	
0%	0	0.152	0.000	0.199	



Tension Load Test Result for PLT-2A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

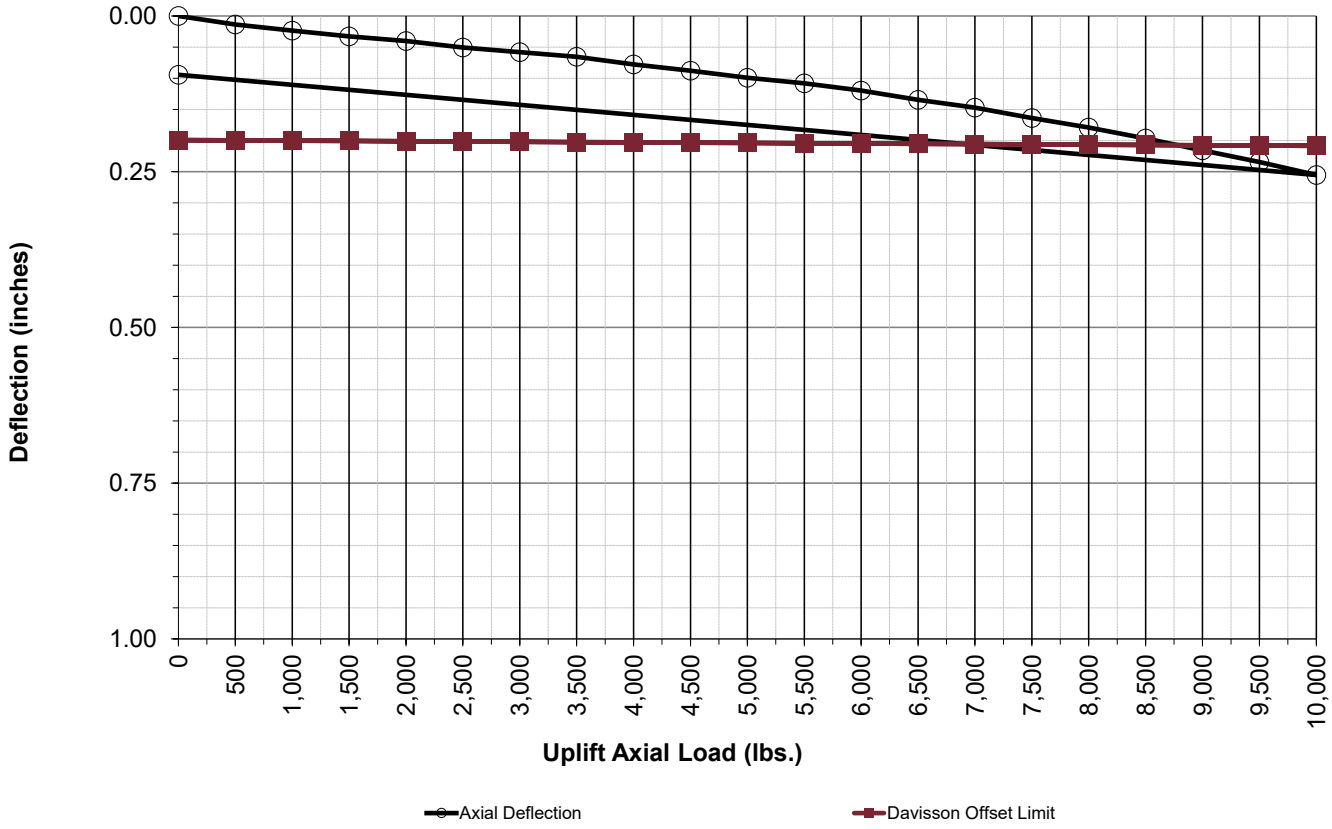
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-2A
Group Latitude [deg.]:	36.131832°
Group Longitude[deg.]:	-119.396316°
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	18

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.014	0.000	0.200	
10%	1000	0.024	0.001	0.200	
15%	1500	0.033	0.001	0.201	
20%	2000	0.040	0.002	0.201	
25%	2500	0.051	0.002	0.201	
30%	3000	0.058	0.003	0.202	
35%	3500	0.066	0.003	0.202	
40%	4000	0.078	0.004	0.203	
45%	4500	0.088	0.004	0.203	
50%	5000	0.099	0.005	0.204	
55%	5500	0.108	0.005	0.204	
60%	6000	0.120	0.006	0.205	
65%	6500	0.135	0.006	0.205	
70%	7000	0.147	0.006	0.206	
75%	7500	0.164	0.007	0.206	
80%	8000	0.179	0.007	0.207	
85%	8500	0.197	0.008	0.207	
90%	9000	0.216	0.008	0.208	
95%	9500	0.235	0.009	0.208	
100%	10000	0.255	0.009	0.208	
0%	0	0.095	0.000	0.199	



Tension Load Test Result for PLT-2B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

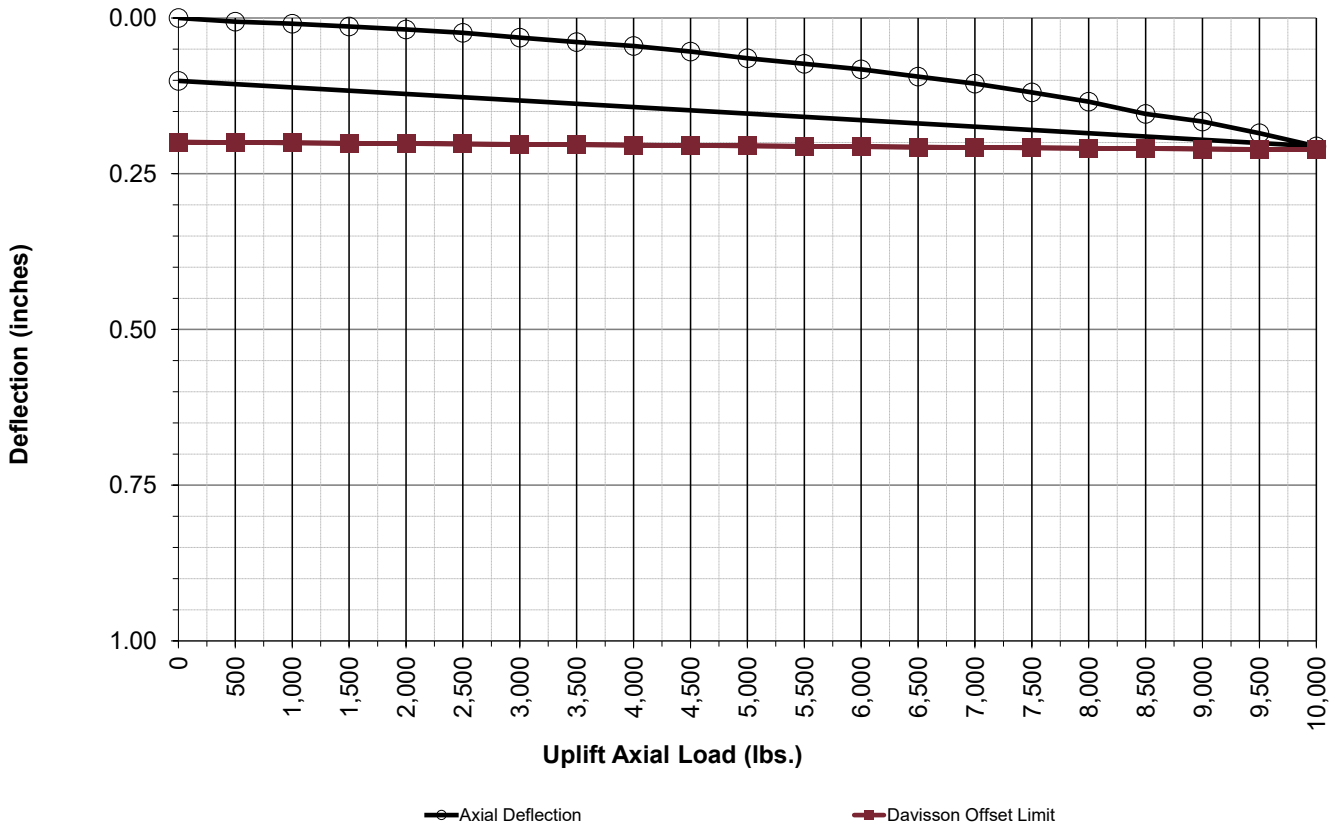
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-2B
Group Latitude [deg.]:	36.131832°
Group Longitude[deg.]:	-119.396316°
Pile Type:	W6x9
Pile Embedment Depth [in.]:	96
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	24

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.006	0.001	0.200	
10%	1000	0.009	0.001	0.200	
15%	1500	0.014	0.002	0.201	
20%	2000	0.018	0.002	0.202	
25%	2500	0.024	0.003	0.202	
30%	3000	0.032	0.004	0.203	
35%	3500	0.039	0.004	0.203	
40%	4000	0.045	0.005	0.204	
45%	4500	0.054	0.006	0.205	
50%	5000	0.065	0.006	0.205	
55%	5500	0.074	0.007	0.206	
60%	6000	0.083	0.007	0.207	
65%	6500	0.094	0.008	0.207	
70%	7000	0.106	0.009	0.208	
75%	7500	0.120	0.009	0.208	
80%	8000	0.134	0.010	0.209	
85%	8500	0.154	0.010	0.210	
90%	9000	0.166	0.011	0.210	
95%	9500	0.185	0.012	0.211	
100%	10000	0.206	0.012	0.212	
0%	0	0.101	0.000	0.199	



Tension Load Test Result for PLT-3A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

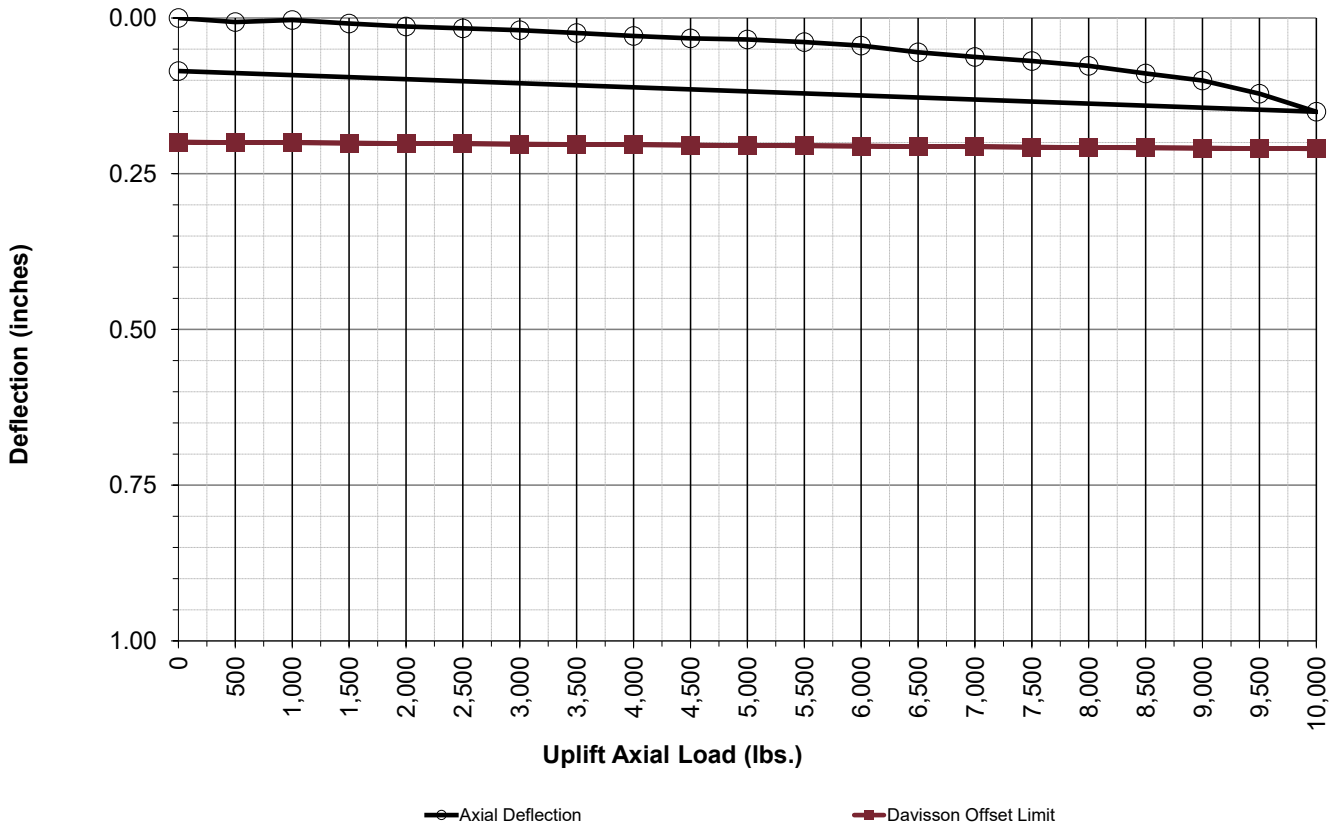
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT-3A
Group Latitude [deg.]:	36.1276
Group Longitude[deg.]:	-119.4037
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	18

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.007	0.001	0.200	
10%	1000	0.003	0.001	0.200	
15%	1500	0.009	0.002	0.201	
20%	2000	0.014	0.002	0.201	
25%	2500	0.017	0.003	0.202	
30%	3000	0.020	0.003	0.202	
35%	3500	0.024	0.004	0.203	
40%	4000	0.029	0.004	0.203	
45%	4500	0.033	0.005	0.204	
50%	5000	0.035	0.005	0.205	
55%	5500	0.039	0.006	0.205	
60%	6000	0.044	0.006	0.206	
65%	6500	0.055	0.007	0.206	
70%	7000	0.063	0.008	0.207	
75%	7500	0.069	0.008	0.207	
80%	8000	0.077	0.009	0.208	
85%	8500	0.089	0.009	0.208	
90%	9000	0.100	0.010	0.209	
95%	9500	0.122	0.010	0.209	
100%	10000	0.151	0.011	0.210	
0%	0	0.085	0.000	0.199	



Tension Load Test Result for PLT-3B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

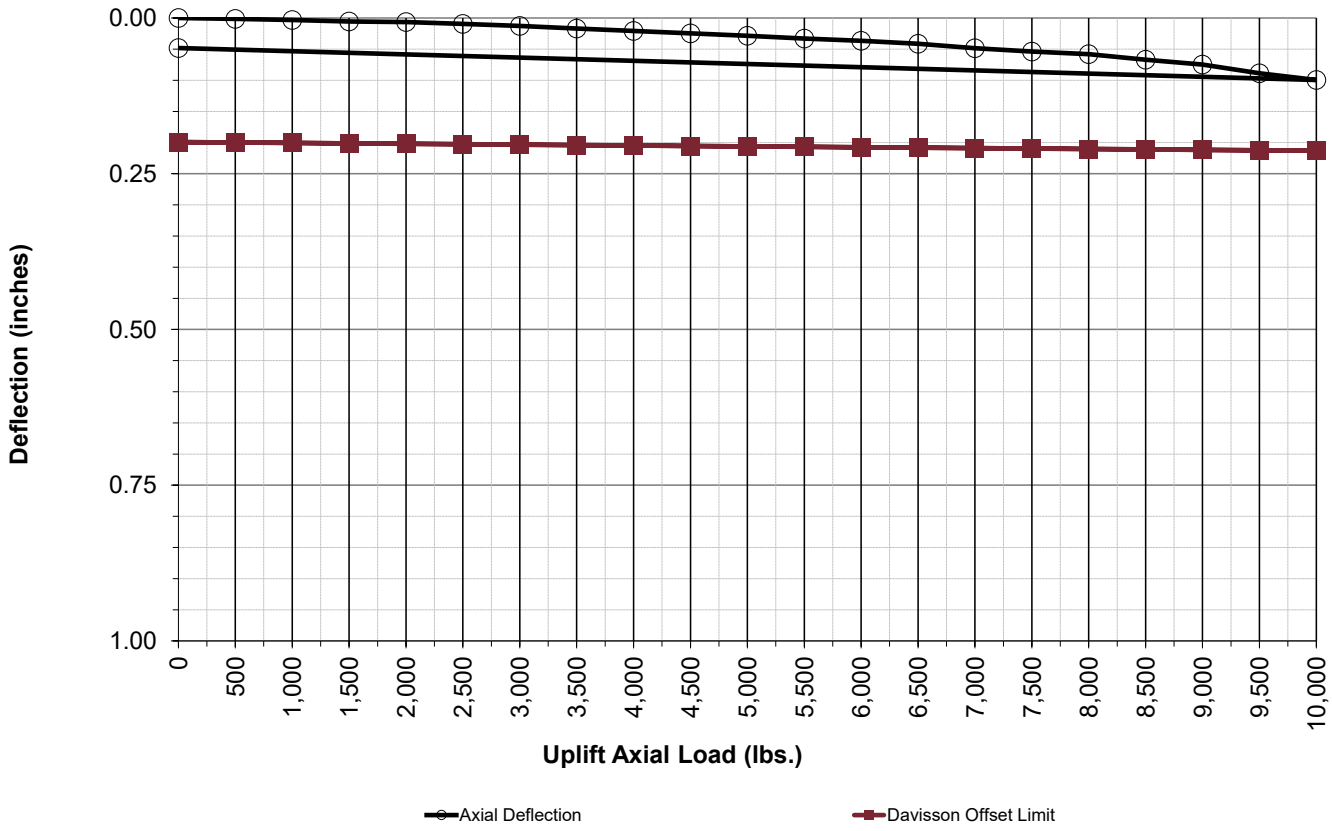
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT-3B
Group Latitude [deg.]:	36.1276
Group Longitude[deg.]:	-119.4037
Pile Type:	W6x9
Pile Embedment Depth [in.]:	108
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	30

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.002	0.001	0.200	
10%	1000	0.003	0.001	0.201	
15%	1500	0.006	0.002	0.201	
20%	2000	0.007	0.003	0.202	
25%	2500	0.010	0.003	0.203	
30%	3000	0.013	0.004	0.203	
35%	3500	0.017	0.005	0.204	
40%	4000	0.021	0.006	0.205	
45%	4500	0.025	0.006	0.205	
50%	5000	0.029	0.007	0.206	
55%	5500	0.033	0.008	0.207	
60%	6000	0.037	0.008	0.208	
65%	6500	0.041	0.009	0.208	
70%	7000	0.049	0.010	0.209	
75%	7500	0.054	0.010	0.210	
80%	8000	0.058	0.011	0.210	
85%	8500	0.067	0.012	0.211	
90%	9000	0.075	0.013	0.212	
95%	9500	0.089	0.013	0.212	
100%	10000	0.100	0.014	0.213	
0%	0	0.048	0.000	0.199	



Tension Load Test Result for PLT-4A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

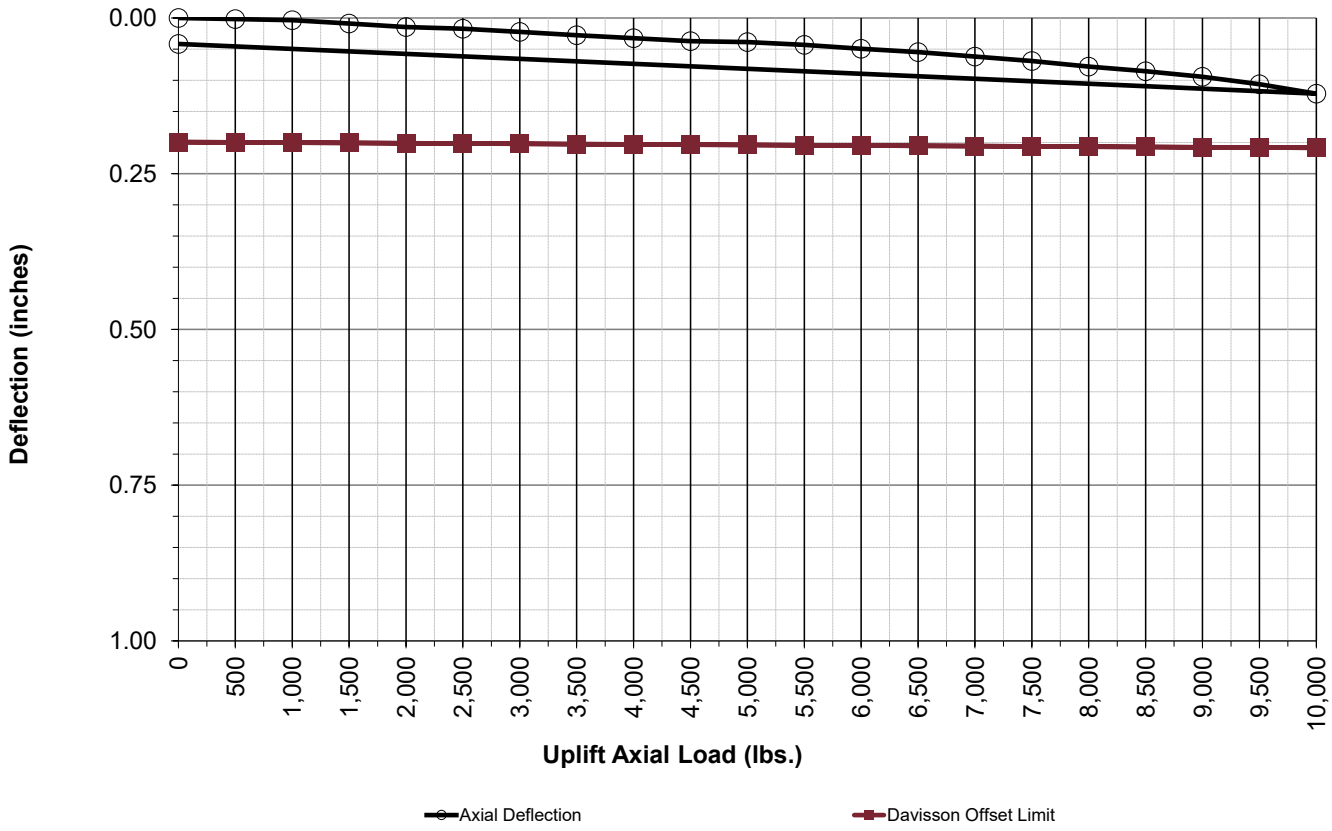
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-4A
Group Latitude [deg.]:	36.1282
Group Longitude[deg.]:	-119.3952
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	18

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.002	0.000	0.200	
10%	1000	0.004	0.001	0.200	
15%	1500	0.009	0.001	0.201	
20%	2000	0.015	0.002	0.201	
25%	2500	0.017	0.002	0.201	
30%	3000	0.022	0.003	0.202	
35%	3500	0.028	0.003	0.202	
40%	4000	0.033	0.004	0.203	
45%	4500	0.037	0.004	0.203	
50%	5000	0.039	0.005	0.204	
55%	5500	0.043	0.005	0.204	
60%	6000	0.049	0.006	0.205	
65%	6500	0.055	0.006	0.205	
70%	7000	0.062	0.006	0.206	
75%	7500	0.069	0.007	0.206	
80%	8000	0.078	0.007	0.207	
85%	8500	0.086	0.008	0.207	
90%	9000	0.095	0.008	0.208	
95%	9500	0.106	0.009	0.208	
100%	10000	0.122	0.009	0.208	
0%	0	0.042	0.000	0.199	



Tension Load Test Result for PLT-4B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

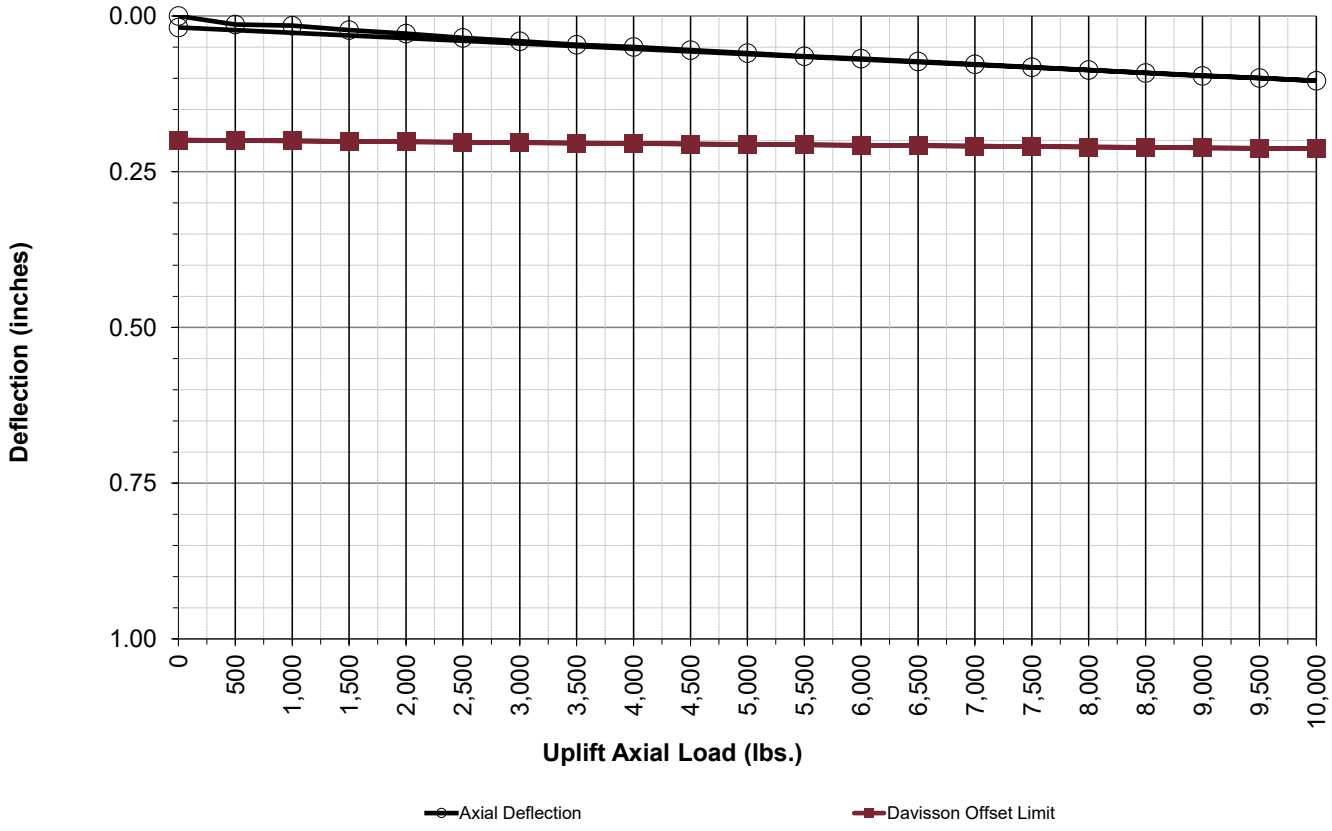
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-4B
Group Latitude [deg.]:	36.1282
Group Longitude[deg.]:	-119.3952
Pile Type:	W6x9
Pile Embedment Depth [in.]:	108
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	31

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.014	0.001	0.200	
10%	1000	0.016	0.001	0.201	
15%	1500	0.023	0.002	0.201	
20%	2000	0.028	0.003	0.202	
25%	2500	0.035	0.003	0.203	
30%	3000	0.041	0.004	0.203	
35%	3500	0.046	0.005	0.204	
40%	4000	0.050	0.006	0.205	
45%	4500	0.055	0.006	0.205	
50%	5000	0.060	0.007	0.206	
55%	5500	0.065	0.008	0.207	
60%	6000	0.069	0.008	0.208	
65%	6500	0.073	0.009	0.208	
70%	7000	0.078	0.010	0.209	
75%	7500	0.082	0.010	0.210	
80%	8000	0.087	0.011	0.210	
85%	8500	0.091	0.012	0.211	
90%	9000	0.096	0.013	0.212	
95%	9500	0.100	0.013	0.212	
100%	10000	0.104	0.014	0.213	
0%	0	0.018	0.000	0.199	



Tension Load Test Result for PLT-5A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

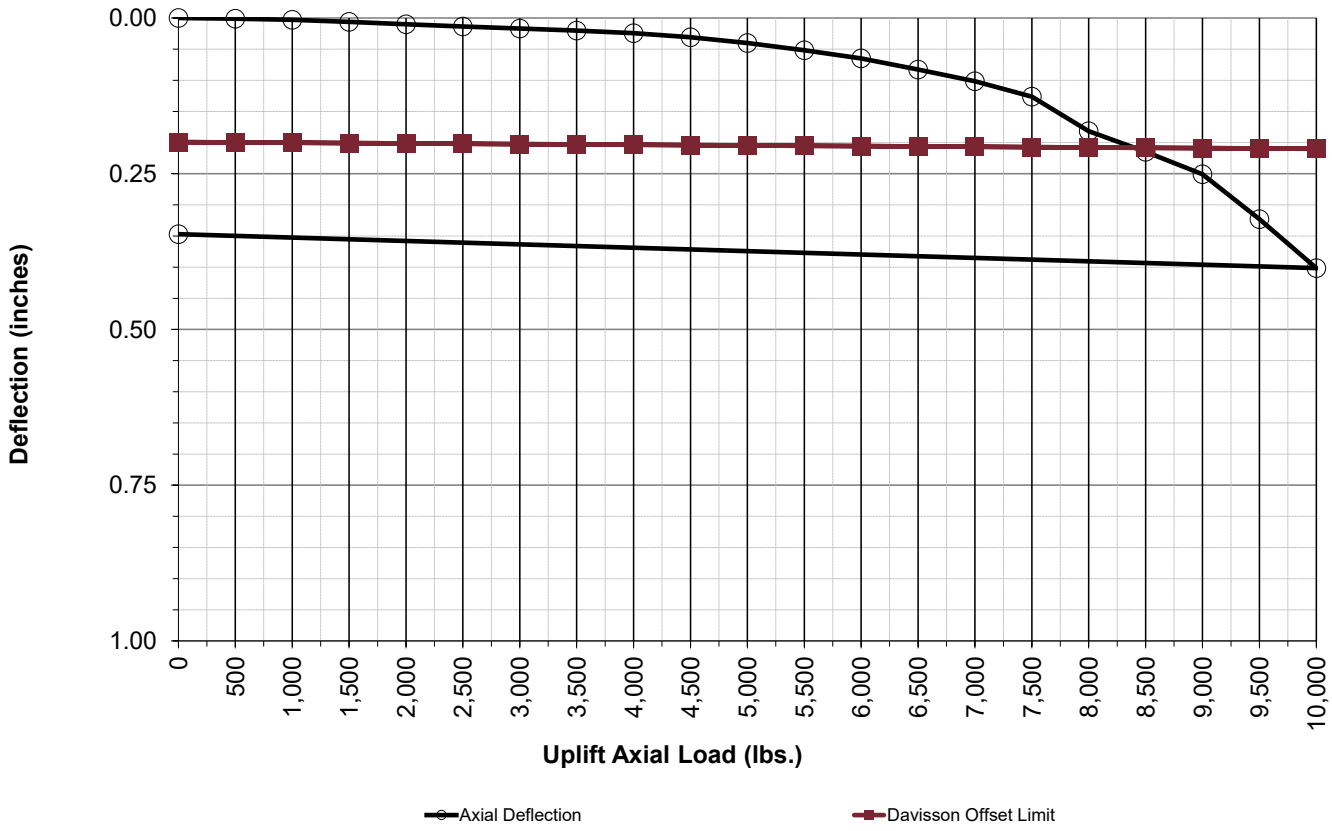
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT -5A
Group Latitude [deg.]:	36.1249
Group Longitude[deg.]:	-119.4081
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	15

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.001	0.001	0.200	
10%	1000	0.003	0.001	0.200	
15%	1500	0.006	0.002	0.201	
20%	2000	0.010	0.002	0.201	
25%	2500	0.014	0.003	0.202	
30%	3000	0.017	0.003	0.202	
35%	3500	0.020	0.004	0.203	
40%	4000	0.025	0.004	0.203	
45%	4500	0.031	0.005	0.204	
50%	5000	0.040	0.005	0.205	
55%	5500	0.052	0.006	0.205	
60%	6000	0.065	0.006	0.206	
65%	6500	0.083	0.007	0.206	
70%	7000	0.102	0.008	0.207	
75%	7500	0.126	0.008	0.207	
80%	8000	0.182	0.009	0.208	
85%	8500	0.215	0.009	0.208	
90%	9000	0.251	0.010	0.209	
95%	9500	0.323	0.010	0.209	
100%	10000	0.402	0.011	0.210	
0%	0	0.347	0.000	0.199	



Tension Load Test Result for PLT-5B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

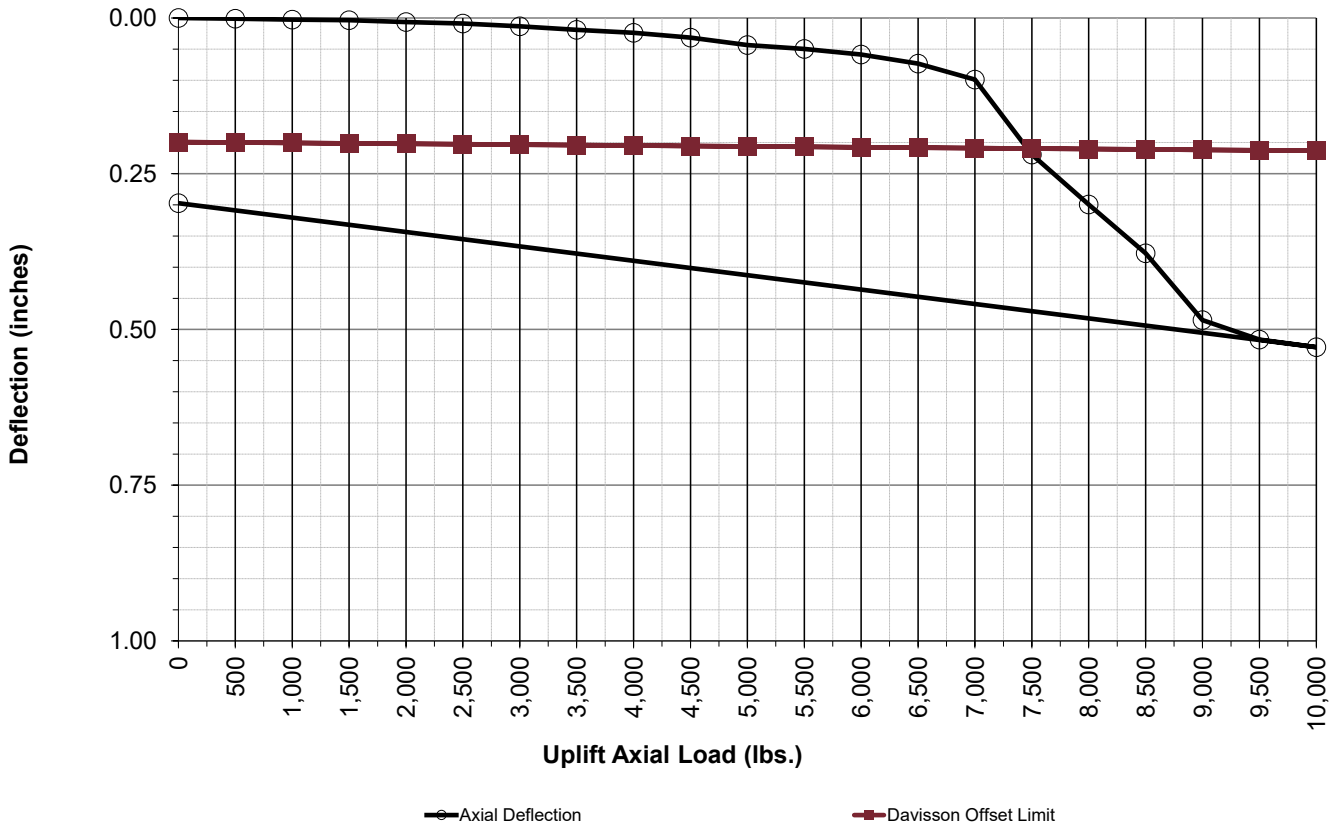
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT-5B
Group Latitude [deg.]:	36.1249
Group Longitude[deg.]:	-119.4081
Pile Type:	W6x9
Pile Embedment Depth [in.]:	108
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	21

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.001	0.001	0.200	
10%	1000	0.003	0.001	0.201	
15%	1500	0.004	0.002	0.201	
20%	2000	0.007	0.003	0.202	
25%	2500	0.009	0.003	0.203	
30%	3000	0.013	0.004	0.203	
35%	3500	0.019	0.005	0.204	
40%	4000	0.024	0.006	0.205	
45%	4500	0.032	0.006	0.205	
50%	5000	0.044	0.007	0.206	
55%	5500	0.050	0.008	0.207	
60%	6000	0.059	0.008	0.208	
65%	6500	0.073	0.009	0.208	
70%	7000	0.099	0.010	0.209	
75%	7500	0.219	0.010	0.210	
80%	8000	0.299	0.011	0.210	
85%	8500	0.378	0.012	0.211	
90%	9000	0.485	0.013	0.212	
95%	9500	0.516	0.013	0.212	
100%	10000	0.529	0.014	0.213	
0%	0	0.297	0.000	0.199	



Tension Load Test Result for PLT-6A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

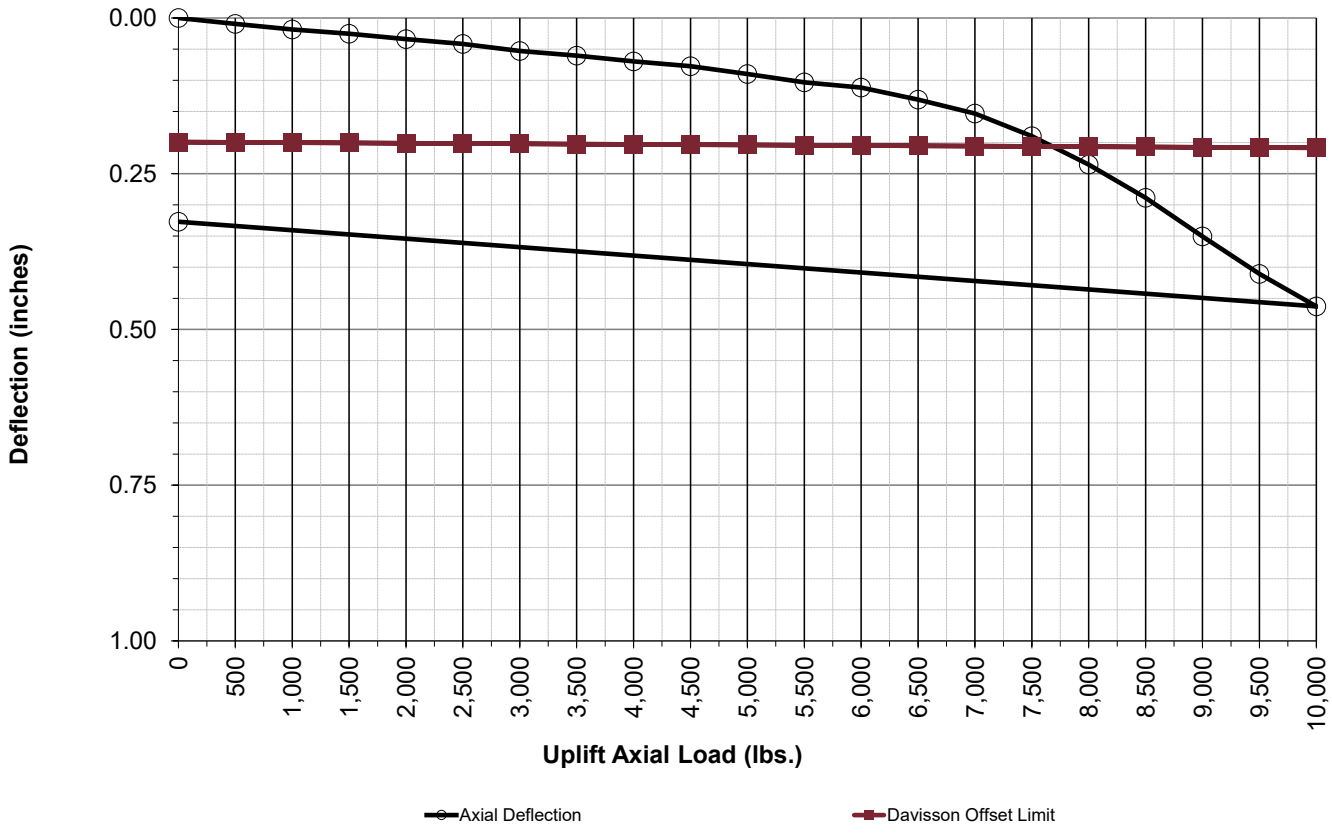
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-6A
Group Latitude [deg.]:	36.1265
Group Longitude[deg.]:	-119.3955
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	17

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.010	0.000	0.200	
10%	1000	0.018	0.001	0.200	
15%	1500	0.025	0.001	0.201	
20%	2000	0.034	0.002	0.201	
25%	2500	0.042	0.002	0.201	
30%	3000	0.053	0.003	0.202	
35%	3500	0.061	0.003	0.202	
40%	4000	0.070	0.004	0.203	
45%	4500	0.078	0.004	0.203	
50%	5000	0.090	0.005	0.204	
55%	5500	0.103	0.005	0.204	
60%	6000	0.112	0.006	0.205	
65%	6500	0.131	0.006	0.205	
70%	7000	0.153	0.006	0.206	
75%	7500	0.190	0.007	0.206	
80%	8000	0.235	0.007	0.207	
85%	8500	0.289	0.008	0.207	
90%	9000	0.351	0.008	0.208	
95%	9500	0.411	0.009	0.208	
100%	10000	0.463	0.009	0.208	
0%	0	0.327	0.000	0.199	



Tension Load Test Result for PLT-6B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in.]:	6
Load Cell:	DILLON ED

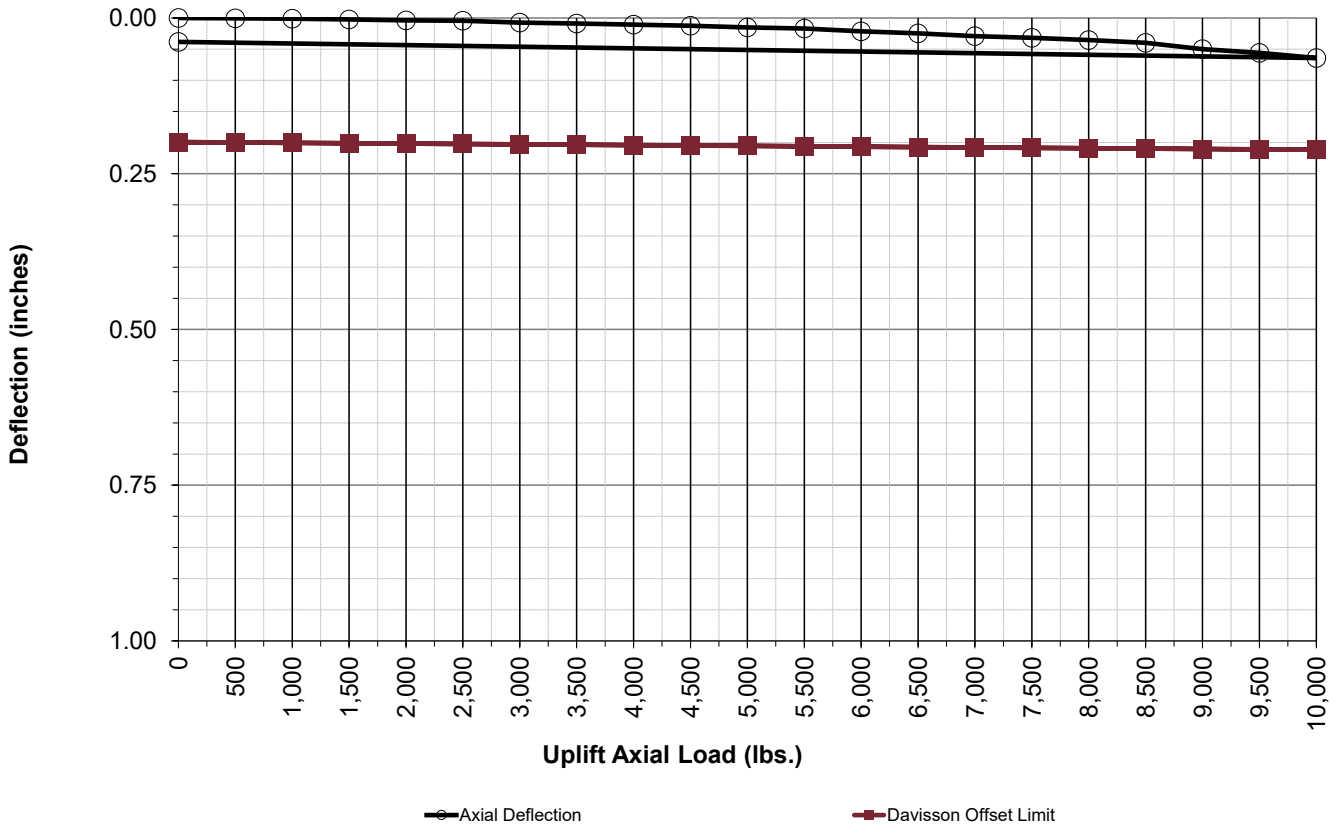
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT6-B
Group Latitude [deg.]:	36.1265
Group Longitude[deg.]:	-119.3955
Pile Type:	W6x9
Pile Embedment Depth [in.]:	96
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	36
Axial Target Load [lbs.]:	10,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	27

Tension Test Results				Davisson Offset Limit Lines	
% of Target Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in.) (PL/AE)	Davisson Offset Limit (in.) (0.15+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
5%	500	0.001	0.001	0.200	
10%	1000	0.001	0.001	0.200	
15%	1500	0.002	0.002	0.201	
20%	2000	0.004	0.002	0.202	
25%	2500	0.005	0.003	0.202	
30%	3000	0.007	0.004	0.203	
35%	3500	0.009	0.004	0.203	
40%	4000	0.011	0.005	0.204	
45%	4500	0.013	0.006	0.205	
50%	5000	0.015	0.006	0.205	
55%	5500	0.017	0.007	0.206	
60%	6000	0.022	0.007	0.207	
65%	6500	0.025	0.008	0.207	
70%	7000	0.029	0.009	0.208	
75%	7500	0.032	0.009	0.208	
80%	8000	0.036	0.010	0.209	
85%	8500	0.040	0.010	0.210	
90%	9000	0.050	0.011	0.210	
95%	9500	0.056	0.012	0.211	
100%	10000	0.064	0.012	0.212	
0%	0	0.039	0.000	0.199	



Lateral Test

Lateral Load

Pile No.		Pile Type	Embedment Depth, ft	Pile Drive Time, sec	Yield Deflection, in[1]	Load Application Height, in above grade	Load, lb
PLT-1	A	W6x9	7	29	0.48	24	4,000
	B	W6x9	9	41	0.51	24	3,000
PLT-2	A	W6x9	6	18	0.51	24	5,500
	B	W6x9	8	24	0.49	24	4,500
PLT-3	A	W6x9	7	18	0.49	24	5,000
	B	W6x9	9	30	0.50	24	4,500
PLT-4	A	W6x9	6	18	0.51	24	4,500
	B	W6x9	8	31	0.48	24	4,500
PLT-5	A	W6x9	7	15	0.50**	24	4,200
	B	W6x9	9	21	0.50	24	4,500
PLT-6	A	W6x9	6	17	0.50**	24	4,100
	B	W6x9	8	27	0.50**	24	4,200

[1] Yield deflection is defined near 1/2"

* Maximum load reached prior to deflection criteria

**Load interpolated from graph.

Lateral Load Test Result for PLT-1A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

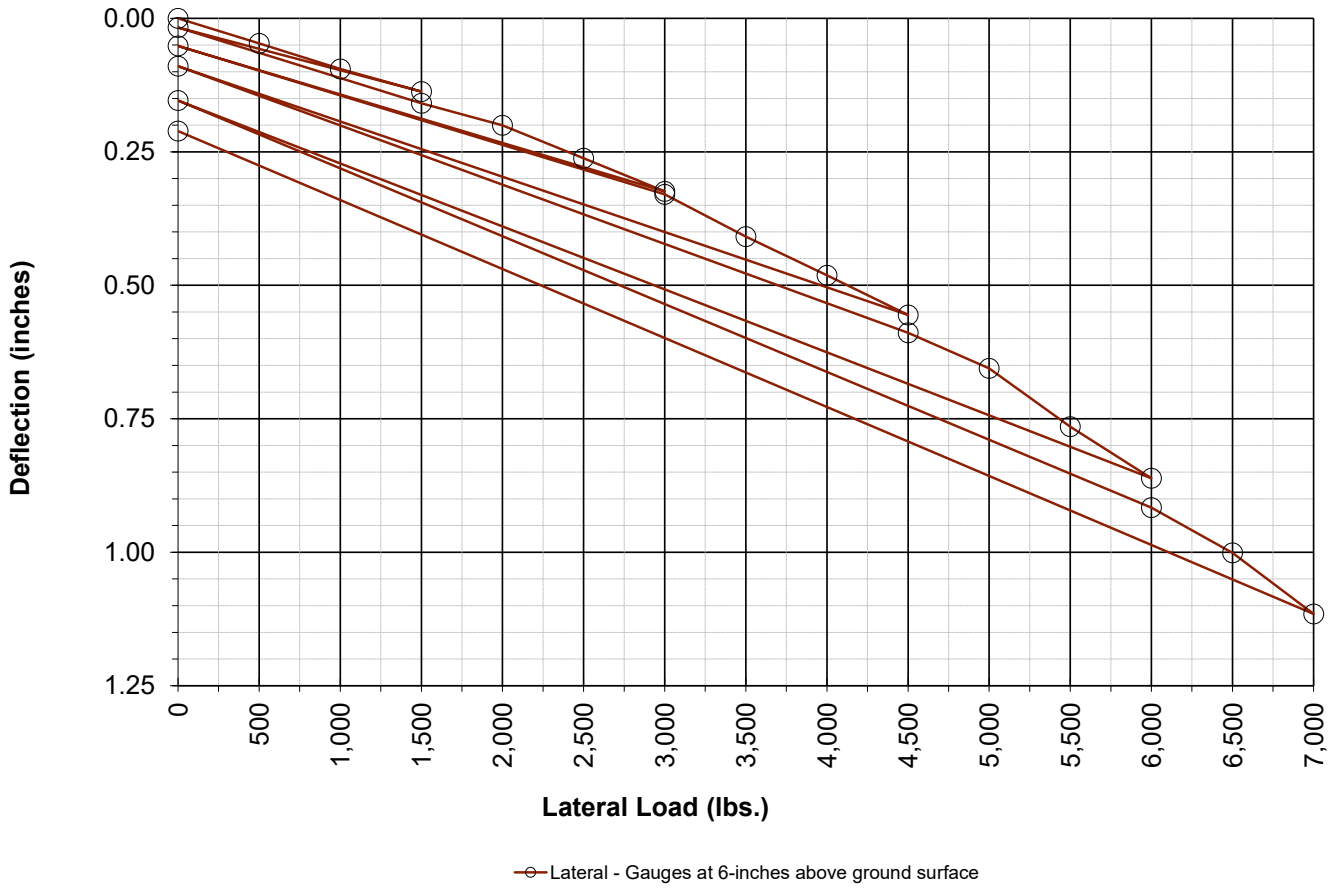
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-1A
Group Latitude [deg.]:	36.132683°
Group Longitude [deg.]:	-119.4096
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	29

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.047	
14%	1,000	0.095	
21%	1,500	0.137	
0%	0	0.017	
21%	1,500	0.159	
29%	2,000	0.201	
36%	2,500	0.262	
43%	3,000	0.324	
0%	0	0.052	
43%	3,000	0.330	
50%	3,500	0.409	
57%	4,000	0.481	
64%	4,500	0.556	
0%	0	0.090	
64%	4,500	0.589	
71%	5,000	0.656	
79%	5,500	0.765	
86%	6,000	0.862	
0%	0	0.154	
86%	6,000	0.916	
93%	6,500	1.001	
100%	7,000	1.116	
0%	0	0.211	



Lateral Load Test Result for PLT-1B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

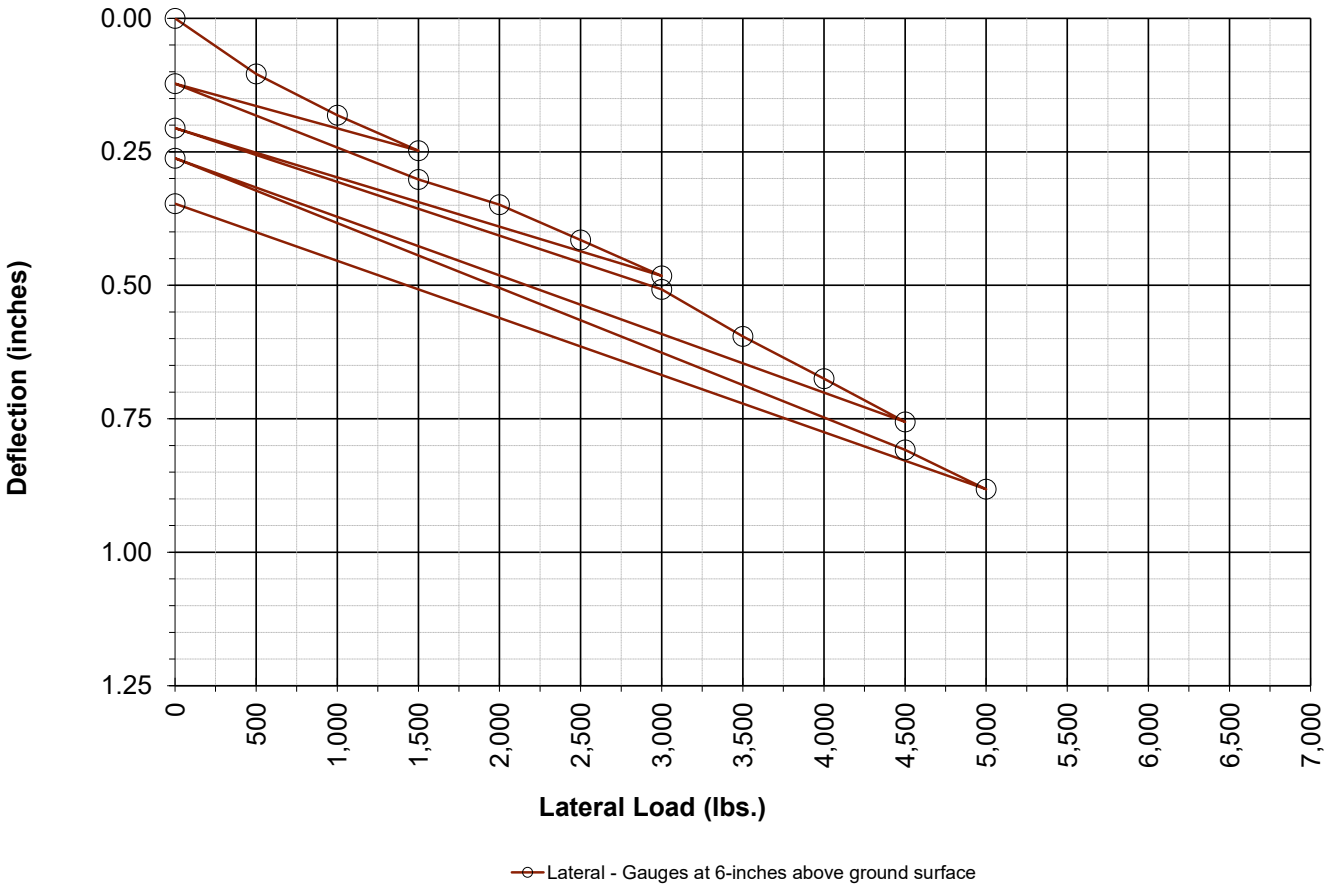
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-1B
Group Latitude [deg.]:	36.132683°
Group Longitude [deg.]:	-119.4096
Pile Type:	W6x9
Pile Embedment Depth [in.]:	108
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	41

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.104	
14%	1,000	0.182	
21%	1,500	0.248	
0%	0	0.123	
21%	1,500	0.302	
29%	2,000	0.349	
36%	2,500	0.415	
43%	3,000	0.482	
0%	0	0.206	
43%	3,000	0.508	
50%	3,500	0.596	
57%	4,000	0.675	
64%	4,500	0.756	
0%	0	0.262	
64%	4,500	0.808	
71%	5,000	0.882	
79%	5,500		
86%	6,000		
0%	0		
86%	6,000		
93%	6,500		
100%	7,000		
0%	0	0.347	



Lateral Load Test Result for PLT-2A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

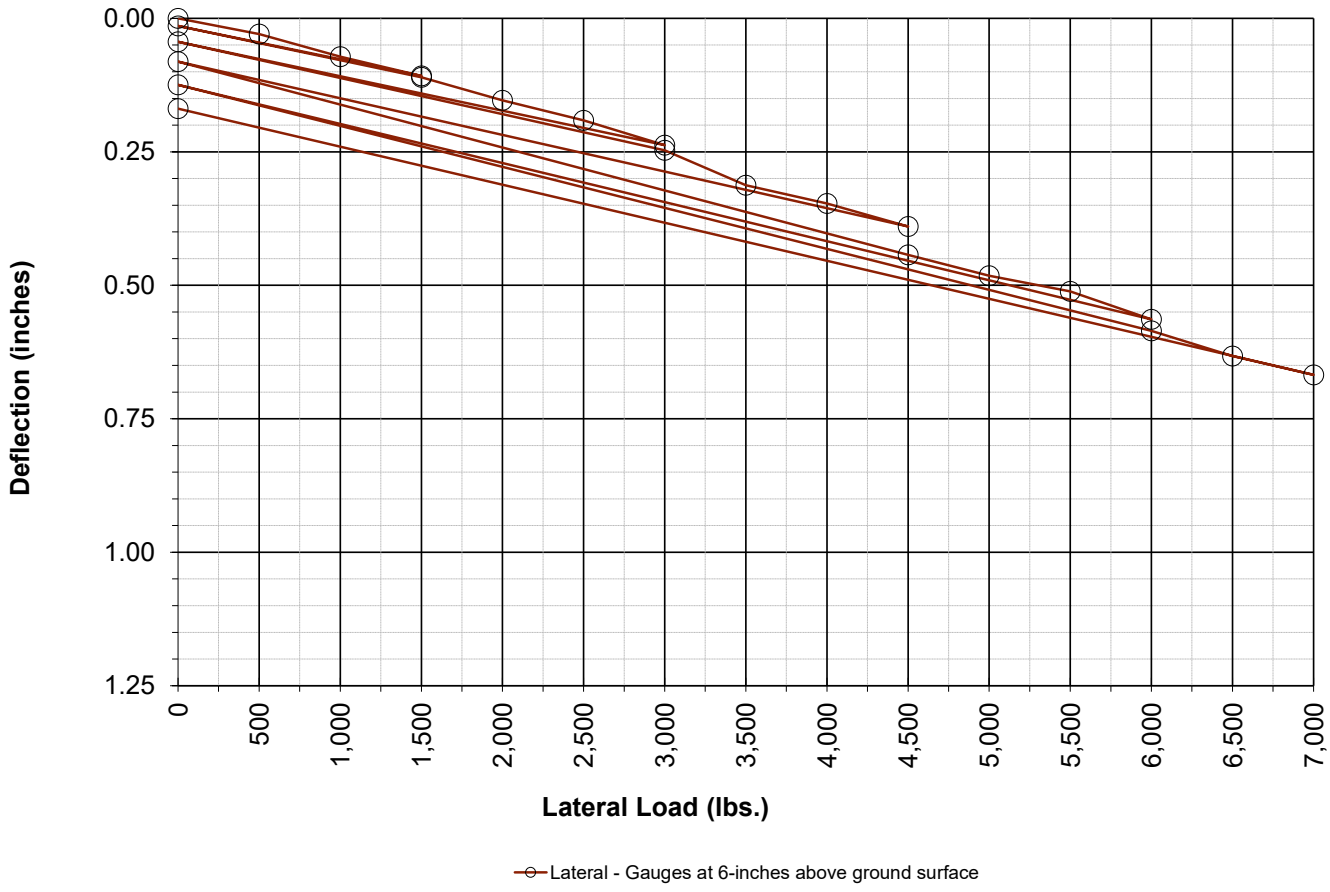
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-2A
Group Latitude [deg.]:	36.131832°
Group Longitude [deg.]:	-119.396316°
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	18

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.029	
14%	1,000	0.072	
21%	1,500	0.108	
0%	0	0.014	
21%	1,500	0.111	
29%	2,000	0.154	
36%	2,500	0.191	
43%	3,000	0.238	
0%	0	0.044	
43%	3,000	0.247	
50%	3,500	0.313	
57%	4,000	0.347	
64%	4,500	0.390	
0%	0	0.081	
64%	4,500	0.443	
71%	5,000	0.482	
79%	5,500	0.511	
86%	6,000	0.564	
0%	0	0.125	
86%	6,000	0.585	
93%	6,500	0.633	
100%	7,000	0.668	
0%	0	0.169	



Lateral Load Test Result for PLT-2B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

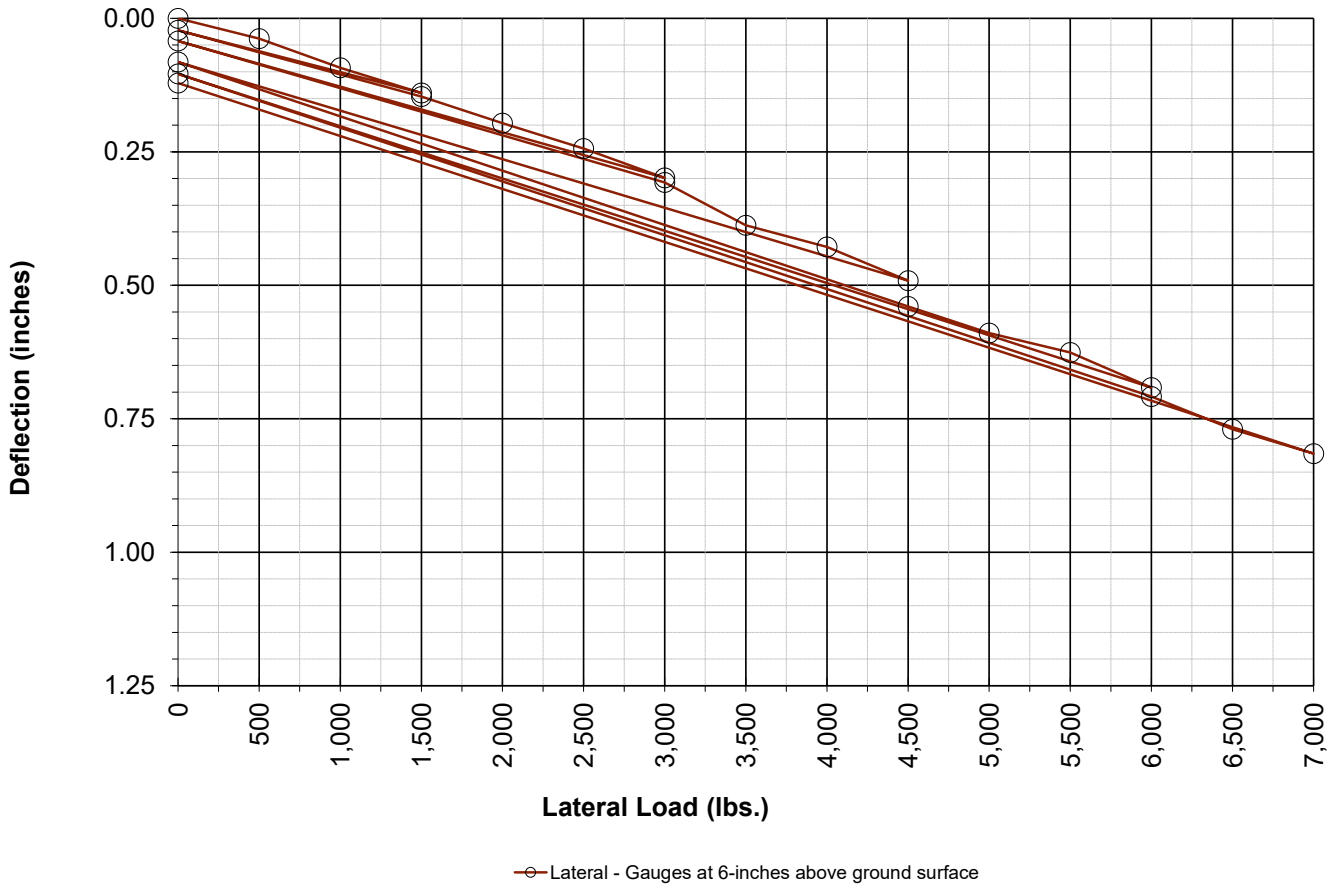
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-2B
Group Latitude [deg.]:	36.131832°
Group Longitude [deg.]:	-119.396316°
Pile Type:	W6x9
Pile Embedment Depth [in.]:	96
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	24

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.038	
14%	1,000	0.093	
21%	1,500	0.140	
0%	0	0.023	
21%	1,500	0.147	
29%	2,000	0.196	
36%	2,500	0.244	
43%	3,000	0.299	
0%	0	0.042	
43%	3,000	0.308	
50%	3,500	0.388	
57%	4,000	0.428	
64%	4,500	0.491	
0%	0	0.082	
64%	4,500	0.540	
71%	5,000	0.590	
79%	5,500	0.626	
86%	6,000	0.692	
0%	0	0.104	
86%	6,000	0.709	
93%	6,500	0.770	
100%	7,000	0.815	
0%	0	0.121	



Lateral Load Test Result for PLT-3A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

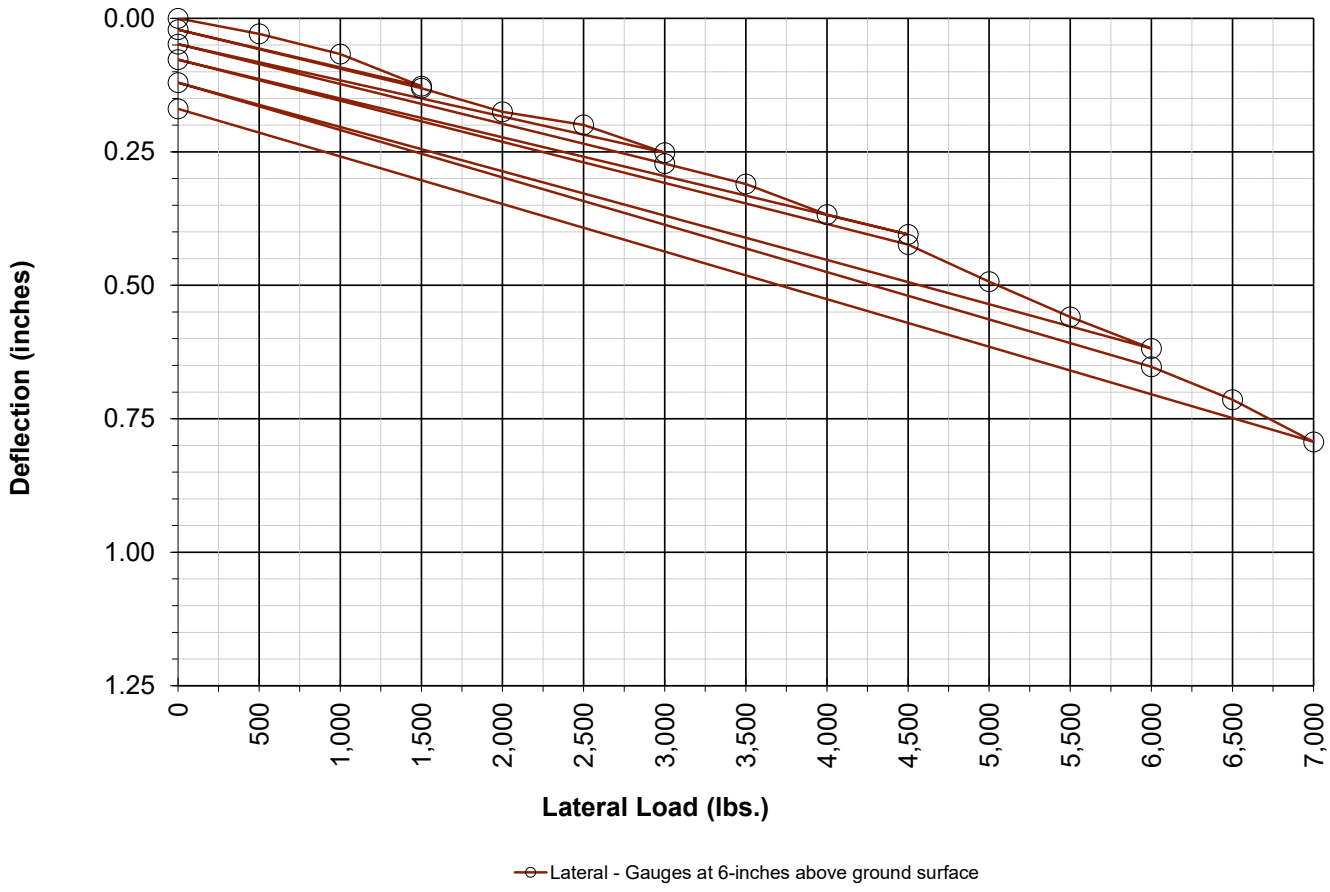
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT-3A
Group Latitude [deg.]:	36.1276
Group Longitude [deg.]:	-119.4037
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	18

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.029	
14%	1,000	0.067	
21%	1,500	0.127	
0%	0	0.021	
21%	1,500	0.131	
29%	2,000	0.175	
36%	2,500	0.200	
43%	3,000	0.252	
0%	0	0.049	
43%	3,000	0.272	
50%	3,500	0.311	
57%	4,000	0.368	
64%	4,500	0.405	
0%	0	0.078	
64%	4,500	0.424	
71%	5,000	0.493	
79%	5,500	0.560	
86%	6,000	0.619	
0%	0	0.121	
86%	6,000	0.653	
93%	6,500	0.714	
100%	7,000	0.793	
0%	0	0.170	



Lateral Load Test Result for PLT-3B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

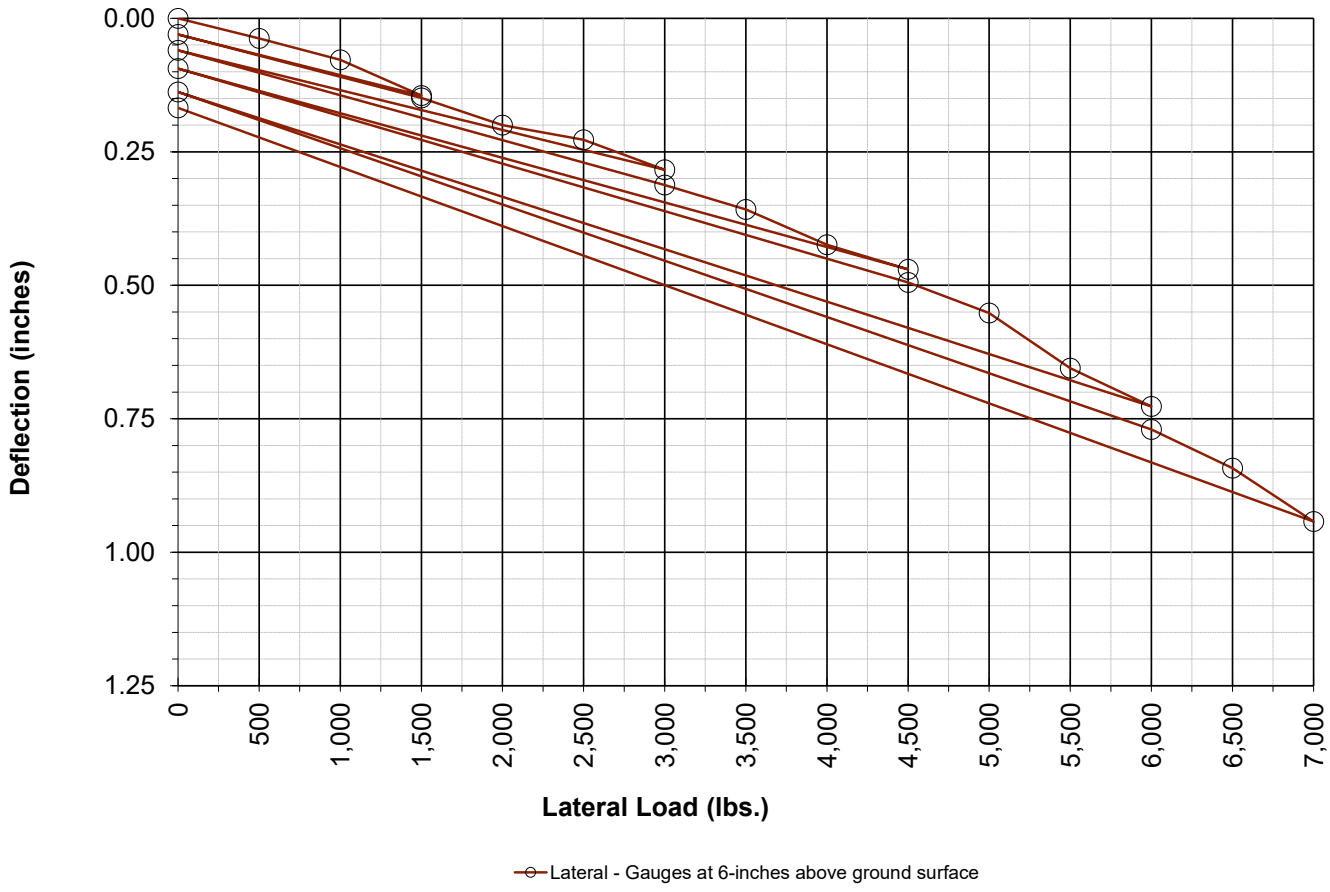
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT-3B
Group Latitude [deg.]:	36.1276
Group Longitude [deg.]:	-119.4037
Pile Type:	W6x9
Pile Embedment Depth [in.]:	108
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	30

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.038	
14%	1,000	0.078	
21%	1,500	0.145	
0%	0	0.030	
21%	1,500	0.149	
29%	2,000	0.200	
36%	2,500	0.228	
43%	3,000	0.284	
0%	0	0.060	
43%	3,000	0.312	
50%	3,500	0.358	
57%	4,000	0.424	
64%	4,500	0.470	
0%	0	0.094	
64%	4,500	0.495	
71%	5,000	0.552	
79%	5,500	0.655	
86%	6,000	0.727	
0%	0	0.138	
86%	6,000	0.770	
93%	6,500	0.843	
100%	7,000	0.943	
0%	0	0.168	



Lateral Load Test Result for PLT-4A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

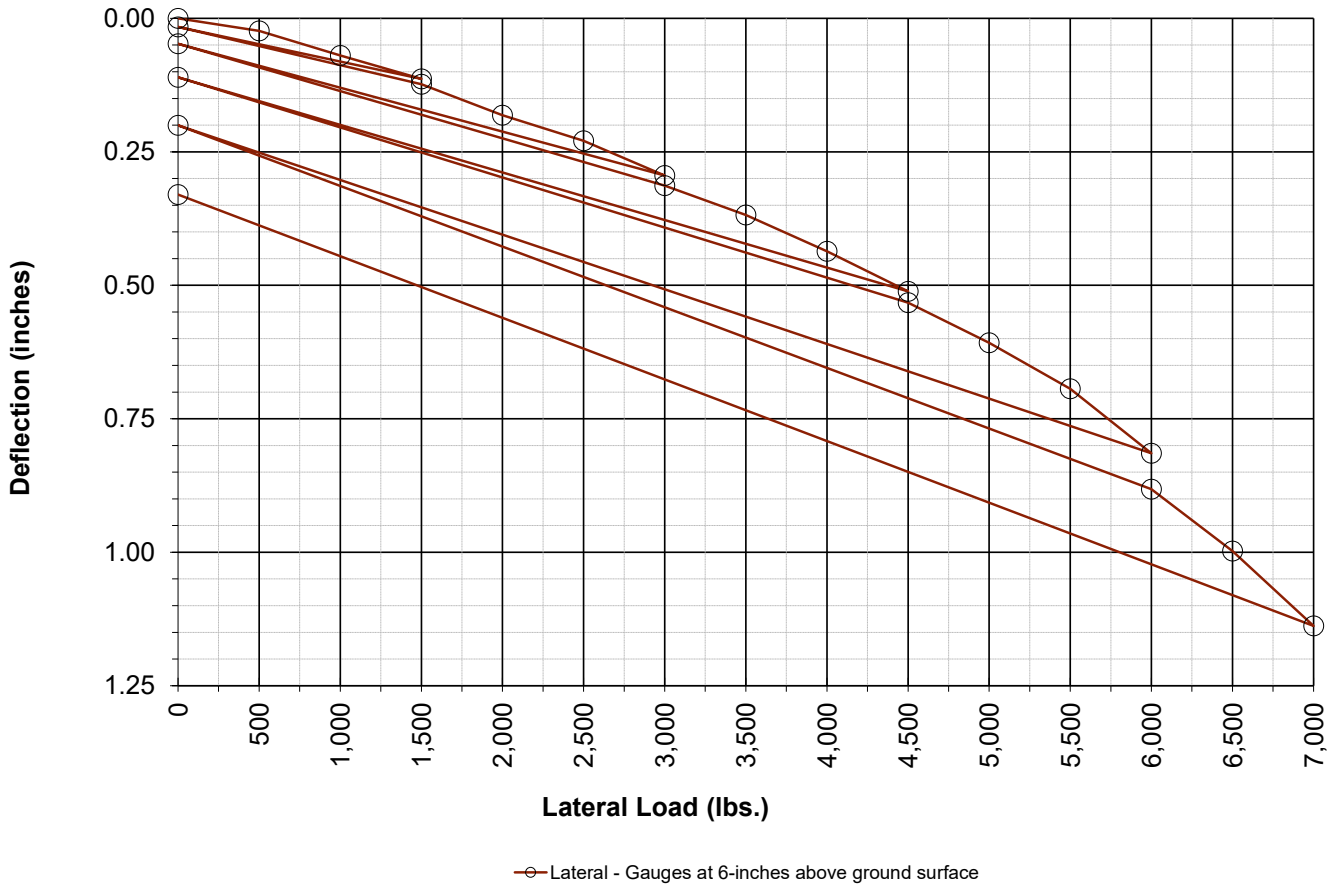
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-4A
Group Latitude [deg.]:	36.1282
Group Longitude [deg.]:	-119.3952
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	18

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.024	
14%	1,000	0.070	
21%	1,500	0.114	
0%	0	0.016	
21%	1,500	0.124	
29%	2,000	0.182	
36%	2,500	0.230	
43%	3,000	0.295	
0%	0	0.048	
43%	3,000	0.314	
50%	3,500	0.369	
57%	4,000	0.437	
64%	4,500	0.511	
0%	0	0.111	
64%	4,500	0.533	
71%	5,000	0.608	
79%	5,500	0.694	
86%	6,000	0.815	
0%	0	0.201	
86%	6,000	0.882	
93%	6,500	0.998	
100%	7,000	1.138	
0%	0	0.330	



Lateral Load Test Result for PLT-4B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

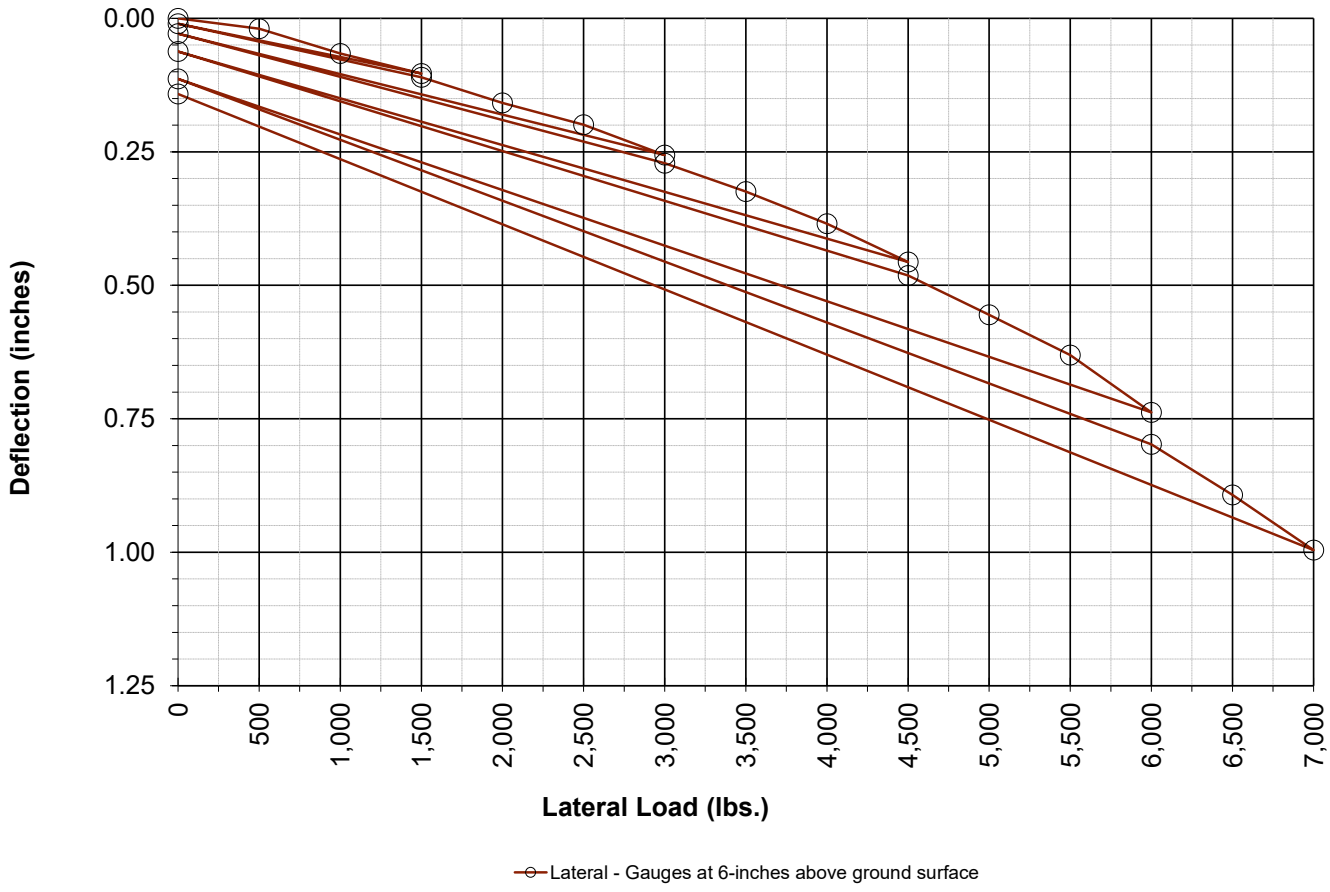
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-4B
Group Latitude [deg.]:	36.1282
Group Longitude [deg.]:	-119.3952
Pile Type:	W6x9
Pile Embedment Depth [in.]:	108
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	31

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.020	
14%	1,000	0.066	
21%	1,500	0.103	
0%	0	0.010	
21%	1,500	0.111	
29%	2,000	0.159	
36%	2,500	0.199	
43%	3,000	0.256	
0%	0	0.029	
43%	3,000	0.272	
50%	3,500	0.325	
57%	4,000	0.385	
64%	4,500	0.456	
0%	0	0.062	
64%	4,500	0.482	
71%	5,000	0.555	
79%	5,500	0.631	
86%	6,000	0.738	
0%	0	0.114	
86%	6,000	0.798	
93%	6,500	0.893	
100%	7,000	0.996	
0%	0	0.142	



Lateral Load Test Result for PLT-5A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

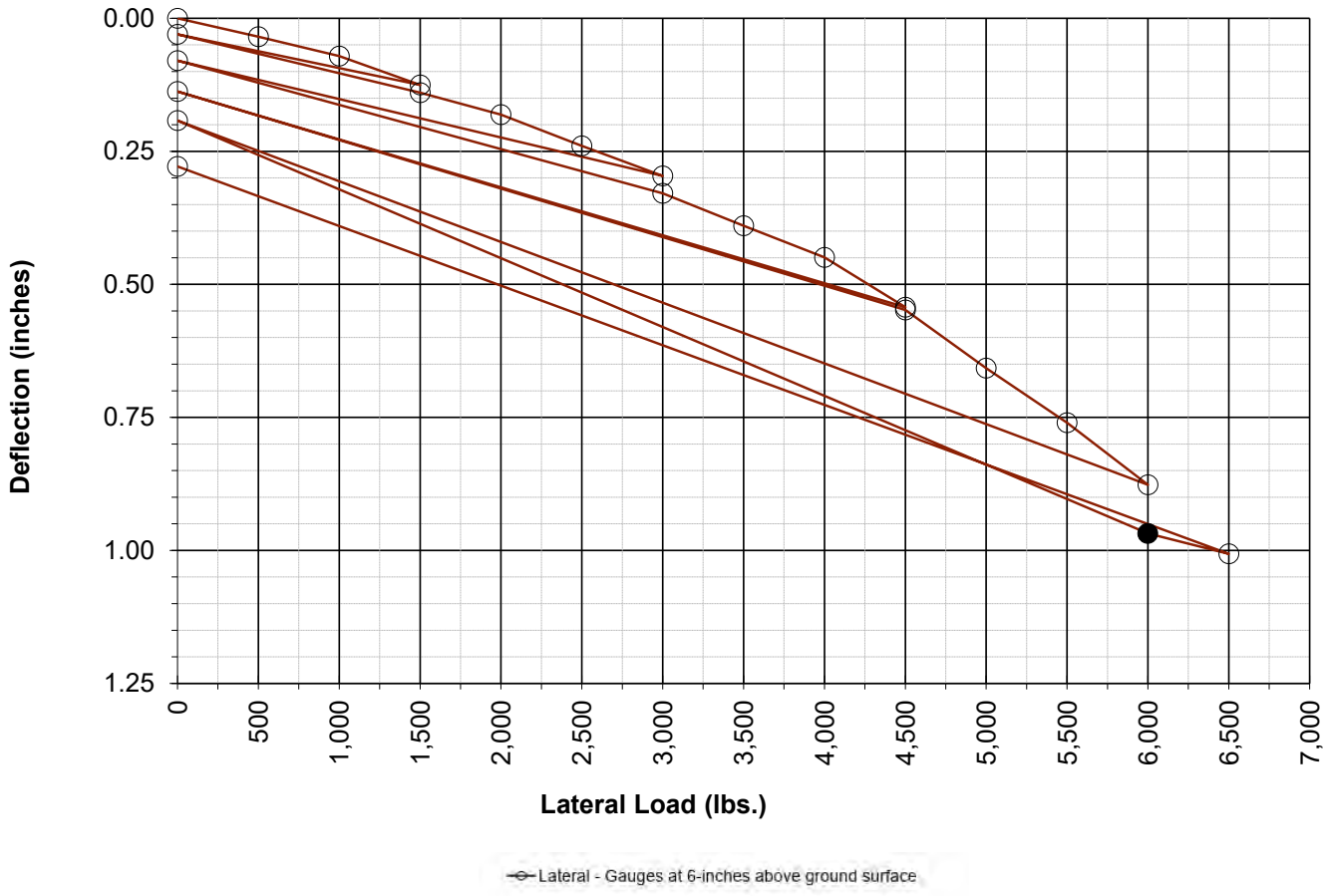
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT-5A
Group Latitude [deg.]:	36.1249
Group Longitude [deg.]:	-119.4081
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	15

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.035	
14%	1,000	0.071	
21%	1,500	0.125	
0%	0	0.030	
21%	1,500	0.140	
29%	2,000	0.181	
36%	2,500	0.240	
43%	3,000	0.296	
0%	0	0.080	
43%	3,000	0.329	
50%	3,500	0.390	
57%	4,000	0.450	
64%	4,500	0.543	
0%	0	0.138	
64%	4,500	0.548	
71%	5,000	0.657	
79%	5,500	0.760	
86%	6,000	0.877	
0%	0	0.192	
86%	6,000	0.968	
93%	6,500	1.007	
100%	7,000		
0%	0	0.279	



Lateral Load Test Result for PLT-5B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

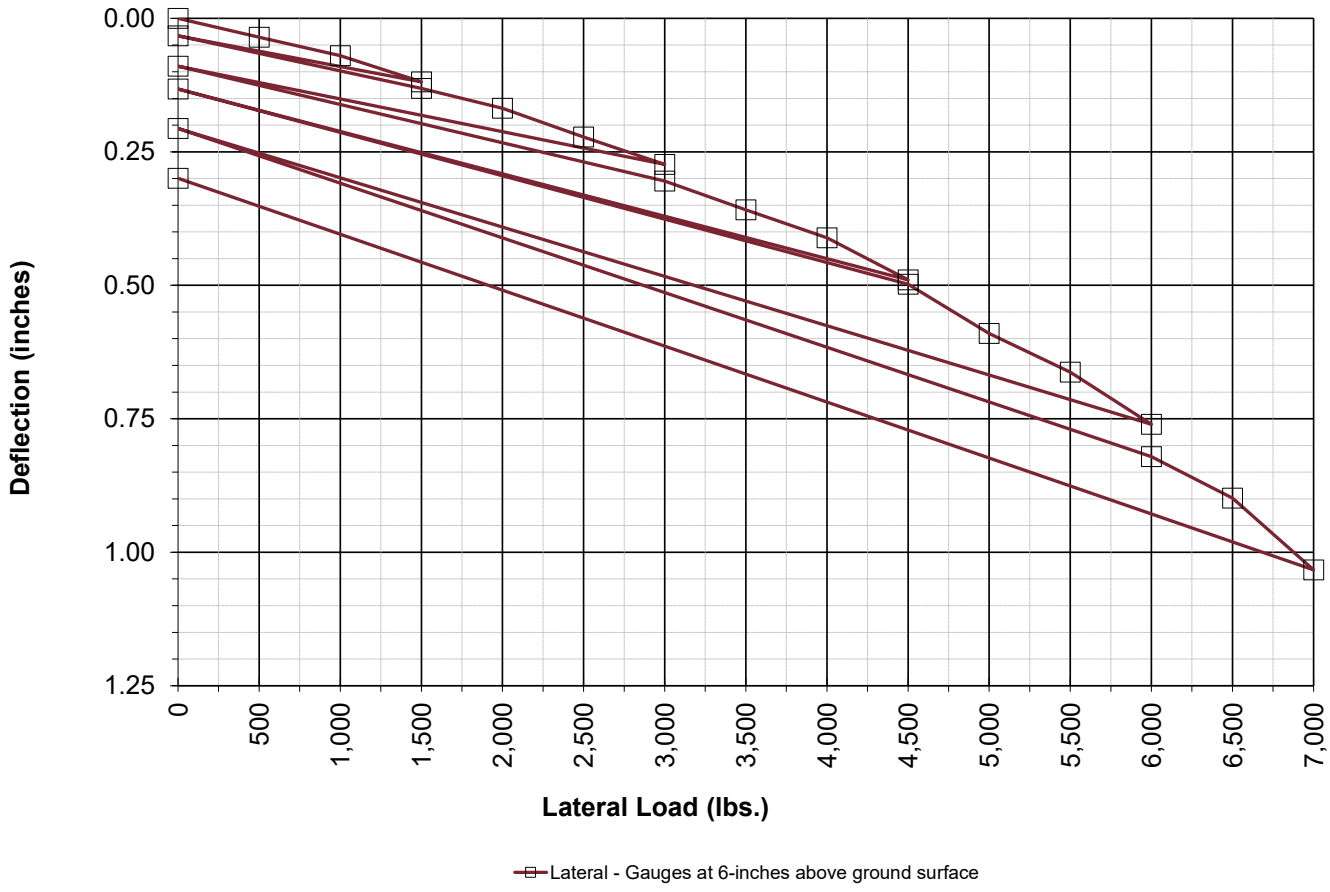
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT-5B
Group Latitude [deg.]:	36.1249
Group Longitude [deg.]:	-119.4081
Pile Type:	W6x9
Pile Embedment Depth [in.]:	108
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	21

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.035	
14%	1,000	0.070	
21%	1,500	0.119	
0%	0	0.033	
21%	1,500	0.131	
29%	2,000	0.168	
36%	2,500	0.222	
43%	3,000	0.274	
0%	0	0.090	
43%	3,000	0.305	
50%	3,500	0.359	
57%	4,000	0.411	
64%	4,500	0.490	
0%	0	0.133	
64%	4,500	0.498	
71%	5,000	0.590	
79%	5,500	0.663	
86%	6,000	0.760	
0%	0	0.206	
86%	6,000	0.821	
93%	6,500	0.899	
100%	7,000	1.033	
0%	0	0.300	



Lateral Load Test Result for PLT-6A

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

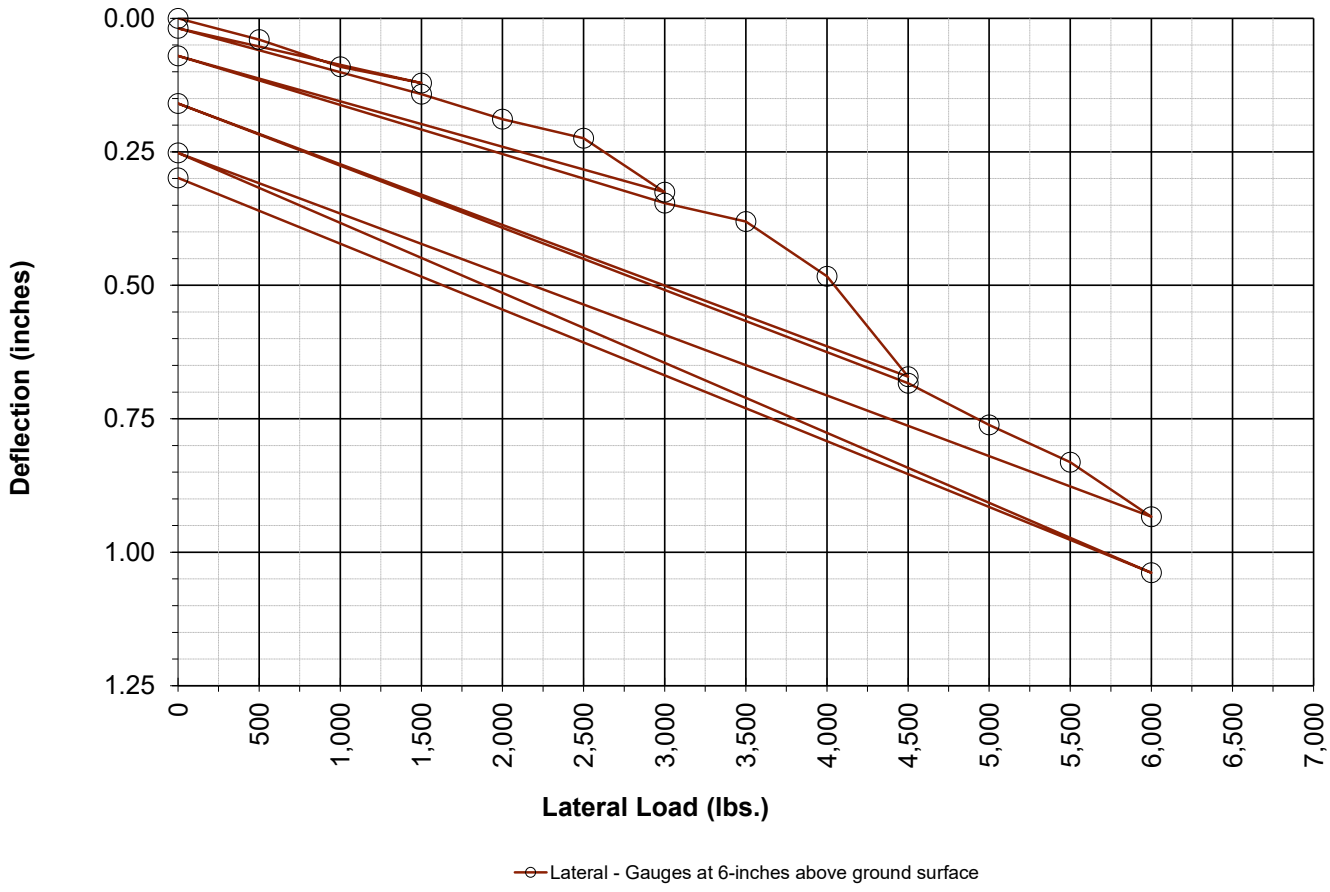
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT- 6A
Group Latitude [deg.]:	36.1265
Group Longitude [deg.]:	-119.3955
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	17

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.040	
14%	1,000	0.091	
21%	1,500	0.121	
0%	0	0.019	
21%	1,500	0.142	
29%	2,000	0.189	
36%	2,500	0.225	
43%	3,000	0.326	
0%	0	0.070	
43%	3,000	0.346	
50%	3,500	0.381	
57%	4,000	0.483	
64%	4,500	0.671	
0%	0	0.160	
64%	4,500	0.684	
71%	5,000	0.762	
79%	5,500	0.832	
86%	6,000	0.934	
0%	0	0.252	
86%	6,000	1.039	
93%	6,500		
100%	7,000		
0%	0	0.299	



Lateral Load Test Result for PLT-6B

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Lateral Load Test Set Up

Number of Top Gauges:	0
Number of Bottom Gauges:	2
Height of Top Gauges [in.]:	6
Height of Bottom Gauges [in.]:	6
Height of Applied Load [in.]:	24
Load Cell:	DILLON ED

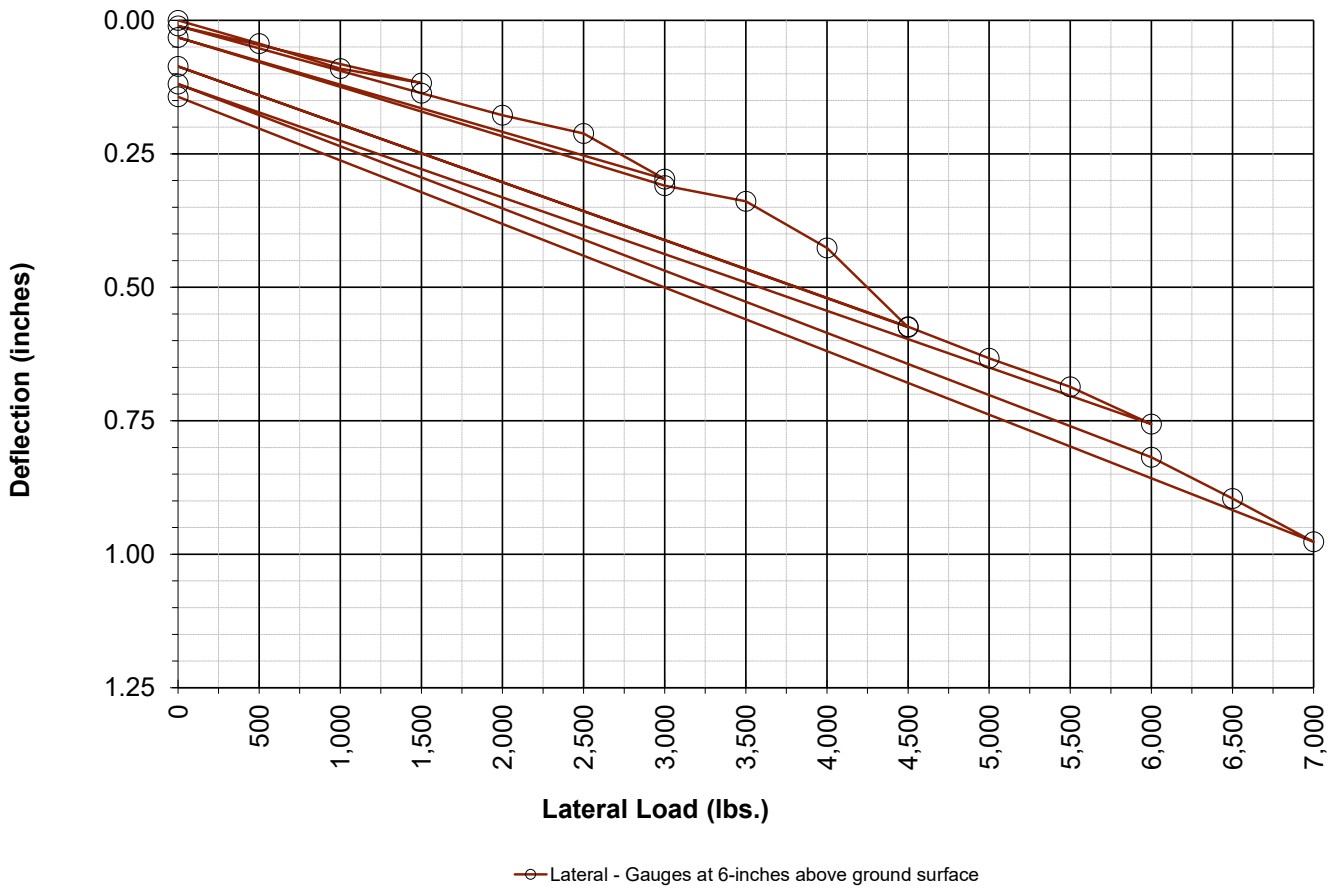
Test Date and Representative

Tested By Terracon Rep:	AC/JB
Date Tested:	11/14/2023

Pile Information

Pile ID:	PLT-6B
Group Latitude [deg.]:	36.1265
Group Longitude [deg.]:	-119.3955
Pile Type:	W6x9
Pile Embedment Depth [in.]:	96
Pile Stick-Up [in.]:	36
Lateral Target Load [lbs.]:	7,000
Drive Time [sec.]:	27

% of Target Load	Lateral Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
7%	500	0.044	
14%	1,000	0.090	
21%	1,500	0.118	
0%	0	0.011	
21%	1,500	0.137	
29%	2,000	0.178	
36%	2,500	0.212	
43%	3,000	0.297	
0%	0	0.032	
43%	3,000	0.310	
50%	3,500	0.339	
57%	4,000	0.426	
64%	4,500	0.575	
0%	0	0.086	
64%	4,500	0.574	
71%	5,000	0.633	
79%	5,500	0.686	
86%	6,000	0.756	
0%	0	0.120	
86%	6,000	0.818	
93%	6,500	0.896	
100%	7,000	0.977	
0%	0	0.143	



Axial Compression Test

Compression Load						
Pile No.		**Pile Type**	**Embedment Depth, ft**	**Pile Drive Time, sec**	**Yield Deflection, in[1]**	**Load, lb**
PLT-1	C	W6x9	7	22	0.05*	13,000
PLT-2	C	W6x9	6	18	0.05*	13,000
PLT-3	C	W6x9	7	13	<0.05*	13,000
PLT-4	C	W6x9	6	15	0.05*	13,000
PLT-5	C	W6x9	7	15	<0.05*	13,000
PLT-6	C	W6x9	6	20	0.05*	13,000

[1] Yield deflection is defined near ¼"

* Maximum load reached prior to deflection criteria

Compression Load Test Result for PLT-1C

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	OHAUS 10Ton

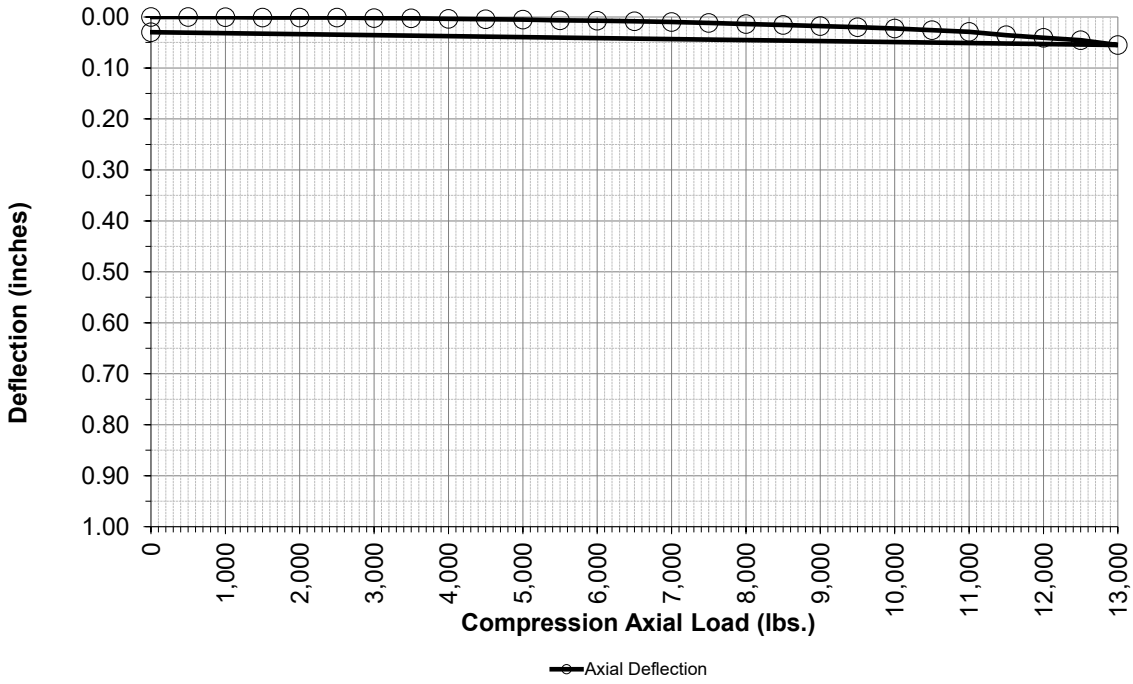
Test Date and Representative

Tested By Terracon Rep:	JB
Date Tested:	11/8/2023

Pile Information

Pile ID:	PLT-1C
Latitude [deg.]:	36.132683°
Longitude [deg.]:	-119.40963
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	24
Axial Design Load [lbs.]:	13,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	22

Compression Test Results			
% of Design Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
4%	500	0.000	
8%	1,000	0.001	
12%	1,500	0.001	
15%	2,000	0.001	
19%	2,500	0.001	
23%	3,000	0.002	
27%	3,500	0.003	
31%	4,000	0.004	
35%	4,500	0.005	
38%	5,000	0.005	
42%	5,500	0.007	
46%	6,000	0.007	
50%	6,500	0.008	
54%	7,000	0.010	
58%	7,500	0.012	
62%	8,000	0.014	
65%	8,500	0.016	
69%	9,000	0.018	
73%	9,500	0.020	
77%	10,000	0.023	
81%	10,500	0.026	
85%	11,000	0.029	
88%	11,500	0.036	
92%	12,000	0.041	
96%	12,500	0.046	
100%	13,000	0.055	
0%	0	0.030	



Compression Load Test Result for PLT-2C

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	OHAUS 10Ton

Test Date and Representative

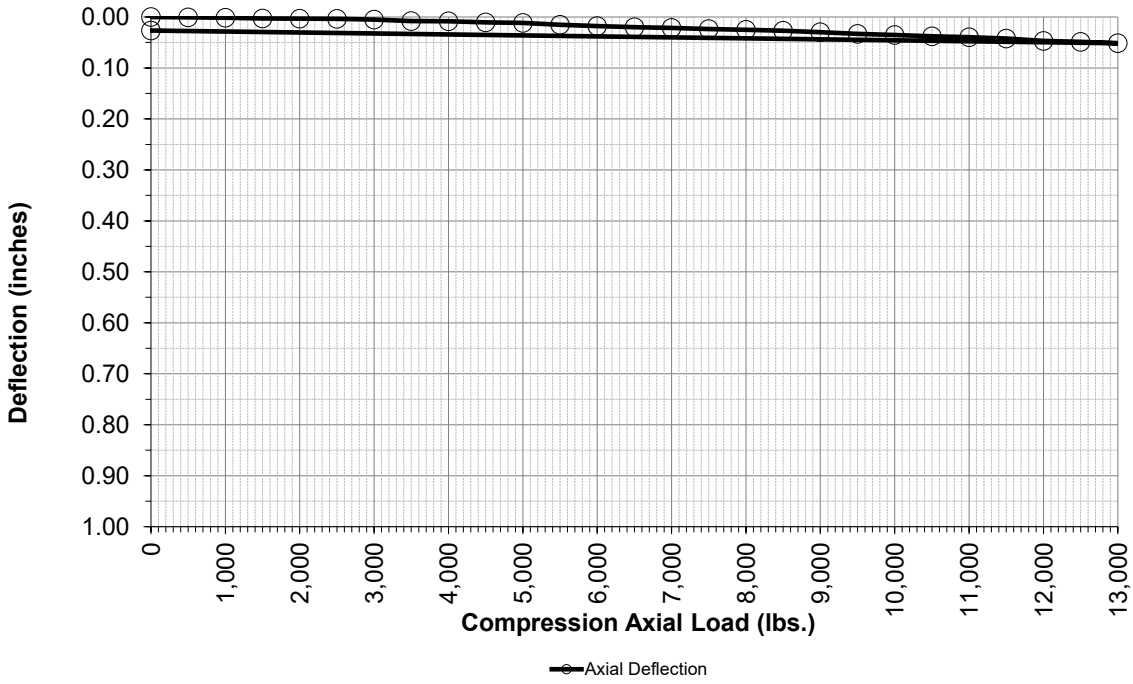
Tested By Terracon Rep:	JB
Date Tested:	11/9/2023

Pile Information

Pile ID:	PLT-2C
Latitude [deg.]:	36.131832°
Longitude [deg.]:	-119.396316°
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	24
Axial Design Load [lbs.]:	13,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	18

Compression Test Results

% of Design Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
4%	500	0.001	
8%	1,000	0.002	
12%	1,500	0.003	
15%	2,000	0.003	
19%	2,500	0.004	
23%	3,000	0.005	
27%	3,500	0.008	
31%	4,000	0.009	
35%	4,500	0.011	
38%	5,000	0.012	
42%	5,500	0.015	
46%	6,000	0.018	
50%	6,500	0.020	
54%	7,000	0.022	
58%	7,500	0.024	
62%	8,000	0.025	
65%	8,500	0.027	
69%	9,000	0.030	
73%	9,500	0.033	
77%	10,000	0.035	
81%	10,500	0.038	
85%	11,000	0.040	
88%	11,500	0.042	
92%	12,000	0.047	
96%	12,500	0.049	
100%	13,000	0.052	
0%	0	0.027	



Compression Load Test Result for PLT-3C

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	OHAUS 10Ton

Test Date and Representative

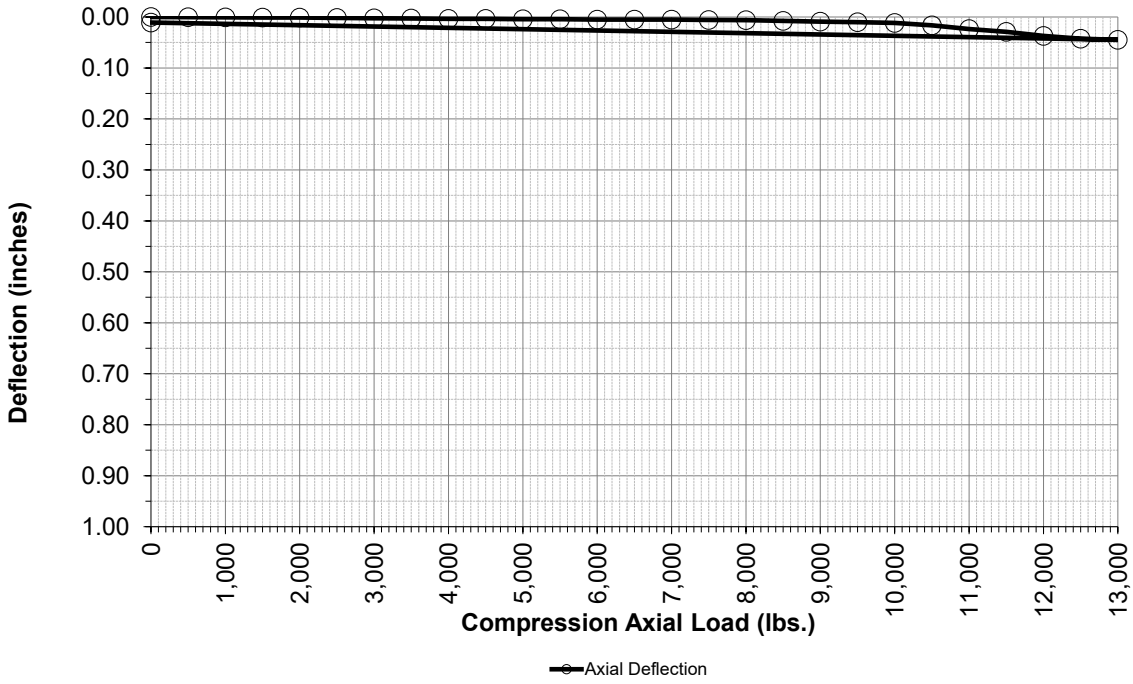
Tested By Terracon Rep:	JB
Date Tested:	11/10/2023

Pile Information

Pile ID:	PLT-3C
Latitude [deg.]:	36.12758
Longitude [deg.]:	-119.40368
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	24
Axial Design Load [lbs.]:	13,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	13

Compression Test Results

% of Design Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
4%	500	0.001	
8%	1,000	0.001	
12%	1,500	0.001	
15%	2,000	0.001	
19%	2,500	0.002	
23%	3,000	0.003	
27%	3,500	0.003	
31%	4,000	0.004	
35%	4,500	0.004	
38%	5,000	0.005	
42%	5,500	0.005	
46%	6,000	0.005	
50%	6,500	0.005	
54%	7,000	0.005	
58%	7,500	0.006	
62%	8,000	0.006	
65%	8,500	0.008	
69%	9,000	0.009	
73%	9,500	0.010	
77%	10,000	0.012	
81%	10,500	0.016	
85%	11,000	0.024	
88%	11,500	0.029	
92%	12,000	0.037	
96%	12,500	0.043	
100%	13,000	0.045	
0%	0	0.011	



Compression Load Test Result for PLT-4C

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	OHAUS 10Ton

Test Date and Representative

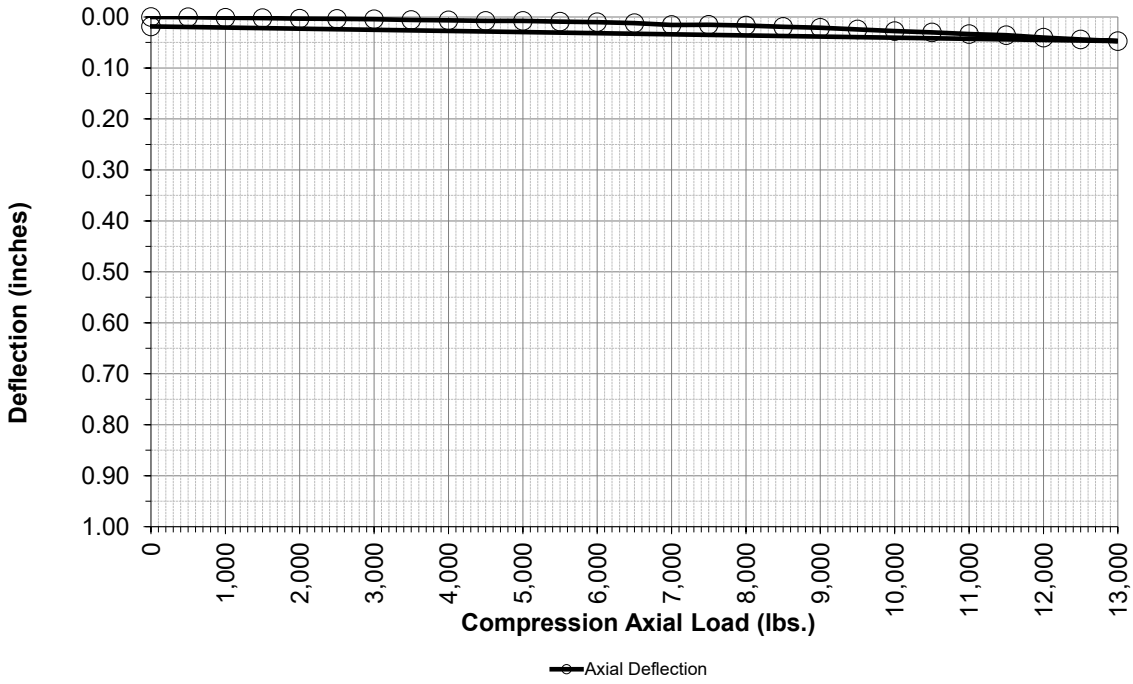
Tested By Terracon Rep:	JB
Date Tested:	11/11/2023

Pile Information

Pile ID:	PLT-4C
Latitude [deg.]:	36.12815
Longitude [deg.]:	-119.39515
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	24
Axial Design Load [lbs.]:	13,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	15

Compression Test Results

% of Design Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
4%	500	0.001	
8%	1,000	0.002	
12%	1,500	0.002	
15%	2,000	0.003	
19%	2,500	0.004	
23%	3,000	0.005	
27%	3,500	0.006	
31%	4,000	0.007	
35%	4,500	0.008	
38%	5,000	0.008	
42%	5,500	0.009	
46%	6,000	0.010	
50%	6,500	0.012	
54%	7,000	0.016	
58%	7,500	0.015	
62%	8,000	0.017	
65%	8,500	0.019	
69%	9,000	0.021	
73%	9,500	0.025	
77%	10,000	0.028	
81%	10,500	0.030	
85%	11,000	0.034	
88%	11,500	0.036	
92%	12,000	0.040	
96%	12,500	0.044	
100%	13,000	0.047	
0%	0	0.019	



Compression Load Test Result for PLT-5C

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	OHAUS 10Ton

Test Date and Representative

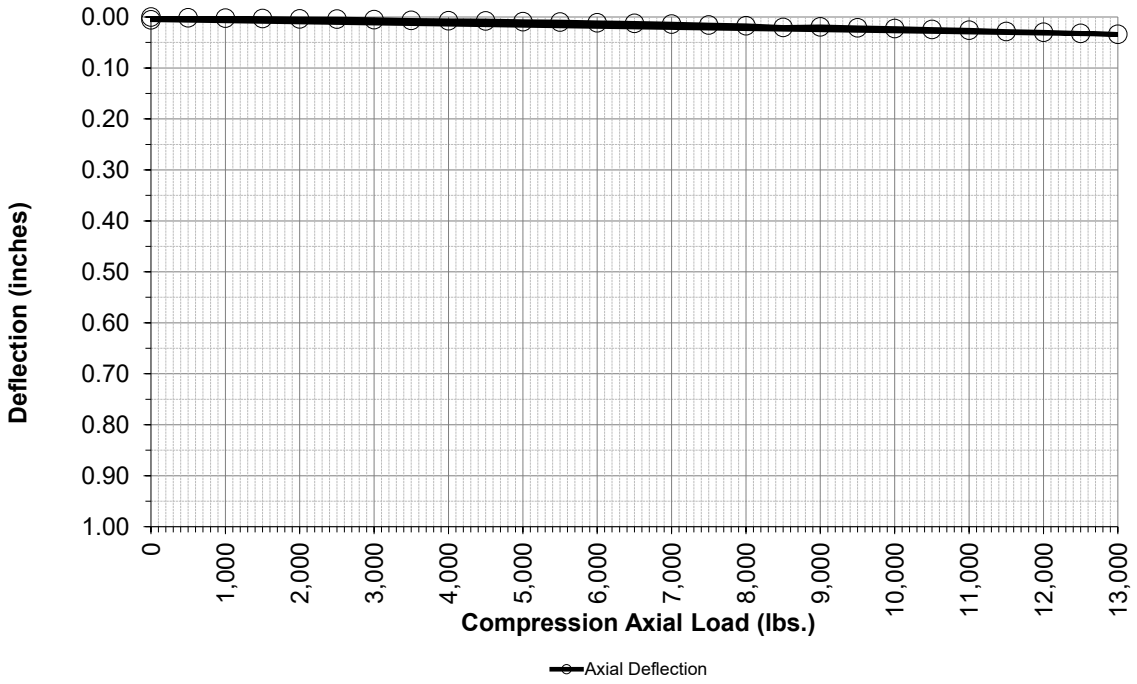
Tested By Terracon Rep:	JB
Date Tested:	11/12/2023

Pile Information

Pile ID:	PLT -5C
Latitude [deg.]:	36.12494
Longitude [deg.]:	-119.40805
Pile Type:	W6x9
Pile Embedment Depth [in.]:	84
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	24
Axial Design Load [lbs.]:	13,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	15

Compression Test Results

% of Design Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
4%	500	0.002	
8%	1,000	0.002	
12%	1,500	0.003	
15%	2,000	0.004	
19%	2,500	0.004	
23%	3,000	0.005	
27%	3,500	0.007	
31%	4,000	0.007	
35%	4,500	0.008	
38%	5,000	0.009	
42%	5,500	0.010	
46%	6,000	0.011	
50%	6,500	0.012	
54%	7,000	0.014	
58%	7,500	0.016	
62%	8,000	0.017	
65%	8,500	0.021	
69%	9,000	0.019	
73%	9,500	0.021	
77%	10,000	0.023	
81%	10,500	0.024	
85%	11,000	0.026	
88%	11,500	0.028	
92%	12,000	0.030	
96%	12,500	0.032	
100%	13,000	0.034	
0%	0	0.006	



Compression Load Test Result for PLT-6C

Project Information

Project Name:	Foxtail Solar
Project Location:	Tulare County, CA
Project Number:	LA235086

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	OHAUS 10Ton

Test Date and Representative

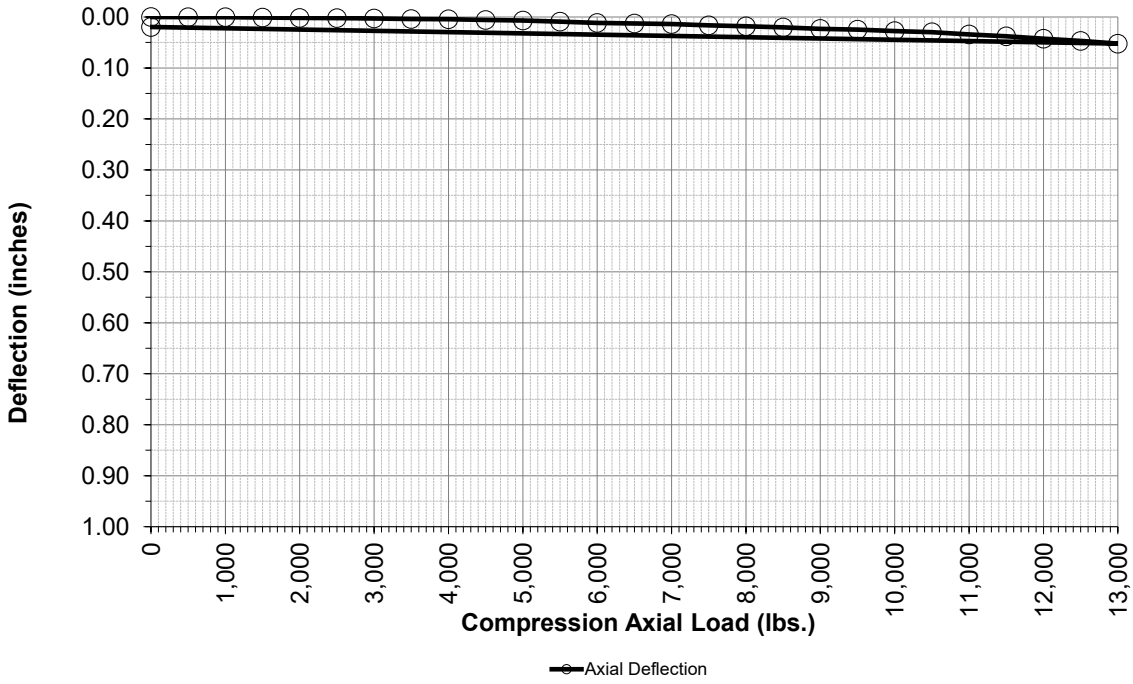
Tested By Terracon Rep:	JB
Date Tested:	11/13/2023

Pile Information

Pile ID:	PLT-6C
Latitude [deg.]:	36.12650
Longitude [deg.]:	-119.39547
Pile Type:	W6x9
Pile Embedment Depth [in.]:	72
Pile Diameter [in.]:	5.9
Pile Stick-Up [in.]:	24
Axial Design Load [lbs.]:	13,000
Pile Area [sq. in.]:	2.68
Elastic Modulus [ksi.]:	29,000
Drive Time [sec.]:	20

Compression Test Results

% of Design Load	Axial Load [lbs.]	Deflection Δ (in.) Gauges #1 & #2	Comments
0%	0	0.000	
4%	500	0.000	
8%	1,000	0.001	
12%	1,500	0.001	
15%	2,000	0.002	
19%	2,500	0.002	
23%	3,000	0.003	
27%	3,500	0.004	
31%	4,000	0.004	
35%	4,500	0.006	
38%	5,000	0.007	
42%	5,500	0.009	
46%	6,000	0.012	
50%	6,500	0.013	
54%	7,000	0.014	
58%	7,500	0.017	
62%	8,000	0.018	
65%	8,500	0.020	
69%	9,000	0.023	
73%	9,500	0.025	
77%	10,000	0.028	
81%	10,500	0.030	
85%	11,000	0.034	
88%	11,500	0.038	
92%	12,000	0.043	
96%	12,500	0.047	
100%	13,000	0.052	
0%	0	0.020	

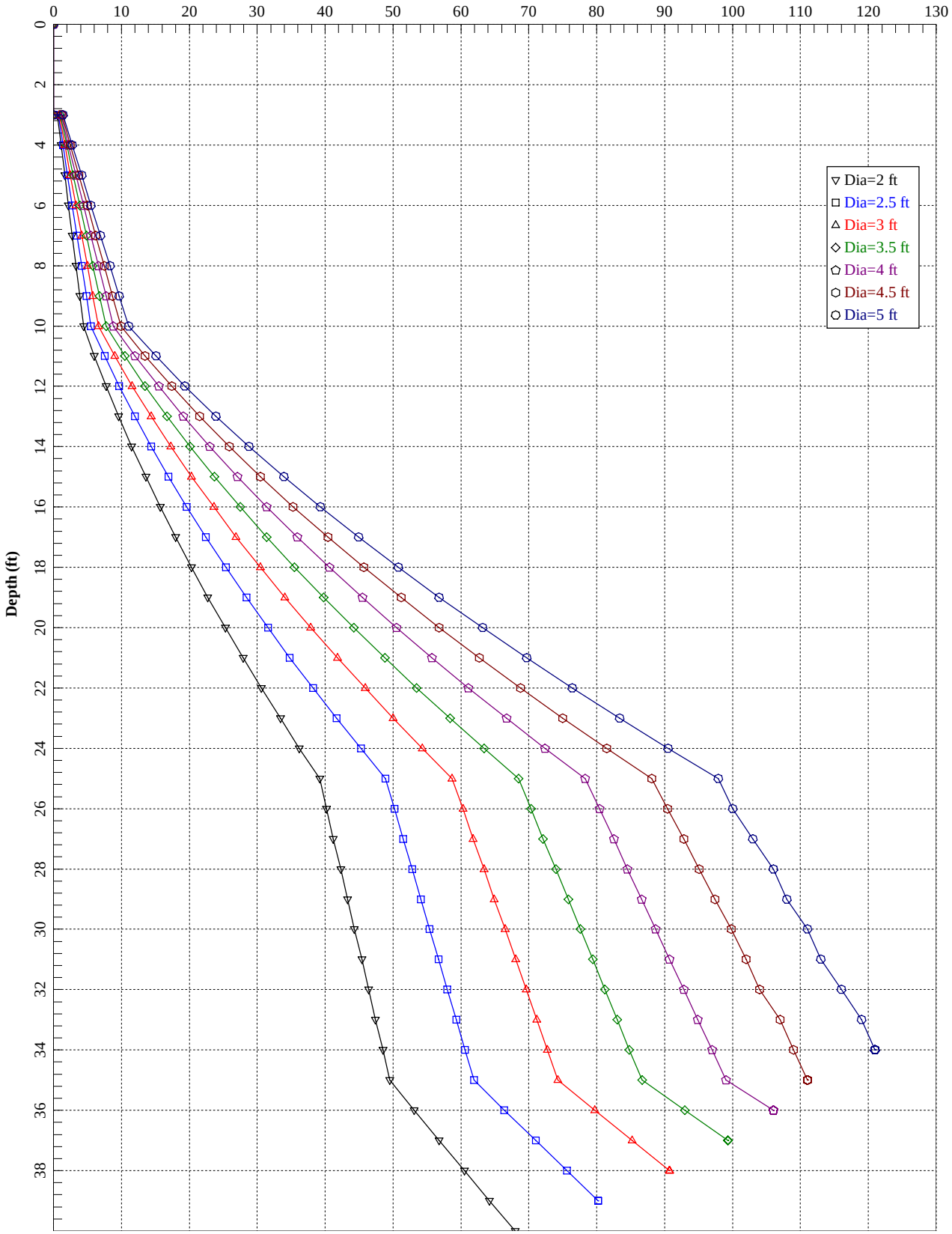


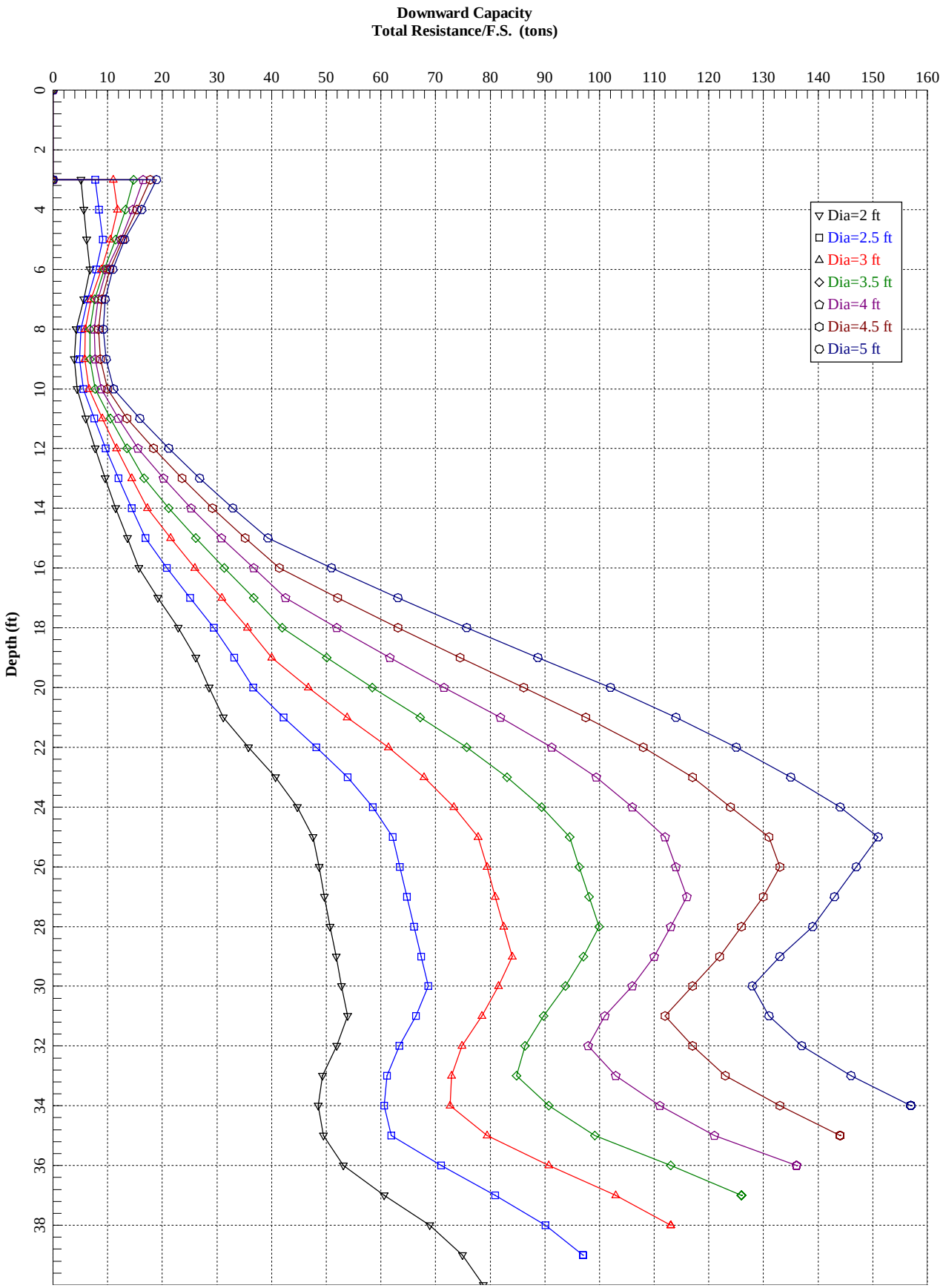
Supporting Information

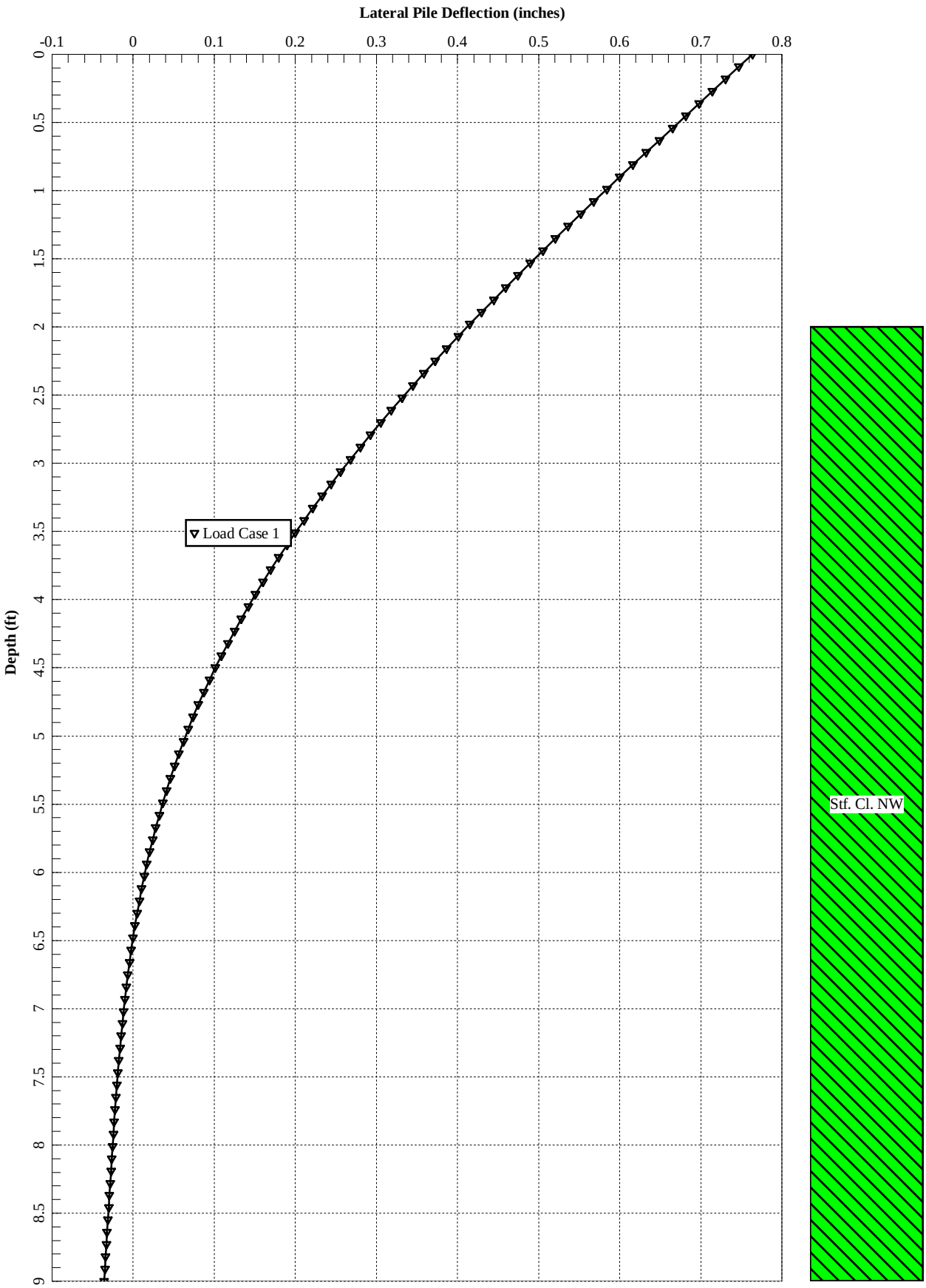
Contents:

Shaft Analysis Output
L-PILE Analyses
General Notes
Unified Soil Classification System

Allowable Skin Friction
Side Resistance/F.S. (tons)




Downward Capacity
Total Resistance/F.S. (tons)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
Depth (ft)
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
36
38
Dia=2 ft
Dia=2.5 ft
Dia=3 ft
Dia=3.5 ft
Dia=4 ft
Dia=4.5 ft
Dia=5 ft


Lateral Pile Deflection (inches)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
Depth (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
9
Load Case 1
Stf. Cl. NW

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LPile for Windows, Version 2019-11.002

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method
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Files Used for Analysis

Path to file locations:
\Users\javaldez3\OneDrive - Terracon Consultants Inc\Desktop\Pile\

Name of input data file:
LA235086 PLT-1B.lp11

Name of output report file:
LA235086 PLT-1B.lp11

Name of plot output file:
LA235086 PLT-1B.lp11

Name of runtime message file:
LA235086 PLT-1B.lp11

Date and Time of Analysis

Date: December 8, 2023 Time: 0:05:39

Problem Title

Project Name: Foxtail Solar

Job Number: LA235086

Client: Samsung C&T

Engineer: JV

Description: Foxtail Pile Lateral Analyses

Program Options and Settings

Computational Options:
 - Conventional Analysis
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed = 500
 - Deflection tolerance for convergence = 1.0000E-05 in
 - Maximum allowable deflection = 100.0000 in
 - Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Analysis uses p-y modification factors for p-y curves
 - Analysis uses layering correction (Method of Georgiadis)
 - No distributed lateral loads are entered
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Input of moment resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
 - Output files use decimal points to denote decimal symbols.
 - Values of pile-head deflection, bending moment, shear force, and
   soil reaction are printed for full length of pile.
 - Printing Increment (nodal spacing of output points) = 1
 - No p-y curves to be computed and reported for user-specified depths
 - Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 9.000 ft
Depth of ground surface below top of pile = 2.0000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over
the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	3.9400
2	9.000	3.9400

Input Structural Properties for Pile Sections:

Pile Section No. 1:

   Section 1 is a AISC strong axis steel pile

Length of section = 9.000000 ft
AISC Section Type = W

AISC Section Name = W6X9

Pile width = 3.940000 in
Shear capacity of section = 0.0000 lbs

Ground Slope and Pile Batter Angles

Ground Slope Angle = 0.000 degrees
= 0.000 radians

Pile Batter Angle = 0.000 degrees
= 0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 1 layers

Layer 1 is stiff clay without free water

Distance from top of pile to top of layer = 2.000000 ft
Distance from top of pile to bottom of layer = 9.000000 ft
Effective unit weight at top of layer = 115.000000 pcf
Effective unit weight at bottom of layer = 115.000000 pcf
Undrained cohesion at top of layer = 880.000000 psf
Undrained cohesion at bottom of layer = 880.000000 psf
Epsilon-50 at top of layer = 0.0000
Epsilon-50 at bottom of layer = 0.0000

NOTE: Default values for Epsilon-50 will be computed for this layer.

(Depth of the lowest soil layer extends 0.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Undrained Cohesion psf	E50 or krm
1	Stiff Clay w/o Free Water	2.0000 9.0000	115.0000 115.0000	880.0000 880.0000	default default

---

p-y Modification Factors for Group Action

Distribution of p-y modifiers with depth defined using 2 points

Point No.	Depth X ft	p-mult	y-mult
1	2.000	1.7000	1.0000
2	9.000	1.7000	1.0000

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length	Run Analysis
1	1	V = 3000. lbs	M = 0.0000 in-lbs	0.0000000	No	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with
specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

---

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Steel AISC Strong Axis:

Length of Section	=	9.000000 ft
Flange Width	=	3.940000 in
Section Depth	=	5.900000 in
Flange Thickness	=	0.215000 in
Web Thickness	=	0.170000 in
Yield Stress of Pipe	=	36.000000 ksi
Elastic Modulus	=	29000. ksi
Cross-sectional Area	=	2.680000 sq. in.
Moment of Inertia	=	16.400000 in^4
Elastic Bending Stiffness	=	475600. kip-in^2
Plastic Modulus, Z	=	6.230000in^3
Plastic Moment Capacity = Fy Z	=	224.280000in-kip

Axial Structural Capacities:

Nom. Axial Structural Capacity = Fy As	=	96.480 kips
Nominal Axial Tensile Capacity	=	-96.480 kips

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 1

Number	Axial Thrust Force kips
1	0.000

Definition of Run Messages:

Y = part of pipe section has yielded.

Axial Thrust Force = 0.000 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Total Stress ksi	Run Msg
0.00001339	6.2119176	463904.	2.9500000	1.1341028	
0.00002678	12.4238352	463904.	2.9500000	2.2682057	
0.00004017	18.6357527	463904.	2.9500000	3.4023085	
0.00005356	24.8476703	463904.	2.9500000	4.5364113	
0.00006695	31.0595879	463904.	2.9500000	5.6705142	
0.00008034	37.2715055	463904.	2.9500000	6.8046170	
0.00009373	43.4834230	463904.	2.9500000	7.9387198	
0.0001071	49.6953406	463904.	2.9500000	9.0728226	
0.0001205	55.9072582	463904.	2.9500000	10.2069255	
0.0001339	62.1191758	463904.	2.9500000	11.3410283	
0.0001473	68.3310933	463904.	2.9500000	12.4751311	
0.0001607	74.5430109	463904.	2.9500000	13.6092340	
0.0001741	80.7549285	463904.	2.9500000	14.7433368	
0.0001875	86.9668461	463904.	2.9500000	15.8774396	
0.0002009	93.1787636	463904.	2.9500000	17.0115425	
0.0002142	99.3906812	463904.	2.9500000	18.1456453	
0.0002276	105.6025988	463904.	2.9500000	19.2797481	
0.0002410	111.8145164	463904.	2.9500000	20.4138510	
0.0002544	118.0264339	463904.	2.9500000	21.5479538	
0.0002678	124.2383515	463904.	2.9500000	22.6820566	
0.0002812	130.4502691	463904.	2.9500000	23.8161594	
0.0002946	136.6621867	463904.	2.9500000	24.9502623	
0.0003080	142.8741043	463904.	2.9500000	26.0843651	
0.0003214	149.0860218	463904.	2.9500000	27.2184679	
0.0003348	155.2979394	463904.	2.9500000	28.3525708	
0.0003482	161.5098570	463904.	2.9500000	29.4866736	
0.0003615	167.7217746	463904.	2.9500000	30.6207764	
0.0003749	173.9336921	463904.	2.9500000	31.7548793	
0.0003883	180.1456097	463904.	2.9500000	32.8889821	
0.0004017	186.3575273	463904.	2.9500000	34.0230849	
0.0004151	192.5694449	463904.	2.9500000	35.1571878	
0.0004285	198.3858501	462981.	2.9500000	36.0000000	Y
0.0004419	202.1674371	457509.	2.9500000	36.0000000	Y
0.0004553	203.8690456	447791.	2.9500000	36.0000000	Y
0.0004687	204.7225650	436818.	2.9500000	36.0000000	Y
0.0004821	205.5090588	426316.	2.9500000	36.0000000	Y
0.0004954	206.2324428	416254.	2.9500000	36.0000000	Y
0.0005088	206.8955817	406603.	2.9500000	36.0000000	Y
0.0005222	207.5094289	397353.	2.9500000	36.0000000	Y
0.0005490	208.6070369	379969.	2.9500000	36.0000000	Y
0.0005758	209.5569063	363945.	2.9500000	36.0000000	Y
0.0006026	210.3767021	349131.	2.9500000	36.0000000	Y
0.0006294	211.1017225	335426.	2.9500000	36.0000000	Y
0.0006561	211.7325300	322697.	2.9500000	36.0000000	Y
0.0006829	212.2946712	310865.	2.9500000	36.0000000	Y
0.0007097	212.7956846	299840.	2.9500000	36.0000000	Y
0.0007365	213.2426746	289544.	2.9500000	36.0000000	Y
0.0007633	213.6423118	279908.	2.9500000	36.0000000	Y
0.0007900	214.0008330	270873.	2.9500000	36.0000000	Y
0.0008168	214.3240410	262388.	2.9500000	36.0000000	Y
0.0008436	214.6173049	254406.	2.9500000	36.0000000	Y
0.0008704	214.8855597	246886.	2.9500000	36.0000000	Y
0.0008972	215.1333070	239793.	2.9500000	36.0000000	Y
0.0009239	215.3531522	233080.	2.9500000	36.0000000	Y
0.0009507	215.5570040	226729.	2.9500000	36.0000000	Y

0.0009775	215.7493940	220714.	2.9500000	36.0000000	Y
0.0010043	215.9177564	214996.	2.9500000	36.0000000	Y
0.0010311	216.0810673	209570.	2.9500000	36.0000000	Y
0.0010579	216.2255971	204401.	2.9500000	36.0000000	Y
0.0010846	216.3657837	199483.	2.9500000	36.0000000	Y
0.0011114	216.4896915	194788.	2.9500000	36.0000000	Y
0.0011382	216.6129905	190313.	2.9500000	36.0000000	Y
0.0011650	216.7183372	186028.	2.9500000	36.0000000	Y
0.0011918	216.8236840	181936.	2.9500000	36.0000000	Y
0.0012185	216.9189640	178016.	2.9500000	36.0000000	Y
0.0012453	217.0077021	174259.	2.9500000	36.0000000	Y
0.0012721	217.0964401	170660.	2.9500000	36.0000000	Y
0.0012989	217.1721073	167200.	2.9500000	36.0000000	Y
0.0013257	217.2460805	163878.	2.9500000	36.0000000	Y
0.0013524	217.3200538	160687.	2.9500000	36.0000000	Y
0.0013792	217.3834295	157613.	2.9500000	36.0000000	Y
0.0014060	217.4443734	154654.	2.9500000	36.0000000	Y
0.0014328	217.5053172	151806.	2.9500000	36.0000000	Y
0.0014596	217.5626383	149060.	2.9500000	36.0000000	Y
0.0014863	217.6121798	146407.	2.9500000	36.0000000	Y
0.0015131	217.6617212	143849.	2.9500000	36.0000000	Y
0.0015399	217.7112627	141379.	2.9500000	36.0000000	Y
0.0015667	217.7577973	138992.	2.9500000	36.0000000	Y
0.0015935	217.7974548	136681.	2.9500000	36.0000000	Y
0.0017006	217.9505893	128161.	2.9500000	36.0000000	Y
0.0018077	218.0753242	120636.	2.9500000	36.0000000	Y
0.0019148	218.1772283	113940.	2.9500000	36.0000000	Y
0.0020220	218.2692272	107949.	2.9500000	36.0000000	Y
0.0021291	218.3413565	102551.	2.9500000	36.0000000	Y

Summary of Results for Nominal Moment Capacity for Section 1

Load No.	Axial Thrust kips	Nominal Moment Capacity in-kips
1	0.00000000	218.3413565420

Note that the values in the above table are not factored by a strength reduction factor for LRFD.

The value of the strength reduction factor depends on the provisions of the LRFD code being followed.

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to the LRFD structural design standard being followed.

Computed Values of Pile Loading and Deflection
for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 3000.0 lbs
Applied moment at pile head = 0.0 in-lbs
Axial thrust load on pile head = 0.0 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch

0.00	0.7637	-1.15E-06	3000.	-0.01527	1.38E-07	4.64E+08	0.00	0.00	0.00
0.09000	0.7472	3240.	3000.	-0.01527	389.1951	4.64E+08	0.00	0.00	0.00
0.1800	0.7307	6480.	3000.	-0.01526	778.3902	4.64E+08	0.00	0.00	0.00
0.2700	0.7142	9720.	3000.	-0.01524	1168.	4.64E+08	0.00	0.00	0.00
0.3600	0.6978	12960.	3000.	-0.01521	1557.	4.64E+08	0.00	0.00	0.00
0.4500	0.6814	16200.	3000.	-0.01518	1946.	4.64E+08	0.00	0.00	0.00
0.5400	0.6650	19440.	3000.	-0.01514	2335.	4.64E+08	0.00	0.00	0.00
0.6300	0.6487	22680.	3000.	-0.01509	2724.	4.64E+08	0.00	0.00	0.00
0.7200	0.6324	25920.	3000.	-0.01503	3114.	4.64E+08	0.00	0.00	0.00
0.8100	0.6162	29160.	3000.	-0.01497	3503.	4.64E+08	0.00	0.00	0.00
0.9000	0.6001	32400.	3000.	-0.01489	3892.	4.64E+08	0.00	0.00	0.00
0.9900	0.5840	35640.	3000.	-0.01482	4281.	4.64E+08	0.00	0.00	0.00
1.0800	0.5681	38880.	3000.	-0.01473	4670.	4.64E+08	0.00	0.00	0.00
1.1700	0.5522	42120.	3000.	-0.01463	5060.	4.64E+08	0.00	0.00	0.00
1.2600	0.5365	45360.	3000.	-0.01453	5449.	4.64E+08	0.00	0.00	0.00
1.3500	0.5208	48600.	3000.	-0.01442	5838.	4.64E+08	0.00	0.00	0.00
1.4400	0.5053	51840.	3000.	-0.01431	6227.	4.64E+08	0.00	0.00	0.00
1.5300	0.4899	55080.	3000.	-0.01418	6616.	4.64E+08	0.00	0.00	0.00
1.6200	0.4747	58320.	3000.	-0.01405	7006.	4.64E+08	0.00	0.00	0.00
1.7100	0.4596	61560.	3000.	-0.01391	7395.	4.64E+08	0.00	0.00	0.00
1.8000	0.4446	64800.	3000.	-0.01376	7784.	4.64E+08	0.00	0.00	0.00
1.8900	0.4299	68040.	3000.	-0.01361	8173.	4.64E+08	0.00	0.00	0.00
1.9800	0.4153	71280.	3000.	-0.01345	8562.	4.64E+08	0.00	0.00	0.00
2.0700	0.4008	74520.	2952.	-0.01328	8951.	4.64E+08	-88.4365	238.2911	0.00
2.1600	0.3866	77657.	2855.	-0.01310	9328.	4.64E+08	-91.8260	256.5417	0.00
2.2500	0.3725	80687.	2754.	-0.01292	9692.	4.64E+08	-95.1274	275.7889	0.00
2.3400	0.3587	83605.	2649.	-0.01272	10043.	4.64E+08	-98.3391	296.1069	0.00
2.4300	0.3450	86409.	2542.	-0.01253	10380.	4.64E+08	-101.4594	317.5770	0.00
2.5200	0.3316	89095.	2430.	-0.01232	10702.	4.64E+08	-104.4867	340.2878	0.00
2.6100	0.3184	91659.	2316.	-0.01211	11010.	4.64E+08	-107.4192	364.3361	0.00
2.7000	0.3055	94098.	2198.	-0.01190	11303.	4.64E+08	-110.2552	389.8281	0.00
2.7900	0.2927	96408.	2078.	-0.01167	11581.	4.64E+08	-112.9931	416.8802	0.00
2.8800	0.2802	98586.	1954.	-0.01145	11842.	4.64E+08	-115.6309	445.6204	0.00
2.9700	0.2680	100629.	1828.	-0.01121	12088.	4.64E+08	-118.1669	476.1896	0.00
3.0600	0.2560	102535.	1699.	-0.01098	12317.	4.64E+08	-120.5992	508.7431	0.00
3.1500	0.2443	104299.	1568.	-0.01074	12529.	4.64E+08	-122.9259	543.4530	0.00
3.2400	0.2328	105921.	1434.	-0.01049	12723.	4.64E+08	-125.1451	580.5095	0.00
3.3300	0.2216	107396.	1297.	-0.01024	12901.	4.64E+08	-127.2547	620.1242	0.00
3.4200	0.2107	108723.	1159.	-0.00999	13060.	4.64E+08	-129.2527	662.5325	0.00
3.5100	0.2000	109900.	1018.	-0.00974	13201.	4.64E+08	-131.1369	707.9970	0.00
3.6000	0.1897	110923.	875.7400	-0.00948	13324.	4.64E+08	-132.9051	756.8118	0.00
3.6900	0.1796	111791.	731.3116	-0.00922	13429.	4.64E+08	-134.5549	809.3067	0.00
3.7800	0.1697	112502.	585.1667	-0.00896	13514.	4.64E+08	-136.0839	865.8534	0.00
3.8700	0.1602	113055.	437.4371	-0.00870	13580.	4.64E+08	-137.4894	926.8714	0.00
3.9600	0.1510	113447.	288.2576	-0.00843	13628.	4.64E+08	-138.7688	992.8364	0.00
4.0500	0.1420	113678.	137.7661	-0.00817	13655.	4.64E+08	-139.9192	1064.	0.00
4.1400	0.1333	113745.	-13.8965	-0.00791	13663.	4.64E+08	-140.9374	1142.	0.00
4.2300	0.1249	113648.	-166.5855	-0.00764	13652.	4.64E+08	-141.8200	1226.	0.00
4.3200	0.1168	113385.	-320.1525	-0.00738	13620.	4.64E+08	-142.5634	1318.	0.00
4.4100	0.1090	112956.	-474.4450	-0.00711	13569.	4.64E+08	-143.1635	1419.	0.00
4.5000	0.1014	112360.	-629.3059	-0.00685	13497.	4.64E+08	-143.6160	1529.	0.00
4.5900	0.09418	111597.	-784.5731	-0.00659	13405.	4.64E+08	-143.9159	1650.	0.00
4.6800	0.08720	110666.	-940.0788	-0.00633	13293.	4.64E+08	-144.0577	1784.	0.00
4.7700	0.08050	109566.	-1096.	-0.00608	13161.	4.64E+08	-144.0351	1932.	0.00
4.8600	0.07408	108299.	-1251.	-0.00582	13009.	4.64E+08	-143.8411	2097.	0.00
4.9500	0.06792	106864.	-1406.	-0.00557	12837.	4.64E+08	-143.4674	2281.	0.00
5.0400	0.06204	105262.	-1561.	-0.00532	12644.	4.64E+08	-142.9043	2488.	0.00
5.1300	0.05642	103492.	-1715.	-0.00508	12432.	4.64E+08	-142.1407	2721.	0.00
5.2200	0.05107	101558.	-1868.	-0.00484	12199.	4.64E+08	-141.1628	2985.	0.00
5.3100	0.04596	99458.	-2020.	-0.00461	11947.	4.64E+08	-139.9543	3289.	0.00
5.4000	0.04111	97195.	-2170.	-0.00438	11675.	4.64E+08	-138.4952	3638.	0.00
5.4900	0.03650	94771.	-2319.	-0.00416	11384.	4.64E+08	-136.7602	4046.	0.00
5.5800	0.03213	92187.	-2465.	-0.00394	11074.	4.64E+08	-134.7174	4528.	0.00
5.6700	0.02800	89446.	-2609.	-0.00373	10744.	4.64E+08	-131.3266	5066.	0.00
5.7600	0.02408	86552.	-2748.	-0.00352	10397.	4.64E+08	-126.4755	5672.	0.00
5.8500	0.02039	83510.	-2882.	-0.00332	10031.	4.64E+08	-121.3165	6427.	0.00
5.9400	0.01690	80327.	-3010.	-0.00313	9649.	4.64E+08	-115.7613	7397.	0.00
6.0300	0.01362	77009.	-3132.	-0.00295	9250.	4.64E+08	-109.6758	8698.	0.00
6.1200	0.01053	73563.	-3246.	-0.00278	8836.	4.64E+08	-102.8420	10550.	0.00
6.2100	0.00762	69997.	-3353.	-0.00261	8408.	4.64E+08	-94.8676	13440.	0.00

6.3000	0.00489	66320.	-3450.	-0.00245	7966.	4.64E+08	-84.9193	18739.	0.00
6.3900	0.00233	62544.	-3534.	-0.00230	7513.	4.64E+08	-70.5541	32674.	0.00
6.4800	-7.28E-05	58686.	-3557.	-0.00216	7049.	4.64E+08	27.9413	414572.	0.00
6.5700	-0.00233	54860.	-3504.	-0.00203	6590.	4.64E+08	70.5392	32695.	0.00
6.6600	-0.00445	51117.	-3421.	-0.00190	6140.	4.64E+08	82.9210	20127.	0.00
6.7500	-0.00644	47471.	-3327.	-0.00179	5702.	4.64E+08	90.9526	15252.	0.00
6.8400	-0.00831	43930.	-3226.	-0.00168	5277.	4.64E+08	96.9422	12596.	0.00
6.9300	-0.01007	40503.	-3119.	-0.00158	4865.	4.64E+08	101.7133	10905.	0.00
7.0200	-0.01173	37194.	-3007.	-0.00149	4468.	4.64E+08	105.6656	9727.	0.00
7.1100	-0.01330	34009.	-2891.	-0.00141	4085.	4.64E+08	109.0272	8855.	0.00
7.2000	-0.01478	30951.	-2771.	-0.00133	3718.	4.64E+08	111.9423	8181.	0.00
7.2900	-0.01618	28023.	-2649.	-0.00127	3366.	4.64E+08	114.5086	7643.	0.00
7.3800	-0.01751	25229.	-2524.	-0.00120	3031.	4.64E+08	116.7958	7203.	0.00
7.4700	-0.01878	22571.	-2397.	-0.00115	2711.	4.64E+08	118.8558	6835.	0.00
7.5600	-0.01999	20051.	-2267.	-0.00110	2409.	4.64E+08	120.7284	6522.	0.00
7.6500	-0.02115	17673.	-2136.	-0.00105	2123.	4.64E+08	122.4448	6251.	0.00
7.7400	-0.02227	15437.	-2003.	-0.00102	1854.	4.64E+08	124.0301	6015.	0.00
7.8300	-0.02335	13346.	-1868.	-9.83E-04	1603.	4.64E+08	125.5047	5805.	0.00
7.9200	-0.02439	11402.	-1732.	-9.54E-04	1370.	4.64E+08	126.8855	5618.	0.00
8.0100	-0.02541	9605.	-1594.	-9.29E-04	1154.	4.64E+08	128.1865	5448.	0.00
8.1000	-0.02640	7958.	-1455.	-9.09E-04	955.9381	4.64E+08	129.4195	5294.	0.00
8.1900	-0.02737	6462.	-1315.	-8.92E-04	776.2208	4.64E+08	130.5944	5153.	0.00
8.2800	-0.02833	5118.	-1173.	-8.79E-04	614.8011	4.64E+08	131.7195	5022.	0.00
8.3700	-0.02927	3928.	-1030.	-8.68E-04	471.8366	4.64E+08	132.8019	4900.	0.00
8.4600	-0.03020	2893.	-886.2972	-8.60E-04	347.4791	4.64E+08	133.8475	4786.	0.00
8.5500	-0.03113	2014.	-741.1945	-8.55E-04	241.8749	4.64E+08	134.8613	4679.	0.00
8.6400	-0.03205	1292.	-595.0118	-8.51E-04	155.1662	4.64E+08	135.8474	4578.	0.00
8.7300	-0.03297	728.3526	-447.7773	-8.48E-04	87.4911	4.64E+08	136.8091	4482.	0.00
8.8200	-0.03388	324.5401	-299.5160	-8.47E-04	38.9844	4.64E+08	137.7490	4391.	0.00
8.9100	-0.03480	81.3981	-150.2500	-8.47E-04	9.7777	4.64E+08	138.6693	4304.	0.00
9.0000	-0.03571	0.00	0.00	-8.47E-04	0.00	4.64E+08	139.5715	2111.	0.00

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

Pile-head deflection = 0.76368913 inches
Computed slope at pile head = -0.01527211 radians
Maximum bending moment = 113745. inch-lbs
Maximum shear force = -3557. lbs
Depth of maximum bending moment = 4.14000000 feet below pile head
Depth of maximum shear force = 6.48000000 feet below pile head
Number of iterations = 40
Number of zero deflection points = 1

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	3000.	M, in-lb	0.00	0.00	0.7637	-0.01527	-3557.	113745.

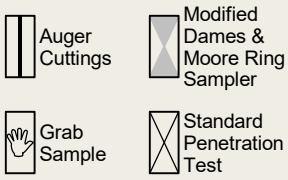
```
Maximum pile-head deflection = 0.7636891250 inches
Maximum pile-head rotation   = -0.0152721080 radians = -0.875027 deg.

The analysis ended normally.
```

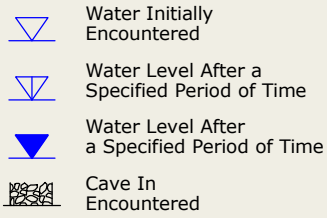
145 W Walnut St
Carson, CA

General Notes

Sampling



Water Level



Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

Field Tests

N	Standard Penetration Test Resistance (Blows/Ft.)
(HP)	Hand Penetrometer
(T)	Torvane
(DCP)	Dynamic Cone Penetrometer
UC	Unconfined Compressive Strength
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils
(More than 50% retained on No. 200 sieve.)
Density determined by Standard Penetration Resistance

Relative Density	Standard Penetration or N-Value (Blows/Ft.)	Ring Sampler (Blows/Ft.)
Very Loose	0 - 3	0 - 6
Loose	4 - 9	7 - 18
Medium Dense	10 - 29	19 - 58
Dense	30 - 50	59 - 98
Very Dense	> 50	> 99

Consistency of Fine-Grained Soils
(50% or more passing the No. 200 sieve.)
Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance

Consistency	Unconfined Compressive Strength Qu (tsf)	Standard Penetration or N-Value (Blows/Ft.)	Ring Sampler (Blows/Ft.)
Very Soft	less than 0.25	0 - 1	< 3
Soft	0.25 to 0.50	2 - 4	3 - 4
Medium Stiff	0.50 to 1.00	4 - 8	5 - 9
Stiff	1.00 to 2.00	8 - 15	10 - 18
Very Stiff	2.00 to 4.00	15 - 30	19 - 42
Hard	> 4.00	> 30	> 42

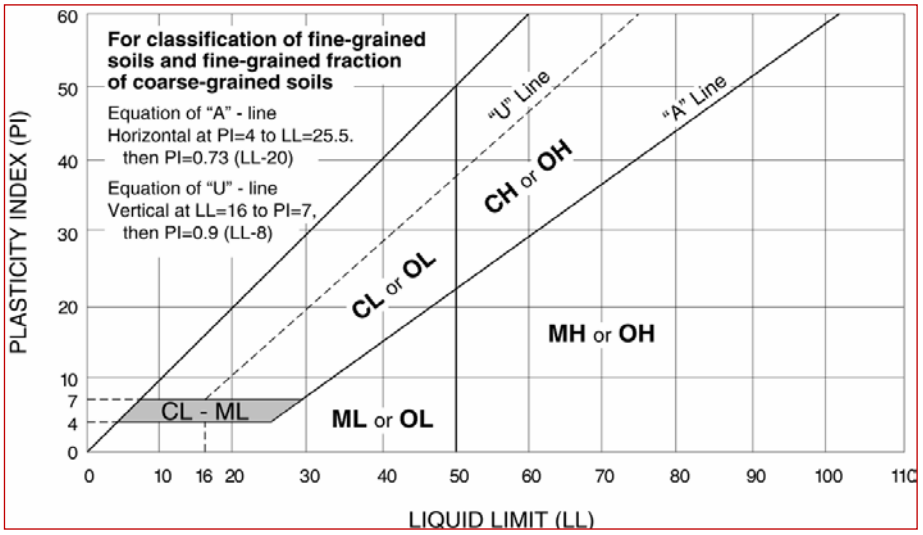
Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay [K, L, M, N]
					Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay [K, L, M, P]
					Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.



ATTACHMENT E

Phase I Environmental Site Assessment

PHASE I ENVIRONMENTAL SITE ASSESSMENT

FOXTAIL HYBRID SOLAR
JOE CARDOZA PARCELS
AVENUE 184
TULARE, CA 93274

REPORT DATE: JANUARY 27, 2022

PREPARED FOR

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Mark Larocque
PRESIDENT

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1.0 EXECUTIVE SUMMARY

Practical Environmental Solutions (PES) was authorized by Samsung Solar Energy II LLC (Samsung Solar) to conduct a Phase I Environmental Site Assessment (ESA) of the Foxtail Hybrid Solar project located along Avenue 184 in Tulare, Tulare County, California ("the Site"). PES has conducted this ESA in general accordance with the scope and limitations of ASTM Designation E1527-21, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process."

The Site consists of one parcel totaling 472.45 acres. The parcel is owned by Joe Cardoza (Parcel #228-050-020). The Site area is used as farm land with a small shed and several water wells on the parcel. Vehicle access to the Site is provided via Avenue 184 which to the south of the parcel. No significant environmental conditions were noted on the project. The Substation for the project is located adjacent to the southeast along Avenue 184.

The Site is situated within a residential & agricultural area of Tulare. The Site is bound to the north by farm land and several farm buildings; to the south by farm land; to the east by farm land and a residential parcel; and to the west by a farm land. Based upon topographic map interpretation and site observations, groundwater flow beneath the Site is inferred to be in a southwesterly direction.

The Site is not listed in the regulatory databases reviewed in Section 4.1.1 of this report.

CONCLUSIONS

PES has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of the Foxtail Hybrid Solar project located along Avenue 184 in Tulare, Tulare County, California. Any exceptions to or deletions from this practice are described in Section 2.4 of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) in connection with the Site. No further actions or investigations are warranted at this time.

2.0 INTRODUCTION

Practical Environmental Solutions (PES) was retained by Samsung Solar to conduct a Phase I Environmental Site Assessment of the Foxtail Hybrid Solar project located along Avenue 184 in Tulare, Tulare County, California. The protocol used for this assessment is in general conformance with ASTM E1527-21, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process scope of work for Phase I Environmental Site Assessments."

PES assessed the possible presence of petroleum products and hazardous materials at the Site. PES's investigation included review of aerial photos, review of adjoining properties, background research, and review of available local, state, and federal regulatory records regarding the presence of petroleum products and/or hazardous materials at the Site.

PES contracted Environmental Data Resources of Shelton, CT (EDR) to perform a computer database search for local, state, and Federal regulatory records pertaining to environmental concerns for the Site and properties in the vicinity of the Site (see Section 4.0).

2.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to identify existing or potential Recognized Environmental Conditions (RECs) (as defined by ASTM Standard E1527-21) in connection with the Site. PES understands that the findings of this study will be used by Samsung Solar to evaluate a pending financial transaction in connection with the Site.

2.2 Scope of Services

PES has performed a Phase I Environmental Site Assessment on the Site in general conformance with the scope and limitations of ASTM Practice E1527-21. Any exceptions to or deletions from this practice are described in the body of this report.

In general, the scope of this assessment consisted of reviewing readily available information and environmental data relating to the Site; interviewing readily available persons knowledgeable about the Site; reviewing readily available maps, aerial photographs and records maintained by federal, state, and local regulatory agencies.

2.3 Assumptions

There is a possibility that even with the proper application of these methodologies there may exist on the Site conditions that could not be identified within the scope of the assessment or that were not reasonably identifiable from the available information. PES believes that the information obtained from the record review and the interviews concerning the Site is reliable.

2.4 Limitations and Exceptions (Data Gaps)

The findings and conclusions contain all of the limitations inherent in these methodologies that are referred to in ASTM E1527-21. Specific limitations and exceptions to this ESA are more specifically set forth below:

- PES encountered data limitations by not interviewing past Site owners, tenants, or adjoining property owners, as none were available for comment, did not respond to requests to information, or did not exist. However, based on our review of the available municipal, regulatory, and historical information, the absence of information obtained from interviews with these individuals is not considered significant to the findings, conclusions, or recommendations of this assessment.

2.5 Special Terms and Conditions

Authorization to perform this work was given by a directive from Samsung Solar.

The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the client. No subsurface exploratory drilling or sampling was done under the scope of this work. Unless specifically stated otherwise in the report, no chemical analyses have been performed during the course of this ESA.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This is subject to the limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollections of those persons contacted.

The content and conclusions provided by PES in this report are based solely on the information collected during our investigation and activities at the Site, our present understanding of the Site conditions, and our professional judgment in light of such information at the time this report was prepared. Part of the findings in this investigation is based on data provided by others. This report presents PES's professional opinion, and no warranty, expressed or implied, is made.

2.6 User Reliance

Samsung Solar and its affiliates (collectively, "Client") may use and rely upon this Report in connection with a planned loan securitization or planned financial transaction involving the Site.

3.0 SITE DESCRIPTION

3.1 User Provided Information

Pursuant to ASTM E1527-21, PES requested the following site information from Samsung Solar (User of this report) and from the site contact.

3.2 Location and Legal Description

The parcel is located along Avenue 184 in Tulare, Tulare County, CA. The Site is located in a residential-agricultural area of Tulare. According to the Tulare County Tax Assessor's Office, parcels total approx. 472.45 acres and owned by the Joe Cardoza and his family (since the 1950s). The tax parcel number is #228-050-020. The legal description is presented in Appendix A.

3.3 Site and Vicinity General Characteristics

The Site is situated within a residential & agricultural area of Tulare. The Site is bound to the north by farm land and several farm buildings; to the south by farm land; to the east by farm land and a residential parcel; and to the west by a farm land. Based upon topographic map interpretation and site observations, groundwater flow beneath the Site is inferred to be in a southwesterly direction.

3.4 Current Use of the Site

The Site consists of one parcel totaling 472.45 acres. The parcel is owned by Joe Cardoza (Parcel #228-050-020). The Site area is used as farm land with a small shed and several water wells on the parcel. Vehicle access to the Site is provided via Avenue 184 which to the south of the parcel. No significant environmental conditions were noted on the project. The Substation for the project is located adjacent to the southeast along Avenue 184.

3.5 Description of Site Improvements

The parcels are mainly farm land, with a small shed and several water wells. Electricity is provided to the Site by Southern Cal Edison. There are no sanitary sewer and potable water services on parcel.

3.6 Current Use of Adjoining Properties

During the vicinity review, PES noted the following land use on properties in the immediate vicinity of the Site.

North:	Areas immediately adjoining to the north of the Site include the following: farm land, farm buildings
South:	Areas immediately adjoining to the south of the Site include the following: farm land
East:	Areas immediately adjoining to the east of the Site include the following: farm land, residential land
West:	Areas immediately adjoining to the west of the Site include the following: farm land
No recognized environmental conditions (RECs) were identified based on the current uses of the adjoining properties.	

4.0 RECORDS REVIEW

4.1 Standard Environmental Record Sources

4.1.1 State and Federal Regulatory Review

Information from standard Federal and state environmental record sources was provided through Environmental Data Resources (EDR). Data from governmental agency lists are updated and integrated into one database, which is updated as these data are released. This integrated database also contains postal service data in order to enhance address matching. Records from one government source are compared to records from another to clarify any address ambiguities. The demographic and geographic information available provides assistance in identifying and managing risk. The accuracy of the geocoded locations is approximately +/-300 feet.

In some cases, location information supplied by the regulatory agencies is insufficient to allow the database companies to geocode facility locations. These facilities are listed under the unmappables section within the EDR report. A review of the unmappable facilities indicated that none of these facilities are within the ASTM minimum search distance from the Site. These facilities are discussed under the appropriate database heading below.

Regulatory information from the following database sources were reviewed for information within the ASTM minimum search distance from the Site. Specific facilities are discussed below if the potential for a recognized environmental condition (REC) has resulted at the Site from the listed facilities. Please refer to Appendix A for a complete listing.

Federal NPL

The National Priorities List (NPL) is the U.S. Environmental Protection Agency (EPA) database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Superfund Program. *The Site is not listed as a NPL facility. No NPL sites are located within two mile radius of the Site.*

Federal Delisted NPL

The Delisted NPL is the U.S. EPA database of sites that have been deleted from the NPL where no further response is appropriate. *The Site is not listed as a Delisted NPL facility. No Delisted NPL sites are located within two mile radius of the Site.*

Federal CERCLIS List

The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list is a compilation of sites that the EPA has investigated or is currently investigating for a release or threatened release of hazardous substances. *The Site is not listed as a CERCLIS facility. No CERCLIS sites are listed within two mile radius of the Site.*

Federal CERCLIS NFRAP Sites List

The CERCLIS No Further Remedial Action Planned (NFRAP) List is a compilation of sites that the EPA has investigated, and has determined do not pose a threat to human health or the environment, under the CERCLA framework. *The Site is not listed as a CERCLIS-NFRAP facility. No CERCLIS-NFRAP sites are listed within two mile radius of Site.*

Federal RCRA CORRACTS Facilities List

The EPA Resource Conservation and Recovery Act (RCRA) Program identifies and tracks hazardous waste from the point of generation to the point of disposal. The CORRACTS database is the EPA's list of hazardous waste handlers subject to corrective action under RCRA. *The Site is not listed as a RCRA CORRACTS facility. No RCRA CORRACTS sites are listed within two mile radius of the Site.*

Federal RCRA Non-CORRACTS TSD Facilities List

The RCRA Non-CORRACTS Treatment, Storage and Disposal (TSD) database is a compilation by the EPA of reporting facilities that treat, store or dispose of hazardous waste. *The Site is not listed as a RCRA Non-CORRACTS TSD facility. No RCRA Non-CORRACTS TSD sites are listed within two mile radius of the Site.*

Federal RCRA Generators List

The RCRA program identifies and tracks hazardous waste from the point of generation to the point of disposal. The RCRA Generators database is a compilation by the EPA of reporting facilities that generate hazardous waste. *The Site is not listed as a RCRA facility. No RCRA Generator sites are listed on the adjoining properties or within the database radius.*

Federal Institutional Control / Engineering Control Registries

The U.S. institutional control (INST CONTROL) and engineering control (ENG CONTROL) registries include sites with engineering controls and institutional controls in place. Engineering controls including various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or affect human health. Institutional controls include administrative measures intended to prevent exposure to contaminants remaining on site. *No U.S. INST CONTROL or ENG CONTROL sites are listed on the Site.*

Federal ERNS

The Emergency Response Notification System (ERNS) is a national database used to collect information on reported releases of oil or hazardous substances. *No ERNS sites are listed for the Site.*

State CERCLIS-Equivalent List

The State maintains a State CERCLIS-equivalent list (SCL) of facilities under investigation that could be actually or potentially contaminated and presenting a possible threat to human health and the environment. *The Site is not listed as a SCL facility. No SCL sites are listed within two mile radius of the Site.*

Solid Waste/Landfill Facilities

A database of Solid Waste and/or Landfill (SWLF) facilities is maintained by the state. *The Site is not listed as a SWLF facility. No SWLF sites are listed within two mile radius of the Site.*

State Leaking Underground Storage Tank List

The State compiles lists of all leaking underground storage tanks (LUST). *The Site is not listed as a LUST facility. No LUST sites are listed within two mile radius of the Site.*

State Registered Storage Tank List

The State compiles a list of registered petroleum tank (i.e. underground and aboveground storage tank (UST/AST) locations. *The Site is not listed as a UST/AST facility. No registered UST/AST sites are listed within a two mile radius of the Site.*

State Institutional Control / Engineering Control Registries

The State compiles a list of INST CONTROL and ENG CONTROL sites. *No State INST CONTROL or ENG CONTROL sites are listed for the Site.*

State Voluntary Cleanup Sites

The State compiles a list of Voluntary Cleanup Program (VCP) sites. *No VCP facilities are listed for the Site. No VCP sites are listed within two mile radius of the Site.*

State Brownfields Sites

The State compiles a list of Brownfield sites. *No Brownfield facilities are listed for the Site. No Brownfield sites are listed within two mile radius of the Site.*

State SPILLS/OTHER sites

No SPILLS/OTHER sites are listed for the Site. No SPILLS or OTHER sites are listed within two mile radius of the Site.

4.1.2 Regulatory Agency Review

4.1.2.1 State Agency

A file review was performed for the Site with the State. This file review consisted of an online search of the State records by EDR. There are no current records on file for the Site with the State, other than what is described above in the EDR database findings.

4.1.2.2 Assessor

According the County Assessor's Office, no environmentally-related liens or deed restrictions have been recorded against the Site.

4.1.2.3 Fire Officials

Records from local Fire Department were reviewed for evidence indicating the presence of petroleum bulk storage tanks and for the use of hazardous materials. No current records were found for the Site address.

4.1.2.4 Planning/Building Department

Records from County Planning/Building Department were reviewed for evidence indicating the developmental history of the Site, and for the presence of documentation relative to petroleum bulk storage tanks. Land use was indicated as farm land and residential land.

4.2 Physical Setting Sources

4.2.1 Topography

The United States Geological Survey (USGS), Paige & Taylor Weir, CA Quadrangle 7.5 minute series topographic map was reviewed for this ESA. The map was published by the USGS in

2018. According to the contour lines on the topographic map, the Site is located at approximately 230 feet above mean sea level (MSL). The contour lines in the area of the Site indicate the area is sloping to the southwest.

4.2.2 Soils/Geology

Based on the on-line soil survey maps published by the USDA Soil Conservation Service, the Site soils consist of the following:

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
104	Biggriz-Biggriz, saline-Sodic, complex, 0 to 2 percent slopes	136.1	27.4%
108	Colpien loam, 0 to 2 percent slopes	359.9	72.6%
Totals for Area of Interest		496.0	100.0%

The estimated depth to bedrock at the Site is approximately >20 feet bgs. The site bedrock consists of marine and non-marine (continental) sedimentary rocks with extensive marine and non-marine sand deposits, generally near the coast or desert playas.

4.2.3 Hydrology

Based on the topography of the Site and vicinity, groundwater flow beneath the Site is inferred to be in a southwesterly direction. No surface water is located on the Site. No wetland areas were noted on the site other than the irrigation pond. The National Wetlands Inventory (NWI) map shows a small irrigation pond in the south central area of the parcel and an irrigation canal along the northern boundary of the parcel.

The EPA defines a sole or principal source aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. These areas may have no alternative drinking water source(s) that could physically, legally and economically supply all those who depend on the aquifer for drinking water. For convenience, all designated sole or principal source aquifers are referred to as "sole source aquifers" (SSA). This designation was made under Section 1424(e) of the Safe Drinking Water Act. The Site is not situated above a SSA.

4.2.4 Flood Zone Information

A review of the Flood Insurance Rate Maps, published by the Federal Emergency Management Agency (FEMA), was performed. According to Panel Number 06107C1250E, the majority of the Site is located in Flood Zone A. Flood Zone A regions consist of those areas that are within the 100-year flood zone. The northwest section of the parcel is in Zone X, outside the 100-year flood zone.

4.2.5 Oil and Gas Exploration

According to web-based information available from the State, the Site is mapped in an area where there is no current or historical exploration or production of oil, gas, or geothermal resources. According to the state mapping, there are no oil or gas wells are located within 1-mile of the project area.

4.3 Historical Use Information

The historical use of the Site was determined based on review of aerial photographs. The following briefly summarizes the developmental history of the Site.

4.3.1 Aerial Photographs

Available aerial photographs dated *1994, 2003, 2012, and 2021*, from Google Earth, were reviewed for this ESA. Copies of selected photographs are included in Appendix C of this report. The site appears as farm land in all the photos. Additionally, the substation area in the SE corner of the parcel is shown in all the photos.

4.3.2 Fire Insurance Maps

Fire insurance maps were created for insurance underwriters and often contain information regarding the uses of individual structures, and the locations of fuel and/or chemical storage tanks that may have historically been on a property. No fire insurance map collection was available for the Site area.

4.3.3 City Directories

Historical city directories were not available for the site. The lack of city directories does not represent a data gap for the report.

4.3.4 Chain of Title

A 50-year chain-of-title was not warranted for this study. Historical use of the Site was researched using other standard historical sources. The site is owned by the by the Joe Cardoza (since the 1950s). PES reviewed the deed for the parcels. PES noted no environmental liens or issues in the title report.

4.3.5 Additional Environmental Record Sources

No additional environmental record sources were available for the project area. PES interviewed the property owner (Joe Cardoza). Mr. Cardozo is unaware of any fuel tanks or other environmental issues on the parcels. PES also contact the county health department. The health department had no records or files for the property area.

4.3.6 Historical Use Information on Adjoining Properties

By review of the standard historical sources referenced above, the historical uses of the adjoining properties were similar to the current usage in all aerial photos.

5.0 SITE REVIEW

5.1 General Site Characteristics

The Site is farm land. Vehicle access to the Site is provided off of Avenue 184. No significant surface features or environmental issues were noted on the Site during the review.

5.1.1 Solid Waste Disposal

No solid waste disposal or dumping was noted on the Site.

5.1.2 Surface Water Drainage

There are no current surface water bodies on the parcel. Surface drainage flows to the southwest.

5.1.3 Wells and Cisterns

No aboveground evidence of cisterns or wells were noted during the Site review.

5.1.4 Wastewater

No indications of industrial wastewater disposal or treatment facilities were noted during the Site review. There is no sanitary waste water generated at the property.

5.1.5 Additional Site Observations

No additional relevant general Site characteristics were noted.

5.2 Potential Environmental Conditions

5.2.1 Hazardous Materials and Petroleum Products Used or Stored at the Site

No evidence of the use of hazardous materials or wastes was noted on the Site during the site review. The project area has been used as farm land recently and historically. It is likely that pesticides and fertilizers have been used on the site.

5.2.1.1 Unlabeled Containers and Drums

No unlabeled containers or drums were noted during the Site review.

5.2.1.2 Disposal Locations of Regulated/ Hazardous Waste

No obvious indications of hazardous waste generation, storage or disposal were noted on the Site or were indicated during interviews.

5.2.2 Evidence of Releases

No obvious indications of hazardous material or petroleum product releases, such as stained areas or stressed vegetation, was noted during the Site review.

5.2.3 Polychlorinated Biphenyls (PCBs)

Older transformers and other electrical equipment could contain polychlorinated biphenyls (PCBs) at a level that subjects them to regulation by the U.S. EPA. PCBs in electrical equipment are controlled by United States Environmental Protection Agency regulations 40 CFR, Part

761. Under the regulations, there are three categories into which electrical equipment can be classified:

- Less than 50 parts per million (PPM) of PCBs – "*Non-PCB" transformer*
- 50 ppm-500 ppm – "PCB-Contaminated" electrical equipment
- Greater than 500 ppm – "*PCB" transformer*

PES noted several pole mounted electrical transformers along the perimeter of the parcel and several pad transformers in the substation to the southeast. All the transformers are labeled as non-PCB containing. No staining or leakage was noted around any of the units. No other electrical equipment expected to contain PCBs was noted on the Site during PES's review.

5.2.4 Landfills

No evidence of on-Site landfills were noted or reported during the Site review.

5.2.5 Pits, Ponds, Lagoons, Sumps, and Catch Basins

No evidence of on-Site pits, ponds, or lagoons was noted or reported during the Site review. No evidence of sumps or catch basins were noted or reported during the Site review.

5.2.6 On-Site ASTs and USTs

No evidence of underground storage tanks (USTs) or aboveground storage tanks (ASTs) was noted during the Site review.

5.2.7 Vapor Migration

During PES's Site observations, review of historical sources, and review of regulatory databases, no current or historical usage of chemicals of concern at the Site or reported release or other indication of subsurface contamination from an onsite source was evident. Additionally, no release or material threat of a release to the subsurface from an offsite source was identified. As such, a vapor migration concern was not identified for the Site during the course of this assessment.

5.2.8 Radiological Hazards

No radiological substances or equipment was noted or reported to be stored on the Site.

5.2.9 Drinking Water

The Site has several on-site irrigation wells but no drinking water wells.

5.2.10 Additional Hazard Observations

No additional hazards were noted on the Site.

5.2.11 Asbestos-Containing Materials (ACM)

No suspected areas of ACMs were noted on the parcel.

5.2.12 Radon

The U.S. EPA has prepared a map to assist National, State, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the

country into three Radon Zones, Zone 3 based on the EPA Action limit of 4.0 picoCuries per Liter (pCi/L). Review of the EPA Map of Radon Zones places the Site in Zone 2, where average predicted radon levels are higher than 4.0 pCi/L. Additionally, based on the undeveloped nature of the site, radon is not considered to be a concern for the Site.

5.2.13 Lead-Based Paint

No suspected areas of lead-based paints were noted on the parcel.

5.2.14 Mold

No suspected areas of mold were noted on the parcel.

6.0 INTERVIEWS

Interviews were conducted with the following individuals. Findings from these interviews are discussed in the appropriate sections in this report.

Contact Name	Affiliation	Telephone No	Date Interviewed	Comments
Tara Freitas	Assessor	559-636-5100	1-26-22	No issues known
Charlie Norman	Fire Department	559-802-9800	1-26-22	No issues known
Hector Ramos	Building-Planning	559-624-7000	1-26-22	No issues known
Miguel Herrara	County Health Dept	559-624-7000	1-26-22	No issues known
Joe Cardoza	Property owner	559-936-3671	1-26-22	No issues known

7.0 FINDINGS AND CONCLUSIONS

7.1 Findings

7.1.1 On-Site Environmental Conditions

No on-Site environmental conditions were identified during the course of this assessment.

7.1.2 Off-Site Environmental Conditions

No off-Site environmental conditions were identified during the course of this assessment..

7.1.3 Historical/Controlled Recognized Environmental Conditions (HRECs/CRECs)

No Historical Recognized Environmental Conditions (HRECs) or Controlled Recognized Environmental Conditions (CRECs) were identified on the Site during the course of this assessment.

7.1.4 De Minimis Environmental Conditions

The project area has been used as farm land currently and historically. There was likely use of pesticides and fertilizers on the site. Due to the general area all being under agricultural production, site soil and the surround area likely has residual materials in the soils that can be considered background levels. Any residual materials (pesticides or fertilizers) in the site soils would be considered a *de minimis* environmental condition.

7.2 Opinion

During the performance of this ESA, no environmental conditions were identified that likely would impact the Site.

7.3 Conclusions

PES has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-21 of the Foxtail Hybrid Solar project located along Avenue 184 in Tulare, Tulare County, CA (the Site). Any exceptions to or deletions from this practice are described in Section 2.4 of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) in connection with the Site.

7.4 Recommendations

No further actions or investigations are recommended at this time.

7.5 Deviations

This Phase I ESA substantially complies with the scope of services and E1527-21, as amended, except for exceptions and/or limiting conditions as discussed in Section 3.4.

8.0 REFERENCES

REPORTS, PLANS, AND OTHER DOCUMENTS REVIEWED:

Aerial Photographs – EDR - *1994, 2003, 2012, 2021*

EDR Radius Map Report

Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, Flood Insurance Map, Community Panel Number 06107C1250E

State or Federal radon info.

State Groundwater or Water Well Maps

State Oil and Gas Map reviewed

USEPA National Radon Survey, 1993.

USGS - 7.5 Minute Topographic Quadrangle

USGS Soil Survey (online)

PES Site Visit - 1-23-22

Owner Interview - Joe Cardoza - 1-26-22

AGENCIES CONTACTED:

County - Fire Department

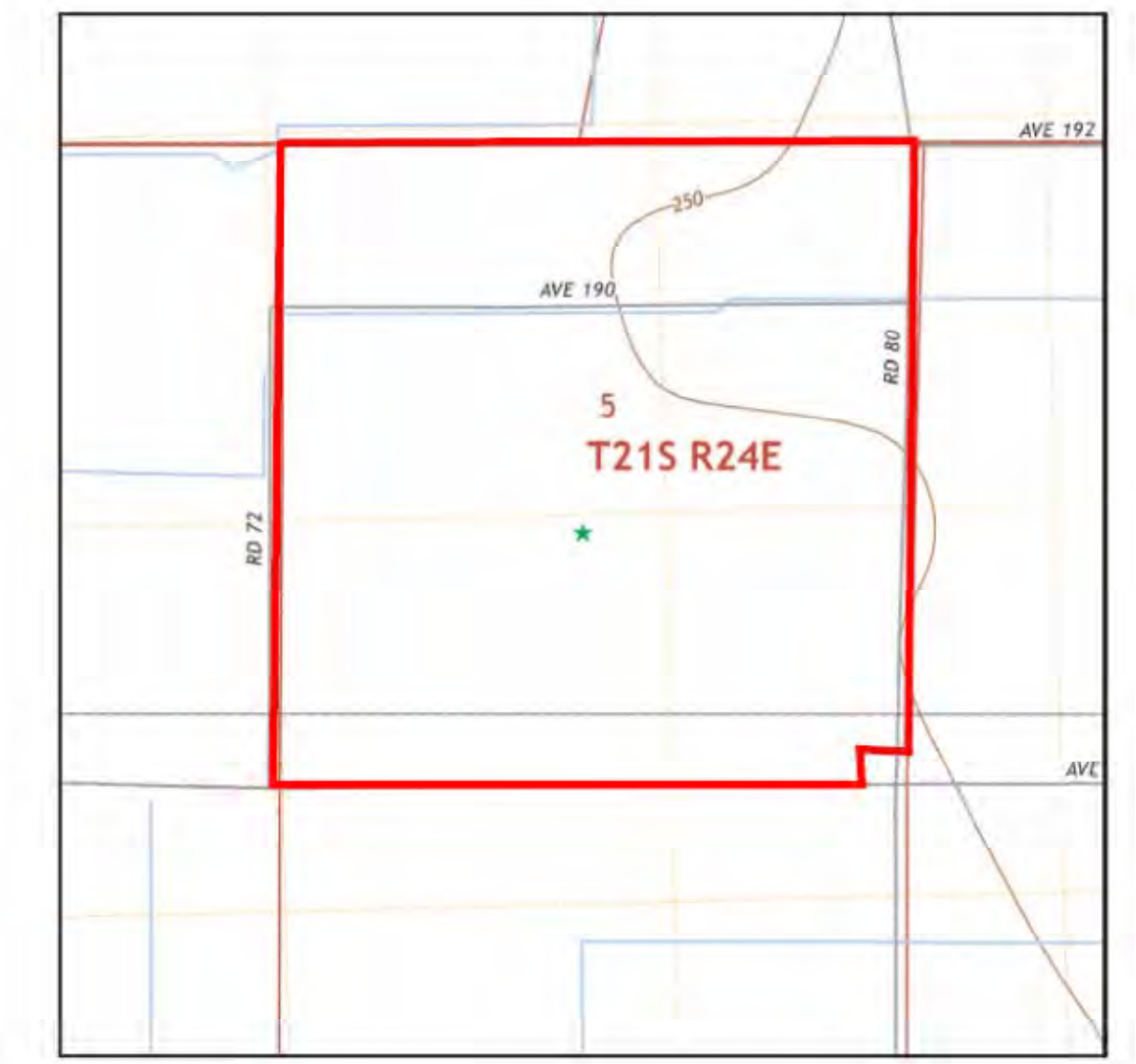
County - Tax Assessor

County - Building/Planning Dept.

County - Health Dept.

FIGURES

Figure 1 - Topo



Map Image Position: TP
Map Reference Code & Name: 12012211 Paige
Map State(s): CA
Version Date: 2018
Map Image Position: SW
Map Reference Code & Name: 12012245 Taylor Weir
Map State(s): CA
Version Date: 2018

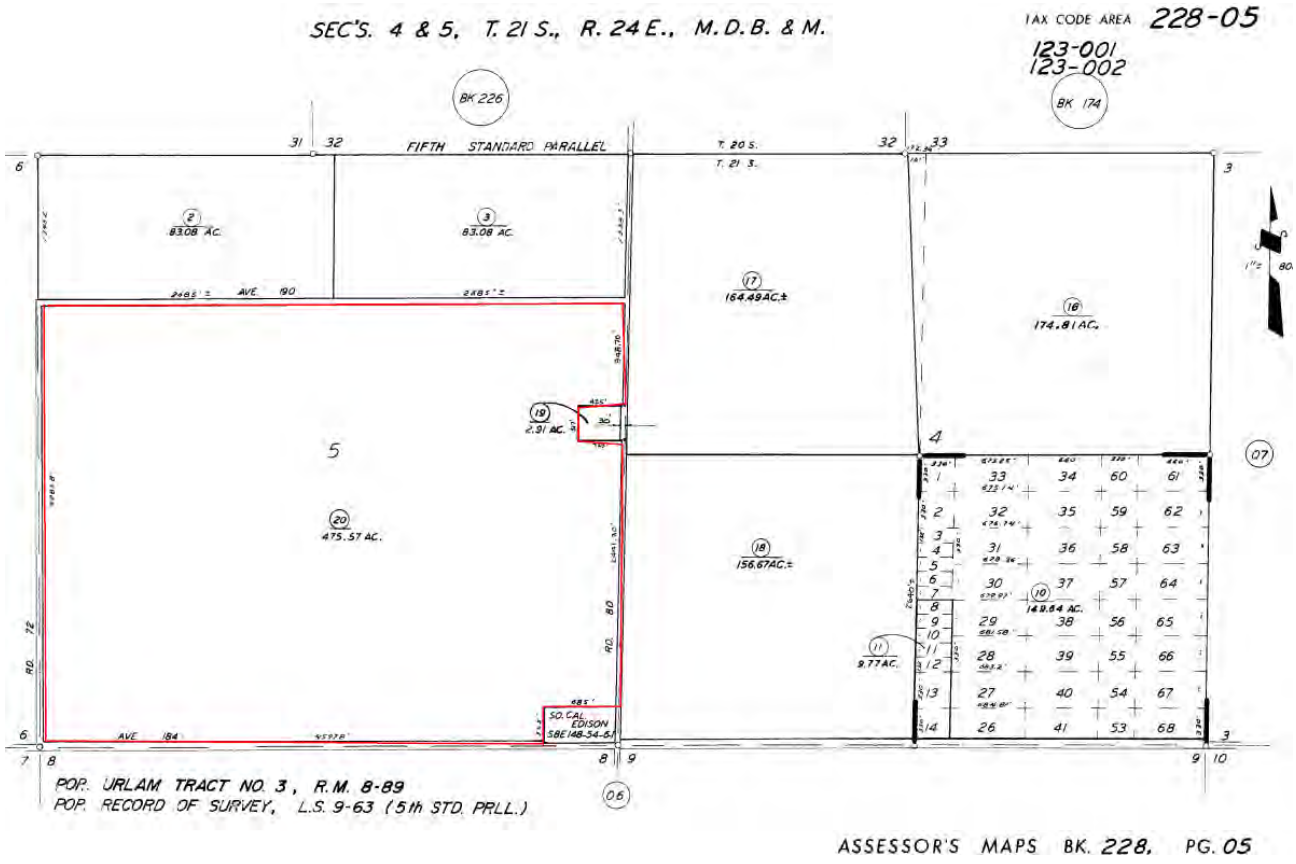
Figure 2 - Site Location



Figure 3 - Site Map



Figure 4 - Tax Parcel Map



APPENDIX A

ENVIRONMENTAL DATABASE
&
LEGAL DESCRIPTION

LEGAL DESCRIPTION

THAT PORTION OF SECTION 5, TOWNSHIP 21 SOUTH, RANGE 24 EAST, MOUNT DIABLO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT OF THE SURVEY OF SAID LAND ON FILE IN THE BUREAU OF LAND MANAGEMENT AT THE DATE Of THE ISSUANCE OF THE PATENT THEREOF, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT 1338.3 FEET SOUTH OF THE NORTHEAST CORNER OF SAID SECTION 5, THENCE WESTERLY 5370.0 FEET TO A POINT IN THE WEST LINE OF SAID SECTION 5, 1346.2 FEET SOUTH OF THE NORTHWEST CORNER THEREOF; THENCE SOUTH ALONG THE WEST LINE OF SAID SECTION 5, 4085.8 FEET TO THE SOUTHWEST CORNER THEREOF; THENCE EAST ALONG THE SOUTH LINE OF SAID SECTION 5, 5282.8 FEET TO THE SOUTHEAST CORNER THEREOF; THENCE NORTH ALONG THE EAST LINE OF SAID SECTION 5, 4062.3 FEET TO THE POINT OF BEGINNING. EXCEPTING THEREFROM THAT PORTION THEREOF CONVEYED TO SOUTHERN CALIFORNIA EDISON COMPANY, LTD., A CORPORATION, BY DEED DATED MARCH 29, 1930, RECORDED JUNE 7, 1932 IN BOOK 474, PAGE 242 OF OFFICIAL RECORDS, DISCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 5; THENCF NORTHERLY ALONG THE EAST LINE OF SAID SOUTHEAST QUARTER, A DISTANCE OF 355 FEET TO A POINT; THENCE WESTERLY PARALLEL TO THE SOUTH LINE OF SAID SOUTHEAST QUARTER, A DISTANCE OF 685 FEET TO A POINT; THENCE SOUTHERLY PARALLEL TO THE EAST LINE OF SAID SOUTHEAST QUARTER, A DISTANCE OF 355 FEET TO A POINT IN THE SOUTH LINE OF SAID SOUTHEAST QUARTER, THENCE EASTERLY ALONG SAID SOUTH LINE, 685 FEET TO THE POINT OF BEGINNING. ALSO EXCEPTING THEREFROM THAT PORTION OF SAID SECTION 5, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT 2287.0 FEET SOUTH OF THE NORTHEAST CORNER OF SAID SECTION 5, THENCE WESTERLY AND PARALLEL TO THE NORTH LINE OF SAID SECTION 425 FEET TO A POINT; THENCE SOUTHERLY AND PARALLEL TO THE EAST LINE OF SAID SECTION A DISTANCE OF 317 FEET TO A POINT; THENCE EASTERLY AND PARALLEL TO THE NORTH LINE OF SAID SECTION A DISTANCE OF 425 FEET TO A POINT ON THE EAST LINE OF SAID SECTION 5; THENCE NORTHERLY 317 FEET ALONG THE EAST LINE OF SAID SECTION TO THE POINT OF BEGINNING APN: 228-050-020-000

Foxtail Solar
Avenue 184
Tulare, CA 93274

Inquiry Number: 6827496.57s
January 20, 2022

FirstSearch Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Search Summary Report

TARGET SITE **AVENUE 184**
TULARE, CA 93274

Category	Sel	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	Y	0	0	0	0	0	0	0
NPL Delisted	Y	0	0	0	0	0	0	0
CERCLIS	Y	0	0	0	0	-	0	0
NFRAP	Y	0	0	0	0	-	0	0
RCRA COR ACT	Y	0	0	0	0	0	0	0
RCRA TSD	Y	0	0	0	0	-	0	0
RCRA GEN	Y	0	0	0	-	-	0	0
Federal IC / EC	Y	0	0	0	0	-	0	0
ERNS	Y	0	-	-	-	-	0	0
State/Tribal NPL	Y	0	0	0	0	0	0	0
State/Tribal CERCLIS	Y	0	0	0	0	0	0	0
State/Tribal SWL	Y	0	0	0	0	-	0	0
State/Tribal LTANKS	Y	0	0	0	0	-	0	0
State/Tribal Tanks	Y	0	0	0	-	-	0	0
State/Tribal VCP	Y	0	0	0	0	-	0	0
US Brownfields	Y	0	0	0	0	-	0	0
Other SWF	Y	0	0	0	0	-	0	0
Other Haz Sites	Y	0	0	0	-	-	0	0
Other Tanks	Y	0	0	0	-	-	0	0
Local Land Records	Y	0	0	0	0	-	0	0
Spills	Y	0	-	-	-	-	0	0
Other	Y	0	0	0	-	-	0	0
	- Totals --	0	0	0	0	0	0	0

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Search Summary Report

TARGET SITE: **AVENUE 184**
TULARE, CA 93274

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	NPL	10/20/2021	1.000	0	0	0	0	0	0	0
	Proposed NPL	10/20/2021	1.000	0	0	0	0	0	0	0
NPL Delisted	Delisted NPL	10/20/2021	1.000	0	0	0	0	0	0	0
CERCLIS	SEMS	10/20/2021	0.500	0	0	0	0	-	0	0
NFRAP	SEMS-ARCHIVE	10/20/2021	0.500	0	0	0	0	-	0	0
RCRA COR ACT	CORRACTS	09/13/2021	1.000	0	0	0	0	0	0	0
RCRA TSD	RCRA-TSDF	09/13/2021	0.500	0	0	0	0	-	0	0
RCRA GEN	RCRA-LQG	09/13/2021	0.250	0	0	0	-	-	0	0
	RCRA-SQG	09/13/2021	0.250	0	0	0	-	-	0	0
	RCRA-VSQG	09/13/2021	0.250	0	0	0	-	-	0	0
Federal IC / EC	US ENG CONTROLS	08/23/2021	0.500	0	0	0	0	-	0	0
	US INST CONTROLS	08/23/2021	0.500	0	0	0	0	-	0	0
ERNS	ERNS	09/13/2021	TP	0	-	-	-	-	0	0
State/Tribal NPL	RESPONSE	10/25/2021	1.000	0	0	0	0	0	0	0
State/Tribal CERCLIS	ENVIROSTOR	10/25/2021	1.000	0	0	0	0	0	0	0
State/Tribal SWL	SWF/LF	08/09/2021	0.500	0	0	0	0	-	0	0
State/Tribal LTANKS	LUST	09/07/2021	0.500	0	0	0	0	-	0	0
	INDIAN LUST	04/28/2021	0.500	0	0	0	0	-	0	0
	CPS-SLIC	09/07/2021	0.500	0	0	0	0	-	0	0
State/Tribal Tanks	UST	09/07/2021	0.250	0	0	0	-	-	0	0
	AST	07/06/2016	0.250	0	0	0	-	-	0	0
	INDIAN UST	04/28/2021	0.250	0	0	0	-	-	0	0
State/Tribal VCP	VCP	10/25/2021	0.500	0	0	0	0	-	0	0
US Brownfields	US BROWNFIELDS	06/10/2021	0.500	0	0	0	0	-	0	0

Search Summary Report

TARGET SITE: **AVENUE 184**
TULARE, CA 93274

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
Other SWF	WMUDS/SWAT	04/01/2000	0.500	0	0	0	0	-	0	0
Other Haz Sites	SCH	10/25/2021	0.250	0	0	0	-	-	0	0
	US CDL	05/18/2021	TP	0	-	-	-	-	0	0
Other Tanks	SWEEPS UST	06/01/1994	0.250	0	0	0	-	-	0	0
	CA FID UST	10/31/1994	0.250	0	0	0	-	-	0	0
Local Land Records	DEED	08/30/2021	0.500	0	0	0	0	-	0	0
Spills	HMIRS	09/12/2021	TP	0	-	-	-	-	0	0
	CHMIRS	09/30/2021	TP	0	-	-	-	-	0	0
	SPILLS 90	06/06/2012	TP	0	-	-	-	-	0	0
Other	RCRA NonGen / NLR	09/13/2021	0.250	0	0	0	-	-	0	0
	TSCA	12/31/2016	TP	0	-	-	-	-	0	0
	TRIS	12/31/2018	TP	0	-	-	-	-	0	0
	SSTS	10/18/2021	TP	0	-	-	-	-	0	0
	RAATS	04/17/1995	TP	0	-	-	-	-	0	0
	PRP	10/20/2021	TP	0	-	-	-	-	0	0
	PADS	11/19/2020	TP	0	-	-	-	-	0	0
	ICIS	11/18/2016	TP	0	-	-	-	-	0	0
	FTTS	04/09/2009	TP	0	-	-	-	-	0	0
	MLTS	07/29/2021	TP	0	-	-	-	-	0	0
	RADINFO	07/01/2019	TP	0	-	-	-	-	0	0
	INDIAN RESERV	12/31/2014	1.000	0	0	0	0	0	0	0
	US AIRS	10/12/2016	TP	0	-	-	-	-	0	0
	FINDS	05/05/2021	TP	0	-	-	-	-	0	0
	Cortese	09/20/2021	0.500	0	0	0	0	-	0	0
	CUPA Listings		0.250	0	0	0	-	-	0	0
	HAZNET	12/31/2019	0.250	0	0	0	-	-	0	0
	WDS	06/19/2007	TP	0	-	-	-	-	0	0
	- Totals --			0	0	0	0	0	0	0

Site Information Report

Request Date: JANUARY 20, 2022
Search Type: COORD
Request Name: MARK LAROCQUE
Job Number: 2022-020

Target Site: AVENUE 184
TULARE, CA 93274

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)		UTMs
Longitude:	119.402656	119.4026560 - 119ˆ 24' 9.56''	Easting:	283783.3
Latitude:	36.129147	36.1291470 - 36ˆ 7' 44.92''	Northing:	4000746.0
Elevation:	249 ft. above sea level		Zone:	Zone 11

Demographics

Sites: 0 **Non-Geocoded:** 0 **Population:** N/A

RADON

Federal EPA Radon Zone for TULARE County: 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 level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 93274

Number of sites tested: 9

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.544 pCi/L	100%	0%	0%
Living Area - 2nd Floor	0.600 pCi/L	100%	0%	0%
Basement	Not Reported	Not Reported	Not Reported	Not Reported

Federal Area Radon Information for TULARE COUNTY, CA

Number of sites tested: 59

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.846 pCi/L	97%	3%	0%
Living Area - 2nd Floor	0.600 pCi/L	100%	0%	0%
Basement	3.100 pCi/L	50%	50%	0%

Site Information Report

RADON

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
93274	92	27

Target Site Summary Report

Target Property: AVENUE 184
TULARE, CA 93274

JOB: 2022-020

TOTAL: 0 GEOCODED: 0 NON GEOCODED: 0

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.

No sites found for target address

NO SITES FOUND

Database Descriptions

NPL: NPL National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices. NPL - National Priority List Proposed NPL - Proposed National Priority List Sites.

NPL Delisted: Delisted NPL The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. Delisted NPL - National Priority List Deletions

CERCLIS: SEMS SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL. SEMS - Superfund Enterprise Management System

NFRAP: SEMS-ARCHIVE SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site. SEMS-ARCHIVE - Superfund Enterprise Management System Archive

RCRA COR ACT: CORRACTS CORRACTS identifies hazardous waste handlers with RCRA corrective action activity. CORRACTS - Corrective Action Report

RCRA TSD: RCRA-TSDF RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste. RCRA-TSDF - RCRA - Treatment, Storage and Disposal

RCRA GEN: RCRA-LQG RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. RCRA-LQG - RCRA - Large Quantity Generators RCRA-SQG - RCRA - Small Quantity Generators. RCRA-VSQG - RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators).

Federal IC / EC: US ENG CONTROLS A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. US ENG CONTROLS - Engineering Controls Sites List US INST CONTROLS - Institutional Controls Sites List.

Database Descriptions

ERNS: ERNS Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances. ERNS - Emergency Response Notification System

State/Tribal NPL: RESPONSE Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk. RESPONSE - State Response Sites

State/Tribal CERCLIS: ENVIROSTOR The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites. ENVIROSTOR - EnviroStor Database

State/Tribal SWL: SWF/LF (SWIS) Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites. SWF/LF (SWIS) - Solid Waste Information System

State/Tribal LTANKS: LUST REG 8 RIVERSIDE CO. LUST - Listing of Underground Tank Cleanup Sites. ORANGE CO. LUST - List of Underground Storage Tank Cleanups. SAN MATEO CO. LUST - Fuel Leak List. LUST - Leaking Underground Fuel Tank Report (GEOTRACKER). LUST REG 7 - Leaking Underground Storage Tank Case Listing. SONOMA CO. LUST - Leaking Underground Storage Tank Sites. LUST REG 5 - Leaking Underground Storage Tank Database. LUST SANTA CLARA - LOP Listing. SAN DIEGO CO. SAM - Environmental Case Listing. LUST REG 4 - Underground Storage Tank Leak List. SAN FRANCISCO CO. LUST - Local Oversite Facilities. LUST REG 6V - Leaking Underground Storage Tank Case Listing. NAPA CO. LUST - Sites With Reported Contamination. LUST REG 3 - Leaking Underground Storage Tank Database. LUST REG 2 - Fuel Leak List. LUST REG 6L - Leaking Underground Storage Tank Case Listing. VENTURA CO. LUST - Listing of Underground Tank Cleanup Sites. SOLANO CO. LUST - Leaking Underground Storage Tanks. LUST REG 1 - Active Toxic Site Investigation. LUST REG 9 - Leaking Underground Storage Tank Report. California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database. LUST REG 9 - Leaking Underground Storage Tanks INDIAN LUST R10 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R5 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R4 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R9 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R1 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R7 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R8 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R6 - Leaking Underground Storage Tanks on Indian Land. CPS-SLIC - Statewide SLIC Cases (GEOTRACKER). SLIC REG 1 - Active Toxic Site Investigations. SLIC REG 2 - Spills, Leaks, Investigation & Cleanup Cost Recovery Listing. SLIC REG 3 - Spills, Leaks, Investigation & Cleanup Cost Recovery Listing. SLIC REG 4 - Spills, Leaks, Investigation & Cleanup Cost Recovery Listing. SLIC REG 5 - Spills, Leaks, Investigation & Cleanup Cost Recovery Listing. SLIC REG 6V - Spills, Leaks, Investigation & Cleanup Cost Recovery Listing. SLIC REG 6L - SLIC Sites. SLIC REG 7 - SLIC List. SLIC REG 8 - Spills, Leaks, Investigation & Cleanup Cost Recovery Listing. SLIC REG 9 - Spills, Leaks, Investigation & Cleanup Cost Recovery Listing. Sacramento Co. CS - Toxic Site Clean-Up List.

State/Tribal Tanks: UST CLOSURE MILITARY UST SITES - Military UST Sites (GEOTRACKER). UST - Active UST Facilities. Active UST facilities gathered from the local regulatory agencies UST - Active UST Facilities AST - Aboveground Petroleum Storage Tank Facilities. INDIAN UST R4 - Underground Storage Tanks on Indian Land. INDIAN UST R1 - Underground Storage Tanks on Indian Land. INDIAN UST R6 - Underground Storage Tanks on Indian Land. INDIAN UST R7 - Underground Storage Tanks on Indian Land. INDIAN UST R9 - Underground Storage Tanks on Indian Land. INDIAN UST R5 - Underground Storage Tanks on Indian Land. INDIAN UST R8 - Underground Storage Tanks on Indian Land. INDIAN UST R10 - Underground Storage Tanks on Indian Land.

Database Descriptions

State/Tribal VCP: VCP Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs. VCP - Voluntary Cleanup Program Properties

US Brownfields: US BROWNFIELDS Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs. US BROWNFIELDS - A Listing of Brownfields Sites

Other SWF: SAN DIEGO CO. LF LOS ANGELES CO. LF - List of Solid Waste Facilities. WMUDS/SWAT - Waste Management Unit Database. VENTURA CO. LF - Inventory of Illegal Abandoned and Inactive Sites. CA LA LF - City of Los Angeles Landfills. Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information. CA LA LF - Waste Management Unit Database

Other Haz Sites: SCH This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose. SCH - School Property Evaluation Program SAN DIEGO CO. HMMD - Hazardous Materials Management Division Database. CERS HAZ WASTE - CERS HAZ WASTE. US CDL - Clandestine Drug Labs. PFAS - PFAS Contamination Site Location Listing. AQUEOUS FOAM - Former Fire Training Facility Assessments Listing.

Other Tanks: SWEEPS UST Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list. SWEEPS UST - SWEEPS UST Listing ALAMEDA CO. UST - Underground Tanks. KERN CO. UST - Underground Storage Tank Sites & Tank Listing. MARIN CO. UST - Underground Storage Tank Sites. NAPA CO. UST - Closed and Operating Underground Storage Tank Sites. ORANGE CO. UST - List of Underground Storage Tank Facilities. RIVERSIDE CO. UST - Underground Storage Tank Tank List. SAN FRANCISCO CO. UST - Underground Storage Tank Information. SOLANO CO. UST - Underground Storage Tanks. SUTTER CO. UST - Underground Storage Tanks. VENTURA CO. UST - Underground Tank Closed Sites List. LOS ANGELES UST - Active & Inactive UST Inventory. YOLO CO. UST - Underground Storage Tank Comprehensive Facility Report. EL SEGUNDO UST - City of El Segundo Underground Storage Tank. LONG BEACH UST - City of Long Beach Underground Storage Tank. UST MENDOCINO - Mendocino County UST Database. UST SAN JOAQUIN - San Joaquin Co. UST. TORRANCE UST - City of Torrance Underground Storage Tank. SAN FRANCISCO AST - Aboveground Storage Tank Site Listing. LOS ANGELES AST - Active & Inactive AST Inventory. CA FID UST - Facility Inventory Database. CERS TANKS - California Environmental Reporting System (CERS) Tanks.

Local Land Records: DEED Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners. DEED - Deed Restriction Listing

Database Descriptions

Spills: HMIRS Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT. HMIRS - Hazardous Materials Information Reporting System CHMIRS - California Hazardous Material Incident Report System. Orange Co. Industrial Site - List of Industrial Site Cleanups. SPILLS 90 - SPILLS90 data from FirstSearch.

Other: RCRA NonGen / NLR RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste. RCRA NonGen / NLR - RCRA - Non Generators / No Longer Regulated FEDLAND - Federal and Indian Lands. TSCA - Toxic Substances Control Act. TRIS - Toxic Chemical Release Inventory System. SSTS - Section 7 Tracking Systems. RAATS - RCRA Administrative Action Tracking System. PRP - Potentially Responsible Parties. PADS - PCB Activity Database System. ICIS - Integrated Compliance Information System. FTTS - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act). FTTS INSP - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act). MLTS - Material Licensing Tracking System. RADINFO - Radiation Information Database. BRS - Biennial Reporting System. INDIAN RESERV - Indian Reservations. US AIRS (AFS) - Aerometric Information Retrieval System Facility Subsystem (AFS). US AIRS MINOR - Air Facility System Data. FINDS - Facility Index System/Facility Registry System. CORTESE - "Cortese" Hazardous Waste & Substances Sites List. CUPA - CUPA Resources List. CUPA AMADOR - CUPA Facility List. CUPA BUTTE - CUPA Facility Listing. CUPA CALVERAS - CUPA Facility Listing. CUPA COLUSA - CUPA Facility List. CUPA DEL NORTE - CUPA Facility List. CUPA EL DORADO - CUPA Facility List. CUPA FRESNO - CUPA Resources List. CUPA HUMBOLDT - CUPA Facility List. CUPA SAN FRANCISCO CO - CUPA Facility Listing. CUPA GLENN - CUPA Facility List. CUPA IMPERIAL - CUPA Facility List. CUPA LIVERMORE-PLEASANTON - CUPA Facility Listing. CUPA PLUMAS - CUPA Facility List. CUPA TEHAMA - CUPA Facility List. CUPA SAN BENITO - CUPA Facility List. CUPA STANISLAUS - CUPA Facility List. CUPA TRINITY - CUPA Facility List. CUPA LASSEN - CUPA Facility List. CUPA TULARE - CUPA Facility List. CUPA INYO - CUPA Facility List. CUPA KINGS - CUPA Facility List. CUPA LAKE - CUPA Facility List. CUPA MADERA - CUPA Facility List. CUPA MERCED - CUPA Facility List. CUPA MONO - CUPA Facility List. CUPA MONTEREY - CUPA Facility Listing. CUPA NEVADA - CUPA Facility List. CUPA SAN LUIS OBISPO - CUPA Facility List. CUPA SANTA BARBARA - CUPA Facility Listing. CUPA SANTA CLARA - Cupa Facility List. CUPA SANTA CRUZ - CUPA Facility List. CUPA SHASTA - CUPA Facility List. CUPA SONOMA - Cupa Facility List. CUPA TUOLUMNE - CUPA Facility List. KERN CO CUPA - CUPA Facility List. CUPA YUBA - CUPA Facility List. HAZNET - Facility and Manifest Data. Sacramento Co. ML - Master Hazardous Materials Facility List. San Bern. Co. Permit - Hazardous Material Permits. LA Co. Site Mitigation - Site Mitigation List. UIC GEO - Underground Injection Control Sites (GEOTRACKER). WDS - Waste Discharge System. MILITARY PRIV SITES - Military Privatized Sites (GEOTRACKER). PROJECT - Project Sites (GEOTRACKER). WDR - Waste Discharge Requirements Listing. SAN DIEGO CO LOP - Local Oversight Program Listing. CIWQS - California Integrated Water Quality System. CERS - CalEPA Regulated Site Portal Data. NON-CASE INFO - Non-Case Information Sites (GEOTRACKER). OTHER OIL GAS - Other Oil & Gas Projects Sites (GEOTRACKER). PROD WATER PONDS - Produced Water Ponds Sites (GEOTRACKER). SAMPLING POINT - Sampling Point ? Public Sites (GEOTRACKER). WELL STIM PROJ - Well Stimulation Project (GEOTRACKER). HWTS - Hazardous Waste Tracking System. MINES MRDS - Mineral Resources Data System. PCS - Permit Compliance System. PCS ENF - Enforcement data. PCS INACTIVE - Listing of Inactive PCS Permits. LOS ANGELES CO LF METHANE - Methane Producing Landfills.

Database Sources

NPL: EPA

Updated Quarterly

NPL Delisted: EPA

Updated Quarterly

CERCLIS: EPA

Updated Quarterly

NFRAP: EPA

Updated Quarterly

RCRA COR ACT: EPA

Updated Quarterly

RCRA TSD: Environmental Protection Agency

Updated Quarterly

RCRA GEN: Environmental Protection Agency

Updated Quarterly

Federal IC / EC: Environmental Protection Agency

Varies

ERNS: National Response Center, United States Coast Guard

Updated Quarterly

State/Tribal NPL: Department of Toxic Substances Control

Updated Quarterly

State/Tribal CERCLIS: Department of Toxic Substances Control

Updated Quarterly

State/Tribal SWL: Department of Resources Recycling and Recovery

Updated Quarterly

State/Tribal LTANKS: State Water Resources Control Board

Updated Quarterly

Database Sources

State/Tribal Tanks: State Water Resources Control Board

Varies

State/Tribal VCP: Department of Toxic Substances Control

Updated Quarterly

US Brownfields: Environmental Protection Agency

Updated Semi-Annually

Other SWF: La County Department of Public Works

Varies

Other Haz Sites: Department of Toxic Substances Control

Updated Quarterly

Other Tanks: State Water Resources Control Board

No Update Planned

Local Land Records: DTSC and SWRCB

Updated Semi-Annually

Spills: U.S. Department of Transportation

Updated Quarterly

Other: Environmental Protection Agency

Updated Quarterly

Street Name Report for Streets near the Target Property

Target Property: AVENUE 184
TULARE, CA 93274

JOB: 2022-020

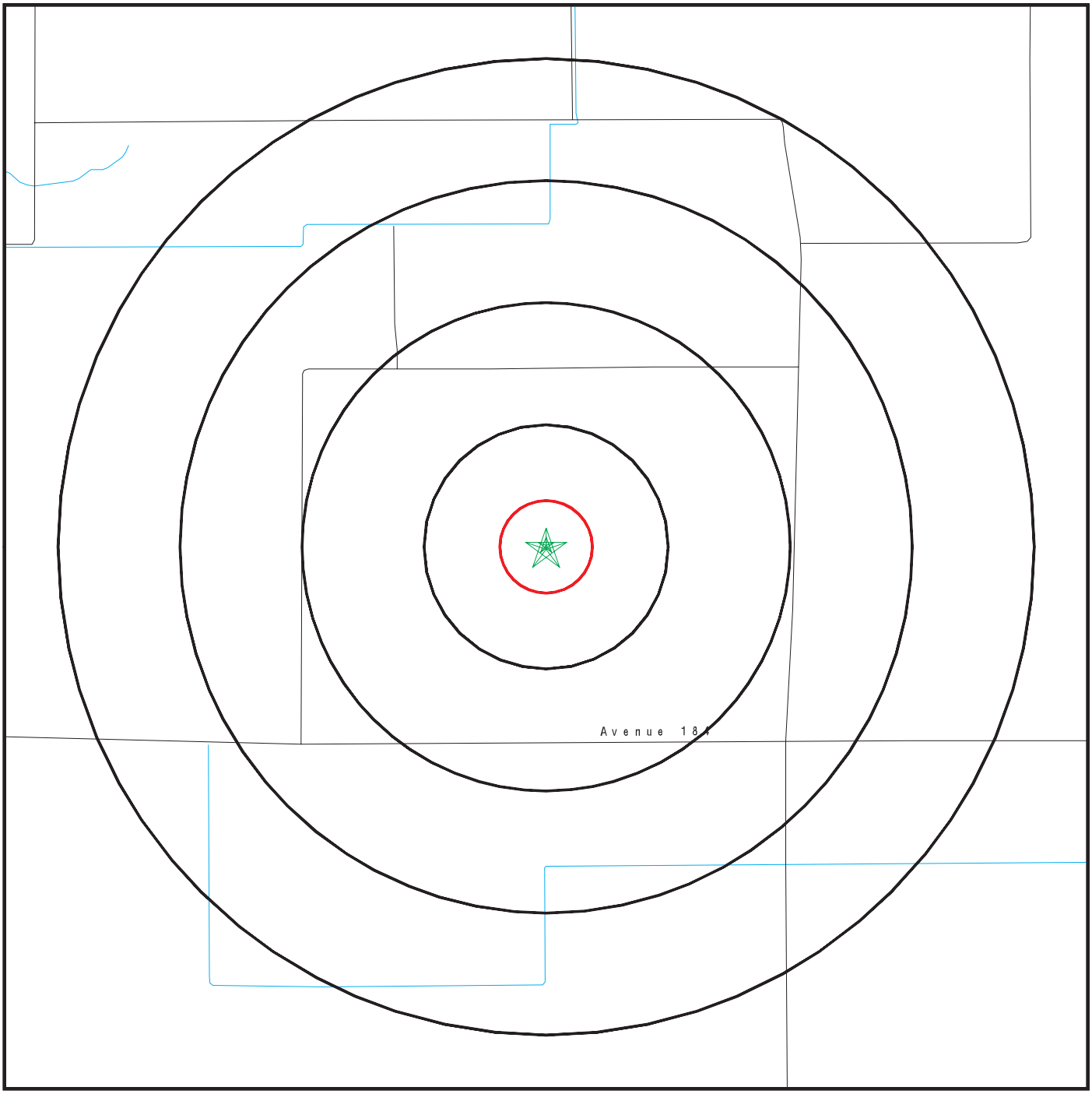
Street Name	Dist/Dir	Street Name	Dist/Dir

Environmental FirstSearch

1.000 Mile Radius

ASTM MAP: NPL, RCRACOR, STATES Sites

AVENUE 184 TULARE, CA 93274



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 36.129147 Longitude: 119.402656)

▲ Identified Sites

National Priority List Sites

Indian Reservations BIA

EDR Reference Code (EDR internal use only): 6827496.57s

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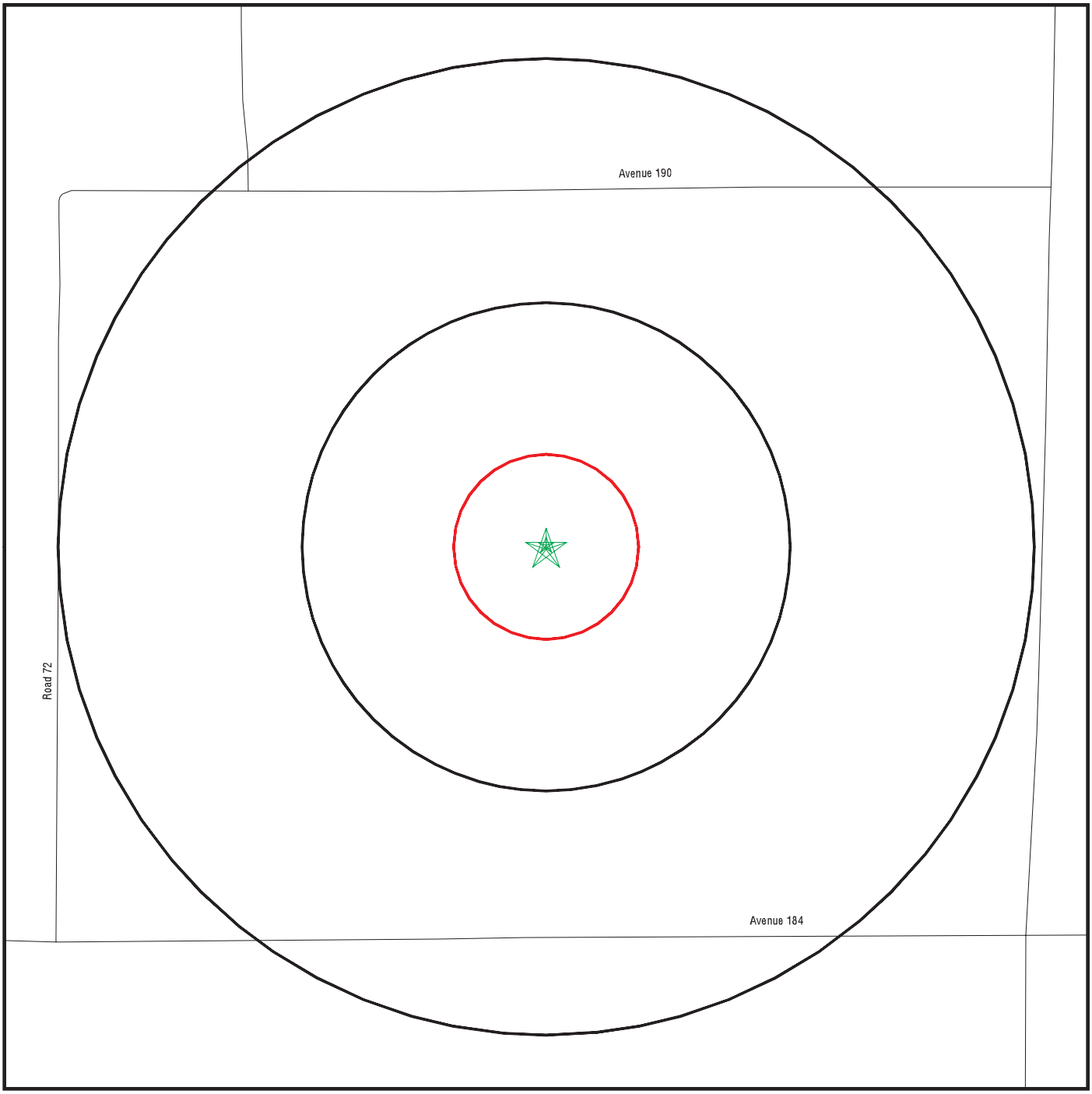
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Environmental FirstSearch

0.500 Mile Radius

ASTM MAP: CERCLIS, RCRATSD, LUST, SWL

AVENUE 184 TULARE, CA 93274



Black Rings Represent Qtr. Mile Radius; **Red Ring Represents 500 ft. Radius**

★ **Target Property (Latitude: 36.129147 Longitude: 119.402656)**

▲ **Identified Sites**

National Priority List Sites

Indian Reservations BIA

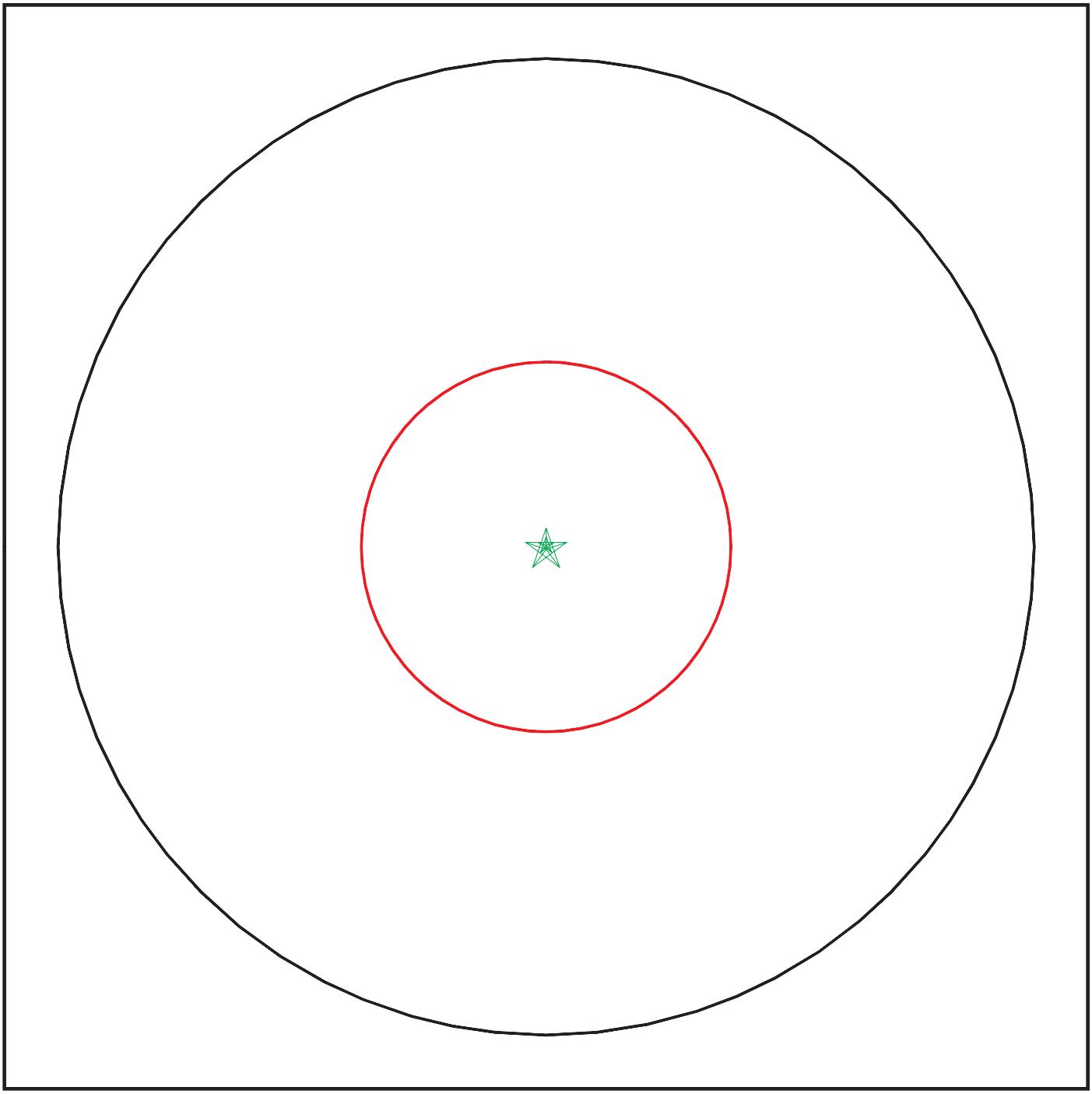
EDR Reference Code (EDR internal use only): 6827496.57s
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Environmental FirstSearch

0.25 Mile Radius

ASTM MAP: RCRAGEN, ERNS, UST, FED IC/EC, METH LABS

AVENUE 184 TULARE, CA 93274



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 36.129147 Longitude: 119.402656)

▲ Identified Sites

National Priority List Sites

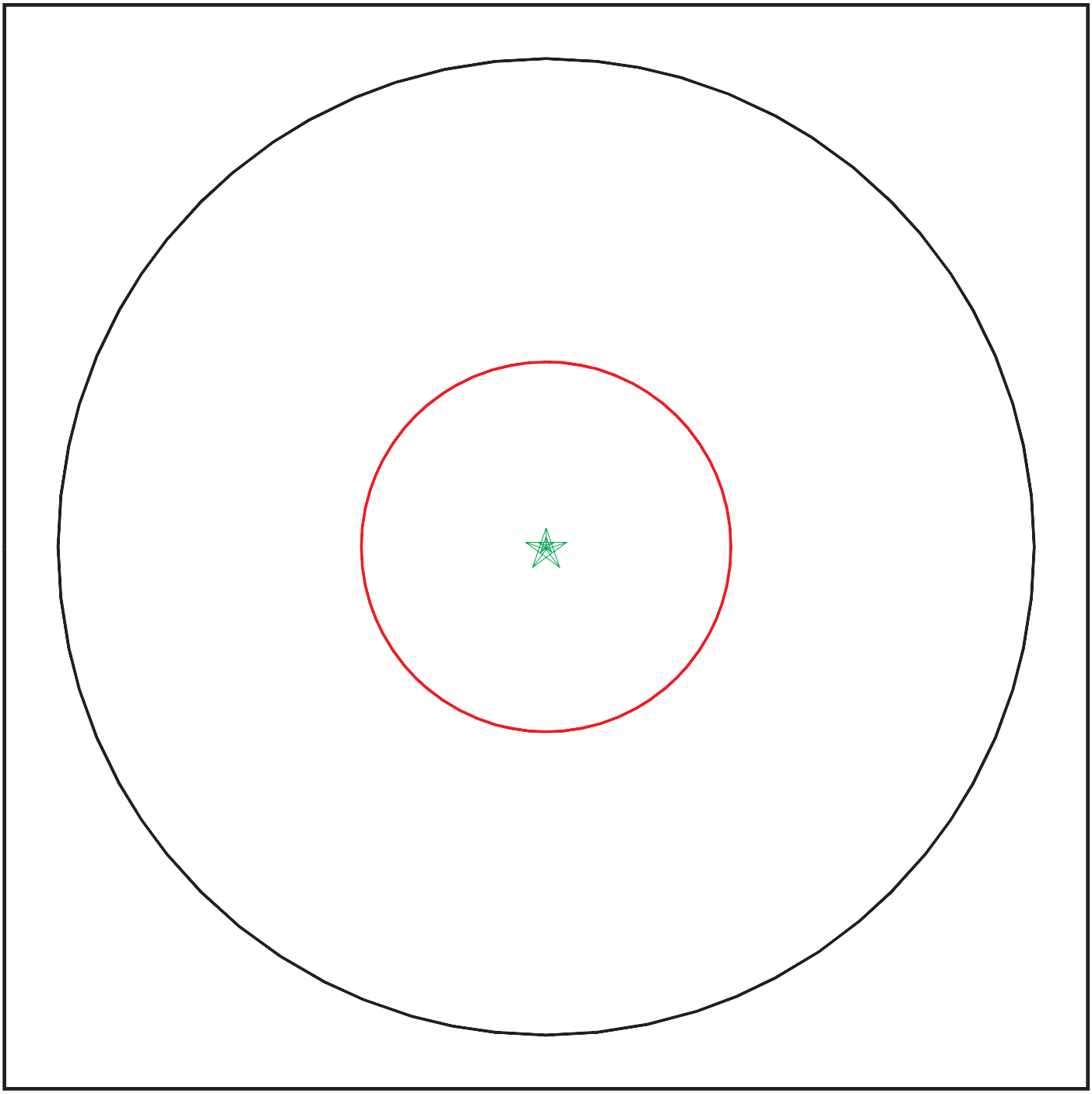
Indian Reservations BIA

EDR Reference Code (EDR Internal use only): 6827496.57s
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22-01-20.17:05:39.Thu

Environmental FirstSearch

0.25 Mile Radius
Non ASTM Map, Spills, FINDS

AVENUE 184 TULARE, CA 93274



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 36.129147 Longitude: 119.402656)

▲ Identified Sites

Sensitive Receptors

National Priority List Sites

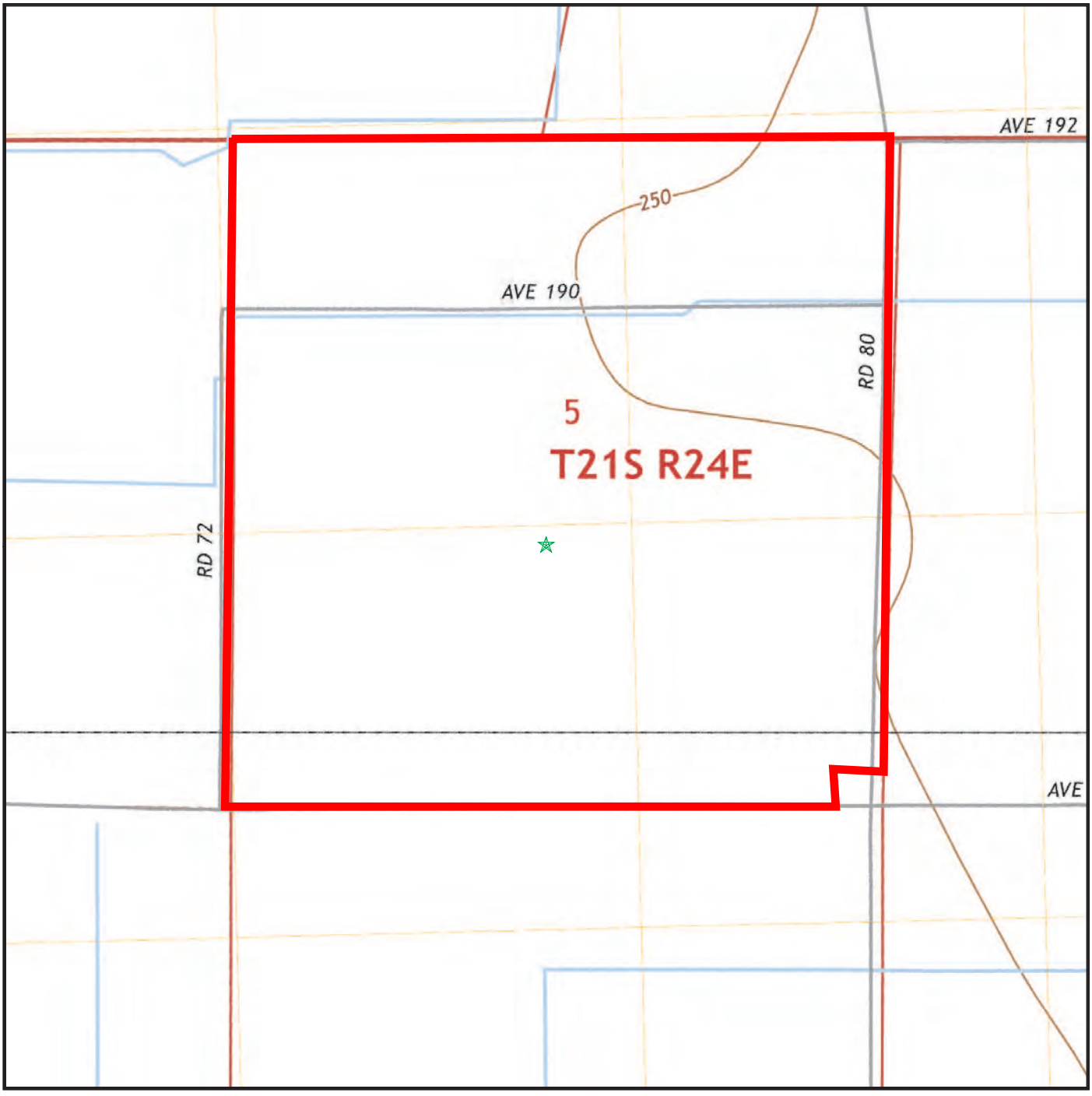
Indian Reservations BIA

EDR Reference Code (EDR Internal use only): 6827496.57s
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22-01-20.17:05:47.Thu

Site location Map

Topo: 0.75 Mile Radius

AVENUE 184 TULARE, CA 93274



Map Image Position: TP
Map Reference Code & Name: 12012211 Paige
Map State(s): CA
Version Date: 2018
Map Image Position: SW
Map Reference Code & Name: 12012245 Taylor Weir
Map State(s): CA
Version Date: 2018

Soil Map—Tulare County, Western Part, California



Map Scale: 1:10,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 15, Sep 3, 2021

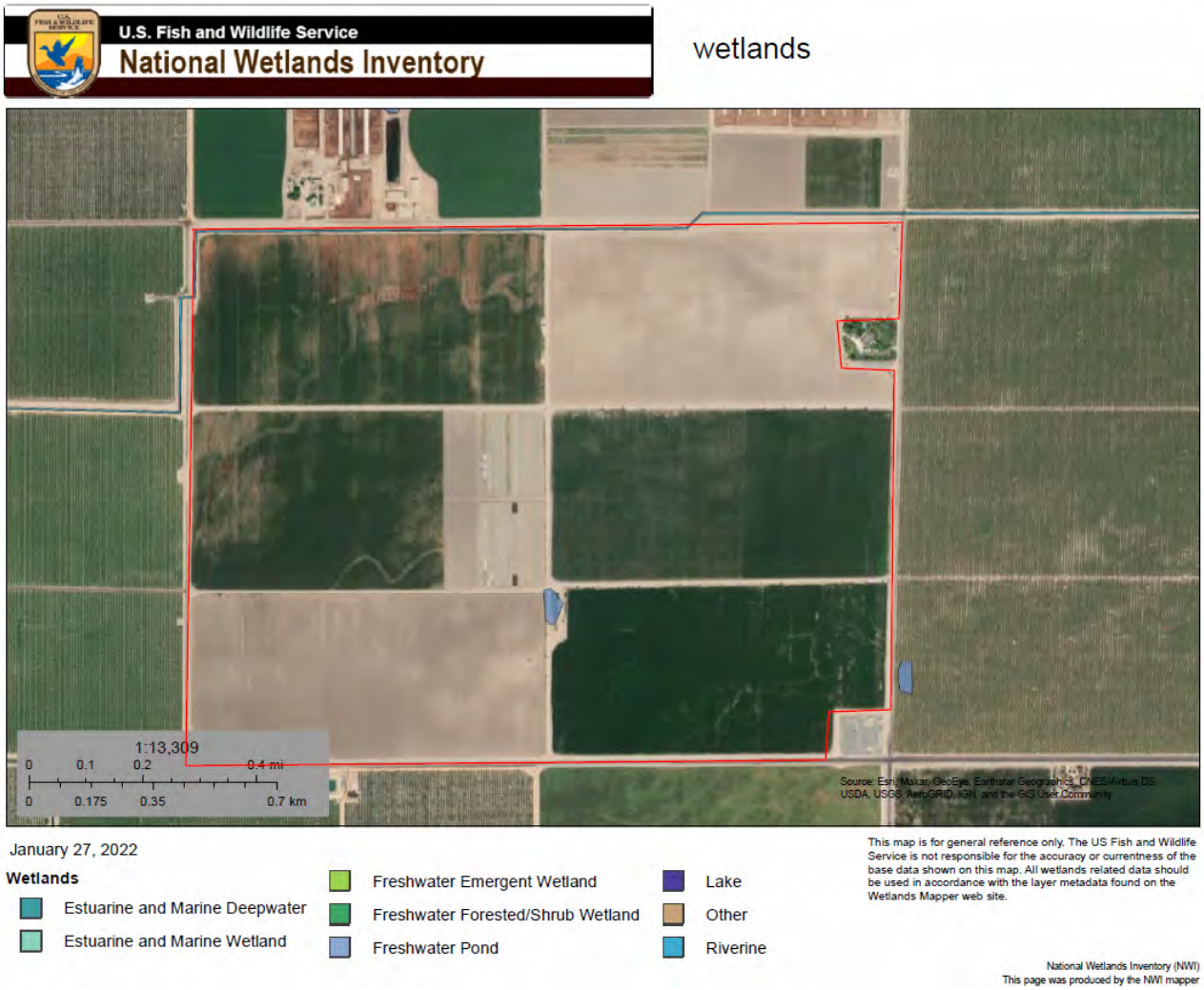
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 17, 2019—Mar 24, 2019

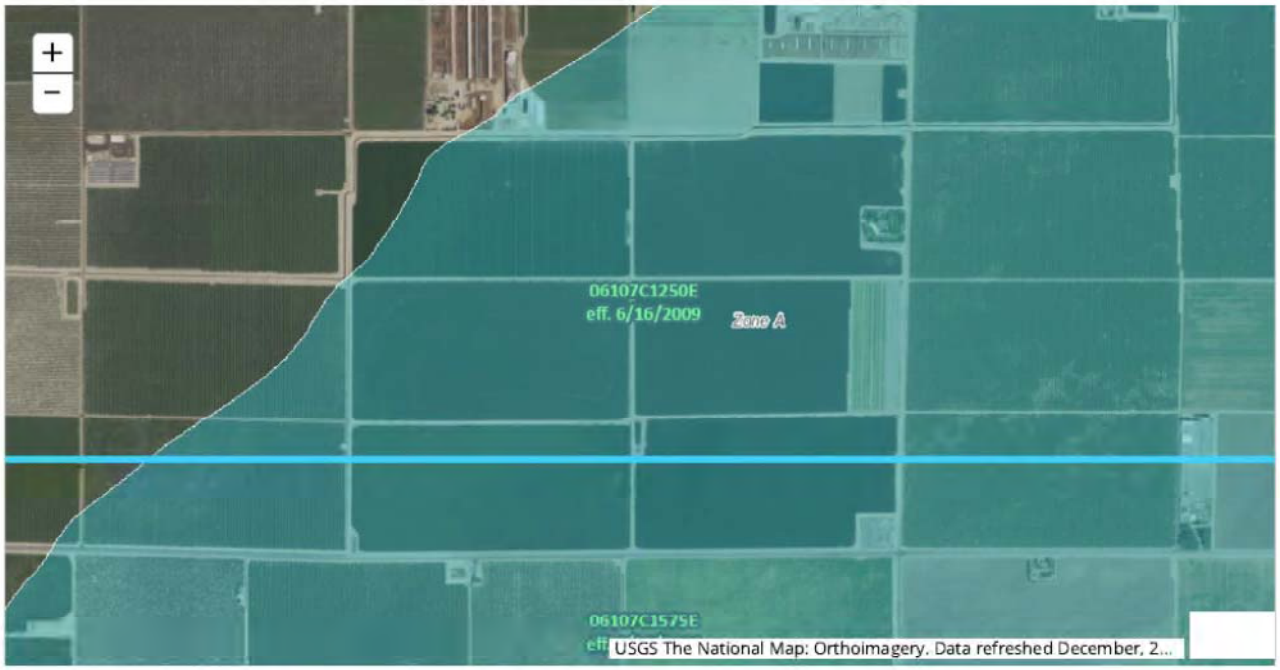
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
104	Biggriz-Biggriz, saline-Sodic, complex, 0 to 2 percent slopes	136.1	27.4%
108	Colpien loam, 0 to 2 percent slopes	359.9	72.6%
Totals for Area of Interest		**496.0**	**100.0%**



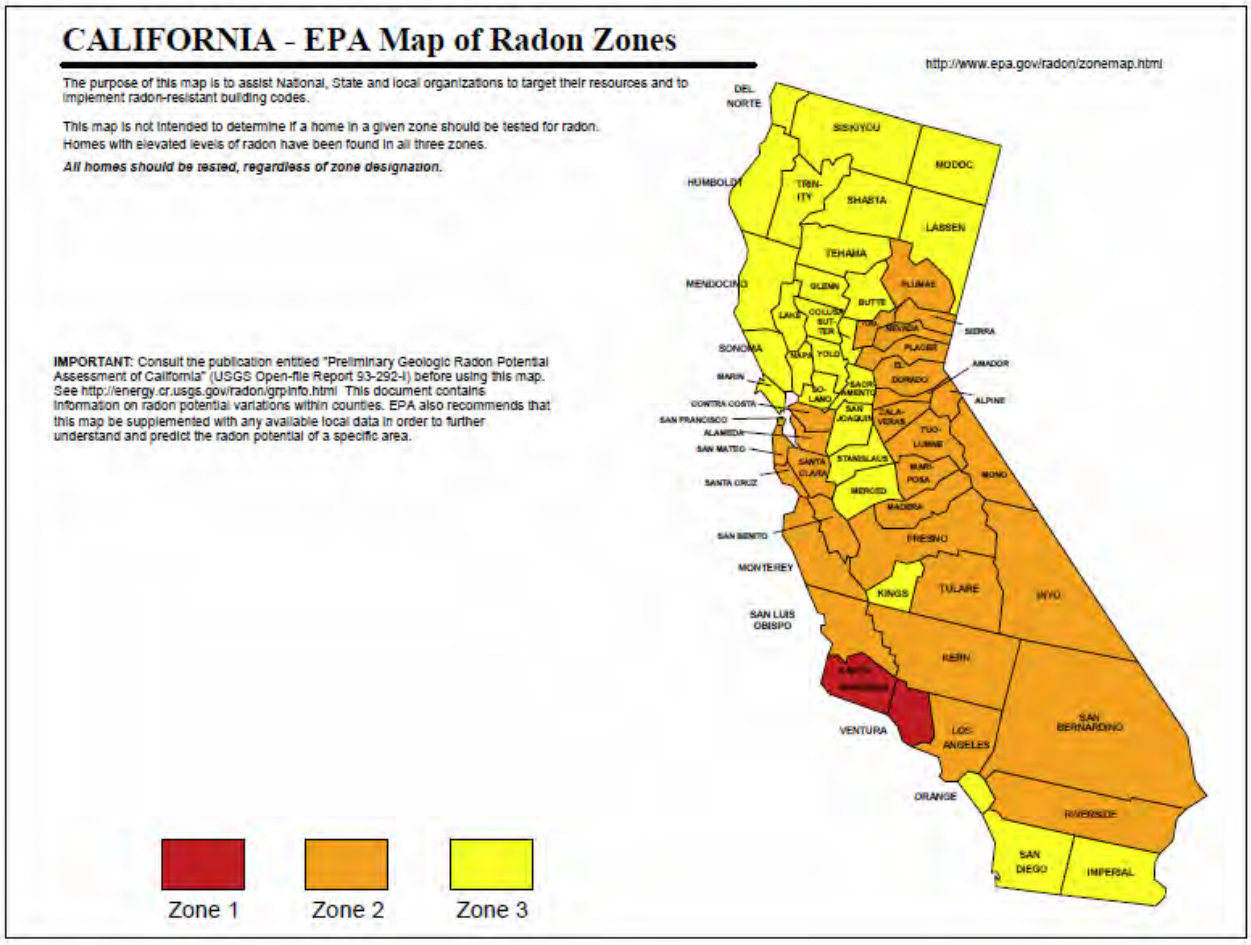
National Wetlands Map



Flood Zone Map



Oil & Gas Well Map


CALIFORNIA - EPA Map of Radon Zones
http://www.epa.gov/radon/zonemap.html
The purpose of this map is to assist National, State and local organizations to target their resources and to implement radon-resistant building codes.
This map is not intended to determine if a home in a given zone should be tested for radon. Homes with elevated levels of radon have been found in all three zones.
All homes should be tested, regardless of zone designation.
IMPORTANT: Consult the publication entitled "Preliminary Geologic Radon Potential Assessment of California" (USGS Open-file Report 93-292-I) before using this map. See http://energy.cr.usgs.gov/radon/grpinfo.html This document contains information on radon potential variations within counties. EPA also recommends that this map be supplemented with any available local data in order to further understand and predict the radon potential of a specific area.
DEL NORTE
SISKIYOU
MODOC
HUMBOLDT
TRINITY
SHASTA
LASSEN
TEHAMA
MENDOCINO
GLENN
PLUMAS
BUTTE
LAKE
COLUSA
SUTTER
YUBA
SIERRA
NEVADA
PLACER
SONOMA
NAPA
YOLO
EL DORADO
AMADOR
MARIN
SACRAMENTO
ALPINE
CONTRA COSTA
SAN JOAQUIN
CALAVERAS
SAN FRANCISCO
ALAMEDA
TUOLUMNE
SAN MATEO
STANISLAUS
SANTA CLARA
MARIPOSA
MONO
SANTA CRUZ
MERCED
MADERA
SAN BENITO
FRESNO
MONTEREY
KINGS
TULARE
INYO
SAN LUIS OBISPO
KERN
VENTURA
LOS ANGELES
SAN BERNARDINO
ORANGE
RIVERSIDE
SAN DIEGO
IMPERIAL
Zone 1
Zone 2
Zone 3

Radon Map

APPENDIX B

RESUME OF ENVIRONMENTAL PROFESSIONAL

MARK J. LAROCQUE

EDUCATION

Bachelor of Sciences in Environmental Science/Biology, University of Massachusetts, Amherst, Massachusetts, 1980 - 1984.

EXPERIENCE

Practical Environmental Solutions, Sanbornton, NH (1998 to present), President and Owner.
Dames & Moore, Willow Grove, PA (1995 to 1998), Senior Project Manager
Lexicon Environmental Associates, Inc., West Chester, PA (1994 to 1995) - Project Manager/Environmental Scientist IV.
Groundwater & Environmental Services, Inc. in Exton, PA (1990 - 1994) - Project Manager/Senior Environmental Scientist.
IEP, Inc. in Northboro, Massachusetts (1984 - 1990) - Environmental Scientist

PROFESSIONAL COURSES

Resource Education Institute, Inc. - Northwest Regional Underground Storage Tank Management and Hydrocarbon Cleanup Conferences 1988 and 1989
University of Massachusetts/Massachusetts Department of Environmental Quality - Hydrocarbon Contaminated Soils Conferences 1991 and 1992
Shell Oil Development - Soil Remediation Workshop 1992
Government Institutes, Inc. - Resource Compensation Recovery Act (RCRA) Regulations Workshop 1994.
Occupational Health and Safety Training 1988 through 1995 - Including 40-hour, 8-hour Refreshers, and Supervisor Training.

CERTIFICATIONS & AFFILIATIONS

National Water Well Association
New Jersey Underground Storage Tank & Subsurface Investigator Certification No. 0013515
Texas Corrective Action Project Manager No.CAPM00197
California Registered Environmental Assessors Class I – No. 07357

EXPERIENCE SUMMARY

Over 30 years of experience in various aspects of environmental assessments and remediation projects. Currently owns his own firm, which conducts due diligence and property transfer assessments nationally and internationally. Conducted and managed numerous single and multi-site Phase I and Phase II pre-purchase assessments on a variety of large and small-scale manufacturing facilities across the United States. Has performed over 2,000 Phase I & NEPA/NHPA assessments for several cellular tower firms across US. NEPA compliance work has included Section 106 reviews, Fish & Wildlife Endangered Species Surveys, FONZI applications, and negotiations with Tribal Historical Officers. He has conducted and prepared several ACM O&M Programs for several radio stations, hotels, and golf courses.

He has also designed and managed over 100 ground water and soil remediation projects utilizing a variety of remedial techniques. Implemented various remedial techniques including ground water pump & treat, soil vapor extraction, air sparging, and bioremediation on numerous sites in MA, MD, NY, NJ, DE, and PA. Conducted soil and ground water sampling, quality control, and decontamination procedures on Super Fund projects in MA and Environmental Compensation Recovery Act (ECRA) projects in NJ.

REPRESENTATIVE PROJECT EXPERIENCE

- Has performed over 2000 Phase 1 and NEPA compliance projects throughout the USA including WA, CA, OR, UT, AZ, NV, FL. GA, SC, NC, MO, IL, IN, MI, MA, CT, RI, VA, OH, MS, AL, TX, and CO. This work has been completed for various cellular tower carriers (Nextel, Sprint, Cingular, AT&T Verizon) and owners (Crown, ATC, AAT).
- Conducts single and multi-site Phase I, Phase II, and Compliance assessments across the USA and internationally on behalf of various law firms for Hick, Muse, Tate & Furst, International Home Foods, Olympus Real Estate Corporation, and Arnold Palmer Golf.
- Conducts Phase I & NEPA/NHPA assessments for several national cell tower firms. Provides full compliance with NHPA and Section 106 of NEPA.
- Conducted Phase I and Compliance Assessments of General Cable Corporation - telecommunication cable manufacturing facilities in MI, IL, GA, and NJ.
- Conducted a Phase I and Compliance Assessment of Simonds Industries, a file manufacturing facility which is actively under a RCRA cleanup in OH.
- Conducted several Phase I assessments of Flex-O-Lite - glass bead manufacturing facilities in IA, KY, TN, and MS.
- Conducted numerous Phase I, Phase II, and Compliance assessments in CA, NC, SC, MS, MA, and AL for various industries including radio station acquisitions, headware manufacturers, computer cable/harness manufacturers, and brass regulating equipment manufacturers.
- Senior Project Manager/Director for engineering firm on a multi-site investigation program for Exxon, that included additional subsurface delineation and preparation of CEAs and RAWs for the NJDEP.
- Designed and managed numerous in-situ ground water remediation projects using bioremediation for Bell Atlantic and NYNEX.

APPENDIX C

PHOTOGRAPHS



1994 aerial



2003 aerial



2012 aerial



2021 aerial

Photo Locations

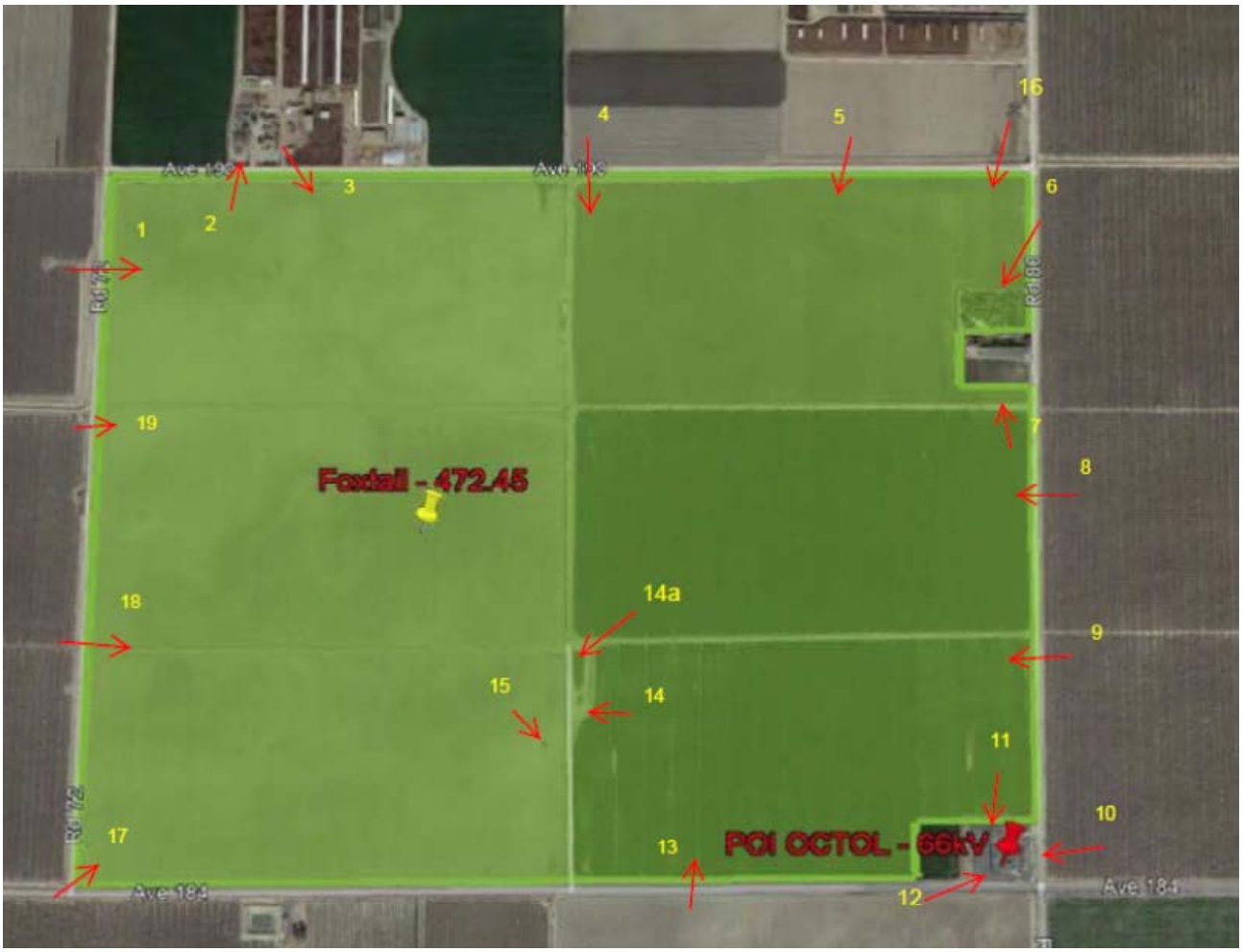




Photo 1 - transformers



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8



Photo 9- water well



Photo 10 - substation



Photo 11



Photo 12



Photo 13



Photo 14



Photo 15 - shed and water well



Photo 14a - pond



Photo 17



Photo 18



Photo 19



Photo - 17a - well



Photo 6a - well



Photo 16 - NE corner of parcel

ATTACHMENT F

Hydrology Study

Samsung Foxtail

Hydrology Study

Tulare County, California

November 2023

Preliminary. Not for construction.

Kimley»Horn

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Appendices

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Appendix B **Hydrology**
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Land Use Map
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Curve Number Map
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Hydrologic Calculations

Appendix C **Hydraulics**
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Existing Condition 100-Year Site Inundation Map
Existing Condition 100-Year Site Velocity Map
Existing Condition 100-Year Site Scour Potential Map

Appendix D **Digital Files**
HEC-HMS
HEC-RAS

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Executive Summary

Samsung C&T Renewable Energy Team is proposing a 90-megawatt (MW) solar and BESS development, named Foxtail Solar, to be in Tulare County, California. This report summarizes the hydrology study performed for the proposed solar development. The purpose of this drainage study is to identify inundation depth, velocity, and potential scour depth within the Foxtail Solar subject tract. This report describes the methodology used to perform this analysis and determine existing drainage patterns.

The U.S. Army Corps of Engineers HEC-HMS v. 4.10 hydrologic modeling program was used to perform the hydrologic analysis and the U.S. Army Corps of Engineers HEC-RAS 2D v. 6.2 modeling program was used to complete the two-dimensional hydraulic analysis.

Results of the analysis show inundation of 2.0' to 5.0' throughout most of the project limits. The subject tract will generally experience potential scour depths of 1.0 ft to 2.0 ft in the modeled event.

Future project development would need to be coordinated with the Tulare County Resource Management Agency. A blank Project Review Committee Application provided by the County in 2023, October that details the specific submittal requirements has been included in **Appendix B**. It is our understanding the County has no minimum freeboard requirements in this area. The use of fill as part of any development in the Federal Emergency Management (FEMA) Floodplain may require detention of the 10-year, 24-hour storm, which was not modeled as part of this study. A Site Plan detailing existing and proposed development is a requirement of this submittal, which was not prepared as part of this report. All submittals should be made online through the Tulare County RMA portal. This review process may determine the need for further hydrological or environmental studies, and the entire review process may take several months and up to over a year.

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1.0 Introduction

1.1 AUTHORITY

Samsung C&T Renewable Energy Team ("Client") has retained the services of Kimley-Horn and Associates, Inc. ("Kimley-Horn") to perform a hydrology study evaluating the existing hydrologic and hydraulic characteristics of the proposed Foxtail Solar project site.

The report describes Kimley-Horn's development of the two-dimensional hydraulic analysis of the project site and the model results for the 100-year event. Acting on behalf of the Client, the contacts for the study are as follows:

Brad Pickering, P.E. *(TX)*,
Kimley-Horn and Associates, Inc.
1400 Woodloch Forest Drive
The Woodlands, TX 77380
281.475.2816

Dave Bossu, P.E.
Kimley-Horn and Associates, Inc.
1100 W. Town & County Blvd, Suite 700
Orange, CA 92668
714.939.1030

1.2 PURPOSE OF STUDY

The purpose of this drainage study is to identify flood inundation depths, velocity, and potential scour depths within the Foxtail Solar subject tract and the surrounding area under existing conditions.

1.3 LOCATION

The approximately 470-acre subject tract is located in Tulare County, California. The subject tract sits on land designated as Federal Emergency Management (FEMA) Zone A Special Flood Hazard Area (SFHA). Zone A floodplain are areas of approximate flooding with no established Base Flood Elevations (BFEs) or regulatory flows. A vicinity map showing the limits and location of the proposed project site is included in **Appendix A**.

1.4 GENERAL SITE CHARACTERISTICS

The subject tract is generally cultivated crops. The topography of the subject tract generally slopes east to southwest, between 0.1% to 1%.

1.5 METHODOLOGY

Hydrology

The hydrologic analysis summarized in this study was performed in general accordance with Natural Resources Conservation Service (NRCS) *Technical Release No. 55* (TR-55).

The U.S. Army Corps of Engineers HEC-HMS (Hydrologic Engineering Center Hydrologic Modeling System) v. 4.10 hydrologic modeling program was used to perform the hydrologic analysis. Hydrologic calculations were performed using the Natural Resources Conservation Service (NRCS) Curve Number and Unit Hydrograph Methods.

Additional information regarding hydrologic calculations and model outputs can be found in Section 3.

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Hydraulics

The U.S. Army Corps of Engineers HEC-RAS 2D (Hydrologic Engineering Center River Analysis System) v. 6.2.0 modeling program was used to complete the two-dimensional hydraulic analysis. This software is a two-dimensional (2D) hydrodynamic routing model that preforms hydraulic routing using the Implicit Finite Volume solution to the 2D unsteady flow equations. This type of model is generally used to estimate flooding limits and velocity distributions for both confined and unconfined flow. Additional information regarding hydraulic model inputs and results can be found in Section 4.

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2.0 Survey Information

2.1 TOPOGRAPHIC INFORMATION

Aerial topography of the study area was based on publicly available 1-meter and 10-meter Digital Elevation Model (DEM) downloaded from the United States Geological Survey (USGS) in 2023. The 10-meter data was used to define the limits of the offsite watersheds and the 1-meter data was used for the limits of the 2D mesh. The vertical datum for all topographic information is NAVD 88.

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3.0 HYDROLOGY

3.1 INTRODUCTION

No effective hydrologic model was available, so a new hydrologic model (using HEC-HMS v. 4.10) was created for this study. This model was used to establish the rainfall hyetograph and inflow hydrographs for the 2D model mesh. The rainfall hyetograph and inflow hydrographs for the 100-year event were input into HEC-RAS 2D model as described in Section 3.4.

The hydrologic model includes one subbasin for the 2D mesh and four offsite subbasins generated using the SCS Unit Hydrograph Method.

Model inputs are discussed in the following sections. Digital files of the HEC-HMS hydrologic model are provided in **Appendix D**.

3.2 RAINFALL

Rainfall is based on a frequency storm with the peak rainfall intensity occurring in the middle of the storm, at or around hour 12. Table 1 shows the NOAA Atlas 14 rainfall depths used to generate the rainfall hyetograph for the modeled 24-hour storm events. The NOAA Precipitation Frequency Data Server was used to determine the rainfall depths for both the subject tract and the offsite areas, which were so expansive as to require the use of a separate location for obtaining rainfall data. Tables acquired from NOAA including the rainfall data used in this study are provided in **Appendix B**.

Table 1: 100-Year Storm Event Rainfall Depths

Duration	Offsite Depths (in.)	2D Mesh Depths (in.)
5 min.	0.331	0.256
15 min.	0.573	0.444
1 hr.	1.09	0.853
2 hr.	1.57	1.20
3 hr.	1.95	1.47
6 hr.	2.81	1.96
12 hr.	4.02	2.56
24 hr.	5.69	3.29

3.3 MODEL PARAMETERS

Subbasin Delineation

The hydrologic model consists of a subbasin for the 2D mesh and four offsite drainage areas that encompass the contributing hydrology for the Foxtail Solar subject tract. Subbasin 2D is approximately 68 square miles and the offsite areas total ~800 square miles. The drainage area boundary is shown in the *Drainage Area Map* in **Appendix B**.

Time of Concentration/Lag time

Time of concentration was calculated based on guidance in the Manual and Natural Resources Conservation Service (NRTCS) Technical Release No. 55 (TR-55). This method considers travel times associated with sheet, shallow, and concentrated flows. Subbasin lag time is related to time of concentration by 0.6*Tc. A maximum sheet flow distance of 300 feet was used per guidance listed in the Manual and TR-55. Lag time was not calculated for the 2D subbasin since the 2D hydraulic model performs this analysis

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by simulating the rainfall transformation to runoff and routing the runoff across the two-dimensional grid. The lag times calculations for the subbasins are included in **Appendix B**. The lag time for the watershed contributing to Success Lake was manually adjusted to calibrate the model results to approximate lake discharge listed in the Flood Insurance Study for Tulare County.

Curve Number

Infiltration losses were calculated using the SCS Curve Number Method. Curve Numbers (CNs) are based on Hydrologic Soil Group (HSG) and existing land cover. A soil type shapefile was downloaded from the NRCS Web Soil Survey to determine the HSG for the area covered by the hydrologic model subbasins. The studied area contains Hydrologic Soil Group A, B, C, and D. Existing land uses are based on the 2021 National Land Cover Database and were obtained from the Multi-Resolution Land Characteristics Consortium (MRLC). The CN and hydrologic calculations are included in **Appendix B,** and CNs are listed in Table 2.

A Land Use Map, Hydrologic Soil Group Map, and Curve Number Map are attached in **Appendix B**.

Table 2: NLCD Land Cover Correlation to Curve Number

NLCD Description	CN for HSG			
	A	B	C	D
Barren Land	68	79	86	89
Cultivated Crops	70	79	84	88
Developed, High Intensity	89	92	94	95
Developed, Low Intensity	61	75	83	87
Developed, Medium Intensity	77	85	90	92
Developed, Open Space	39	61	74	80
Emergent Herbaceous Wetlands	30	58	71	78
Hay/Pasture	39	61	74	80
Herbaceous	30	58	71	78
Open Water	100	100	100	100
Shrub/Scrub	39	61	74	80
Woody Wetlands	30	55	70	77

Reach Routing

Reach routing was modeled using the Muskingum-Cunge method. Table 3 lists the reach parameters input into the HEC-HMS hydrologic model for the reaches. Elevation data for the 8-point cross sections is based on the topographic information described in Section 2.0. The reach flow paths are shown in the *Drainage Area Map* in **Appendix B**.

Table 3: Muskingum-Cunge Reach Parameters

Reach	Length (ft)	Slope (ft/ft)	Manning's "n"	Shape
A	78863	0.002	0.035	8-point
B	133056	0.005	0.035	8-point

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Areal Reduction

An areal reduction factor was applied for contributing areas greater than 10 mi^2. In the HMS model, there are meteorological models with areal reductions of 373 mi^2, and 486 mi^2 which were used to generate the Junctions A and B hydrographs for the inflow hydrograph boundary conditions.

3.4 RESULTS

Flow from the offsite drainage areas enters the 2D model at three locations. The hydrographs generated by the hydrologic model at the two junctions are used to introduce flow at the mesh limits of the 2D hydraulic model via an inflow boundary condition. Areal reductions were applied in the meteorological model of HEC_HMS under the Storm Area (MI2) input. The 100-year peak flow data from the respective hydrologic simulation run used in the hydraulic model is outlined below in Table 4.

The rainfall hyetograph for Subbasin 2D was developed from the hydrologic model, which produces a time-series table of the precipitation. The incremental precipitation, rainfall prior to any initial abstraction or infiltration, was generated and applied as a rainfall boundary condition to the 2D mesh in the hydraulic model.

The HEC-HMS hydrologic model outputs are provided in **Appendix B**.

Table 4: Peak Flow Results

HMS Element	Area (Sq. Mi.)	100-Year Peak Flow (cfs)	Areal Reduction (TP40)
Junction-A	373.1	55208.8	173
Junction-B	485.9	17509.4	486

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4.0 Hydraulics

4.1 INTRODUCTION

Hydraulic modeling of the site was performed using the U.S. Army Corps of Engineers' HEC-RAS 2D v. 6.2 hydraulic modeling software. HEC-RAS 2D is a two-dimensional hydrodynamic routing model that performs hydraulic routing using the Implicit Finite Volume solution to the 2D unsteady flow equations. This type of model is generally used to estimate flooding limits and velocity distributions for both confined and unconfined flow.

The existing condition 2D hydraulic model was developed as part of this analysis. Digital files of the HEC-RAS 2D hydraulic models are provided in **Appendix D**.

4.2 MODEL INPUTS

2D Mesh

A 2D computational mesh based on the topographic information was generated in HEC-RAS to perform hydraulic modeling. A grid size of 100' x 100' was used for most of the model area. Breaklines were added in areas of topographic relief to align the cells with the direction of flow and capture the detail of the underlying topographic high points and low points. Breaklines with a spacing of 20'-25' were added along embankments, road centerlines, and flow centerlines within the model area to further refine the grid. The computational grid was created for the surface to develop a group of rating tables for the stage-storage-volume relationship in each computational grid cell. HEC-RAS also cuts cross sections at each cell face of the computational grid to simulate flow more accurately between cells.

Terrain

The existing condition terrain for the 2D Mesh was built from publicly available USGS 1-meter LiDAR as described in Section 2.0.

Boundary Conditions

The rainfall hyetograph for Subbasin 2D was developed from the hydrologic model. The incremental precipitation from the HEC-HMS Subbasin 2D was applied uniformly to each cell. The runoff was routed through each cell using the Diffusion Wave 2D equation. The flow direction and depth are based on several factors, including topography and surface roughness.

Two inflow hydrographs were applied to the 2D mesh via inflow hydrograph boundary conditions along the eastern boundary. The inflow hydrographs were generated from the HEC-HMS Junctions A and B, which can be seen in the Drainage Area Map in Appendix C.

Seven normal depth outflow boundary conditions were applied along all sides of the 2D mesh where flow exits the model area in existing conditions. The assigned friction slope varied based on the terrain for each boundary condition.

Structures

Culverts adjacent to the subject tract were modeled using the 2D connection function. The terrain of the structure was captured using the LiDAR topography mentioned in Section 2.0 and sizing was estimated using satellite imagery. The overflow computation method for all culvert structures was set to the weir equation. A total of seven concrete box culverts were entered into the model.

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Infiltration

Infiltration losses for the 2D mesh were calculated using the SCS Curve Number Method as described in Section 3.3. The land cover and soils layer were created in HEC-RAS using data from the 2021 NLCD and the NRCS Web Soil Survey, respectively. The infiltration layer was created using the land cover and soil layers with the SCS Curve Number method. Each land use and HSG combination were assigned a CN. An abstraction ratio of 0.2 was assumed for all land uses.

A *Land Use Map*, *Hydrologic Soil Group Map*, and *Curve Number Map* are attached in **Appendix B**.

Surface Roughness

The Manning's "n" values for friction losses are based on existing land cover determined from the 2021 National Land Cover Database and engineering judgement based on the observed condition of vegetation using aerial imagery. Table 5 lists the NLCD land cover descriptions included within the 2D model limits and the associated Manning's "n" value. The Land Uses with a reduced designation represent a reduced Manning's "n" value used for all areas experiencing over 1' of inundation during the 100-year event.

Table 5: Manning's "n" Value

Land Use	Manning's "n" Value
Barren Land	0.06
Barren Land, reduced	0.04
Cultivated Crops	0.10
Cultivated Crops, reduced	0.06
Developed, Low Intensity	0.16
Developed, Low Intensity, reduced	0.12
Developed, Medium Intensity	0.18
Developed, Medium Intensity, reduced	0.14
Developed, High Intensity	0.03
Developed, High Intensity, reduced	0.02
Developed, Open Space	0.06
Developed, Open Space, reduced	0.04
Emergent Herbaceous Wetlands	0.08
Emergent Herbaceous Wetlands, reduced	0.05
Hay/Pasture	0.15
Hay/Pasture, reduced	0.06
Herbaceous	0.22
Herbaceous, reduced	0.07
Open Water	0.02
Open Water, reduced	0.02
Shrub/Scrub	0.25
Shrub/Scrub, reduced	0.20
Woody Wetlands	0.08

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4.3 RESULTS

Inundation Depth Summary

Predicted flooding depths for site conditions were calculated based on the 2D modeling simulation and were mapped within the 2D model area. The mapping reflects depths that are expected to equal or exceed 0.5 ft. Shallower depths were removed from the mapping as is typical for models based on the direct rainfall method, as this method produces depth in every grid cell of the mesh.

The results of the analysis are based on publicly available LiDAR and Kimley-Horn's best engineering judgement of the hydrology that can be expected in the watershed. Development in the watershed has the potential to alter runoff volumes and rates.

The 100-year inundation depths are shown in the *100-Year Inundation Map* included in **Appendix C**. Most of the project site has a maximum inundation depth of 2.0 to 5.0 ft. An approximate 4,000 square foot depression in the lower third of the site saw depths up to 10'.

Onsite Velocity

Maximum flow velocity in existing conditions during the modeled storm event is shown in the 100-*Year Velocity Map* in **Appendix C**. Flow velocities typically range between 1 and 2 feet per second (fps) through the site and surrounding area.

Scour Depth Calculation

Kimley-Horn calculated anticipated local pier scour depth for the maximum potential flow velocity and flow depth combinations within the subject tract based on the hydraulic model results. Pier scour was calculated using guidance in the FHWA's *HEC-18: Evaluating Scour at Bridges, Fifth Edition*.

Potential scour for existing conditions is shown in the *100-Year Scour Potential Map* in **Appendix C**. Other than immediately adjacent to the irrigation channel, most of the site will experience maximum scour potential depths between 0.75' and 1.5'.

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5.0 References

Federal Highway Administration (FHWA). *Hydraulic Engineering Circular No. 18: Evaluating Scour at Bridges, Fifth Edition.* April 2012.

National Land Cover Database 2021 - Landcover & Imperviousness (NLCD2021)

Natural Resources Conservation Service: Conservation Engineering Division. *Urban Hydrology for Small Watersheds: Technical Release 55 (TR-55)*, USDA, June 1986.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. *Web Soil Survey.* Accessed 2023-10-01.

U.S. Army Corps of Engineers. Hydrologic Engineering Center, *HEC-HMS Hydrologic Modeling System Version 4.10*, October 2023.

U.S. Army Corps of Engineers. Hydrologic Engineering Center, *HEC-RAS River Analysis System, Version 6.2.0*, August 2021.

United States Geological Survey (USGS). Panhandle Lidar, 2021-05-20. Web. Accessed 2023-09-15.

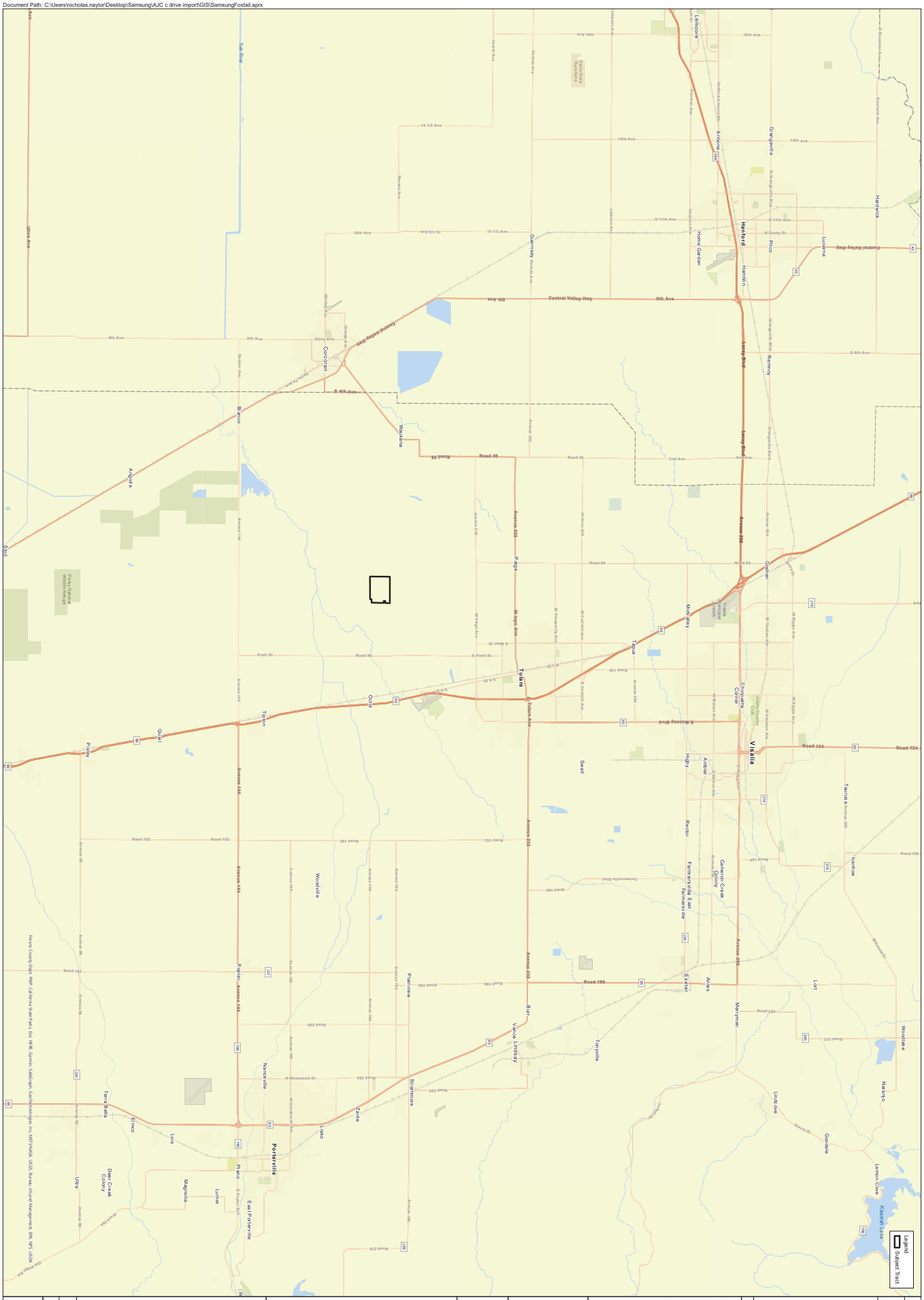
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Appendix A
General

Vicinity Map
FEMA Map

Kimley»Horn
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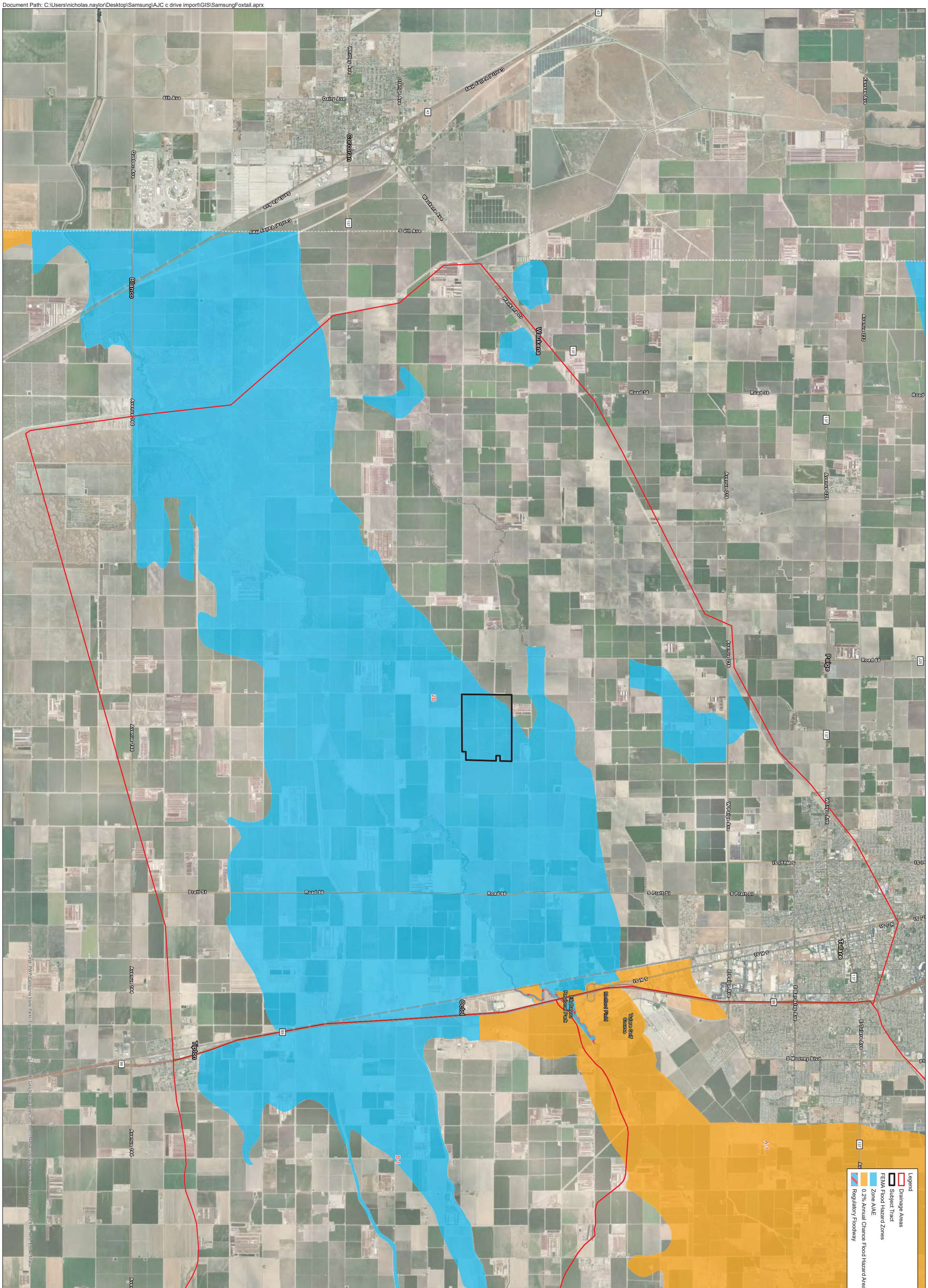


SHEET NUMBER 1	PROJECT NO. 197619004	DATE NOVEMBER 2023	VICINITY MAP	FOXTAIL SOLAR TULARE COUNTY, CA	1 inch = 8,000 feet	

Kimley»Horn
1100 W TOWN AND COUNTY ROAD, SUITE 700
ORANGE, CA 92868
PHONE: 714-939-1030

DESIGN:	NBN
DRAWN:	NBN
REVIEW:	BWP

Document Path: C:\Users\nicholas.naylor\Desktop\Samsung\AJC c drive import\GIS\SamsungFoxtail.aprx



DATE NOVEMBER 2023 PROJECT NO. 194620001 SHEET NUMBER 2	FEMA MAP	FOXTAIL SOLAR TULARE COUNTY, CA	1 inch = 3,200 feet	N	Kimley»Horn 1100 W TOWN AND COUNTY ROAD, SUITE 700 ORANGE, CA 92868 PHONE: 714-939-1030		DESIGN: NBN DRAWN: NBN REVIEW: BWP

TULARE COUNTY RESOURCE MANAGEMENT AGENCY

APPLICATION

GENERAL INFORMATION / COVER SHEET

PROJECT REVIEW COMMITTEE

General Information:

Applicant _____

Mailing Address _____ City _____ State ___ Zip_____

Phone _____ Cell Phone _____ E-Mail _____

Property Owner *(if different)*_____

Mailing Address _____ City _____ State ___ Zip_____

Phone _____ Cell Phone _____ E-Mail _____

Agent *(if applicable)*_____

Mailing Address _____ City _____ State ___ Zip_____

Phone _____ Cell Phone _____ E-Mail _____

Site Address: _____ **City/Town:** _____

Physical Location of Site (cross streets & nearest community): _____

_____

Assessor's Parcel No.: _____

THIS SPACE FOR PERMIT CENTER STAFF USE ONLY

Project Number:_____ **Supervisor District:** _____ **Economic Development:**_____

Current Zoning: _____ **General Plan Land Use:**_____ **UAB/UDB/HDB/MSC:** Yes ☐ No ☐

Project Description _____

Agricultural Preserve ***(if applicable)*** **– Preserve No.** _____ **Contract No.** _____

Filing Fee(s): _____ **Total Amount Paid:** _____**Payment Type:** _____

Date Received: _____ **Existing Entitlements/References:**_____

Application Received/Reviewed by: _____

PERMIT CENTER HOURS: MONDAY – THURSDAY 9:00 A.M. TO 4:30 P.M. FRIDAY 9 A.M. -11 A.M.

TULARE COUNTY RESOURCE MANAGEMENT AGENCY
****5961 S. Mooney Blvd. Visalia, CA 93277 ** PHONE: 559-624-7000 ****

PROJECT REVIEW COMMITTEE APPLICATION

REQUIREMENTS, FEES AND INSTRUCTIONS *(Please use dark blue or black ink)*
The application form must be filled out completely before the County can officially accept the application for processing. File the completed application with the Resource Management Agency Permit Center, at 5961 S. Mooney Blvd., Visalia CA 93277. Phone is (559) 624-7100.

1. Ordinance No. 352, as amended, requires a filing fee to be paid at the time of filing a land use application. This fee is to cover the cost to the County for investigations and processing the application through the preliminary review process.

PRELIMINARY PROJECT REVIEW FEE	**$601.00 (SUBJECT TO CHANGE AT ANY TIME)**

2. This application must be filled out with full and complete answers and must be signed by at least one of the property owners (Owner's Affidavit).
3. A minimum of one (1) full size site plan copy and one (1) reduced copy (8½" x 11") shall be submitted.
4. The Site Plans shall be clearly and legibly drawn and of a suitable size to allow proper review, as determined by the Planning Director. The scale of the map should be 1 inch equals 100 feet, or other scale if more appropriate. Site Plans shall include the following:

    a. Location map
    b. Date prepared and by whom
    c. North point and scale
    d. Lot dimensions and net areas
    e. All existing and proposed development, including square footage of each
    f. Distances (in feet) between existing & proposed development and closest property boundary
    g. Walls, fences and barriers, including type and height
    h. Parking and loading areas, including dimensions
    i. Access to the site and surrounding circulation
    j. Signs, including size and materials
    k Drainage plans
    l. Landscaping
    m. Existing and proposed utilities, sewage disposal systems and domestic water supply systems
    n. Locations and names of water courses and areas subject to flooding or ponding of surface water
    o. Lighting
    p. Easements including those for access and public utilities

5. Operational Statement: Please attach a detailed Operational Statement

SUMMARY OF REQUIREMENTS FOR SUBMITTAL WITH THIS APPLICATION:

		Applicant	Staff
1.	Completed Application and Filing Fee	☐	☐
2.	Owner's Affidavit *(Signed by Property Owner)*	☐	☐
3.	Preliminary Site Plan (1 copy) *(additional copies may be required)*	☐	☐
4.	Operational Statement	☐	☐

PLEASE FILL OUT THE FOLLOWING INFORMATION COMPLETELY

1. Proposed use of site? _____

   _____

   _____

   Please attach an operational statement stating exactly and in detail what is intended to be done on, or with, the property.

2. Parcel or Lot Size(s) *(in acres or sq. ft. as appropriate)*: _____

3. How much area of the parcel is being developed or utilized for the proposed use?_____

4. Present use of the project site? _____

5. Employees: Indicate the total number of employees and shifts per employee.

   _____

6. Days and Hours of Operation *(if seasonal, include months of operation)*:

   _____

7. Parking: Specify the number of on-site parking spaces, including the location, size, and type of surfacing.

   _____

8. Describe the project site, prior to the proposed use, including all above and below ground developed improvements *(residences, outbuildings, barns, sheds, covers, shop buildings, septic tank-leach line systems, domestic/agricultural wells, fuel storage tanks, etc.),* including the size of each.

   _____

   _____

9. Describe the slopes (%) and general terrain of the subject site: _____

   _____

10. Trees: identify the type and size of any large trees on site. _____

    _____

11. Water courses: identify the type and location of any on-site or nearby water courses *(rivers, canals, ditches, streams, natural drainage channels, creeks, etc.)*. _____

    _____

12. Describe the character and land use of the surrounding properties (orchards, vineyards, row crops, pasture, open space, water courses, railroads, roads, rural residential, subdivisions, commercial, schools, churches, vacant, city or county boundary):

DIRECTION	CHARACTER/LAND USE
North	
South	
East	
West	

13. Liquid waste disposal *(please check appropriate box)*:

    ☐ Septic Tank-Leach Lines: Size of tank _____gallons & length of lines _____ft.

    ☐ Seepage Pit - Size_____

    ☐ Community System – Name:_____

    ☐ Aerobic tank - Size of tank _____

14. Water supply *(please check appropriate box)*:

- ☐ Domestic Well – Size of pump_____ Gallons per minute _____
- ☐ Irrigation Well: _____
- ☐ Irrigation District – Name: _____
- ☐ Private Water Company – Name: _____
- ☐ Community System – Name: _____

15. Solid Waste Disposal: _____

16. Source of energy *(please check appropriate box)*:

- ☐ Electricity – Company name: _____
- ☐ Natural Gas – Company name: _____
- ☐ Propane: Size of tank _____ Provider _____

17. Will the project require the development of public service facilities *(roads, sewer lines, water lines, etc.)?* If so, describe the required development: _____

_____

18. Provide any additional information that may be helpful in evaluating this request. *(Use the back of this application or attach a separate sheet.)*

OWNER'S AFFIDAVIT

(Must be signed by property owner)

STATE OF CALIFORNIA)
COUNTY OF TULARE) SS.

I, (We,) the undersigned, say:

I (We) own property involved in this application and I (we) have completed this application and other documents and maps required hereby to the best of my (our) ability and the statements and information above referred to are, in all respects, true and correct to the best of my (our) knowledge and belief. I (We) declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, 20__, at _____

Property Owner:

Name:_____ Signature:_____

Address: _____ State: _____ Zip: _____

Optional – additional property owner:

Name:_____ Signature:_____

Address: _____ State: _____ Zip: _____

If there is an agent, title company, or prospective buyer who desires notification of the action taken on this application, please enter name here.

Name: _____

Relationship: _____

Address: _____

State: _____ Zip: _____

Telephone: _____

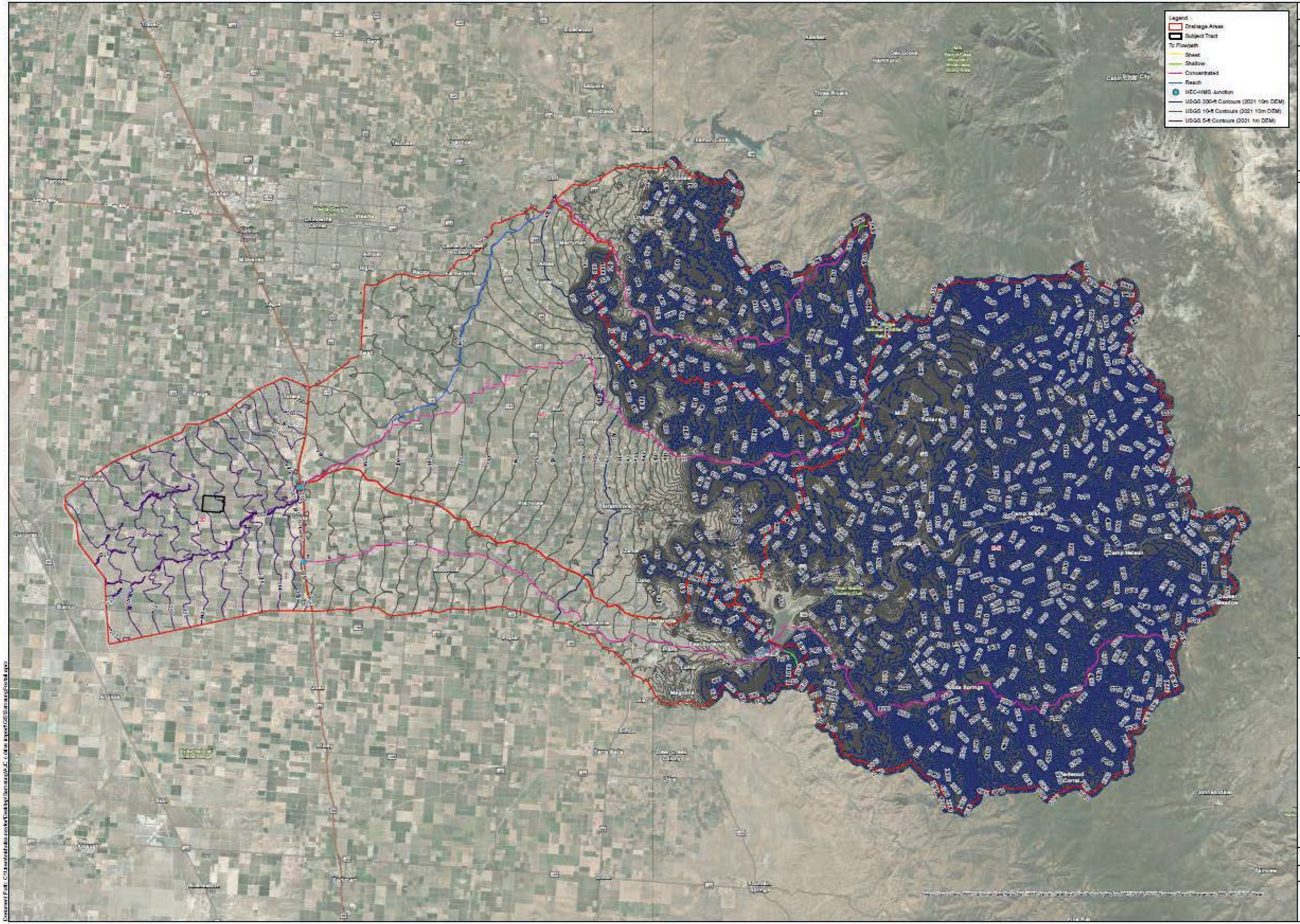
FAX No.: _____

Signed: _____ Date: _____

Appendix B
Hydrology

Drainage Area Map
Land Use Map
Hydrologic Soil Group Map
Curve Number Map
Rainfall Data
Hydrologic Calculations

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Kimley»Horn

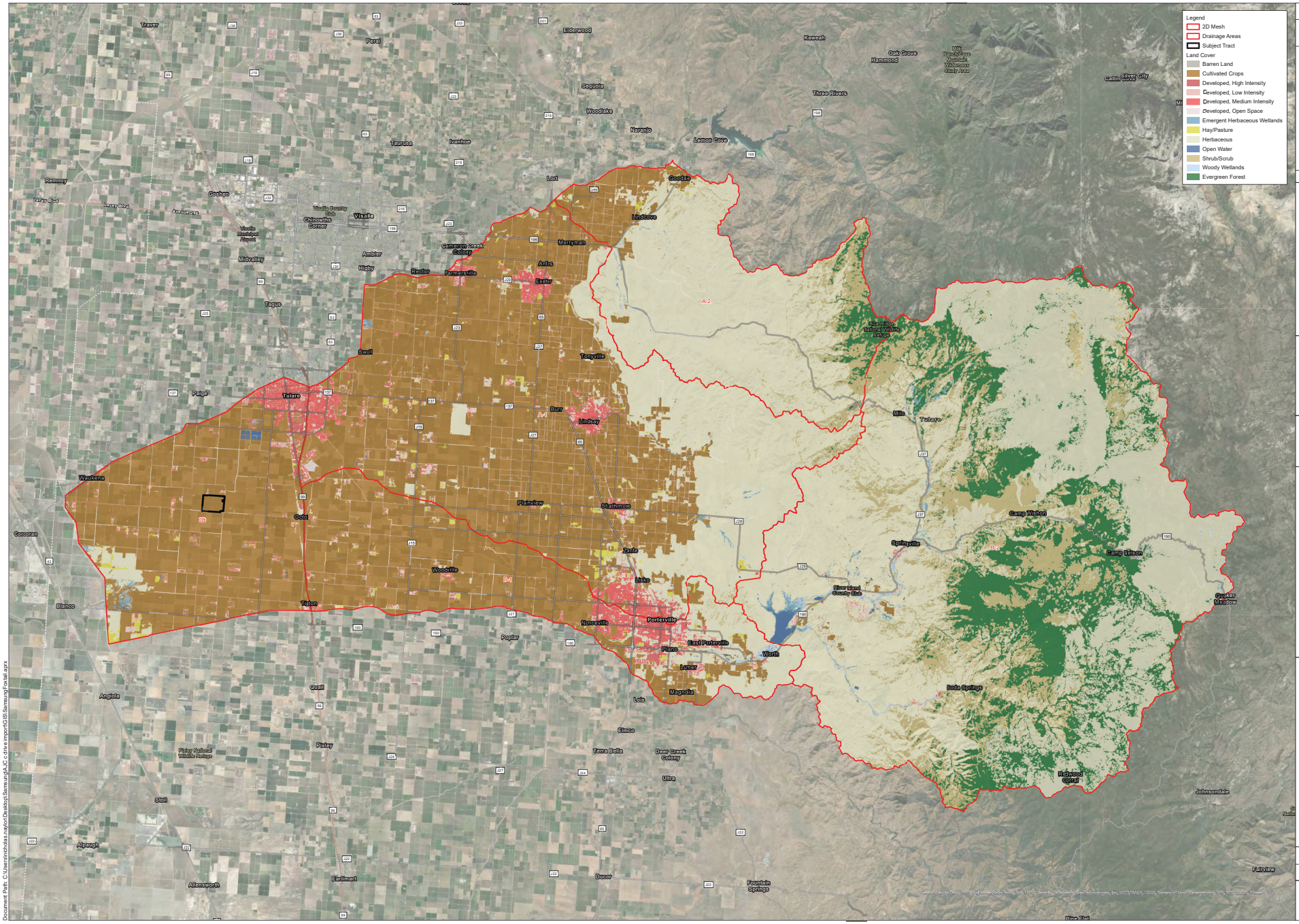
FOXTAIL SOLAR
TULARE COUNTY, CA

DRAINAGE AREA MAP

DATE
NOVEMBER 2023

PROJECT NO.
194620001

SHEET NUMBER
3



Kimley»Horn
1100 W TOWN AND COUNTRY ROAD, SUITE 700
ORANGE, CA 92868
PHONE: 714-939-1030

DESIGN: NBN
DRAWN: NBN
REVIEW: BMP

1 inch = 10,000 feet

FOXTAIL SOLAR
TULARE COUNTY, CA

LAND USE MAP

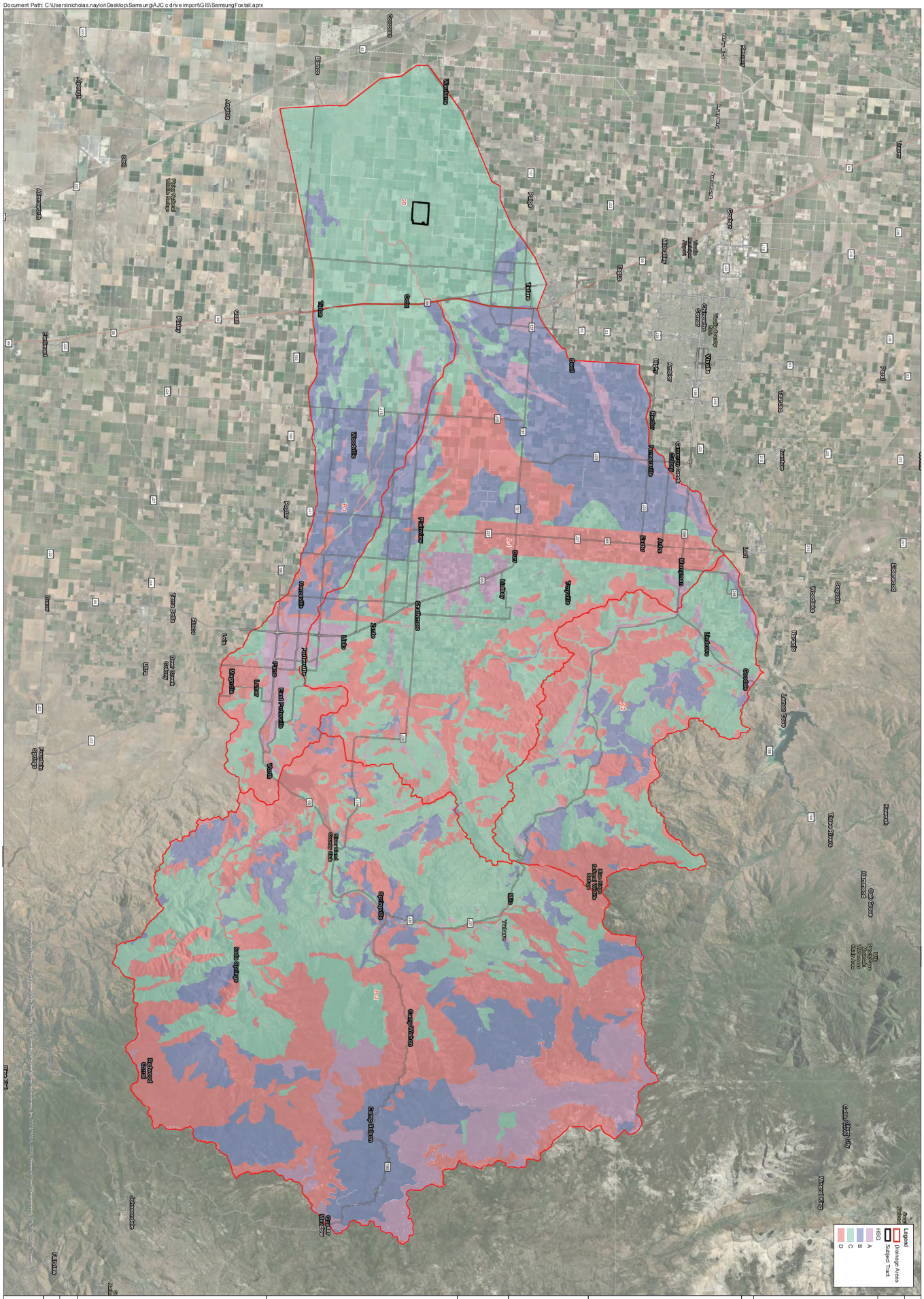
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NOVEMBER 2023

PROJECT NO.
194620001

SHEET NUMBER
4

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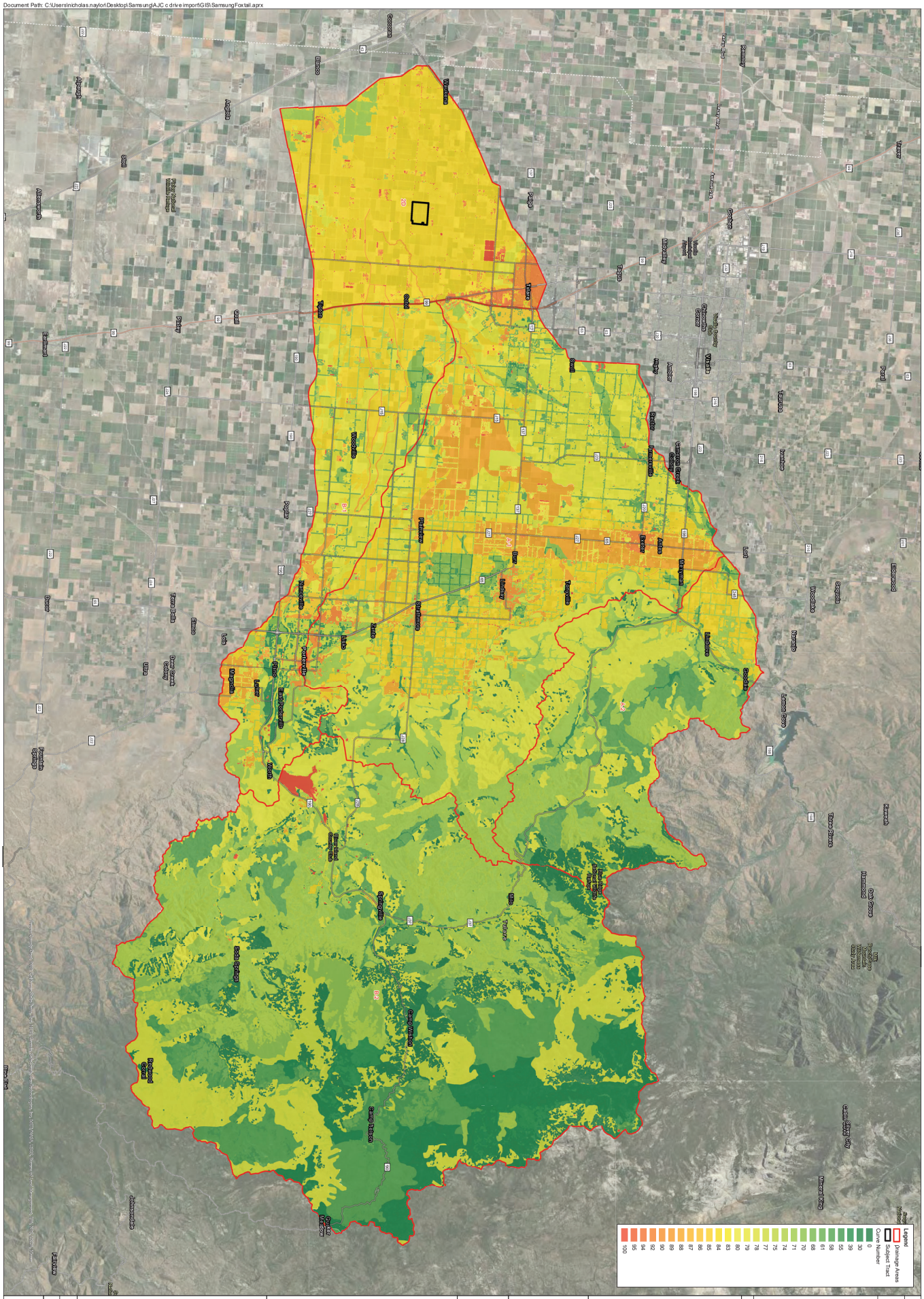
5	SHEET NUMBER	194520001	PROJECT NO.	NOVEMBER 2023	DATE	HYDROLOGIC SOIL GROUP MAP	FOXTAIL SOLAR TULARE COUNTY, CA

1 inch = 10,000 feet

Kimley»Horn
1100 W TOWN AND COUNTY ROAD, SUITE 700
ORANGE, CA 92868
PHONE: 714-939-1030

DESIGN:	NBN
DRAWN:	NBN
REVIEW:	BWP

Document Path: C:\Users\nicholas.naylon\Desktop\Samsung\AJC c drive import\GIS\SamsungFoxtail.aprx



6	CURVE NUMBER MAP	FOXTAIL SOLAR TULARE COUNTY, CA	1 inch = 10,000 feet	Kimley»Horn 1100 W TOWN AND COUNTY ROAD, SUITE 700 ORANGE, CA 92868 PHONE: 714-939-1030		DESIGN:	NBN
SHEET NUMBER	PROJECT NO. 194520001	DATE NOVEMBER 2023				DRAWN:	NBN
						REVIEW:	BWP

NOAA Atlas 14, Volume 6, Version 2
Location name: Tulare, California, USA*
Latitude: 36.0885°, Longitude: -119.4641°
Elevation: 226 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.066 (0.054-0.082)	0.089 (0.072-0.111)	0.121 (0.097-0.151)	0.148 (0.119-0.186)	0.188 (0.146-0.244)	0.221 (0.168-0.292)	0.256 (0.191-0.347)	0.295 (0.215-0.410)	0.352 (0.246-0.508)	0.399 (0.271-0.595)
10-min	0.095 (0.077-0.118)	0.127 (0.103-0.159)	0.173 (0.140-0.216)	0.212 (0.170-0.267)	0.269 (0.210-0.350)	0.316 (0.241-0.419)	0.367 (0.274-0.497)	0.423 (0.308-0.587)	0.504 (0.353-0.728)	0.572 (0.388-0.853)
15-min	0.114 (0.093-0.142)	0.154 (0.125-0.192)	0.209 (0.169-0.261)	0.257 (0.206-0.323)	0.326 (0.253-0.423)	0.383 (0.292-0.507)	0.444 (0.331-0.601)	0.511 (0.372-0.710)	0.610 (0.427-0.880)	0.692 (0.469-1.03)
30-min	0.157 (0.127-0.195)	0.211 (0.171-0.263)	0.286 (0.231-0.358)	0.352 (0.282-0.443)	0.447 (0.347-0.580)	0.525 (0.400-0.695)	0.609 (0.454-0.824)	0.701 (0.510-0.974)	0.836 (0.585-1.21)	0.949 (0.643-1.42)
60-min	0.220 (0.178-0.274)	0.295 (0.239-0.368)	0.401 (0.324-0.501)	0.493 (0.395-0.620)	0.625 (0.486-0.812)	0.735 (0.561-0.973)	0.853 (0.636-1.16)	0.982 (0.714-1.36)	1.17 (0.820-1.69)	1.33 (0.901-1.98)
2-hr	0.322 (0.261-0.402)	0.428 (0.346-0.533)	0.574 (0.464-0.718)	0.701 (0.562-0.883)	0.884 (0.687-1.15)	1.03 (0.789-1.37)	1.20 (0.892-1.62)	1.37 (0.997-1.90)	1.62 (1.14-2.34)	1.84 (1.24-2.74)
3-hr	0.399 (0.324-0.497)	0.528 (0.428-0.658)	0.707 (0.571-0.884)	0.862 (0.691-1.09)	1.09 (0.845-1.41)	1.27 (0.969-1.68)	1.47 (1.09-1.98)	1.68 (1.22-2.34)	1.99 (1.39-2.87)	2.25 (1.52-3.35)
6-hr	0.535 (0.434-0.667)	0.706 (0.572-0.881)	0.945 (0.764-1.18)	1.15 (0.923-1.45)	1.45 (1.13-1.88)	1.70 (1.29-2.24)	1.96 (1.46-2.65)	2.25 (1.63-3.12)	2.66 (1.86-3.85)	3.01 (2.04-4.49)
12-hr	0.690 (0.560-0.860)	0.913 (0.739-1.14)	1.22 (0.989-1.53)	1.50 (1.20-1.88)	1.89 (1.47-2.45)	2.21 (1.69-2.93)	2.56 (1.91-3.47)	2.94 (2.14-4.09)	3.50 (2.45-5.06)	3.97 (2.69-5.92)
24-hr	0.874 (0.744-1.05)	1.16 (0.985-1.39)	1.56 (1.32-1.87)	1.90 (1.60-2.30)	2.41 (1.98-2.99)	2.83 (2.29-3.57)	3.29 (2.60-4.23)	3.79 (2.94-4.98)	4.52 (3.39-6.15)	5.14 (3.75-7.19)
2-day	1.06 (0.903-1.27)	1.40 (1.19-1.68)	1.87 (1.58-2.24)	2.28 (1.92-2.76)	2.88 (2.37-3.58)	3.38 (2.73-4.27)	3.93 (3.11-5.05)	4.53 (3.51-5.96)	5.41 (4.06-7.36)	6.16 (4.50-8.61)
3-day	1.17 (0.995-1.40)	1.53 (1.30-1.84)	2.04 (1.73-2.45)	2.48 (2.09-3.00)	3.14 (2.58-3.90)	3.68 (2.97-4.65)	4.27 (3.39-5.50)	4.93 (3.82-6.48)	5.89 (4.42-8.01)	6.70 (4.89-9.37)
4-day	1.28 (1.08-1.53)	1.66 (1.41-2.00)	2.21 (1.88-2.66)	2.69 (2.27-3.26)	3.40 (2.79-4.22)	3.99 (3.22-5.04)	4.63 (3.67-5.96)	5.34 (4.14-7.02)	6.38 (4.78-8.67)	7.25 (5.29-10.1)
7-day	1.50 (1.28-1.80)	1.96 (1.66-2.35)	2.60 (2.21-3.13)	3.17 (2.67-3.84)	3.99 (3.28-4.96)	4.68 (3.78-5.90)	5.42 (4.29-6.97)	6.23 (4.83-8.20)	7.42 (5.57-10.1)	8.42 (6.14-11.8)
10-day	1.62 (1.38-1.94)	2.12 (1.80-2.54)	2.81 (2.39-3.38)	3.42 (2.88-4.14)	4.30 (3.53-5.34)	5.03 (4.06-6.35)	5.81 (4.61-7.48)	6.67 (5.17-8.78)	7.92 (5.94-10.8)	8.96 (6.54-12.5)
20-day	2.00 (1.71-2.40)	2.62 (2.23-3.15)	3.48 (2.95-4.19)	4.22 (3.56-5.11)	5.28 (4.34-6.56)	6.14 (4.96-7.75)	7.06 (5.60-9.09)	8.06 (6.25-10.6)	9.48 (7.12-12.9)	10.7 (7.78-14.9)
30-day	2.40 (2.04-2.88)	3.14 (2.67-3.76)	4.15 (3.52-4.99)	5.01 (4.22-6.06)	6.23 (5.12-7.74)	7.22 (5.83-9.11)	8.26 (6.55-10.6)	9.38 (7.28-12.3)	11.0 (8.23-14.9)	12.3 (8.96-17.2)
45-day	2.90 (2.47-3.48)	3.76 (3.20-4.51)	4.93 (4.19-5.93)	5.92 (4.99-7.17)	7.31 (6.01-9.08)	8.42 (6.80-10.6)	9.58 (7.60-12.3)	10.8 (8.39-14.2)	12.5 (9.41-17.1)	13.9 (10.2-19.5)
60-day	3.42 (2.91-4.10)	4.40 (3.74-5.28)	5.73 (4.86-6.89)	6.83 (5.76-8.27)	8.38 (6.88-10.4)	9.60 (7.76-12.1)	10.9 (8.62-14.0)	12.2 (9.47-16.1)	14.1 (10.6-19.1)	15.6 (11.3-21.7)

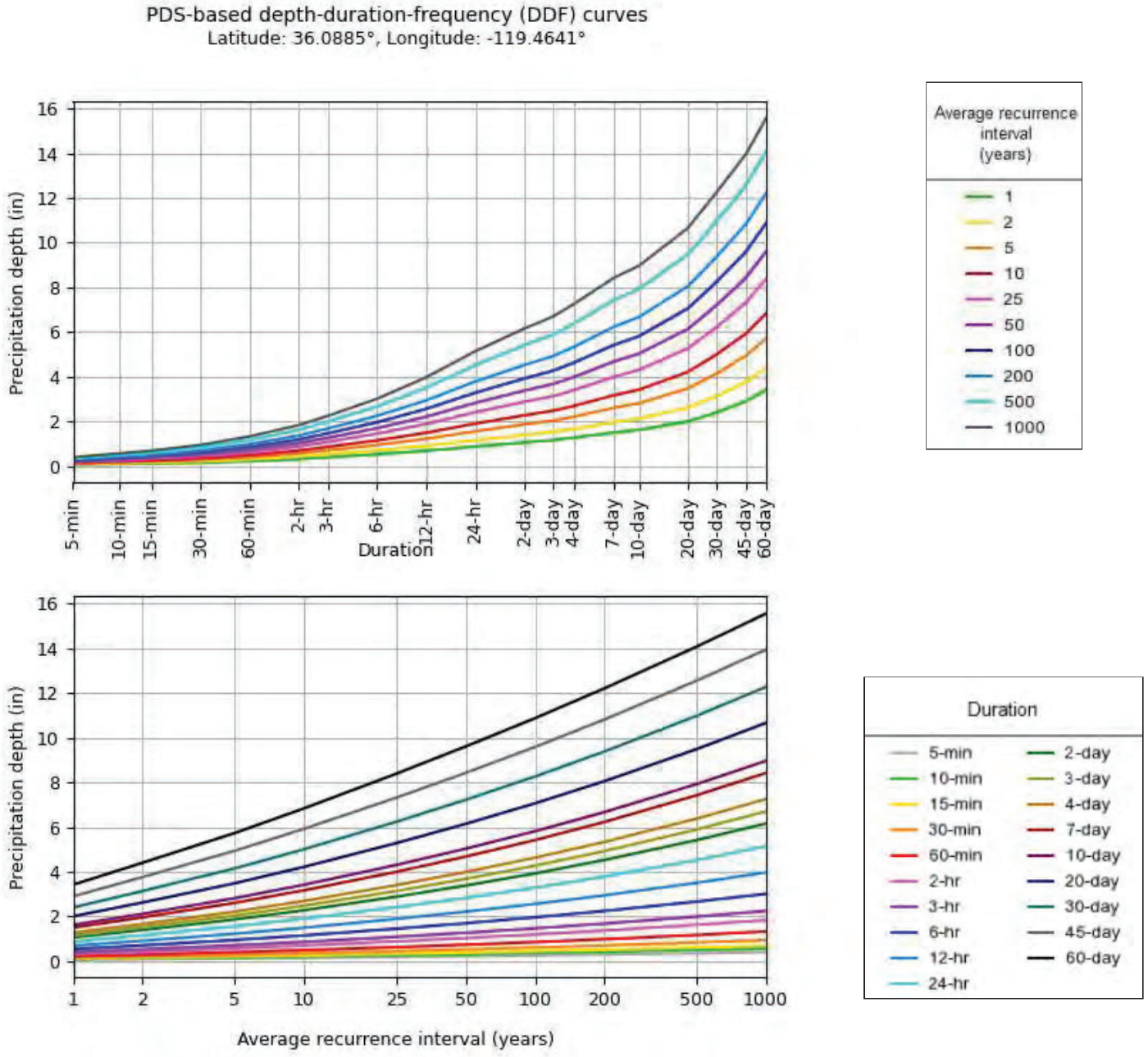
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



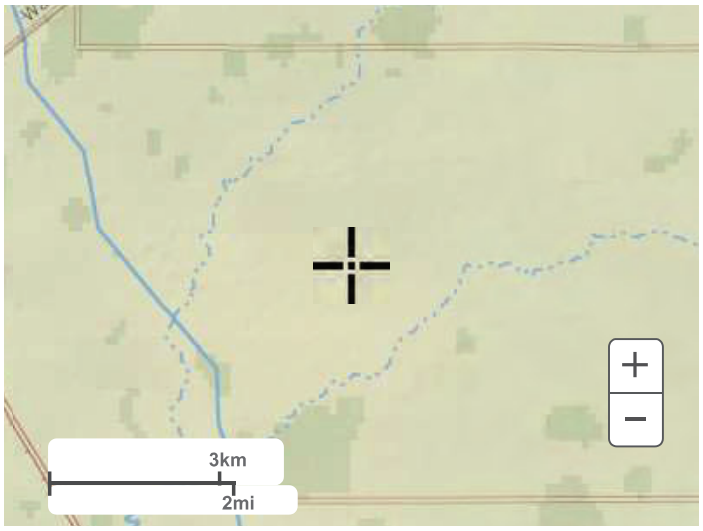
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Created (GMT): Mon Oct 23 23:00:26 2023

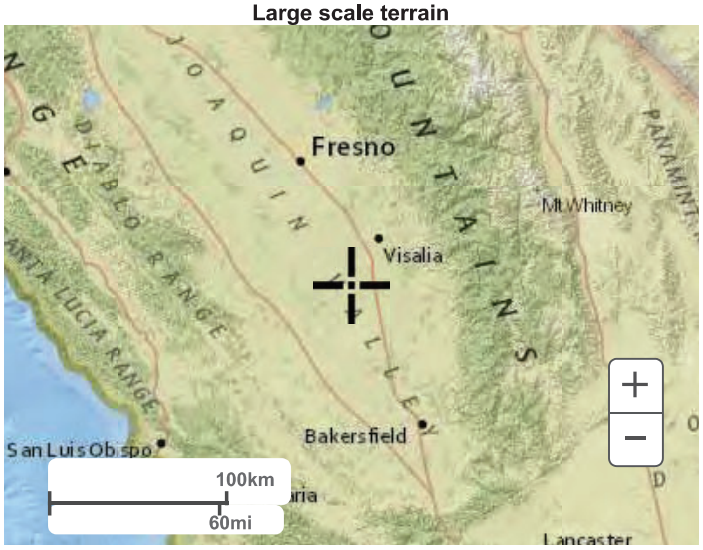
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Maps & aerials

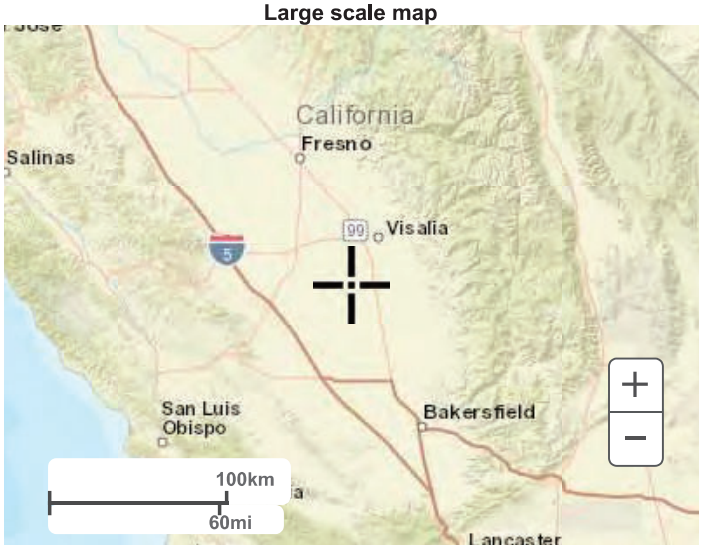
Small scale terrain



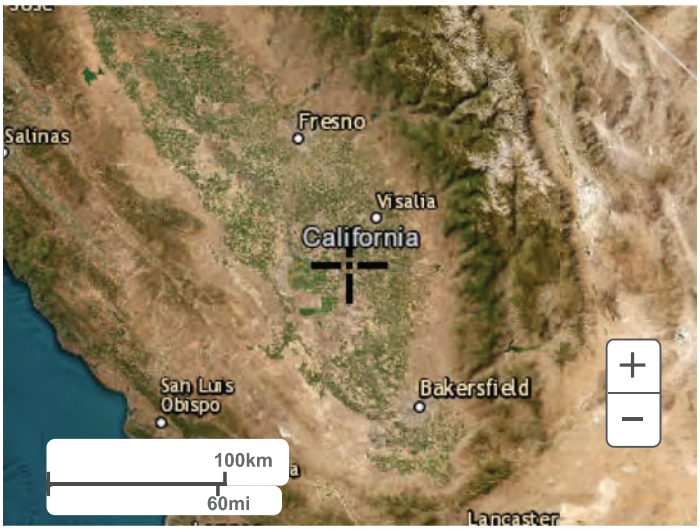
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

NOAA Atlas 14, Volume 6, Version 2
Location name: Springville, California, USA*
Latitude: 36.1709°, Longitude: -118.9286°
Elevation: 965 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.106** (0.089-0.126)	**0.132** (0.111-0.158)	**0.168** (0.142-0.202)	**0.200** (0.167-0.243)	**0.248** (0.199-0.312)	**0.287** (0.225-0.371)	**0.331** (0.252-0.439)	**0.379** (0.280-0.520)	**0.452** (0.318-0.649)	**0.514** (0.348-0.768)
10-min	**0.151** (0.128-0.181)	**0.189** (0.159-0.226)	**0.241** (0.203-0.289)	**0.287** (0.239-0.348)	**0.355** (0.285-0.447)	**0.412** (0.322-0.531)	**0.474** (0.361-0.629)	**0.544** (0.401-0.745)	**0.648** (0.455-0.931)	**0.737** (0.498-1.10)
15-min	**0.183** (0.155-0.219)	**0.228** (0.193-0.273)	**0.292** (0.245-0.350)	**0.347** (0.290-0.421)	**0.429** (0.344-0.541)	**0.498** (0.390-0.643)	**0.573** (0.436-0.761)	**0.658** (0.485-0.901)	**0.783** (0.551-1.12)	**0.892** (0.603-1.33)
30-min	**0.253** (0.214-0.303)	**0.316** (0.267-0.378)	**0.404** (0.340-0.484)	**0.481** (0.401-0.583)	**0.594** (0.477-0.748)	**0.689** (0.540-0.889)	**0.794** (0.604-1.05)	**0.910** (0.671-1.25)	**1.08** (0.762-1.56)	**1.23** (0.834-1.84)
60-min	**0.348** (0.294-0.415)	**0.433** (0.366-0.518)	**0.553** (0.466-0.664)	**0.659** (0.550-0.799)	**0.815** (0.654-1.03)	**0.945** (0.740-1.22)	**1.09** (0.828-1.44)	**1.25** (0.920-1.71)	**1.49** (1.04-2.14)	**1.69** (1.14-2.53)
2-hr	**0.516** (0.436-0.617)	**0.642** (0.542-0.768)	**0.817** (0.688-0.981)	**0.970** (0.808-1.18)	**1.19** (0.955-1.50)	**1.37** (1.08-1.77)	**1.57** (1.20-2.09)	**1.79** (1.32-2.45)	**2.11** (1.48-3.03)	**2.38** (1.61-3.56)
3-hr	**0.643** (0.544-0.768)	**0.800** (0.675-0.957)	**1.02** (0.857-1.22)	**1.21** (1.01-1.46)	**1.48** (1.19-1.87)	**1.71** (1.34-2.20)	**1.95** (1.48-2.59)	**2.22** (1.64-3.04)	**2.61** (1.84-3.75)	**2.94** (1.99-4.39)
6-hr	**0.915** (0.774-1.09)	**1.14** (0.964-1.37)	**1.46** (1.23-1.75)	**1.73** (1.44-2.10)	**2.13** (1.71-2.68)	**2.46** (1.92-3.17)	**2.81** (2.14-3.73)	**3.20** (2.36-4.38)	**3.76** (2.64-5.40)	**4.24** (2.87-6.33)
12-hr	**1.24** (1.05-1.48)	**1.56** (1.32-1.87)	**2.02** (1.70-2.42)	**2.41** (2.01-2.92)	**3.00** (2.40-3.78)	**3.49** (2.73-4.50)	**4.02** (3.06-5.33)	**4.61** (3.40-6.32)	**5.50** (3.86-7.90)	**6.25** (4.23-9.34)
24-hr	**1.65** (1.47-1.88)	**2.10** (1.88-2.40)	**2.74** (2.44-3.15)	**3.32** (2.93-3.83)	**4.17** (3.57-4.97)	**4.89** (4.10-5.95)	**5.69** (4.67-7.08)	**6.59** (5.26-8.43)	**7.95** (6.10-10.6)	**9.13** (6.78-12.6)
2-day	**2.06** (1.84-2.35)	**2.64** (2.36-3.02)	**3.47** (3.09-3.98)	**4.21** (3.72-4.86)	**5.32** (4.55-6.34)	**6.25** (5.24-7.60)	**7.28** (5.97-9.06)	**8.43** (6.73-10.8)	**10.2** (7.80-13.5)	**11.6** (8.65-16.0)
3-day	**2.30** (2.05-2.62)	**2.96** (2.64-3.38)	**3.90** (3.48-4.47)	**4.74** (4.19-5.48)	**5.99** (5.13-7.14)	**7.05** (5.91-8.57)	**8.21** (6.73-10.2)	**9.51** (7.59-12.2)	**11.4** (8.78-15.2)	**13.1** (9.72-18.0)
4-day	**2.51** (2.24-2.86)	**3.23** (2.88-3.69)	**4.26** (3.79-4.88)	**5.17** (4.57-5.97)	**6.53** (5.59-7.78)	**7.67** (6.44-9.33)	**8.93** (7.32-11.1)	**10.3** (8.25-13.2)	**12.4** (9.53-16.5)	**14.2** (10.5-19.5)
7-day	**2.96** (2.64-3.38)	**3.79** (3.38-4.33)	**4.97** (4.42-5.69)	**6.00** (5.30-6.93)	**7.54** (6.45-8.98)	**8.83** (7.41-10.7)	**10.2** (8.40-12.7)	**11.8** (9.43-15.1)	**14.1** (10.8-18.8)	**16.1** (12.0-22.1)
10-day	**3.29** (2.94-3.75)	**4.20** (3.74-4.80)	**5.47** (4.87-6.27)	**6.60** (5.83-7.62)	**8.25** (7.06-9.83)	**9.63** (8.08-11.7)	**11.1** (9.14-13.9)	**12.8** (10.2-16.4)	**15.3** (11.7-20.3)	**17.4** (12.9-23.9)
20-day	**4.20** (3.75-4.80)	**5.36** (4.79-6.13)	**6.97** (6.20-7.98)	**8.35** (7.38-9.65)	**10.4** (8.86-12.3)	**12.0** (10.1-14.6)	**13.8** (11.3-17.2)	**15.7** (12.6-20.1)	**18.6** (14.3-24.7)	**21.0** (15.6-28.8)
30-day	**5.11** (4.57-5.84)	**6.53** (5.83-7.46)	**8.46** (7.53-9.69)	**10.1** (8.92-11.7)	**12.4** (10.6-14.8)	**14.3** (12.0-17.4)	**16.4** (13.4-20.4)	**18.6** (14.8-23.7)	**21.7** (16.7-28.9)	**24.4** (18.1-33.5)
45-day	**6.36** (5.68-7.26)	**8.10** (7.23-9.26)	**10.4** (9.30-12.0)	**12.4** (11.0-14.3)	**15.1** (13.0-18.0)	**17.3** (14.5-21.0)	**19.6** (16.1-24.4)	**22.1** (17.6-28.2)	**25.6** (19.6-34.0)	**28.4** (21.1-39.1)
60-day	**7.43** (6.64-8.49)	**9.44** (8.42-10.8)	**12.1** (10.8-13.8)	**14.3** (12.6-16.5)	**17.2** (14.8-20.6)	**19.6** (16.4-23.8)	**22.0** (18.1-27.4)	**24.6** (19.6-31.5)	**28.2** (21.7-37.5)	**31.2** (23.1-42.8)

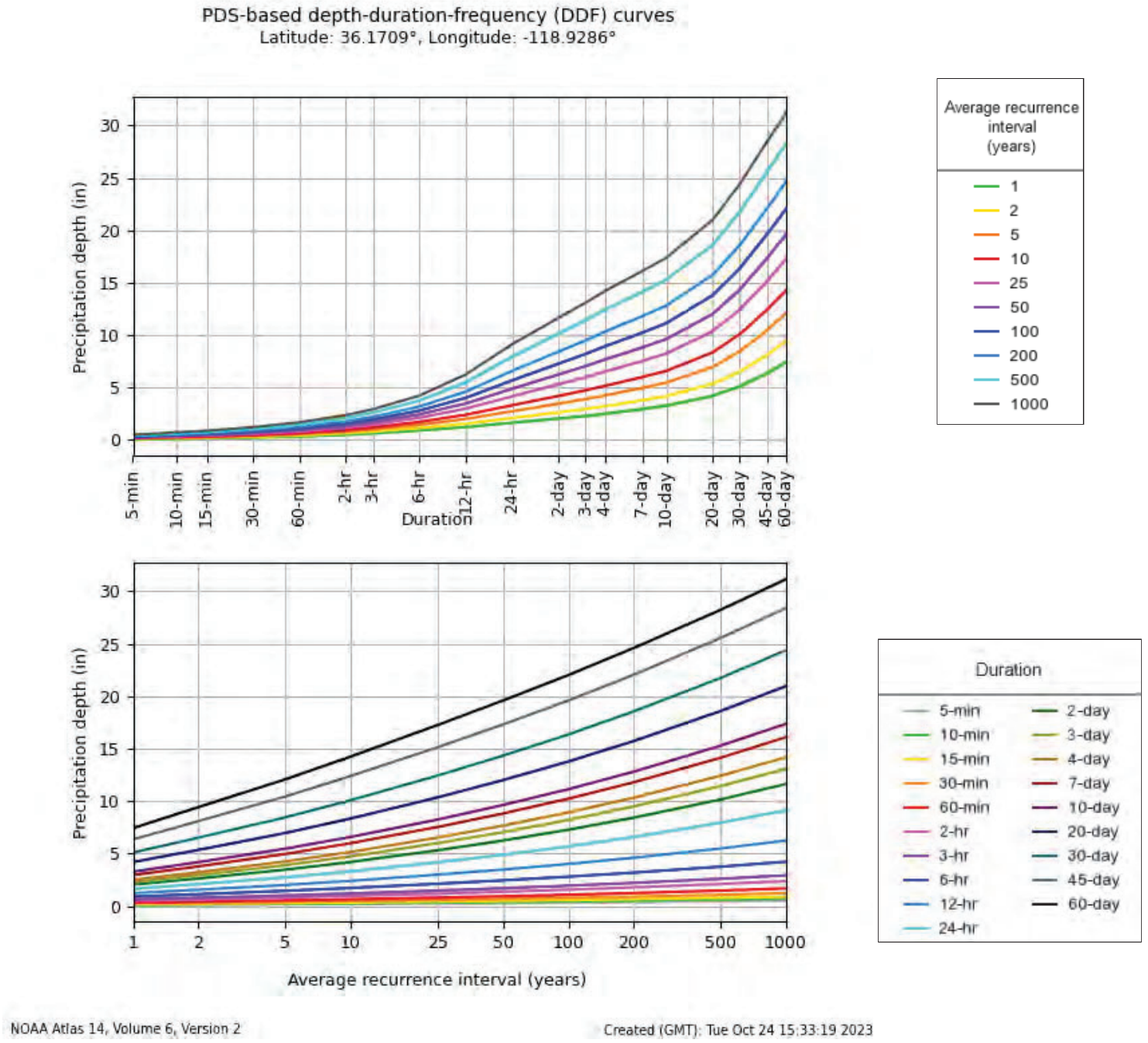
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

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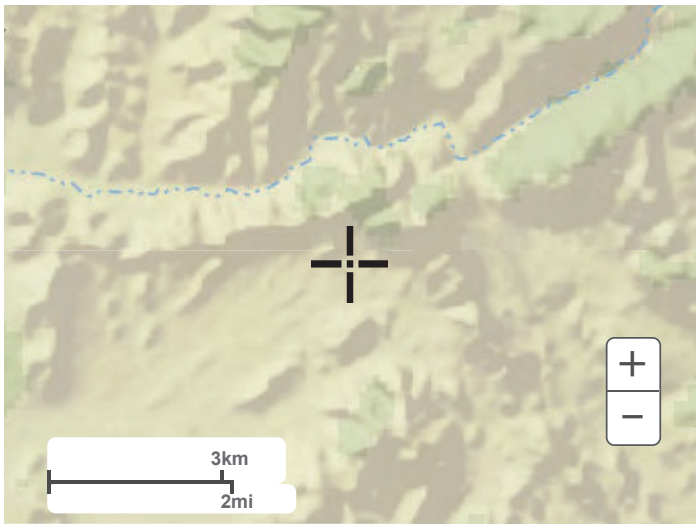
PF graphical



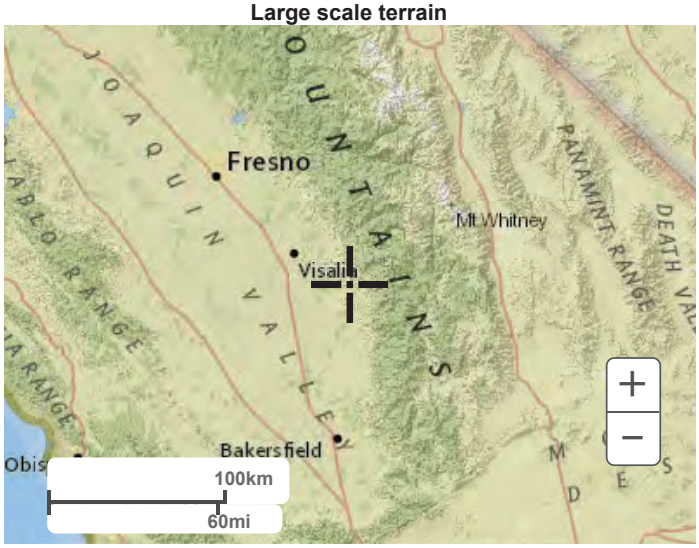
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Maps & aerials

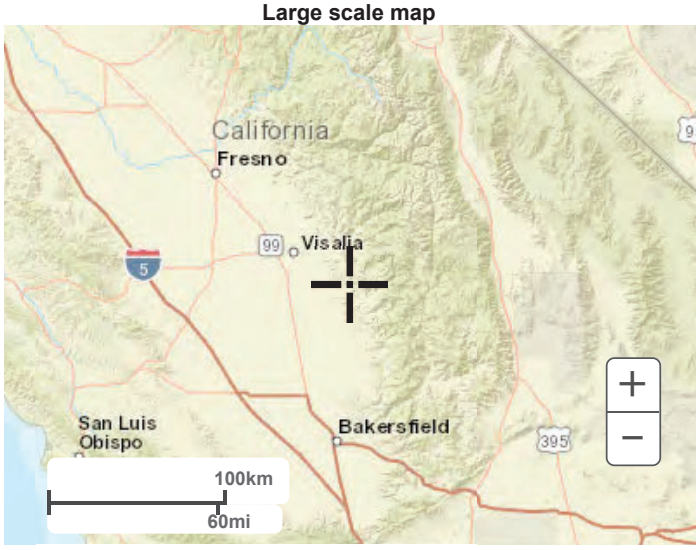
Small scale terrain



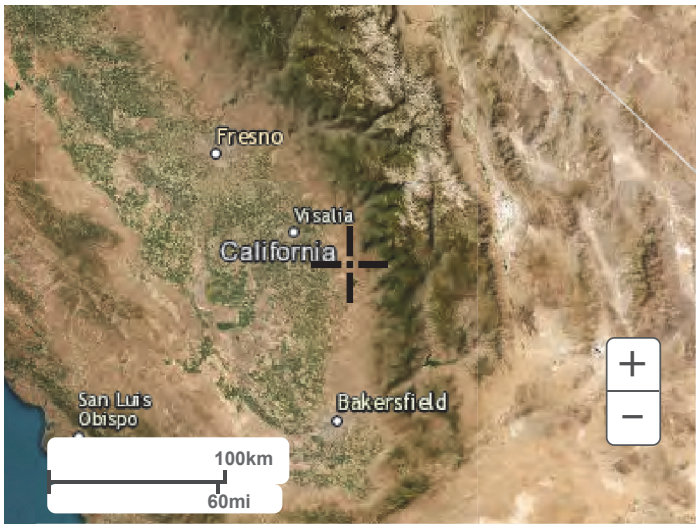
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Samsung Foxtail CN Calculations

Samsung Foxtail Composite Curve Number			
Drainage Area	**Area (ac)**	**Area (sq-mi)**	**CN**
A-1	168889.3	263.9	78.9
A-2	69911.4	109.2	68.3
B-1	61317.8	95.8	77.8
B-2	249681.4	390.1	61.0
2D	80791.5	126.2	83.2

Samsung Foxtail Lag Time Calculations

TIME OF CONCENTRATION & LAG TIME
PRE-PROJECT WATERSHED CONDITIONS
TR-55 Methodology

	SHEET FLOW						**SHALLOW CONCENTRATED FLOW**							**OPEN CHANNEL FLOW**			**TOTAL**	
	Tc = (0.42(nL)^0.8)/(P2^0.5)(s^0.4) 2-year/24-hr Rainfall Depth (in.) = 2.1						Tc = L / 60*V							Tc = L / 60*V V = assumed				
Basin	Length (ft)	$Elev_1$	$Elev_2$	Slope (ft/ft)	Manning's "n"	T_{c1} (min)	Length (ft)	$Elev_2$	$Elev_3$	Slope (ft/ft)	Condition TR-55 Fig. 3-1	V_{avg} (ft/s)	T_{c2} (min)	Length (ft)	V_{avg} (ft/s)	T_{c3} (min)	T_{cTOTAL} * (min)	T_{lag} $0.6*T_c$ (min)
A-1	300	3302.0	3257.0	0.1500	0.400	28.5	3550	3257.0	2312.1	0.2662	Unpaved	8.32	7.1	190441	5.00	634.8	670.4	402.3
A-2	300	3302.0	3257.0	0.1500	0.400	28.5	2849	3257.0	2960.9	0.1039	Unpaved	5.20	9.1	125420	6.00	348.4	386.0	231.6
B-1	300	1220.6	1153.2	0.2248	0.400	24.3	5662	1153.2	679.2	0.0837	Unpaved	4.67	20.2	136230	5.00	454.1	498.6	299.1
B-2	300	8929.3	8840.8	0.2950	0.400	21.8	1759	8840.8	8099.4	0.4215	Unpaved	10.47	2.8	142837	6.00	396.8	421.3	1750*

*adjusted to approximate the Success Lake discharge as listed in the Flood Insurance Study for Tulare County

Samsung Foxtail HMS Results

Project: SamsungFoxtail Simulation Run: OFF A

Start of Run: 01Jan2023, 00:00
End of Run: 02Jan2023, 12:00

Basin Model: EX
Meterologic Model: 100-YR A14 OFF_A_373_SQMI
Control Specifications: Control 1

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A-1	263.9	42655.7	01Jan2023, 19:38	3.96
A-2	109.2	12700.7	01Jan2023, 17:04	2.19
Junction-A.2	109.2	12700.7	01Jan2023, 17:04	2.19
Reach-A	109.2	12621.4	01Jan2023, 19:18	2.14
B-2	390.1	8339.7	02Jan2023, 12:00	0.29
Junction-B.2	390.1	8339.7	02Jan2023, 12:00	0.29
Reach-B	390.1	5885.3	02Jan2023, 12:00	0.14
B-1	95.8	17437	01Jan2023, 17:37	3.99
Junction-B	485.9	17521	01Jan2023, 17:39	0.90
Junction-A	373.1	55243.2	01Jan2023, 19:31	3.43

Samsung Foxtail HMS Results

Project: SamsungFoxtail Simulation Run: OFF B

Start of Run: 01Jan2023, 00:00
End of Run: 02Jan2023, 12:00

Basin Model: EX
Meterologic Model: 100-YR A14 OFF_B_486_SQMI
Control Specifications: Control 1

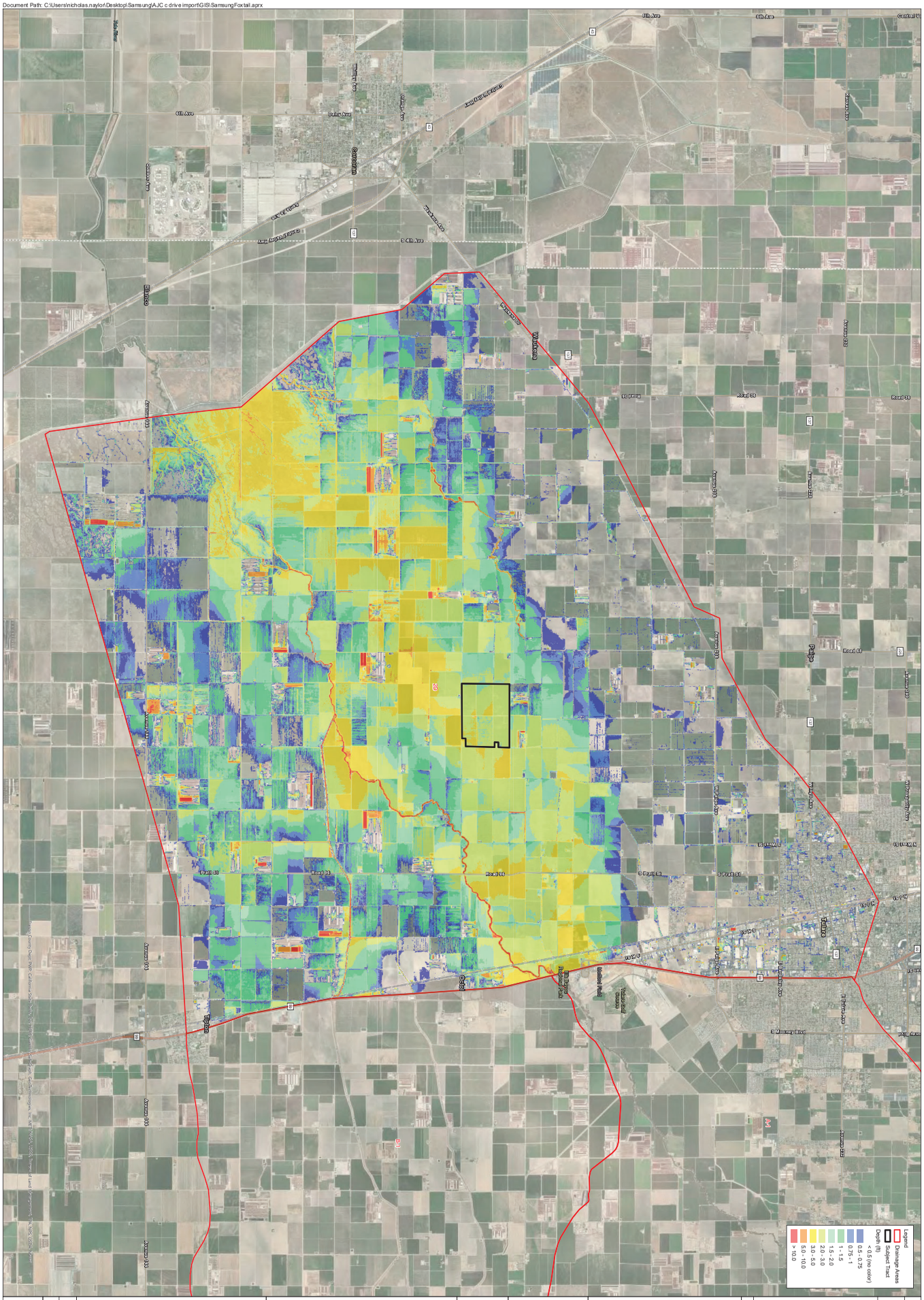
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
A-1	263.9	42630.9	01Jan2023, 19:38	3.96
A-2	109.2	12689.5	01Jan2023, 17:04	2.19
Junction-A.2	109.2	12689.5	01Jan2023, 17:04	2.19
Reach-A	109.2	12609.8	01Jan2023, 19:19	2.14
B-2	390.1	8334.2	02Jan2023, 12:00	0.29
Junction-B.2	390.1	8334.2	02Jan2023, 12:00	0.29
Reach-B	390.1	5880.4	02Jan2023, 12:00	0.14
B-1	95.8	17425.4	01Jan2023, 17:37	3.99
Junction-B	485.9	17509.4	01Jan2023, 17:39	0.90
Junction-A	373.1	55208.8	01Jan2023, 19:31	3.42

Appendix C
Hydraulics

Existing Condition 100-Year Inundation Map
Existing Condition 100-Year Site Inundation Map
Existing Condition 100-Year Site Velocity Map
Existing Condition 100-Year Site Scour Potential Map

Kimley»Horn
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Document Path: C:\Users\nicholas.naylon\Desktop\Samsung\AJC c drive import\GIS\Samsung Foxtail.aprx

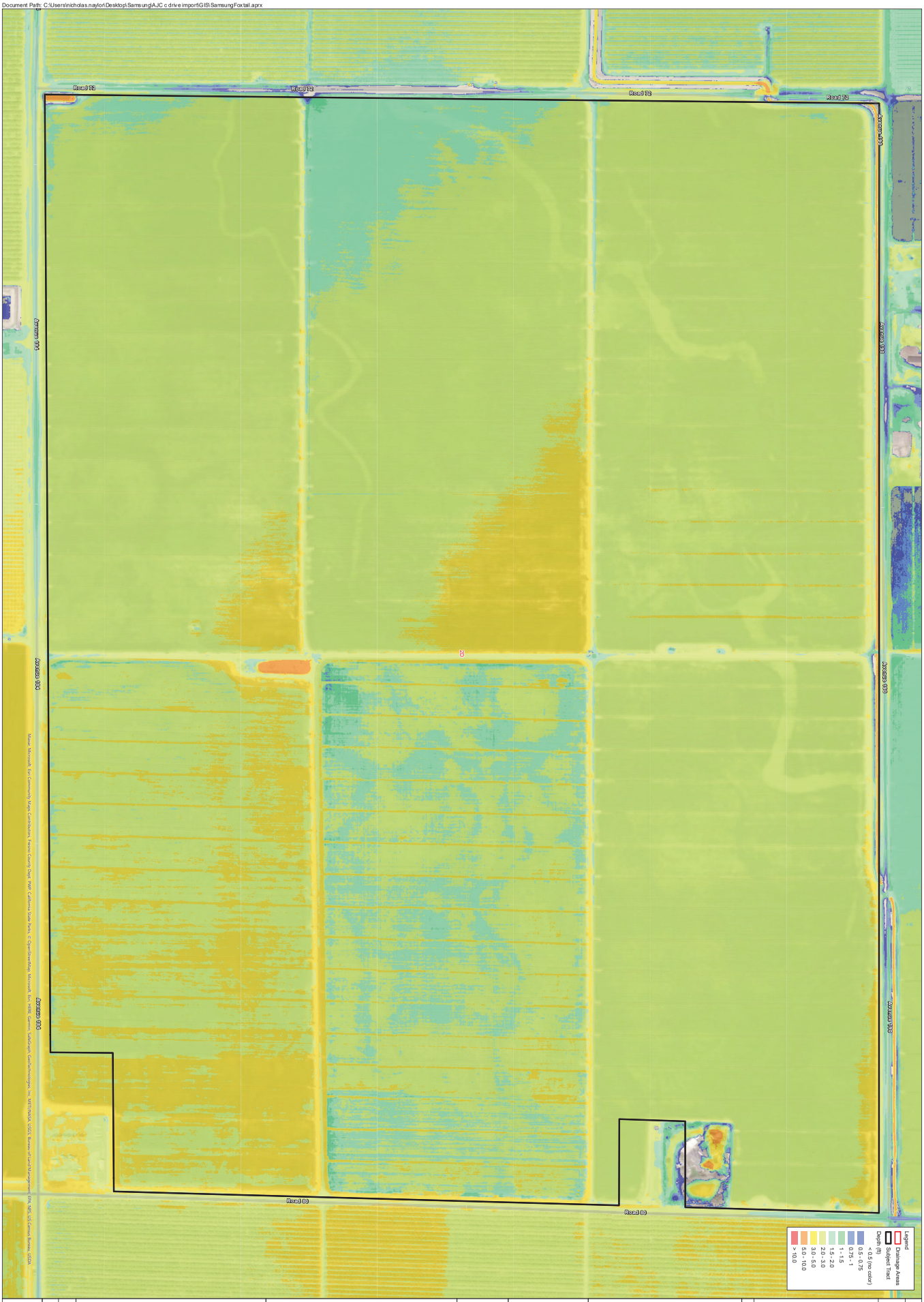


SHEET NUMBER 7	PROJECT NO. 194520001	DATE NOVEMBER 2023	100-YR INUNDATION MAP	FOXTAIL SOLAR TULARE COUNTY, CA	1 Inch = 3,333 Feet

Kimley»Horn
1100 W TOWN AND COUNTY ROAD, SUITE 700
ORANGE, CA 92868
PHONE: 714-939-1030

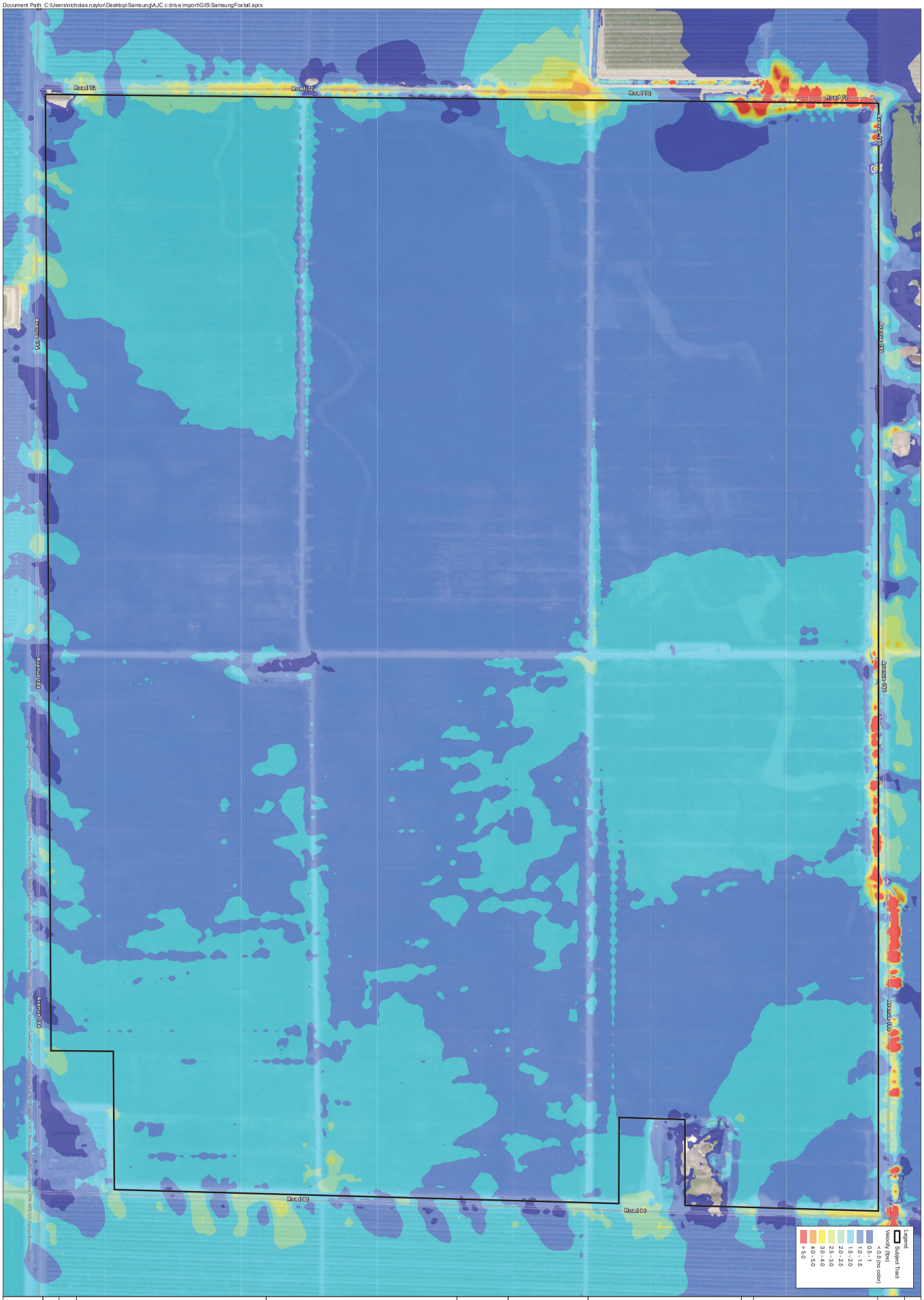
DESIGN:	NBN
DRAWN:	NBN
REVIEW:	BWP

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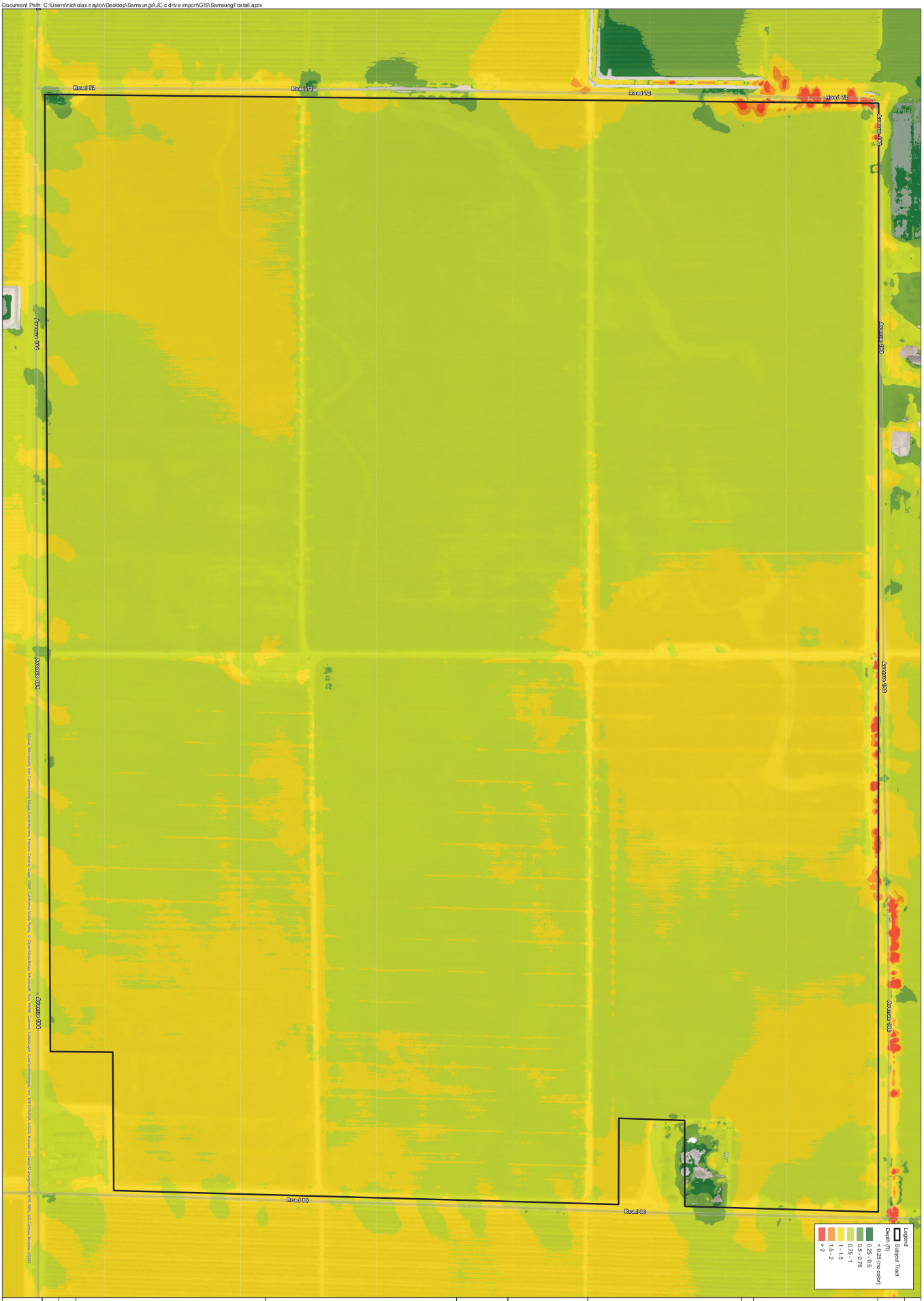
SHEET NUMBER: 8	PROJECT NO.: 194620001	DATE: NOVEMBER 2023	100-YR SITE INUNDATION MAP	FOXTAIL SOLAR TULARE COUNTY, CA	1 inch = 191 feet		Kimley»Horn 1100 W TOWN AND COUNTY ROAD, SUITE 700 ORANGE, CA 92868 PHONE: 714-939-1030	DESIGN: NBN DRAWN: NBN REVIEW: BWP

Document Path: C:\Users\nicholas.naylon\Desktop\Samsung\AJC c drive import\GIS\SamsungFoxtail.aprx



9 SHEET NUMBER	PROJECT NO. 194620001	DATE NOVEMBER 2023	100-YR SITE VELOCITY MAP	FOXTAIL SOLAR TULARE COUNTY, CA	1 inch = 191 feet	Kimley»Horn 1100 W TOWN AND COUNTY ROAD, SUITE 700 ORANGE, CA 92868 PHONE: 714-939-1030	DESIGN: NBN DRAWN: NBN REVIEW: BWP

Document Path: C:\Users\nicholas.naylon\Desktop\Samsung\AJC c drive import\GIS\SamsungFoxtail.aprx



SHEET NUMBER 10	PROJECT NO. 194620001	DATE NOVEMBER 2023	100-YR SITE SCOUR POTENTIAL MAP	FOXTAIL SOLAR TULARE COUNTY, CA	1 inch = 191 feet	N

Kimley»Horn
1100 W TOWN AND COUNTY ROAD, SUITE 700
ORANGE, CA 92868
PHONE: 714-939-1030

DESIGN:	NBN
DRAWN:	NBN
REVIEW:	BWP

Appendix D
Digital Files

HEC-HMS
HEC-RAS

Kimley»Horn
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ATTACHMENT G

Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

Mitigation Measure		When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance		
						Initials	Date	Remarks
BIOLOGICAL RESOURCES								
AQ-1	Engine Standards for Off-Road Equipment. In order to reduce the impact of PM10 off-road equipment exhaust emissions during construction-related activities, applicant shall ensure that construction contracts stipulate that all off-road diesel-powered equipment used will be equipped with USEPA Tier 4 or cleaner engines, except for specialized equipment in which an USEPA Tier 4 engine is not available. In lieu of Tier 4 engines, project equipment can incorporate retrofits such that emissions reductions achieved equal to that of the Tier 4 engines at a minimum. The construction contractor shall submit a detailed list of the equipment fleet that demonstrates achievement of this mitigation measure to Tulare County Resource Management Agency Planning Branch for approval prior to receiving Notice to Proceed.	Prior to construction	Once prior to start of construction and once after completion of construction	County of Tulare	Equipment and Usage Report			
BIOLOGICAL RESOURCES								
Measures for Special Status Plant Species								
BIO-1	**(Pre-construction Survey)** A qualified biologist/botanist will conduct preconstruction surveys for special status plant species in accordance with the California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (2009). This protocol includes identification of reference populations to facilitate the likelihood of field investigation occurring during the appropriate floristic period. Surveys should be timed to coincide with flowering periods for species that could occur (March-May). In the absence of protocol-level surveys being performed, additional surveys may be necessary.	Prior to start of construction	Once within 30 days of construction, unless pre-construction survey results in new recommendations for further study and mitigation; then mitigation should occur as recommended following coordination with Tulare County RMA	County of Tulare	Field survey by a qualified Biologist			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**		
						Initials	**Date**	**Remarks**
	• If special status plant species are not identified during preconstruction surveys, no further action is required. • If special status plant species are detected during preconstruction surveys, plant population shall be avoided with the establishment of a minimum 50-foot no disturbance buffer from the outer edge of the plant population. If buffers cannot be maintained, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to identify the appropriate minimization actions to be taken as appropriate for the species identified and to determine permitting needs.							
Measures for Special Status Animal Species								
BIO-2	**(Pre-construction Survey)** A qualified biologist will conduct pre-construction surveys during the appropriate periods for special status animal species in accordance with CDFW guidance and recommendations. In the absence of protocol-level surveys being performed, additional surveys may be necessary. If special status animal species are not identified during pre-construction surveys, no further action is required. If special status animal species are detected during pre-construction surveys, the Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW shall be contacted immediately to identify the appropriate avoidance and minimization actions to be taken as applicable for the identified species and to determine permitting needs.	Prior to start of construction	Once within 30 days of construction, unless pre-construction survey results in new recommendations for further study and mitigation; then mitigation should occur as recommended following coordination with Tulare County RMA	County of Tulare	Field survey by a qualified Biologist			
Measures for Special Status Plant and Animal Species Identified in Pre-construction Surveys								
BIO-3	**(Employee Education Program)** Prior to the start of construction, the applicant shall retain a qualified biologist/botanist to conduct a tailgate	Prior to construction-	As needed if special status	County of Tulare	Qualified biologist working with			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**		
						Initials	**Date**	**Remarks**
	meeting to train all construction staff that will be involved with the project on the special status species that occur, or may occur, on the project site. This training will include a description of the species and its habitat needs; a report of the occurrence of the species in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of the measures being taken to reduce impacts to the species during project construction and implementation.	related activities	species are detected		USFWS and/or CFW			
Measures for Nesting Raptors and Migratory Birds (Including Swainson's Hawk, Loggerhead Shrike, Prairie Falcon, and Northern Harrier)								
BIO-4	**(Avoidance)** In order to avoid impacts to nesting raptors and migratory birds, individual Projects within the Project will be constructed, where possible, outside the nesting season (between September 1st and January 31st).	Implemented only if sensitive species are encountered	Throughout construction	County of Tulare	Determination by qualified biologist			
BIO-5	**(Pre-construction Survey)** If Project activities must occur during the nesting season (February 1-August 31), the proponent is responsible for ensuring that implementation does not violate the Migratory Bird Treaty Act or relevant Fish and Game Code. A qualified biologist shall conduct pre-construction surveys for active raptor and migratory bird nests within 10 days of the onset of these activities. The survey will include the proposed work area(s) and surrounding lands within 500 feet for all nesting raptors and migratory birds; with the exception of Swainson's hawk. The Swainson's hawk survey will utilize the Swainson's Hawk Technical Advisory Committee *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (2000) methodology which will extend to ½-mile outside of work area boundaries. If no nesting pairs are found within the survey area, no further mitigation is required.	Prior to start of construction	Once within 10 days of construction, unless a pre-construction survey results in new recommendations for further study and mitigation, then mitigation should occur as recommended following coordination with Tulare County RMA	County of Tulare	Field survey by a qualified Biologist			

Mitigation Monitoring and Reporting Program

<table>
<tr><th colspan="2" rowspan="2">Mitigation Measure</th><th rowspan="2">When Monitoring is to Occur</th><th rowspan="2">Frequency of Monitoring</th><th rowspan="2">Agency Responsible for Monitoring</th><th rowspan="2">Method to Verify Compliance</th><th colspan="3">Verification of Compliance</th></tr>
<tr><th>Initials</th><th>Date</th><th>Remarks</th></tr>
<tr><td>BIO-6</td><td>(Pre-construction Survey) A qualified biologist will conduct pre-construction surveys in accordance with Swainson’s Hawk Technical Advisory Committee Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley (2000) which employs the following:

<table>
<tr><th>Survey Period</th><th>Survey Dates</th><th>Survey Time</th><th>Number of Surveys Needed</th></tr>
<tr><td>I</td><td>January – March 20</td><td>All day</td><td>1</td></tr>
<tr><td>II</td><td>March 20 – April 5</td><td>Sunrise – 1000; 1600 to Sunset</td><td>3</td></tr>
<tr><td>III</td><td>April 5 – April 20</td><td>Sunrise – 1200; 1630 – Sunset</td><td>3</td></tr>
<tr><td>IV</td><td>April 21 – June 10</td><td>Monitoring sites only</td><td>Initiating surveys is not recommended</td></tr>
<tr><td>V</td><td>June 10 – July 30</td><td>Sunrise – 1200; 1600 – Sunset</td><td>3</td></tr>
</table>

If project activities must occur during the nesting season (February 1-August 31), the project proponent and/or their contractor is responsible for ensuring that implementation does not violate the Migratory Bird Treaty Act or relevant Fish and Game Code, and a qualified biologist will conduct pre-construction surveys for active raptor and migratory bird nests within 10 days of the onset of these activities. The survey will include the proposed work area(s) and surrounding lands within 500 feet for all nesting raptors and migratory birds save Swainson’s hawk; the Swainson’s hawk survey will extend to ½ mile</td><td>Prior to start of construction</td><td>Once within 30 days of construction, unless a pre-construction survey results in new recommendations for further study and mitigation, then mitigation should occur as recommended following coordination with Tulare County RMA</td><td>County of Tulare</td><td>Field survey by a qualified Biologist</td><td></td><td></td><td></td></tr>
</table>

Mitigation Monitoring and Reporting Program								
Mitigation Measure		**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**		
						Initials	**Date**	**Remarks**
	outside of work area boundaries. If no nesting pairs are found within the survey area, no further mitigation is required.							
BIO-7	**(Buffers)** Should any active nests be discovered near proposed work areas, a qualified biologist will determine appropriate construction setback distances and a behavioral baseline of all identified nests based on applicable CDFW guidelines and/or the biology of the affected species. Within these buffers, the biologist will continue monitoring to detect behavioral changes. If adverse behavioral changes occur, the activity causing the changes will cease and CDFW will be consulted to determine if avoidance and minimization measures need to be modified to adequately protect the impacted birds. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged (i.e., when a bird's feathers and wing muscles are sufficiently developed for flight). Unless a variance is approved by CDFW, the buffer shall not be less than 250 feet around active nests of non-listed bird species and not less than 500 feet around active nests of non-listed raptor species until the birds have fledged. Unless a variance is approved by CDFW, a ½ mile distance shall be used for SWHA, until the birds have "fledged".	Implemented only if sensitive species are encountered	Throughout construction	County of Tulare	Determination by qualified biologist			
Measures for Burrowing Owl								
BIO-8	**(Pre-construction Survey)** A pre-construction survey for burrowing owls will be conducted by a qualified biologist within 30 days of the onset of project-related activities involving ground disturbance or heavy equipment use. The survey area will include all suitable habitat on and within	Prior to the start of construction	Once within 30 days of construction, unless a pre-construction survey results in	County of Tulare	Field survey by a qualified Biologist			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**		
						Initials	**Date**	**Remarks**
	500 feet of project impact areas, where accessible.		new recommendations for further study and mitigation then mitigation should occur as recommended following coordination with Tulare County RMA					
BIO -9	**(Avoidance of Active Nests.)** If pre-construction surveys and subsequent project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are located within or near project impact areas, then a 250-foot construction setback will be established around active owl nests, or alternate avoidance measures implemented in consultation with CDFW. The buffer areas will be enclosed with temporary fencing to prevent construction equipment and workers from entering the setback area. Buffers will remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e., once all young have left the nest), passive relocation of any remaining owls may take place as described below.	Prior to construction-related activities	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare RMA and CDFW	Qualified biologist			
BIO-10	**(Passive Relocation of Resident Owls)**. During the non-breeding season (September 1-January 31), resident owls occupying burrows in project impact areas may be passively relocated to alternative habitat in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50 foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside	Prior to construction-related activities	Retention of professional biologist/ongoing monitoring/ submittal of Report of Findings, if applicable	County of Tulare RMA and CDFW	Qualified biologist			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**		
						Initials	**Date**	**Remarks**
	the 50 foot buffer and up to 160 feet outside of the impact areas as necessary, 3) installing one-way doors on all potential owl burrows within the 50 foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50 foot buffer.							
Measures for Tricolored Blackbird (TRBL)								
BIO-11	**(Pre-construction Surveys)** If construction activities must occur between February 1 and September 15, then a qualified biologist will conduct pre-construction surveys to determine the presence/absence of tricolored blackbirds on and, to the extent feasible, within 500 feet of the project site, no more than 10 days prior to the start of construction. Should any tricolored blackbirds be discovered within the survey area, then the observation will be submitted to the CNDDB, and the local CDFW office (Fresno) will be contacted. Additional measures, if any, will be identified in consultation with the CDFW based on local conditions.	Prior to construction-related activities	Retention of professional biologist/ongoing monitoring/submittal of Report of Findings, if applicable	County of Tulare RMA	Qualified biologist			
Measures for San Joaquin Kit Fox								
BIO12	**(Pre-construction Survey)** Pre-construction surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance, construction activities, and/or any project activity likely to impact the San Joaquin kit fox. These surveys will be conducted in accordance with the USFWS Standard *Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (2011). Specifically the survey	Prior to start of construction	Once within 30 days of construction, unless a pre-construction survey results in new recommendations for further study and mitigation;	County of Tulare	Field survey by a qualified Biologist			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**		
						Initials	**Date**	**Remarks**
	will include the project site and a minimum of a 200-foot area outside of all project impact areas. The primary objective is to identify kit fox habitat features (e.g. potential dens and refugia) on the project site and evaluate their use by kit fox through the use of remote monitoring techniques such as motion-triggered cameras and tracking medium. If potential dens are not identified, no further action is required.		then mitigation should occur as recommended following coordination with Tulare County RMA					
BIO-13	**(Avoidance)** Should an active or potential kit fox den be detected within or immediately adjacent to the area of work during pre-construction surveys, the den shall not be disturbed or destroyed. In accordance with the USFWS, *Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (2011), a minimum 50-foot no-disturbance buffer area shall be established around potential and man-made (atypical) dens and a minimum 100-foot no-disturbance buffer area shall be established around known den sites. The Sacramento Field Office of the USFWS and Fresno Field Office of the CDFW shall be contacted immediately by phone and in writing to determine the best course of action, if required, and to initiate the take authorization/permit process.	Implemented only if sensitive species are encountered	Throughout construction	County of Tulare	Determination by qualified biologist			
BIO-14	**(Minimization)** Construction activities shall be carried out in a manner that minimizes disturbance to kit fox. Minimization measures include, but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit	During construction	As needed during construction	County of Tulare	Determination by qualified biologist			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance		
						Initials	Date	Remarks
	foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.							
BIO-15	**(Mortality Reporting)** The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be contacted immediately by phone and notified in writing within three working days in case of the accidental death or injury of a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.	During Construction	Ongoing throughout construction	County of Tulare	Qualified biologist working with USFWS and/or CFW			
CULTURAL RESOURCES								
CUL-1	**(Designated Cultural Resources Specialist)** The Applicant shall retain a designated CRS who will be available to carry out mitigation measures related to cultural resources for the project. The CRS will meet or exceed the Secretary of the Interior's Professional Qualifications Standards for Archaeology (National Park Service 1983). The CRS will be qualified in site detection, evaluation of deposit significance, consultation with regulatory agencies, and plan site evaluation and mitigation activities.	During Construction	Ongoing throughout construction	County of Tulare	Determination by qualified archaeologist or paleontologist and consultation with County of Tulare			
CUL-2	**(Cultural Resources Monitoring Plan)** Prior to the start of permitted ground-disturbing activities, a Cultural Resources Monitoring Plan should be prepared by the CRS. The monitoring plan should include a description of the monitoring methodology, including when monitoring will be required, 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	During Construction	Ongoing throughout construction	County of Tulare	Determination by qualified archaeologist or paleontologist and consultation with County of Tulare; also, applicable Native American Tribe			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance		
						Initials	Date	Remarks
	made, provide the protocols for unanticipated discoveries (e.g., who to call and next steps for documentation), provide guidance in the event an Environmentally Sensitive Area (ESA) must be designated, review and approval protocols (e.g., define review periods for agencies and interested communities), and dispute resolution.							
CUL-3	**(Cultural Resources Sensitivity Training)** 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 training 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 50 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.	During Construction	Ongoing throughout construction	County of Tulare	Determination by qualified archaeologist or paleontologist and consultation with County of Tulare. Also, applicable Native American Tribe			
CUL-4	**(Cultural Resources Sensitivity Training)** 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	During Construction	Ongoing throughout construction	County of Tulare	Determination by qualified archaeologist or paleontologist and			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance		
						Initials	Date	Remarks
	related activities. This training 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 50 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.				consultation with County of Tulare. Also, applicable Native American Tribe			
CUL-5	**(Unanticipated Discovery of Cultural Resources)** In the event archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and the project CRS be contacted immediately to evaluate the resource. If the resource is determined by the CRS to be prehistoric, then a Native American representative shall also be contacted to participate in the evaluation of the resource. If the CRS and/or Native American representative determines it to be appropriate, archaeological testing for CRHR eligibility should be completed. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, the CRS 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 Section 15126.4(b)(3)(C). The	During Construction	Ongoing throughout construction	County of Tulare	Determination by qualified archaeologist or paleontologist and consultation with County of Tulare. Also, applicable Native American Tribe			

Mitigation Monitoring and Reporting Program								
Mitigation Measure		**When Monitoring is to Occur**	**Frequency of Monitoring**	**Agency Responsible for Monitoring**	**Method to Verify Compliance**	**Verification of Compliance**		
						Initials	**Date**	**Remarks**
	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 CRS and Native American representative, as appropriate, should recover and document the scientifically consequential information that justifies the resource's significance. The lead agency 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 California Code of Regulations Section 15126.4(b)(3)(C).							
CUL-6	**(Compliance with HSC § 7050.5)** No human remains are known to be present within the project site. However, the discovery of human remains is always a possibility during ground-disturbing activities. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the County Coroner must be notified immediately. If the human remains are determined to be of Native American origin, the Coroner will notify the NAHC, which will determine and notify a MLD. The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance.	During Construction	Ongoing throughout construction	County of Tulare	Determination by qualified archaeologist or paleontologist and consultation with County of Tulare. Also, applicable Native American Tribe			

Mitigation Monitoring and Reporting Program

Mitigation Measure		When Monitoring is to Occur	Frequency of Monitoring	Agency Responsible for Monitoring	Method to Verify Compliance	Verification of Compliance		
						Initials	Date	Remarks
GEOLOGY/ SOILS								
See Mitigation Measures CUL-1 through CUL-6								
HYDROLOGY AND WATER QUALITY								
HYD-1	The location of a structure within the special flood hazard area shall require compliance with the National Flood Insurance Program under FEMA and the special provisions of the Tulare County Flood Damage Prevention Ordinance.	Prior to start of construction	Ongoing throughout construction	County of Tulare	On-site Project Manager			
NOISE								
NOI-1	Internal combustion engines shall be equipped with a muffler of a type recommended by the manufacturer.	During Construction	Ongoing throughout construction	County of Tulare	On-site Project Manager			
NOI-2	Construction activities, excluding activities required to occur without interruption or activities that would pose a significant safety risk to workers or citizens, shall be limited to between the daytime hours of 7:00 a.m. and 7:00 p.m.	During Construction	Ongoing throughout construction	County of Tulare	On-site Project Manager			
NOI-3	Portable/stationary equipment (e.g., generators, compressors) shall be located at the furthest distance from the nearest residential dwelling.	During Construction	Ongoing throughout construction	County of Tulare	On-site Project Manager			
NOI-4	As directed by the County resident engineer, the contractor shall implement appropriate additional noise abatement measures including, but not limited to, siting the location of stationary construction equipment away from sensitive noise receptors to the greatest extent feasible, turning off idling equipment after no more than five minutes of inactivity, and rescheduling construction activity to avoid noise-sensitive days or times.	During Construction	Ongoing throughout construction	County of Tulare	On-site Project Manager			
NOI-5	Use alternative pile installation techniques (e.g., drilled piles) to the extent possible.	During Construction	Ongoing throughout construction	County of Tulare	On-site Project Manager			
TRIBAL CULTURAL RESOURCES								
See Mitigation Measures CUL-1 through CUL-6								

ATTACHMENT H

Operational Statement

Operational Statement & Project Description – Foxtail Hybrid Solar Project

Foxtail Hybrid Solar Project (project) proposed by Foxtail Solar, LLC. (Applicant) would construct and operate 55-megawatt (MW) photovoltaic solar generation facility and a 55 MW battery energy storage system (BESS) at 4 hours of continuous discharge on an approximate 475.5-acre site in Tulare County, California (Figure 1 and Figure 2).

1. Project Characteristics

1.1. Location

The project site consists entirely of a privately-owned 475.5-acre undeveloped parcel. The land is under an option to lease agreement between the property owner and the project proponent. The site consists of Assessor Parcel Number (APN) 228-050-020. The project proposes to develop approximately 450 acres of the 475.5-acre parcel (Figure 3).

The project site is generally located on the northwest corner of Avenue 184 and Road 80. The project is within the Paige and Taylor Weir USGS Quad and Section 5, Township 21S Range 24E, Mount Diablo Base and Meridian (MDB&M). The project site is under Williamson Act contract and is located in Zone A Special Flood Hazard Area per FEMA.

1.2. Surrounding Properties

North – Agriculture developed land improved with operating dairies and accessory structures zoned AE-40 (Exclusive Agriculture, 40-acre minimum).

East – Agricultural land zoned AE-40.

South- Agricultural land zoned AE-40 and a Southern California Edison (SCE) electrical substation.

West- Agricultural land zoned AE-40.

1.3. General Plan and Zone District

The property is designated Valley Agriculture in the Tulare County General Plan and is appropriately zoned AE-40.

2. Entitlements

The project will require the following entitlement:

2.1 Special Use Permits

Pursuant to Sections 16.II of Tulare County Zoning Ordinance, solar facilities and battery energy storage system are permitted on properties zoned AE-40, subject to approval of a Special Use Permit.

2.2. Williamson Act Contract

County of Tulare Board of Supervisors Resolution No. 2013-0104 adopted policies regarding siting of utility scale solar facilities on agricultural land and land subject to a Williamson Act land use contract (Contract). Should County of Tulare staff determine that the proposed project does not meet the criteria under Resolution 2013-0104, then cancellation of the Contract will be required. Cancellation findings will be made pursuant to Government Code 51282(c) where the cancellation to allow a renewable energy generator is in the public interest.

3. Project Components:

The Project proposes to construct and operate 55-megawatt (MW) photovoltaic solar generation facility and a 55 MW battery energy storage system (BESS) on approximately 45 ac. See Figure 3 and Figure 4.

3.1. Panels

The Project would install approximately 108,344 single-axis tracker solar panels on the site. The layout of the single axis tracker solar panels will be in an east-west direction. The maximum height of the would be up to 10 feet above grade at the beginning and end of each day. Each solar panel would be attached to embedded piers using a support structure. Module layout and spacing is typically optimized to balance energy production versus peak capacity and depends on the sun angles and shading due to the surrounding horizon of the site. The modules would typically be mounted with the longer side-oriented east to west across the tracker system's north-south axis. Individual arrays of modules would be combined to generate the total plant capacity.

3.2 Electrical Collector System and Inverters

The AC-DC electrical collection system includes all cables and combiners that collect electricity from the panels, delivers it to the inverters, collects it from the inverters, and ultimately delivers it to the Project switching station(s). The collection system would likely be installed along internal access roads to collect power from the rows of modules and deliver it to the switching station. This collection system would likely be installed in subsurface trenches, though in some areas of the site, part or all the collection system may be housed in above-grade raceways mounted on supports approximately 24-36 inches above ground level. The collection system would be rated at between 1,000-2,000 volts DC until it reached the inverters and a 33 kV AC intermediate voltage system between the inverters and the project switching station.

The Project would use a typical unmanned field control system. The controls generally include a field supervisory controller in a central location and local microprocessor controllers connected to each tracker, if trackers are to be used. The field control system monitors solar insolation, wind velocity, and tracker performance and status, and communicates with all the local microprocessor controllers. When the appropriate conditions exist, the field supervisory controller initiates the trackers' daily tracking of the sun, and at the end of the day stows the trackers in the solar array.

The DC electricity produced by the solar panels is converted to three-phase alternating current by a series of inverters. The solar facility and BESS would each require up to 16 inverters. Alternating current is the type of electricity usable by the electric utility and is the form required to connect to

the transmission system. The inverter pad equipment includes a transformer that steps up the electricity in its new form to an output voltage of 66 kV. This electricity is then transmitted via the medium voltage collection system to the switching station.

3.3 Battery Energy Storage System (BESS)

As proposed, the proposed project includes a BESS that would be located within the project footprint. The BESS would encompass a maximum of approximately 3.43 total acres.

The BESS, would be installed/constructed on the project site and would have appropriate fire suppression systems built to applicable state and local code requirements. The final design would include appropriate containment features (secondary containment) to prevent the escape of liquids or spills from the BESS site.

The BESS would be contained within an outdoor-rated steel enclosure and electrically connected to the inverters. The modular container stacks would be set on a concrete or steel pile foundation and would be approximately 8 feet wide by 72 feet long by 11 feet high. The proposed BESS would be designed, constructed, operated, and maintained in accordance with applicable industry best practices and regulatory requirements, including compliance with the latest National Fire Protection Association (NFPA) fire safety codes and fire rating in conformance with Tulare county standards.

The BESS would use one of several commercially available lithium ion (Li ion) technologies, though alternatives may be considered (such as flow batteries). Due to the rapidly changing technology in the battery industry, it may be more efficient, environmentally conscious, and economical, to use a then-current technology.

As planned, the BESS would consist of self-contained battery storage modules placed in racks, switchboards, inverters, transformers, controls, and integrated heating, ventilation, and air conditioning (HVAC) units, all enclosed in one or more buildings or in prefabricated metal modular container stacks. Potential hazards associated with BESS include increased potential for electrical shock and chemical release associated with the batteries used. The BESS would have fire suppression systems that would have a fire rating and built to applicable State and local code requirements. Also, implementation of established construction controls and safety procedures would reduce the risk of hazardous materials spills and releases.

The proposed battery energy storage system would be designed, constructed, operated and maintained in accordance with applicable industry best practices and regulatory requirements, including fire safety standards.

3.4 Point of Interconnection and Interconnection Agreement

The project's point of interconnection will be connecting directly to the existing 66 kV transmission line that runs to the adjacent SCE substation.

The project plans to negotiate and execute a Generator Interconnection Agreement (GIA) with SCE.

4. Construction Activities

The construction activities for the proposed Project fall into three main categories: (1) site grading and earthwork; (2) solar array construction; and (3) electrical interconnection to transmission owner infrastructure. Construction of the Project is anticipated to take up to 18 months, starting in Q4 2025 and completed by Q2 2027. Construction would primarily occur during daylight hours, Monday through Friday. Additional hours/days may be necessary to facilitate the schedule.

The construction workforce would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. The average workforce is expected to be approximately 100 construction, supervisory, support, and construction management personnel on-site during construction. The on-site workforce has been conservatively estimated to peak at approximately 200 individuals for short periods of time, which is typically one week.

Beginning work on the Project site would involve preparing the land for installation of arrays, related infrastructure, access driveways, and temporary construction staging areas. Prior to initial construction mobilization, preconstruction biological clearance surveys would be performed, and sediment and erosion controls would be installed in accordance with an approved Stormwater Pollution and Prevention Plan (SWPPP) to reduce potential impacts related to erosion and surface water quality. Stabilized construction entrance and exits would be installed at driveways to reduce tracking of sediment onto adjacent public roadways.

Site preparation would involve the removal and proper disposal of existing vegetation and debris that would unduly interfere with Project construction or the health and safety of onsite personnel. Dust minimizing techniques would be employed, utilizing "mow-and-roll" vegetation clearance strategy, placement of wind control fencing, application of water, and application of dust suppressants. Conventional grading would be minimized to the maximum extent possible to reduce unnecessary soil movement that may result in dust. As the ground is relatively flat, minimal, if any grading is anticipated. Land-leveling equipment, such as a smooth steel drum roller, would be used to even the surface of the ground and to compact the upper layer of soil to a value recommended by a geotechnical engineer for structural support. Trenching would be required for placement of underground electrical and communications lines, and may include the use of trenchers, backhoes, excavators, haul vehicles, compaction equipment and water trucks.

Initial construction water usage would be in support of site preparation and grading activities. During earthwork for grading of access road foundations, equipment pads and project components, the main use of water would be for compaction and dust control. Smaller quantities of water would be required for preparation of the concrete required for foundations and other minor uses. Subsequent to the earthwork activities, water usage would be used for dust suppression and normal construction water requirements that are associated with construction of the building, internal access roads, and solar arrays.

4.1 Electrical Interconnection to Transmission Owner Infrastructure

The Project includes a point of interconnection to an existing SCE transmission line as illustrated on the site plan (Attachment 2). The generated electricity will be received at the existing SCE substation.

4.2 Telemetry requirements

Real-time telemetry will be required. In order to meet the telemetry requirements SCE is planning to utilize a new method telemetry, which utilizes a centralized remote terminal unit (RTU) concept.

4.3 Construction Water Use

Water needed for construction is expected to be trucked from a nearby well on the land adjacent to the project site. Each truck typically holds approximately 4,000 gallons of water. The Project construction is estimated to occur over an 18 month period. Construction water demands are estimated to be approximately 0.735-acre feet per MWac consumed during the 18month construction period totaling approximately 40.43 acre feet of water for dust control, site preparation, and miscellaneous construction purposes. The Applicant has obtained a will serve letter from property owner to provide the water during construction and operation.

Initial construction water usage would be in support of site preparation and grading activities. During earthwork for grading of access road foundations, equipment pads and project components, the main use of water would be for compaction and dust control. Smaller quantities would be required for preparation of the concrete required for foundations and other minor uses. Subsequent to the earthwork activities, water usage would be used for dust suppression and normal construction water requirements that are associated with construction of the building, internal access roads, and solar arrays.

4.4 Operation and Maintenance Activities

The Project will be remotely monitored. The facility's regular maintenance program would be largely conducted on-site during daytime hours as a safety precaution. Equipment repairs would typically take place in the early morning or evening when the plant is producing the least amount of energy. Key program elements include:

- Responding to plant failures and emergencies in a timely manner.
- Maintaining and managing a pre-qualified group of routine maintenance and repair firms who can address the operational and maintenance needs throughout the life of the facility.
- Creating an optimized cleaning schedule to be more responsive to location and type of installation.
- Maintaining an inventory of spare parts to facilitate timely repairs to maintain plant output.
- Using trouble-ticketing to effectively record, track and escalate all maintenance problems.
- Conducting on-site maintenance as required to clear weeds, grass and ground cover for ground-mount systems.

Prudent security measures would be taken to ensure the safety of the public and facility. The proposed project would be secured by a chain-link fence along all borders with locking gates at

the specified points of ingress and egress. As proposed, the fence is anticipated to be a standard 7 feet in height, topped with one or two strands of barbed wire. Off-site security personnel may be dispatched during nighttime hours or be on-site depending on security risks and operating needs. The facility may use security lighting for both normal and emergency conditions. If used, lighting would be designed to provide the minimum illumination needed to achieve safety and security and would be downward-facing and shielded to focus illumination on the desired areas only.

The project site would produce a small amount of waste associated with maintenance activities. PV solar system wastes typically include broken and rusted metal, defective or malfunctioning modules, electrical materials, and empty containers and other miscellaneous solid materials, including typical household refuse generated by workers. Most of these materials would be collected and delivered back to the manufacturer for recycling. The project estimates up to 420 trips per year for security, maintenance, and panel washing activities.

4.5 Operations Water Use

The PV panel surfaces may be washed seasonally to increase the average optical transmittance of the flat panel surface. Panel washing is expected to take three days to complete per wash, up to four times per year or a total of 12 days per year to complete. Additional staff up to three people would be required during panel washing and are expected to be hired from the local community. A water truck with mounted sprayers will drive between the arrays to clean the panels.

It takes approximately 1 gallon of water to clean each panel. Long-term operational water demand is not expected to be more than 0.33 acre-feet, primarily to support PV panel washing activities, which is anticipated to occur 2 to 4 times a year, as needed. Therefore, a total of approximately 1.33 acre-feet of water is anticipated per year, based on a four times a year maintenance schedule. Water for panel washing will be taken from the onsite well. The Applicant has obtained a will service letter from the property owner .

4.6 Decommissioning

The project proponent expects to sell the renewable energy produced by the product under the terms of a long-term Power Purchase Agreement (PPA) or directly into the wholesale market. The useful life of the project facility is anticipated to be up to 35 years; however, the Project proponent may, at its discretion, choose to extend the life of the facility with updated technology and re-power, or decommission and remove the system and its components. If and when a decommissioning event occurs, the project site would be reverted to its original state, and could then be converted to other uses in accordance with applicable land use regulations in effect at that time.

It is anticipated that during project decommissioning project structures would be removed from the ground on the project site. Above-ground equipment that would be removed would include module posts and support structures, on-site transmission poles that are not shared with third parties and the underground collection system within the project site, inverters, transformers, electrical wiring, equipment on the inverter pads, and related equipment and concrete pads. The substation would be removed if it is owned by the project, however if a public or private utility assumes ownership of the substation, the substation may remain on-site to be used as part of the utility service to supply other applications.

Project roads would be restored to their pre-construction condition unless the landowner elects to retain the improved roads for access throughout that landowner's property. The area would be thoroughly cleaned and all debris removed. As discussed above, most materials would be recycled to the extent feasible, with minimal disposal to occur in landfills in compliance with all applicable laws. A collection and recycling program would be executed in the event system components are manufactured with hazardous materials.

A collection and recycling program would be executed to promote recycling of project components and minimize disposal of project components in landfills. All decommissioning and restoration activities would adhere to the requirements of the appropriate governing authorities and in accordance with all applicable federal, state, and county regulations. The project proponent expects a secondary market for PV modules to develop over time. Although energy output may diminish, PV modules are expected to continue to have a productive life and can be decommissioned from a prime location or re-commissioned in another location.

- Develop a viable source of clean energy to assist California and its utilities in fulfilling California's Renewable Portfolio Standard (RPS) Program. In October 2015, Governor Brown signed into law Senate Bill 350, which establishes a new RPS for all electricity retailers in the state. Electricity retailers must adopt the new RPS goals of 50 percent of retail sales from renewables by the end of 2030 and 100% by 2040.

- Use proven and established PV technology that is efficient and requires low maintenance.

5. Additional Permits

It is understood that additional permits will be required by the County, other local and State regulatory agencies, and public utility entities. These permits can include, but not be limited to the following:

- County of Tulare – Grading Permit and Building Permit
- San Joaquin Valley Air Pollution Control District (SJVAPCD) – Authority To Construct/Permit to Operate (ATC/PTO), Indirect Source Review (ISR)
- State Water Resources Control Board (SWRCB) – Stormwater Pollution and Prevention Plan (SWPPP)
- SCE – Interconnection Agreement

August 19, 2024

To: Tulare County Resource Management Agency

Fr: Joe Cardoza, 18839 Road 80, Tulare, California 93274

Re: Water supply for the construction and operation of Foxtail Hybrid Solar by Foxtail Solar, LLC

I have been requested by the project proponent if my water entitlements will allow me to provide water for the construction and operation of this solar project. Construction water demands are estimated to be approximately 0.735-acre feet per MWac consumed during the 18-month construction period totaling approximately 40.43-acre feet of water for dust control, site preparation, and miscellaneous construction purposes.

Long-term operational water demand is not expected to be more than 0.33 acre-feet, primarily to support PV panel washing activities, which is anticipated to occur 2 to 4 times a year, as needed. Therefore, a total of approximately 1.33 acre-feet of water is anticipated per year, based on this maintenance schedule.

In addition, a 24,000-gallon water tank is proposed, and water will be required to maintain water levels within the tank for the life of the project.

Pending execution of a final contract with Foxtail Solar LLC., I hereby confirm that I can provide sufficient water to the project during construction and operations from a well in close proximity to the solar facility.

Please feel free to contact me at 559) 936-3671, if you have any questions.

Joe Cardoza