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CalCapture CCS Project

Cultural Resources Study



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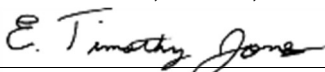
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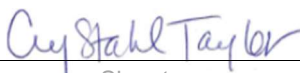
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Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
AB	Assembly Bill
API	Area of Potential Impact
CalGEM	California Geologic Energy Management Division
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CCS	Carbon Capture and Sequestration
CCU	Carbon Capture Unit
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGC	California Government Code
CHSC	California Health and Safety Code
CO ₂	carbon dioxide
County	Kern County Planning and Natural Resource Department
CRC	California Resources Corporation
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
CTV	Carbon TerraVault Holdings, LLC
CTV I	Carbon TerraVault I Project
CUP	Conditional Use Permit
the CUP	Collectively, CUP No. 13, Map 118; CUP No. 14, Map 118; CUP No. 5, Map 119; CUP No. 3, Map 120; CUP No. 2, Map 138; and CUP No. 6, Map 119
DPR	Department of Parks and Recreation
EFG+	Econamine FG Plus
EHPP	Elk Hills Power Plant
EHOF	Elk Hills Oilfield
EIR	Environmental Impact Report
GT	gas turbines
HDD	horizontal directional drilling
HRSG	heat recovery steam generators
Kern County	Kern County Planning and Natural Resources Department
kV	kilovolt
M	magnitude
MDB&M	Mount Diablo Base and Meridian
MLD	most likely descendant
MMPY	million metric tons per year
MTPD	metric tons per day
MWe	megawatt equivalent
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act



CalCapture CCS Project – Cultural Resources Study

Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
NOD	Notice of Determination
NRHP	National Register of Historic Places
PRC	California Public Resources Code
Project	CalCapture Carbon Capture and Sequestration Project
RO	reverse osmosis
SLF	Sacred Lands File
SSJVIC	Southern San Joaquin Valley Information Center
ST	steam turbine
Stantec	Stantec Consulting Services Inc.
UIC	Underground Injection Control
U.S. EPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
YBP	years before present



1 Introduction

Stantec Consulting Services Inc. (Stantec) conducted a cultural resources study and inventory on behalf of Carbon TerraVault Holdings, LLC (CTV), a carbon management subsidiary of California Resources Corporation (CRC) for the CalCapture Carbon Capture and Sequestration (CCS) Project (Project) in the Elk Hills Oilfield (EHOF) and included sections within the *East Elk Hills* (T30S/R23E) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle, on the southwestern edge of the San Joaquin Valley near Tupman, Kern County, California (Appendix A).

The Project would capture carbon dioxide (CO₂) generated as a by-product by CRC's Elk Hills Power Plant (EHPP). The area of potential impact (API) includes the physical extent of potential ground disturbance during Project implementation with an additional 100-foot buffer to accommodate any potential indirect effects and changes in alignment of Project infrastructure as part of design refinements. For purposes of this study, the API consists of the proposed capture facility; a proposed substation pad; a substation extension pad; temporary parking and office areas; and a 200-foot-wide (100 feet from centerline) review corridor along pipelines and powerlines. The Project's depth of disturbance is variable, with a maximum depth of disturbance ranging between 6 and 51 feet below ground surface. The potential to impact buried cultural deposits is discussed in Section 4.3, Geoarchaeological Analysis. The API consists of 83.19 acres, with the entire Project on private land. The majority of the proposed project sites will be located within existing, previously disturbed or active work sites.

The Project is subject to the California Environmental Quality Act (CEQA). This study was conducted in accordance with the CEQA standards and guidance, with the California Energy Commission (CEC) serving as the Lead Agency. Stantec prepared this report to address both CEQA and CRHR requirements. The purpose of this study is to identify cultural resources within the API, to provide a preliminary evaluation of eligibility for listing in the California Register of Historical Resources (CRHR), and to provide management recommendations for historical resources and/or unique archaeological resources pursuant to CEQA.

The archaeological study consisted of an archival records search of the API and a 0.5-mile radius conducted at the Southern San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield; a review of the Native American Heritage Commission (NAHC) Sacred Lands File; a review of relevant archaeological, ethnographic, historical, and environmental literature relevant to the Project site; and an intensive pedestrian survey of the API to identify cultural resources.

The SSJVIC search identified two recorded cultural resources within the PA. Historic-era site P-15-003175 was previously documented as a refuse scatter of milk cans, meat tins, China dishware fragments, and glass medicine bottles; precontact site P-15-010099 was previously documented as a scatter of freshwater mussel, chert debris and tools, and a quartzite bowl or mortar. The locations and conditions of P-15-003175 and P-15-010099 were assessed and updated during a pedestrian survey conducted for the Project. The survey also identified two new historic-era sites, both consisting of historic refuse scatters associated with the oilfield. Department of Parks and Recreation 523 (DPR 523) forms were completed



for all four cultural resources (two previously recorded sites and two new historic-era sites) within the API (Appendix B).

1.1 Project Description

The proposed Project would capture carbon dioxide (CO₂) generated as a by-product by CRC's 550-megawatt-equivalent (MWe) Elk Hills Power Plant (EHPP), located in the EHOE near Tupman, Kern County, California. The EHPP was commissioned in 2003 and is powered by two General Electric 7FA gas turbines (GTs), with two heat recovery steam generators (HRSGs) providing steam to a General Electric D11 steam turbine (ST). The Carbon Capture Unit (CCU), not including pipelines or temporary staging and parking areas, would be located immediately south of the EHPP in a 7.64-acre existing disturbed area.

Implementation of the Project will require approval of a Petition for Modification Application from the California Energy Commission (CEC), who has the exclusive authority for licensing thermal power plants of 50 MW or larger, as well as related transmission lines, fuel supply lines, and other facilities.

The CCU would utilize Fluor's Econamine FG PlusSM (EFG+) process to capture and concentrate the CO₂. The EFG+ process is designed to capture 95 percent of the CO₂ from the total flue gas feed to the unit. The EFG+ CCU can be divided into seven primary subsystems or sections: Flue Gas Cooling, CO₂ Absorption, Solvent Regeneration, Solvent Maintenance, Chemical Storage and Supply, CO₂ Compression, and Utility Support Systems. The treated flue gas is vented to the atmosphere directly from the EFG+ CCU plant absorber. The concentrated CO₂ would then be compressed, dehydrated, and stripped of oxygen prior to conveyance to the permitted manifold pad, permitted as part of the approved Carbon TerraVault I (CTV I) project (State Clearinghouse No. 2022030180), which will direct the CO₂ to the U.S. Environmental Protection Agency (U.S. EPA) approved Class VI Underground Injection Control (UIC) wells to be injected into a depleted oil and gas reservoir located on the CRC property and approved as part of the CTV I project. The previously approved CTV I manifold pad, injection wells, depleted oil and gas reservoir and related facilities further discussed in Section 1.2 below are not part of the CalCapture CCS Project analyzed in this report.

A new, approximately 0.5-mile, 8- to 10-inch pipeline, installed primarily below ground utilizing either trenching or horizontal directional drilling (HDD) techniques, would transport the CO₂ from the CCU to the tie-in with the Carbon TerraVault I (CTV I) permitted 35R manifold facility (pad). It is anticipated that the proposed Project would capture approximately 4,400 metric tons of CO₂ per day (MTPD) (1.6 million metric tons of CO₂ per year [MMTPY]). The proposed Project is estimated to be in operation for up to 26 years.¹

¹The life of the project is dependent on the sources permitted for injection into the CTV I approved storage reservoir, the ability of the project year by year to obtain CO₂ and inject at the maximum 2,210,000 million tons per year, and the total estimated storage capacity of up to 48 million tons of CO₂.



Water use during operation of the CalCapture CCU would be minimized by the inclusion of a hybrid cooling system (Wet Surface Air Coolers [WSAC], air coolers, secondary glycol cooling, and water cooling). Additionally, the CCU would be equipped with a water treatment system, consisting of a reverse osmosis (RO) Unit that is designed to recover and reuse water from the Cooling Tower blowdown. The recovered water is utilized as make-up to the CO₂ absorption system and the Wash Water WSAC Basin. A wastewater stream (less than 10 gallons per minute) would be collected at the CalCapture CCU and transferred by a new surface pipeline to the EHPP for disposal via an existing UIC Class I injection well.

The proposed Project includes a single connection to the CRC Power System and would include a connection of a new 115-kilovolt (kV) transmission line to a new CRC electrical substation. The proposed Project would require a new transmission tie line to connect the Project switching station to the existing CRC substation. Electrical power would be supplied to the CalCapture Substation with a new dedicated electrical transformer. The new 115-kV transmission tie line is expected to be built using pre-engineered steel poles with anchor bolt foundation designs.

During construction, temporary offices and existing parking areas would be used by construction personnel. Temporary office and parking areas have been designated on previously disturbed areas to the south and northeast of the Project site. Two additional areas are located approximately 5.5 miles southeast of the Project site. There are no permanent new buildings proposed for the Project, and no grading would occur within the temporary office and parking areas. Total temporary staging and parking area would be approximately 30.74 acres.

1.2 CTV I Background Information

On December 31, 2024, the U.S. EPA issued four UIC Class VI well permits to CTV, a carbon management subsidiary of CRC.

The specific U.S. EPA permits issued for the four wells are as follows:

- R9UIC-CA6-FY22 1.1 for well 373-35R
- R9UIC-CA6-FY22 1.2 for well 345C-36R
- R9UIC-CA6-FY22 1.3 for well 353XC-35R
- R9UIC-CA6-FY22 1.4 for well 363C-27R

These four wells would be utilized to inject the CO₂ captured from the proposed Project into the Monterey Formation 26R storage reservoir located approximately 6,000 feet below the ground surface. The CTV I project area is located within the EHOF, which is a suitable area for long-term CO₂ storage and sequestration. The CTV I project was designed to implement sustainable CCS in support of California's initiative to combat climate change by reducing CO₂ levels in the atmosphere.

In addition to the Class VI Permit, CTV obtained a land use permit from the Kern County Planning and Natural Resources Department (Kern County) in 2024. Specifically, the CTV I project was approved by the Kern County Board of Supervisors on October 21, 2024, based on a final Environmental Impact Report (EIR, State Clearinghouse #2022030180) prepared by Kern County and certified by it on the same



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Introduction

date. A Notice of Determination was filed with the Kern County Clerk on October 22, 2024. The CTV I project is subject to the terms, conditions and restrictions set forth in the Conditional Use Permits (CUP) issued by Kern County and identified as CUP No. 13, Map 118; CUP No. 14, Map 118; CUP No. 5, Map 119; CUP No. 3, Map 120; CUP No. 2, Map 138; and CUP No. 6, Map 119 (collectively, “the CUP”). Implementation of the CUP authorizes the construction and operation of underground CO₂ facility pipelines to support the CTV I CCS facility and related infrastructure (e.g., injection/monitoring wells, CO₂ manifold piping and metering facilities) within the 9,104-acre project site, located within the EHO.

Four monitoring wells permitted by the California Geologic Energy Management Division (CalGEM), as part of the CUP issued by Kern County for the CTV I project would be used for CO₂ monitoring. In addition, six CTV I permitted wells would be used to monitor for seismic activity. The seismic monitoring wells will be used to detect seismic events at or above magnitude (M) 1.0 in real time as required by the California Air Resources Board (CARB) CCS Protocol under the Low Carbon Fuel Standard (LCFS) (C.4.3.2.3). Additionally, the California Integrated Seismic Network will be monitored continuously for indication of a 2.7 M or greater earthquake or greater occurring within a 1-mile radius of injection operations from commencement of injection activity to its completion.

Monitoring activities would extend beyond the injection phase of the Project pursuant to Code of Federal Regulation (CFR) Title 40 Section 146.93 until site closure is granted. Monitoring requirements during post-injection are similar to those during injection, with activities such as sampling occurring quarterly and monitoring well integrity testing at frequency per U.S. EPA requirement.

As noted above, the facilities approved as part of the CTV I project, including but not limited to the manifold, pad, injection wells, monitoring wells and related transmission lines, pipelines and other related facilities that have already been approved by applicable agencies with jurisdiction over those facilities, including the U.S. EPA, CalGEM and Kern County, are not included as part of the proposed Project. Accordingly, such facilities are not analyzed in this report.



1.3 Project Location

The Project is located within the EHOFF in the southwestern edge of the San Joaquin Valley near Tupman in Kern County, California.

The Project comprises portions of six parcels owned by CRC. The Project is contained within the following sections of EHOFF: sections 26, 34, and 35 of Township 30 South Range 23 East and sections 10 and 11 of Township 31 South Range 24 East, Mount Diablo Base and Meridian (MDB&M), Kern County, State of California (Table 1). The proposed Project would be located on approximately 52 acres within the identified parcels.

Table 1 Project Parcel Data

Assessor's Parcel Number	Section/ Township/ Range	Acreage*
158-090-19	Section 35/ Township 30S/ Range 23E	590.61
158-090-16	Section 35/ Township 30S/ Range 23E	14.78
158-090-02	Section 26/ Township 30S/ Range 23E	640
158-090-04	Section 34/ Township 30S/ Range 23E	682.86
298-070-05	Section 11/Township 31S/Range 24E	640
298-070-06	Section 10/Township 31S/Range 24E	640

Notes:
Assessor's parcel acreages from Kern County Web Map ([Kern County GIS](#), 2025).



2 Regulatory Context

State and federal codes and regulations relevant to the Project are summarized and described below.

2.1 State Requirements

2.1.1 California Environmental Quality Act

CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (14 CCR Section 15002(i)). The CEC conducts its environmental analysis in accordance with the requirements of the CEQA. However, no Environmental Impact Report (EIR) is required because the CEC's site certification program has been certified by the Resources Agency (Pub. Resources Code, section 21080.5 and Cal. Code Regs., tit. 14, section 15251 (k)). Under the provisions of CEQA, "A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (14 California Code of Regulations [CCR] Section 15064.5(b)).

According to Appendix G of the CEQA statutes (CCR 2018), a project would have a significant environmental impact in terms of cultural resources if it would do the following:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CCR Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5.
- Disturb any human remains, including those interred outside of dedicated cemeteries.

California Public Resources Code (PRC) 21084.1 defines a "historical resource" as a resource that meets one or more of the following criteria:

- Listed in, or eligible for listing in, the CRHR (as defined at PRC Section 5024.1; 14 CCR Section 4850, et seq.);
- Listed in a local register of historical resources (as defined at PRC Section 5020.1(k));
- Identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or
- Determined to be a historical resource by a project's lead agency (14 CCR Section 15064.5(a)).

A historical resource consists of "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of



California...Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources" (14 CCR Section 15064.5(a)(3)).

CEQA also considers potential impacts to "unique archaeological resources." The CEQA Guidelines require that lead agencies first determine whether an archaeological site is a historical resource, as defined above and in 14 CCR Section 15064.5(a). Only if the site does not meet those definitions, then the CEQA lead agency must consider whether an archaeological site is a unique archaeological resource, which is defined as "an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria":

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

The criteria for a unique archaeological resource under CEQA are similar to the eligibility criteria for inclusion in the CRHR. As a practical matter, a significant archaeological site will, in most circumstances, meet the definition of a historical resource under CEQA.

If an impact on a historical or archaeological resource is significant, CEQA requires feasible measures to minimize the impact (14 CCR Section 15126.4 (a)(1)). Mitigation of significant impacts must lessen or eliminate the physical impact that the project would have on the resource. CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to less-than-significant levels (14 CCR Section 15126.4(a)(1)).

2.1.2 California Register of Historical Resources

PRC Section 5024.1 established the CRHR. The requirements for listing in the CRHR, including the criterion for listing and integrity requirements, are similar to those of the National Register of Historic Places (NRHP). Generally, a resource is considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR (14 CCR Section 15064.5(a)(3)). For a cultural resource to qualify for listing in the CRHR, it must be significant under one or more of the following criteria:

1. Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Associated with the lives of persons important in our past;



3. 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
4. Has yielded, or may be likely to yield, information important in prehistory or history.

2.1.3 CEQA Tribal Consultation

Assembly Bill (AB) 52, which became law on January 1, 2015, provides for consultation with California Native American tribes during the CEQA process and equates significant impacts to “tribal cultural resources” with significant environmental impacts. PRC Section 21074 states that “tribal cultural resources” are:

sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and are one of the following:

- Included or determined to be eligible for inclusion in the CRHR.
- Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1.
- 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

A “historical resource” (PRC Section 21084.1), a “unique archaeological resource” (PRC Section 21083.2(g)), or a “non-unique archaeological resource” (PRC Section 21083.2 (h)) may also be a tribal cultural resource if it is included or determined to be eligible for inclusion in the CRHR.

The consultation provisions of the law require that a public agency consult with local Native American tribes that have requested placement on that agency’s notification list for CEQA projects. Within 14 days of determining that a project application is complete or a decision by a public agency to undertake a project, the lead agency must notify tribes of the opportunity to consult on the project, should a tribe have previously requested to be on the agency’s notification list. California Native American tribes must be recognized by the NAHC as traditionally and culturally affiliated with the project site and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency.

The purpose of consultation is to inform the lead agency in its identification and determination of the significance of tribal cultural resources. If a project is determined to result in a significant impact on an identified tribal cultural resource, the consultation process must occur and conclude prior to adoption of a Negative Declaration or Mitigated Negative Declaration or certification of an EIR (PRC Sections 21080.3.1, 21080.3.2, 21082.3).



2.2 Federal Requirements

2.2.1 National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 establishes the role and responsibilities of the federal government in historic preservation. Toward this end, the NHPA directs agencies (1) to identify and manage historic properties under their control; (2) to undertake actions that will advance the Act's provisions and avoid actions contrary to its purposes; (3) to consult with others while carrying out historic preservation activities; and (4) to consider the effects of their actions on historic properties.

The CRC has indicated that the U.S. EPA would require a minor modification to the existing UIC Class VI injection permit to add the CalCapture CO₂ source to the CTV I CCS facility. However, NHPA Section 106 consultation will not be required to approve the permit modification.

2.2.1.1 Section 106

Section 106 of the NHPA of 1966, as amended, requires federal agencies to (1) take into account the effects of their undertakings on historic properties and (2) afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on potential effects. The regulations that implement Section 106 and outline the historic preservation review process are at 36 CFR Part 800.

Some degree of review under Section 106 must be conducted for all federal, federally assisted, federally licensed, or federally funded projects. If a project is subject to federal jurisdiction and the project is an undertaking as defined at 36 CFR 800.16(y) with the potential to cause effects on historic properties (36 CFR 800.3(a)), Section 106 of the NHPA must be addressed to take into account the effect of the undertaking on any district, site, building, structure, or object included in or eligible for inclusion in the National Register (i.e., historic properties).

2.2.1.2 Section 101: National Register of Historic Places

The NRHP was authorized by Section 101 of the NHPA as the nation's official list of cultural resources worthy of preservation. Properties listed in the NRHP consist of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. Properties listed in or eligible for listing in the NRHP are considered in planning and environmental review, and effects to such properties are primarily addressed under Section 106.

The criteria for determining a resource's eligibility for National Register listing are defined at 36 CFR 60.4 and are as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

- A. That are associated with events that have made a significant contribution to the broad patterns of our history; or



- B. That are associated with the lives of persons significant in our past; or
- C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. That have yielded, or may be likely to yield, information important in prehistory or history.

Under criteria A, B, and C, the NRHP places an emphasis on a resource appearing as it did during its period of significance to convey historical significance; under Criterion D, properties convey significance through the information they contain.

NRHP Bulletin *How to Apply the National Register Criteria for Evaluation* states that for a property to qualify for listing in the NRHP, it must meet at least one of the NRHP criteria by (1) being associated with an important historic context and (2) retaining historic integrity of those features necessary to convey its significance (National Park Service, 1997). The historic context of a resource will define the theme(s), geographical limits, and period of significance by which to evaluate a resource's significance (National Park Service 1997:7). Historical integrity is the ability of a resource to convey its significance and consists of seven aspects that are considered when evaluating a cultural resource: location, design, setting, materials, workmanship, feeling, and association (National Park Service, 1997:44-45).

Generally, cultural properties must be 50 years of age or older to be eligible for listing in the NRHP. According to the National Park Service (1997:2), "properties that have achieved significance within the past 50 years shall not be considered eligible" unless such properties are "of exceptional importance."

Resources associated with an important historic context, meeting the age guidelines, and possessing integrity will generally be considered eligible for listing in the NRHP.

2.3 Treatment of Human Remains

The disposition of burials and cremations—whether intact or disturbed—falls under the general prohibition on disturbing or removing human remains under California Health and Safety Code (CHSC) Section 7050.5. More specifically, remains suspected to be Native American are treated under Section 15064.5 of the CEQA Guidelines; PRC Section 5097.98 illustrates the process to be followed if remains are discovered. If human remains are discovered during construction, no further disturbance to the site shall occur, and the county coroner must be notified (CCR Title 14 Section 15064.5 and PRC Section 5097.98).

Section 7050.5 of the CHSC states the following regarding the discovery of human remains.

- a) Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. The provisions of this subdivision shall not apply to any person carrying out an agreement developed pursuant to



subdivision (l) of Section 5097.94 of the PRC or to any person authorized to implement Section 5097.98 of the PRC.

- b) 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 human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the California Government Code (CGC), that the remains are not subject to the provisions of Section 27491 of the CGC or any other related provisions of law concerning the investigation of the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation or their authorized representative, in the manner provided in Section 5097.98 of the PRC. The coroner shall make his or her determination within two working days from when the person responsible for the excavation, or their authorized representative, notifies the coroner of the discovery or recognition of the human remains.
- c) If the coroner determines that the remains are not subject to their authority and if the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, they shall contact, by telephone within 24 hours, the NAHC (CHSC Section 7050.5).

Of particular importance to cultural resources is subsection (c), requiring the coroner to contact the NAHC within 24 hours if discovered human remains are determined to be Native American in origin. After notification, NAHC will follow the procedures outlined in PRC Section 5097.98, which include notification of most likely descendants (MLDs), if possible, and recommendations for treatment of the remains. The MLD will have 24 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). In addition, knowing or willful possession of Native American human remains or artifacts taken from a grave or cairn is a felony under state law (PRC Section 5097.99).

2.4 Local Requirements

Kern County has established General Plan policies and implementation measures for promoting the preservation of cultural and historic architectural resources. Specifically, these policies and implementation measures are described in the General Plan Land Use, Open Space, and Conservation Element and are listed below.

Section 1.10.3 – Archaeological, Paleontological, Cultural, and Historical Preservation

Policy

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

Implementation Measures:



K. Coordinate with the California State University, Bakersfield's Archeology Inventory Center.

L. The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act.

M. In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

N. The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

O. On a project specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.



3 Project Area Background

3.1 Environmental Setting

The API is situated at the southwestern end of the San Joaquin Valley, a region bordered by the Sierra Nevada and Tehachapi Mountains to the east and southeast, the San Emigdio Mountains to the south, and the Temblor and Diablo ranges to the west. The Elk Hills form the northwestern shore of Buena Vista Lake, and without impoundments, the Kern River would naturally empty into the Buena Vista Lake Basin. This area is characterized by extensive, shallow inland lakes, as the rivers and streams lack a natural outlet to the west. Much of the region, including the API, has been extensively developed for agriculture. The API's elevation ranges from 1,298 to 1,386 feet above mean sea level.

The climate of the region is Mediterranean, featuring semiarid winters and hot, dry summers. Annual precipitation rarely exceeds seven inches, with approximately 70 percent falling between December and April (Sutton, 1997). Tule fog, a dense fog resulting from moist air trapped in the valley by high-pressure systems, is common in winter and can persist for several weeks (Felton, 1965).

Prior to modern agricultural practices, the San Joaquin Valley was dominated by networks of interconnecting watercourses, lakes, and sloughs (Sutton, 1997). These water sources transformed an otherwise xeric landscape into a home for biotic communities associated with a mesic environment (Sutton et al., 2010). Until the late nineteenth century, the valley supported various grassland and freshwater communities typical of a more mesic environment (Twisselmann, 1967). Tulare Lake, part of the larger Tulare Lake Basin, was a vast freshwater lake formed by the consolidation of alluvial fan dams generated by the Kings River to the east and Los Gatos Creek to the west (Atwater et al., 1986; G. Fenenga, 1994). At its maximum, the lake covered approximately 760 square miles, supporting a diverse biotic community and a large population of various Yokut tribes (G. Fenenga, 1994; Preston, 1981). Buena Vista Lake, the second largest in the Tulare Lake Basin, was fed by the Kern River and connected to Kern and Tulare Lakes via several sloughs.

The region's plant communities were crucial to precontact populations, providing resources such as grassnut root, grass seed, clover, mustard greens, salt grass, and fruits like wild grapes, blackberries, and manzanita berries (Latta, 1976; Osborne, 1992; Powers, 1976). Tule was abundant and used for both food and manufacturing by native groups (Osborne, 1992). During the mid-twentieth century, Buena Vista Lake dried up following the construction of Isabella Dam and the diversion of its tributary rivers for agricultural and municipal water uses. While many of these resources still exist, their distribution and abundance have significantly diminished over the past century.

The San Joaquin Valley once supported diverse animal species, many of which are now locally extinct or have experienced drastic population declines following Euro-American contact. Currently extant mammal species include coyotes, foxes, badgers, California jackrabbits, cottontail rabbits, ground squirrels, wood rats, pocket gophers, and mice (Osborne, 1992). A variety of birds and waterfowl, though in reduced numbers, still reside in the valley, including teals, mallards, wood ducks, Canada geese, American coots, grebes, hawks, and various passerine birds (Cogswell, 1977). Fish species historically included



Sacramento blackfish, Sacramento sucker, hitch, trout, perch, chub, and salmon (Moyle, 1976). Invertebrates, reptiles, and amphibians were abundant, including freshwater mussels, clams, insects, snakes, lizards, frogs, and toads. The region's paleontological record includes fossil remains of mammoth, giant ground sloth, large and small horses, camel, dire wolf, Pleistocene lion, and bison (G. Fenenga, 1991), attesting to the area's rich prehistoric biodiversity.

3.2 Cultural Setting

3.2.1 Precontact Setting

The archaeology of the southern San Joaquin Valley region remains relatively understudied compared to other areas in California (Moratto, 1984). Despite the limited archaeological record providing specific details, the region's precontact history can be broadly characterized as similar to that of south-central and central California (Elsasser, 1962; F. Fenenga, 1952; Fredrickson and Grossman, 1977; Gifford, 1926; Hewes, 1941; Rosenthal, 2007; Schiffman and Garfinkel, 1981; Wedel, 1941). More recent research has revealed that the precontact history of southern San Joaquin Valley within the last millennium resembles that of the more extensively studied Santa Barbara region (Siefkin, 1999). This similarity allows for the establishment of a working knowledge of the area's precontact setting.

To characterize Holocene period cultural history in the San Joaquin Valley, we can use the taxonomic system first proposed by Beardsley (1954a, 1954b) and later elaborated by Moratto (1984). This system provides a framework for understanding the region's cultural development over time despite the relative paucity of archaeological data specific to the southern San Joaquin Valley. This approach, while acknowledging the limitations of the current archaeological record, allows for a general understanding of the region's precontact cultural sequence. It also highlights the need for further archaeological investigation in the southern San Joaquin Valley to refine our understanding of its unique cultural developments and relationships with neighboring regions.

The following sections will provide a general characterization of the Late Pleistocene and Holocene periods in the San Joaquin Valley, based on this taxonomic system, while noting that future research may lead to refinements or revisions of this understanding.

3.2.2 Paleoindian Period

The initial human occupation of the southern San Joaquin Valley region can be traced back to the Paleoindian period, extending at least 12,000 years into the past, with evidence suggesting human presence prior to 10,000 years before present (YBP). Characteristic fluted and stemmed projectile points, indicative of early human activity, have been discovered throughout the region, including the margins of Tulare Lake, the Carrizo Plain, the Sierra foothills, and the Mojave Desert.

The Witt site (CA-KIN-32), located on the western edge of Tulare Lake, stands as the most notable archaeological site from this period in the region (F. Fenenga, 1993). The prevalence of fluted and stemmed points along lake margins suggests a lakeshore-centered lifestyle adaptation, mirroring patterns observed in other areas of western North America during this time.



Additional significant discoveries include a Clovis-like projectile point near White Oak Lodge on the Tejon Ranch (Glennan, 1987a,b) and other fluted points found throughout Kern and Inyo Counties in proximity to Pleistocene lakes (F. Fenenga, 1993; Glennan, 1987a,b; Moratto et al., 2018; Sutton and Wilke, 1984; Yohe and Gardner, 2016; Zimmerman et al., 1989). These findings further corroborate the early human presence in the region and provide insights into the distribution of Paleoindian populations.

Despite the documented evidence of human occupation during this period, our understanding of the specific nature and distribution of these early groups remains limited. Many early sites have been compromised by historic land use, suffer from poor preservation, or remain undiscovered. The available evidence suggests that Paleoindian peoples in this region likely consisted of small, highly mobile populations whose lifeways left a minimal archaeological signature.

This scarcity of well-preserved Paleoindian sites underscores the importance of protecting and carefully studying the few known locations. Future research in the southern San Joaquin Valley may yield additional insights into the lifeways of these early inhabitants, potentially refining our understanding of regional variations in Paleoindian adaptations and their relationships with the changing post-Pleistocene environment.

3.2.3 Early Horizon

The Early Horizon, from approximately 8,000 to 4,000 YBP, marks the earliest period with substantial archaeological evidence of human occupation in the region. During this time, populations in southern California were primarily concentrated along the coast, with minimal visible utilization of inland areas. This distribution pattern may be partially attributed to the severely cold and dry paleoclimatic conditions prevalent during this period.

The Early Horizon is characterized by low population density, with human adaptation emphasizing the exploitation of hard seeds and nuts. This subsistence strategy is reflected in the archaeological record, which features mullers and grindstones (manos and metates). The prevalence of these grinding implements suggests a specialized subsistence adaptation primarily focused on plant food gathering rather than hunting.

In comparison with the coast, archaeological evidence of Early Horizon habitation sites in the Central Valley proper is extremely limited. Only one Early Horizon site (CA-KER-116) has been identified in this region. This site is associated with a deeply buried deposit on the shoreline of Buena Vista Lake (Rosenthal, 2007), providing a rare glimpse into inland occupation during this period. The paucity of Early Horizon sites in the Central Valley underscores the challenges in identifying and studying these early occupations. Factors such as deep burial of deposits, erosion, and subsequent land use may have obscured or destroyed many early sites. Additionally, the apparent preference for coastal settlements during this period may have resulted in fewer inland occupations, further contributing to the limited archaeological visibility of Early Horizon sites in the Central Valley.



3.2.4 Middle Horizon

The Middle Horizon, also known as the Intermediate Period (4,000 to 1,500 YBP), is characterized by the onset of the Holocene Maximum (beginning ca. 3,800 YBP), a period of significantly warmer environmental conditions. Archaeological evidence suggests that this period witnessed substantial population increases and movements into previously uninhabited environments, particularly in south-central California, encompassing both coastal and interior regions (Whitley, 2000).

The Middle Horizon is marked by further subsistence specialization, possibly coinciding with the archaeological appearance of acorn processing. It is hypothesized that Takic-speaking and Penutian-speaking groups (including the Yokuts) entered California during this period, potentially introducing subsistence specialization technologies such as acorn processing (cf. Moratto, 1984). This migration may have established the so-called "Shoshonean Wedge" (Takic-speaking groups including the Gabrielino/Fernandeño, Tataviam, and Kitanemuk) earlier than initially posited by Kroeber (1925). Evidence from the Carrizo Plain suggests that the origins of the tribelet level of political organization (land-owning groups linked by shared territory and common ancestry) may have also developed during this period (W & S Consultants, 2004; Whitley et al., 2007).

Unlike earlier periods, the Middle Horizon presents substantial archaeological evidence of occupation in south-central California. Large site complexes and a subsequent increase in environmental exploitation range appear in the archaeological record around 4,000 YBP. Notable examples include the Agua Dulce village complex along the upper Santa Clara River in modern Los Angeles County, which included an occupation of possibly 50 or more people dating to the Intermediate Period (King, n.d.; W & S Consultants, 1994). Significant population increases have also been documented in the Carrizo Plain, with evidence for substantial occupations in the Tehachapi Mountains dating to the Middle Horizon (W & S Consultants, 2006).

Similar patterns of increased occupation and environmental exploitation are visible in the inland Ventura County region (Whitley and Beaudry, 1991), the Coso Range region (Whitley et al., 1988), the southern Sierra Nevada (W & S Consultants, 1999), and the western Mojave Desert (Sutton, 1988). In contrast, less evidence exists in the western areas, such as the upper Sisquoc and Cuyama River drainages, until populations were established around 3,500 YBP (Horne, 1981).

It is important to note that while these patterns of population increase and environmental expansion are well-documented in adjacent areas, their applicability to the southern San Joaquin Valley is not as well established. Most investigations into these expansions have focused on local and adjacent areas, leaving the question of whether similar patterns of population growth and environmental adaptation occurred in the southern San Joaquin Valley during the Middle Horizon. This gap in our understanding highlights the need for further archaeological investigation specific to the southern San Joaquin Valley region to better understand its unique cultural developments during this crucial period.



3.2.5 Late Horizon

Research on the Late Horizon (1,500 YBP to historic contact) period has found increasing evidence of the importance of the Middle-Late Horizon transition (approximately AD 800 to 1200) in south-central California. Again, significant climatic changes mark this period—the so-called Medieval Climatic Anomaly represents a period of climatic instability, including significant droughts, resulting in a cooler, wetter, and more stable climate. This climate resulted in demographic changes across much of the West (Jones et al., 1999), including considerable population decline and occupational abandonment in as much as 90 percent of some interior regions and across south-central California broadly (Whitley, 2007). It is not well established if these occupational abandonments corresponded to an actual reduction in population levels or if they represent a reconcentration of people into population centers.

Middle Horizon villages were widely dispersed, including many locations that lack contemporary evidence of freshwater sources. In contrast, Late Horizon sites are typically located in conjunction with historical and often contemporary freshwater sources, representing some of this change in population distribution. Large lake systems in valley bottoms are likely to have mediated some of the population effects of drought seen elsewhere. However, research such as the reconstruction of Soda Lake in the Carrizo Plain has found that these environmental disturbances also significantly impacted lake systems.

The Late Horizon, then, can be understood as a period of recovery from significant climatic and demographic changes, serving as the foundation for the regional archaeological cultures that are precursors to ethnographic Native California, and suggests that ethnographic lifeways recorded by anthropologists extend roughly 800 years into the past. The end of the Late Horizon is marked by perhaps the most substantial and comprehensive archaeological record for any period in the Central Valley, with assemblages and adaptations represented being the most diverse (Rosenthal, 2007; see also Bennyhoff, 1977 and Fredrickson, 1974). This period is also characterized by the introduction of the bow and arrow, replacing the dart and atlatl in the procurement of large game (Yohe, 1998). Subsistence during this time was focused on fishing and plant harvesting, which appear to have increased in importance throughout the Central Valley, as most residential sites dated to this time include large quantities of fish bone and an assortment of mammal and bird remains.

3.2.6 Ethnographic Setting

The southern San Joaquin Valley region was historically inhabited by Penutian-speaking Yokuts tribal groups, whose ethnographic information was primarily documented by several key researchers in the late nineteenth and early twentieth centuries (Driver, 1937; Gayton, 1930, 1948; Harrington, 1981–1996; Kroeber, 1925; Latta, 1977; Powers, 1971, 1976). Kroeber (1925) provided early records, later confirmed by Latta (1977), of the tribal distribution in this area, noting that the Tulamni occupied the edges of Buena Vista Lake and the southwestern end of the San Joaquin Valley, while the Hometwoli inhabited the area in and around Kern Lake to the east. The Tuhohi (or Chuxoxi) were located near the mouth of the Kern River as it flowed north into Tulare Lake, and the Yauelmani territory extended from the southeastern side of the valley northward into present-day Bakersfield.



European contact with the Yokuts was first documented in 1772 when Spanish soldiers under Pedro Fages' command traversed the Tejon Pass into the San Joaquin Valley. The next recorded interaction occurred in 1776 with the arrival of Father Garces, a Franciscan friar. Following California's annexation by the United States, the influx of settlers into the San Joaquin Valley led to the rapid displacement of native populations and the transfer of ancestral lands to European control (Latta, 1977).

Most ethnographic research on Yokuts tribes focused on the central groups in the valley and Sierra foothills, commencing around the turn of the twentieth century. By this time, the northernmost tribes had been severely impacted by Euro-American activities during the Gold Rush and were virtually extinct. The Spanish had partially removed the southernmost tribes to missions. Consequently, ethnographic details for the southern valley tribes are limited compared to the rich information collected from the central foothill tribes, where native speakers of Yokuts dialects can still be found today.

Despite these limitations, general information about indigenous lifeways remains broadly consistent across Yokuts territories. This similarity is particularly evident among valley and foothill tribes, where comparable environments influenced subsistence strategies and adaptations. Additionally, religious beliefs exhibited strong similarities throughout the region, reflecting a shared cultural heritage despite geographical variations.

Across Yokuts groups, regardless of specific tribal affiliation, social organization typically centered around distinct tribelets. These tribelets were structured around a central village and ranged in size from 150 to 500 individuals (Kroeber, 1925; Latta, 1977). While subsistence practices varied among tribelets based on local environmental conditions, certain dietary patterns were consistent throughout Native California and Yokuts territory. Acorns served as a primary dietary staple, regularly supplemented by various gathered seeds. Valley tribes further enriched their diet with fish, wildfowl, and other lacustrine and riverine resources.

A chief supported by various assistants headed the political structure of Yokuts tribelets. Among these, the winatum held particular importance, serving multiple roles, including herald or messenger, assistant chief, and shaman. The winatum also functioned as a religious officer. While shamans did not possess direct political authority, they wielded significant influence within their tribelet due to their multifaceted roles as healers, diviners, controllers of natural phenomena, and ceremonial officials (Gayton, 1930; Latta, 1977).

The arrival of Spanish colonizers in the region had profound and devastating effects on native populations. Many foothill communities experienced significant population declines, with some villages becoming entirely depopulated (Cook, 1955; Latta, 1977). The introduction of European diseases and the forced relocation of communities further decimated the indigenous population. Surviving Southern Valley Yokuts were relocated to reservations, including the Tejon reservation at the base of the Tehachapi Mountains, the Fresno reservation near Madera, and later, in 1859, to the Tule River reservation when earlier reservations failed to thrive.

Despite the severe impacts of Spanish contact, including novel diseases, social and environmental disruption, and fundamental alterations to resources and populations, the Yokuts remained one of the largest and most resilient groups in Native California. Cook (1978) estimates that the Yokuts region



contained approximately 27 percent of the state's indigenous population at the time of contact, though some estimates suggest even higher numbers.

3.2.7 Historical Setting

Historic-period impacts on the Kern Valley landscape began in the mid-1850s with ranching and mineral extraction activities, which have remained locally significant. Hydroelectric power development along the Kern River commenced in 1902 with the initiation of the Kern River Hydroelectric System No. 1 construction. This was followed by the building of the Borel Powerhouse in 1904 and Kern River No. 3 between 1919 and 1921 (Taylor, 1993). In the mid-1950s, the U.S. Army Corps of Engineers constructed the Lake Isabella Dam at the confluence of the Kern River and South Fork Kern River, creating a reservoir for agricultural water storage and flood control. However, the region's primary historical development and activity has centered around oil.

The western San Joaquin Valley has a long history of petroleum exploitation. Indigenous Yokuts people gathered asphaltum from seeps and oil sands for adhesive and waterproofing purposes (Latta, 1977). By the 1860s, Euro-American settlers used asphaltum ("brea") for waterproofing and crude oil as a lubricant. The Civil War increased demand for these resources, leading to the establishment of a still near McKittrick by the Buena Vista Petroleum Company in 1864 (Rintoul, 1976).

Early oil industry development in the southern San Joaquin Valley began with the first oil well drilled in 1877, followed by the erection of the first oil derrick in 1887. The rural and remote nature of these locations initially hindered expansion due to transportation challenges. However, the construction of a railroad line to McKittrick in 1893 and the first oil pipeline to Los Angeles in 1913 significantly enhanced the economic viability of oilfields in the western valley (Rintoul, 1976). By 1916, five pipelines connected the valley to three coastal ports.

By 1899, three oil fields had been established: McKittrick and Midway-Sunset to the west and Kern River to the northeast of Bakersfield (Rintoul, 1976). The McKittrick field, which began with the first well, derrick, and refinery during the initial exploitation of asphaltum, saw significant production with the Klondike Oil Company's Shamrock Gusher, first drilled in 1896, producing 1,300 barrels per day (Rintoul, 1990).

Though established separately and bounded by the Mount Diablo and San Bernardino meridians, the Midway and Sunset fields contained 1,710 producing wells by 1916 (California State Council of Defense, 1917). The Midway field began development in 1900 and was in heavy production by 1909. The Sunset field saw its first well drilled in 1891, with systematic production in 1894. The economic importance of the Sunset field quickly became apparent, with 18 wells producing roughly 12,500 barrels during 1900, increasing to 9.2 million barrels by 1910. The discovery of the Lakeview Gusher in 1909 significantly boosted production, contributing about seven million barrels.

By 1913, the combined Midway-Sunset field produced more than one-third of California's oil barrels, increasing to almost half by 1915 (Rintoul, 1978). In 1916, the field produced about 32 million barrels (California State Council of Defense, 1917). The Midway-Sunset field's importance continued to grow. By



2006, it had a cumulative production of nearly three billion barrels of oil per year, making it the largest oilfield in California and the third largest in the United States.

The Kern River oilfield, discovered in the spring of 1899 by Jonathan Elwood and his son James Munroe Elwood, marked another significant early enterprise in the region. Located on the north bank of the Kern River, approximately seven miles northeast of Bakersfield, this discovery prompted the rapid formation of over 200 oil companies to participate in its development. Within 2 years, the field expanded to cover more than 12 square miles, with its heavy crude primarily used as locomotive fuel (Rintoul, 1990).

The West Valley oilfields were served by the Sunset Railroad, jointly owned by the Southern Pacific and Santa Fe railroads. In 1909, this railroad extended 7 miles beyond Maricopa to "Siding Two" to reach the Midway-Sunset oilfield. "Siding Two," initially a small community called "Boust City" and later "Moron," eventually developed into the city of Taft, which became the trade center for the oilfields.

Many early oilfields led to the development of nearby oil towns (such as Oildale and Taft) and oil camps constructed by companies to house workers (Rintoul, 1978). These camps typically included bunkhouses, small houses for families, cookhouses, recreation halls, offices, and supply yards. By 1919, while Taft had about 3,000 residents, nearby west-side oil camps housed three times as many inhabitants (Rintoul, 1976).

The shift from coal to oil for shipping fuel had significant national defense implications. In response, President Taft initiated temporary withdrawals of oil-bearing federal lands in California and Wyoming in 1909 and 1910, including what would become Naval Petroleum Reserve Number 1 (NPR 1) in the Elk Hills and NPR 2 in the Buena Vista Hills. These lands were permanently withdrawn in 1912.

The petroleum industry underwent significant changes in the early twentieth century, coinciding with the rise of automobiles and increasing gasoline demand. While attempts were made to standardize various aspects of the industry, true standardization was never fully achieved due to variations across different oilfields and regions.

Over the last century, 92 oilfields have been established in the west-side region, reflecting the area's rich petroleum resources and the industry's ongoing development. This extensive history of oil exploration and production has significantly shaped the cultural and economic landscape of Kern County, making it a crucial part of California's oil industry heritage (Kern County Economic Development Foundation, 2021; Melley, 2021).

Early drilling technology in California oilfields primarily utilized "cable" or percussion rigs. These rigs featured wood-frame derricks for hoisting the stem and drill bit and inserting or removing pipe lengths. Initially, wooden "walking beam" pumps were employed, requiring an engine, motor, and power source to operate the derrick and pump. The setup also included one or more wooden tanks, belts (later chains) and pulley wheels (later gears), typically arranged in a linear formation (Rintoul, 1990).

Most early wooden derricks and pumps were constructed on wooden beam foundations resting on the ground surface. However, Standard Oil of California often built concrete foundations even for their wooden derricks. These systems, used into the 1930s, were typically steam-powered, with engines



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powered by natural gas-fueled boilers. Due to fire hazards, boilers were usually placed 100 to 200 feet away from wells, resulting in well sites often exceeding 100 feet in diameter (Brantly, 1971).

The 1920s and 1930s witnessed a gradual decrease in steam boiler size. While World War II disrupted oilfield equipment development, post-war internal combustion engines were introduced to run drills and pumps (Brantly, 1971). California's oilfields were developed more densely than elsewhere due to earthquake faulting and smaller underground petroleum deposits. This layout allowed a single, larger boiler to service multiple well motors, making California oilfield boilers often larger and more permanent (Brantly, 1971).

Metal derricks were introduced locally in 1924, replacing older wooden structures. These were typically built on concrete foundations with bolts, though some could be placed directly on the ground. Derrick dimensions varied based on well depth and required piping length, with California oilfields generally needing larger derricks due to more and heavier piping requirements. Practical use of portable drilling rigs in the valley region began around 1940, eliminating the need for significant concrete foundations. By the 1960s, oil extraction had become increasingly automated (Pacific Legacy, Inc., 2006).

The Kern County area boasts a rich history of human occupation dating back 10,000 years. The last century has seen extensive agricultural use, oil exploration, and oil production in parts of the region. The landscape is characterized by numerous pipelines, oil pumping units, and storage tanks alongside contact-era and precontact sites, reflecting the area's long and diverse history of human activity and resource exploitation.



4 Study Methods and Results

Stantec conducted background research and a pedestrian survey to identify cultural resources, and to assess the potential for such resources, in the API and vicinity. The methods and results of these tasks are described and summarized below.

4.1 CHRIS Records Search

Stantec Archaeologist E. Timothy Jones requested a cultural resources records search from the SSJVIC on November 27, 2024. The SSJVIC, one of the centers within the California Historical Resources Information System (CHRIS) at California State University, Bakersfield, is the official state repository of cultural resource records and reports for Kern County. The purpose of this search was to determine the presence of previously documented cultural resources in the API and a surrounding 0.5-mile radius. Previous cultural resource investigation reports on file at the SSJVIC were also reviewed for the API. In addition, cultural resource listings in the NRHP, CRHR, California Historical Landmarks, California Inventory of Historic Resources, California Points of Historical Interest, and the Built Environment Resource Directory were consulted.

The search results identified 23 previous studies completed within a 0.5-mile radius of the API, 15 of which partially cover the API. A list and summary description of all studies within the 0.5-mile search radius is in Table 2, and the locations of these studies are shown in Figure 4a (Appendix A).

Table 2 Cultural Resource Studies Completed within the 0.5-Mile Search Radius

Report Reference No.	Author(s)	Year	Title	Level of Investigation	Within the PA?
KE-04916	Macko, Michael	2017	Archaeological Sensitivity Assessment Elk Hills Road & Skyline Road, Taft, California	Evaluation	No
KE-05122	Bell, Arran and Whitley David S.	2014	FINAL Class III Inventories of Portions of the Buena Vista Hills, Kern County, California	Field study, evaluation	No
KE-04376	Romani, Gwen R.	2013	Archaeological Survey Report Improvements to Elk Hills Road from State Route 119 to Skyline Road (approximately 6.8 miles), Kern County, California	Survey	No
KE-04512	Romani, Gwen R.	2013	Archaeological Survey Report Improvements to Elk Hills Road, Skyline Road to State Route 58, Kern County, California	Survey	No



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Report Reference No.	Author(s)	Year	Title	Level of Investigation	Within the PA?
KE-04661	Reese, Elena and Jackson, Thomas	2013	Cultural Resources Management Plan Addendum No. 1, Appendix 1: Cultural Resources Inventory for the Former Naval Petroleum Reserve No. 1, Closure Project, Kern County, California	Field study, evaluation	No
KE-04435	Meyer, J., Young, D., and Rosenthal, J.	2010	Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9 - Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways - EA 06-0A7408 TEA Grant	Other: research	Yes
KE-02581	Culleton et al.	2001	Cultural Resources Inventory, Evaluation, and Mitigation Plan for the Water Supply Line (Route 2), Elk Hills Power Project (99-AFC-1): Addendum to the Elk Hills Power Project Cultural Resources Monitoring and Mitigation Plan	Intensive survey, evaluation	Yes
KE-02500	Nachmanoff, J., McKeehan J., and Davy, Douglas M.	1999	Cultural Resources Inventory of the Elk Hills Power Project, Kern County, California	Survey, evaluation	Yes
KE-02055	Eidsness, Janet P.	1998	Archaeological Inventory and Assessment for Proposed Trash Clean-up at 17 Localities in Naval Petroleum Reserve No. 1, Elk Hills, Kern County, California	Field study, evaluation	No
KE-02268	Jackson, T. L., Shapiro, L. A., and King, J. H.	1998	Prehistoric Archaeological Resources Inventory and Evaluation at Naval Petroleum Reserve No. 1 (Elk Hills), Kern County, California	Field study, evaluation	No
KE-01173	Barnhill, Glenn	1997	Sale of Naval Petroleum Reserve No. 1 (Elk Hills)	Field study, data recovery	Yes
KE-01174	Como, A., Borgstrom, C., and Barnhill, G.	1997	Draft - Supplemental Impact Statement/Program Environmental Impact Report for Sale of NPR -1 (Also Final)	Planning, evaluation	Yes
KE-00359	Hamusek-McGann, B., Baker, C. L., and Maniery, M. L.	1997	Historical Resources Evaluation and Assessment Report of Western Naval Petroleum Reserve No. 1, Elk Hills, Kern County, California	Field study, evaluation	Yes
KE-02034	Jackson, Thomas, L. and Shapiro, Lisa A.	1997	Cultural Resources Management Plan Naval Petroleum Reserve No. 1, Elk Hills, Kern County, CA	Survey, evaluation	Yes



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Report Reference No.	Author(s)	Year	Title	Level of Investigation	Within the PA?
KE-02269	Jackson, T. L., Shapiro, L. A., and Alcock, G.	1997	Prehistoric Archaeological Extended Inventory Research at Naval Petroleum Reserve No. 1 (Elk Hills), Kern County, California	Field study, evaluation	No
KE-00924	Peak & Associates Inc.	1991	Cultural Resource Assessment of Sample Areas of Naval Petroleum Reserve No. 1, Kern County, California	Evaluation, Survey	Yes
KE-00756	Osborne, Richard H.	1990	An Archaeological Assessment of Approximately Seven Acres North of the Intersection of Elk Hills Road and Skyline Road Within the Elk Hills Naval Petroleum Reserve No. 1, Kern County, California	Intensive survey	Yes
KE-02026	Peak & Associates Inc.	1987	Cultural Resource Monitoring Plan for the Construction of the San Joaquin Valley Pipeline	Intensive survey	Yes
KE-01960	Cleland, J. et al.	1986	Kern River Pipeline Cultural Resource Overview	Other: research	Yes
KE-01183	Schiffman, Robert A. and Garfinkel, Alan P.	1981	Prehistory of Kern County - An Overview	Other: research	Yes
KE-01182	Schiffman, Robert A. and Garfinkel, Alan P.	1980	Draft – Archaeological Overview of Kern County	Other: research	Yes
KE-02232	Cawley	1980	Cawley Manuscript	Other: research	Yes
KE-00321	Chavez, David	1979	FINAL REPORT: Cultural Resources Evaluation of the Natural Gas Liquid Pipeline Route, Natural Gas Liquid Railroad Facilities, and the Associated Spur Line, Naval Petroleum Reserve No. 1 (Elk Hills), Kern County, California	Field study, evaluation	Yes

The records search also identified three recorded cultural resources within a 0.5-mile radius of the API, two of which intersect the API. These resources consist of a precontact site, a historic-period refuse scatter, and a historic-period oil and/or gas production facilities and habitation debris (Table 3). A description of the previously recorded cultural resource within the API is included in Section 4.3, Geoarchaeological Analysis, and the locations of cultural resources identified by the records search are shown in Figures 4b and 4c (Appendix A).



Table 3 Cultural Resources Recorded within the 0.5-Mile Search Radius

Primary No.	Trinomial	Description	Within API?
P-15-006447	CA-KER-5270H	Historic habitation site associated with oil industry	No
P-15-003175	CA-KER-3175H	Historic Refuse Scatter	Yes
P-15-010099	CA-KER-5955	Precontact lithic and tool scatter	Yes

4.2 NAHC Sacred Lands File Search and Native American Consultation

Stantec requested a review of the NAHC's Sacred Lands File (SLF) on January 7, 2025. On January 10, 2025, NAHC Cultural Resources Analyst Melina Carlos responded via email to Stantec's request that the results of the SLF search were negative. The NAHC also provided a list of tribal representatives that may have additional information regarding tribal cultural resources in the API. The NAHC's response is included in Appendix C of this report.

The Project is subject to Native American consultation requirements, pursuant to the CEQA (AB 52). Tribal consultation is pending and will be conducted by the CEC. The results of tribal consultation will be reported separately in the CEC Staff Analysis of the Petition For Post-Certification Amendment.

4.3 Geoarchaeological Analysis

This desktop geoarchaeological analysis evaluates the potential for intact, subsurface precontact cultural deposits to occur within the API. The analysis focuses on precontact resources because historic-era resources are often too young to have been buried by natural processes. Stantec conducted a comprehensive review of geologic mapping (Dibblee and Minch, 2005a, 2005b), soil data (National Cooperative Soil Survey, 2025) and relevant studies (Croft, 1968; Culleton, 2006; Pacific Legacy, Inc., 2001) to characterize the local geology and geomorphology and determine the buried site sensitivity of the API. This desktop analysis assesses the capacity for soils within the API to contain buried archaeological materials, but it does not predict the specific location of unidentified cultural resources. The findings of this desktop analysis have not been verified by subsurface testing in the field.

The API is within the Elk Hills, a series of small hills and drainages that have been uplifted by multiple fault and fold systems (Dibblee and Minch, 2005a, 2005b). The API is entirely underlain by Pleistocene (11,700 to 2.6 million years old) to Pliocene (2.6 to 5.3 million years old) alluvial deposits of the Tulare Formation. Although the API is less than 1 mile northwest of the modern limits of Buena Vista Lake, the lakeshore never intersected the API in the past, even during times of increased precipitation in the Pleistocene, as the lake outflows into the Buena Vista Slough when its depth exceeds 13 feet (Croft, 1968).



The small hills surrounding the API have relatively low slopes ranging from 15 to 30 percent and all work locations within the API are positioned on flat ground surfaces (Google Earth Pro, 2025). The flat surfaces of the API are geomorphologically stable, although this appears to have resulted mostly from grading and not natural processes. Before the API was disturbed by historic-era oil extraction activities, the landscape experienced erosional processes on hillsides and depositional processes at the base of hills and in the region's many small drainages.

There are four soil units within the API: Sodic Haplocambids in the southeastern corner of the PA along North Access Road, Kimberlina-Urban land complex along Tank Farm Road, and Elkhills-Torriorthents stratified complex and Kimberlina sandy loam in the northwest portion of the API at the intersection of Skyline Road and Elk Hills Road (NCSS, 2025). Sodic Haplocambids are thick, sandy loams with poor horizon development and high sodium content (NCSS, 2025). Kimberlina sandy loam forms from alluvial parent material in alluvial fan and flood plain depositional settings and has little to no B horizon development. Kimberlina-Urban land complex soil is Kimberlina sandy loam that has been disturbed by 'urban land.' Elkhills-Torriorthents stratified complex consists of sandy loam in upland settings formed from alluvial parent material (NCSS, 2025). The soil has limited soil development, likely due to its position in an erosional setting.

Previously recorded precontact site P-15-010099 indicates a precontact presence in the vicinity of the API. Additionally, the P-15-010099 site record (Pacific Legacy, Inc., 2001) notes that shell fragments were observed in road cuts and that some of the site may be buried under approximately 20 inches of fill, indicating that precontact material may be present at shallow depths within and near the site boundary. Buried cultural deposits that have been identified in the Elk Hills area are typically shallow; of the 43 excavated radiocarbon samples from 18 precontact Elk Hills sites presented by Culleton (2006), only one was obtained deeper than 25 inches below ground.

Taken together, the parent material for all soils in the API is Tulare Formation alluvium, which is too old to contain archaeological deposits at depth. While some deposition is possible within the API, regional archaeological data (Pacific Legacy, Inc., 2006) suggest that buried cultural material is most likely to be encountered at shallow depths. Ground disturbances associated with the proposed Project include trenching and HDD. These activities are unlikely to encounter archaeological deposits below the near surface (approximately 20 inches or less, as interpreted from Pacific Legacy, Inc., 2006). While there is a possibility to encounter shallow archaeological deposits, much of the soil in the API has been disturbed by historic and modern activities (Google Earth, 2025; NCSS, 2025), reducing the likelihood of the Project to encounter intact subsurface cultural resources. Therefore, the API has a low buried site sensitivity, a finding that is supported by the modelling of Meyer, Young, and Rosenthal (2010). Despite the Project's low buried site sensitivity, this analysis recommends an inadvertent discovery protocol be followed in the unlikely event that subsurface deposits are encountered.

4.4 Pedestrian Survey

Stantec Archaeologists Andrea Van Schmus, B.A., and Curtis Alcantar, B.A., conducted a pedestrian survey of the API on February 21 and 22, 2025. Stantec Archaeologists Sandy Hollispeasy, B.A., and Saeed Sawaed, B.A., conducted supplemental surveys of additions to the API on May 14 and 15 and



June 10, 2025. All surveys were completed using parallel survey transects spaced 10 to 15 meters (33 to 50 feet) apart. Steep slopes were surveyed with zig-zag transects, where feasible. Foot- and toe-slopes of steep slopes were carefully examined for downward-moving, displaced cultural materials. Areas of dense vegetation were closely examined for cultural resources, using narrower transect spacing. Areas of exposed subsurface sediments, such as rodent burrow spoils piles and cut-banks, were opportunistically examined for cultural materials.

The extent of the survey coverage was recorded with Environmental Systems Research Institute FieldMaps for ArcGIS application and a Global Positioning System receiver, with the Universal Transverse Mercator, North American Datum of 1983 (NAD 83), Zone 11S, meters, as the spatial reference. Photographs were taken with an iPhone 13 cellular phone to document the environment within the API and surrounding areas. Surface visibility was highly variable and ranged from fair (around 25 percent) to excellent (more than 90 percent) along the linear survey routes.

The survey revisited the previously recorded historic-era site P-15-0003175 and precontact site P-15-010099 within the API. Additionally, Stantec identified two previously unrecorded historic era sites. Descriptions of resources identified during the survey are included below. DPR 523 records for cultural resources within the API have been prepared and are included in Appendix B.

4.4.1 Cultural Resources Identified During Survey

4.4.1.1 P-15-003175 / CA-KER-3175H

Site P-15-003175 was previously recorded in 1991 by Robert Gerry and Barry Boyer (Peak and Associates, Inc.) as a historic refuse scatter of 50+ milk cans, meat tins, China dishware fragments, and glass medicine bottles. It was originally noted as being mostly graded and located within a rapidly eroding slope. On May 15, 2025, Stantec Archaeologists Sandy Hollispeasy and Saeed Sawaed revisited the site location, but were not able to relocate any cultural resources. The site has either been destroyed (as the south half of this site extends into a graded pad) or vegetation overgrowth prevented identification of artifacts at the time of survey.

4.4.1.2 P-15-010099 | CA-KER-5955

Site P-15-010099 was initially recorded by R. Osborne in 1990 as two separate precontact isolates (P-15-009827 / IF-KER-633 [a modified quartzite bowl or mortar] and P-15-009828 / IF-KER-632 [a chalcedony flake]) on the west side of Elk Hills Road. In 2001, B. Culleton expanded the site to include artifacts on both sides of Elk Hills Road. The site consists of a lithic scatter of chert debitage and cores, a modified quartzite bowl or mortar, three utilized chert flakes (presumed to be scrappers), one large side-notched projectile point, three *Olivella* shells (one shell saucer), and a scatter of freshwater mussel shells (*Anodonta* and/or *Gonidea* sp.). The 2001 update noted multiple disturbances to the site from oilfield activities, as well as the potential for buried sections of the site.

Stantec revisited the site on February 21, 2025. Ground visibility was fair to excellent, with vegetation and structures associated with the oilfield limiting surface visibility. The presence and condition of the site



were confirmed; however, none of the artifacts observed in 2001 were identified, possibly due to them being previously collected. Stantec did identify four gray chert secondary flaked stone tools, one gray chert secondary flake, and one freshwater clam shell (Appendix B).

4.4.1.3 CRC-Site-AV1

This historic-era site was discovered on February 22, 2025. The site consists of 2 depressions (Features 1 and 2), which appear to be looter pits, and approximately 64 artifacts including 4 bottle base fragments, 25 glass fragments, 6 ceramics fragments, 5 metal cans, 2 metal enamelware pots, 8 red brick fragments, 5 yellow brick fragments, and 9 miscellaneous metal fragments. The only temporally diagnostic artifact was an Illinois Glass Co. maker's mark on an amethyst bottle base fragment. Artifacts were observed scattered throughout the site on the surface, with some concentrations around Features 1 and 2 and on top of a deflated spoils pile between Features 1 and 2. As recorded, the site is approximately 55 feet (north/south) by 32 feet (east/west).

4.4.1.4 CRC-Site-AV2

This historic site was discovered on February 22, 2025. The site consists of three brick features (Features 1–3) and an artifact scatter consisting of four amethyst glass fragments, two aqua glass fragments, two leather shoe fragments, one metal rivet, and brick fragments. Features 1 through 3 likely represent a brick alignment with a portion of a demolished brick boiler. As recorded, the site is approximately 90 feet (north/south) by 120 feet (east/west).



5 Environmental Analysis

The following sections present the potential effects from the construction and operation of the Project on cultural resources.

5.1 Significance Criteria

In accordance with the State's CEQA Guidelines Appendix G Environmental Checklist, the following questions are to be analyzed and evaluated to determine whether cultural resources impacts are significant. Would the proposed project:

- a) Cause a substantial adverse change in the significance of a historical resource pursuant to CCR Section 15064.5?
- b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5?
- c) Disturb any human remains, including those interred outside of dedicated cemeteries?

5.2 Impact Analysis

Stantec's cultural resources study for the Project identified four cultural resources within the API, consisting of a precontact artifact and shell scatter, and three historic-era refuse scatters. Study findings and recommendations to reduce the Project's potential impacts on cultural resources are discussed below.

A proposed surface waterline would intersect the southwest portion of precontact site P-15-010099 (Appendix A, Figures 5a and 5b). This site has not been formally evaluated for listing in the CRHR; although, for purposes of this Project, P-15-010099 is assumed to be eligible for listing and would therefore qualify as a historical resource under CEQA.

Sites P-15-003175, CRC-Site-AV1 and CRC-Site-AV2 consist of historic-era refuse scatters and features. These resources likely represent opportunistic refuse disposal (P-15-003175) or are associated with oil extraction within the EHOF (CRC-Site-AV1 and CRC-Site-AV2).

While the historical development of the oil industry in the Central Valley represents an important historical context, neither CRC-Site-AV1 nor CRC-Site-AV2 are associated with "discovery wells" or other historically significant individuals or entities associated with oil extraction that would warrant CRHR listing under Criterion 1 or Criterion 2. These two newly recorded historic-era sites in the API also do not exhibit distinctive qualities that would qualify them for listing under CRHR Criterion 3, nor do they have the quantity and/or variety of cultural materials necessary to yield information important in history, as specified under CRHR Criterion 4.



No cultural materials were identified at P-15-003175, and as such, the site is not eligible for listing under any CRHR criteria.

Due to an apparent lack of historical significance and eligibility for listing in the CRHR, none of the historic-era resources qualify as historical resources or unique archaeological resources for the purposes of CEQA

Based on the analysis and results of this study, and with implementation of recommendations described below, the Project will not have a substantial adverse change on a historical resource, unique archaeological resource, or human remains pursuant to the CEQA (14 CCR Section 15064.5). The CEQA significance criteria for cultural resources are discussed below along with recommended mitigation measures.

5.2.1 CUL-1 Impact Analysis

Impact CUL-1 Would the project cause a substantial adverse change in the significance of a historical resources pursuant to CCR Section 15064.5?

Less than significant with mitigation. The portion of P-15-010099 intersected by a proposed waterline has been previously disturbed by construction of a large pad and a water tank. Despite previous disturbances to P-15-010099, however, the potential to identify intact subsurface cultural materials during Project ground disturbance cannot be ruled out. In addition, there is the potential to encounter unknown historical resources during excavation and ground-disturbing activities. If any previously unrecorded cultural materials are identified during project ground-disturbing activities and were found to qualify as an historical resource per CEQA Guidelines section 15064.5, any impacts to the resource resulting from construction could be potentially significant. Implementation of mitigation measure (MM) MM CUL-1 and MM CUL –2 during construction would address impacts on P-15-010099 and any previously unrecorded and buried or otherwise obscured historical resources by requiring the Project sponsor and its contractors to adhere to the appropriate procedures and protocols identified below to appropriately identify and treat any historical resources discovered during construction activities. As a result, the potential impact to historical resources would be less than significant with mitigation.

5.2.2 CUL-2 Impact Analysis

Impact CUL-2 Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5?

Less than significant with mitigation. According to the CEQA Guidelines, “When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource” (CEQA Guidelines Section 15064.5(c)(1)). Those archaeological sites that do not qualify as historical resources shall be assessed to determine if these qualify as “unique archaeological resources” (California PRC Section 21083.2). As noted above, the API includes two previously recorded cultural resources (P-15-003175 and P-15-010099) and two newly identified resources (CRC-Site-AV-1 and CRC-Site-AV-2). . However, If any previously unrecorded archeological resources are identified during Project ground-



disturbing activities and were found to qualify as an historical resource per CEQA Guidelines section 15064.5 or a unique archeological resource as defined in Public Resources Code section 21083.2(g), any impacts to the resource resulting from construction could be potentially significant. Accordingly, implementation of mitigation measure (MM) MM CUL-1 and MM CUL –2 during construction would address impacts on P-15-010099 and any previously unrecorded and buried or otherwise obscured archeological resources by requiring the project sponsor and its contractors to adhere to the appropriate procedures and protocols identified below to appropriately identify and treat any historical resources discovered during construction activities. As a result, the potential impact to archeological resources would be less than significant with mitigation.

5.2.3 CUL-3 Impact Analysis

Impact CUL-3 Would the project disturb human remains, including those interred outside of formal cemeteries?

Less than significant with mitigation. There are no known human remains within the API. However, earthmoving activities associated with construction could result in direct impacts on previously undiscovered human remains, which would have a significant impact. If human remains are encountered during Project construction, MM CUL-3 should be implemented. Implementation of Mitigation Measure CUL-3, during construction would address impacts on any buried human remains that are discovered during construction activities by requiring the Project sponsor to solicit the Most Likely Descendant's recommendations and adhere to appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition protocols.



6 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (CEQA Guidelines Section 15065[a][3]).

Although a formal evaluation of precontact site P-15-010099 was not completed as part of this study, the site is assumed to be eligible for listing in the CRHR for purposes of this Project, and as such, it qualifies as a historical resource for purposes of CEQA. However, as described in Section 7, avoidance using exclusionary fencing, archaeological/tribal monitoring, and work stoppage in the event of an accidental discovery would ensure preservation in place or implementation of other appropriate measures to mitigate impacts to less than significant. The recovery, documentation, and interpretation of any recovered information would enhance our knowledge of the precontact-era and would contribute to the scientific community and general public's understanding and interpretation of the past. Additionally, should previously unrecorded archaeological historical resources be unearthed during Project construction, these would be treated in accordance with mitigation measures CUL-1 through CUL-3 that reduce potential impacts to less than significant.

With implementation of the proposed mitigation measures along with implementation of County-required mitigation measures on the CTV I project (currently under construction), and other oil and gas development allowed under the Oil and Gas Ordinance, the Project's contribution would not have a cumulatively considerable impact on either historical resources or unique archaeological resources.



7 Mitigation Measures

The following mitigation measures (MMs) are proposed for the Project to reduce cultural resource impacts to less than significant.

MM CUL-1: A qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology shall supervise the installation of temporary exclusionary fencing at P-15-010099 to preclude Project activities from disturbing areas where surface cultural materials may be present. Additionally, an archaeological and tribal monitor are recommended for any Project ground disturbance within 50 feet of P-15-010099 to ensure that (1) construction personnel and equipment are not staging at locations where artifacts are present and the temporary exclusionary fencing is maintained; and (2) if archaeological materials are identified during Project excavation, these will be identified and appropriate measures, as summarized below, will be taken to avoid potential impacts to the resource. Archaeological and tribal monitoring should occur within 50 feet of P-15-010099 until the archaeologist determines that there is a low potential for intact subsurface archaeological deposits.

Should an archaeological deposit be encountered during Project subsurface construction within 50 feet of P-15-010099, all ground-disturbing activities within 50 feet should be redirected and the on-site archaeologist should assess the deposit, consult with agencies and the tribal monitor as appropriate, and make recommendations for the treatment of the discovery. If found to be significant by the on-site archaeologist (i.e., eligible for listing in the CRHR), CRC will be responsible for funding and overseeing implementation of the following measures. As required under CEQA, preservation in place is the preferred manner of mitigating impacts to archaeological sites (CEQA Guidelines Section 15126.4(b)(3)). If preservation in place is not feasible, however, other mitigation measures shall be implemented. Such mitigation measures may include, but would not be limited to, recording the archaeological deposit, data recovery and analysis, and public outreach. Upon completion of the selected mitigations, a report documenting methods, findings, and management recommendations should be prepared and submitted to the lead agency for review, and the final report should be submitted to the SSJVIC.

MM CUL-2: In the event archaeological materials are encountered during the course of ground disturbance or construction, the Project operator/contractor shall cease any ground-disturbing activities within 50 feet of the find or as needed to preserve the site. A qualified archaeologist shall evaluate the significance of the resources and recommend treatment measures. Per CEQA Guidelines Section 15126.4(b)(3), project redesign and preservation in place shall be the preferred means to avoid impacts to significant historical resources. Consistent with CEQA Guidelines Section 15126.4(b)(3)(C), if it is demonstrated that resources cannot be avoided, the qualified archaeologist shall develop additional treatment measures in consultation with the CEC, which may include data recovery or other measures. The lead agency shall consult with Native American representatives in determining treatment for unearthened cultural resources if the resources are prehistoric or Native American in nature. If after consultation it is determined that archaeological materials are to be recovered, then they shall be curated at an appropriate curation facility. The qualified archaeologist shall prepare a report documenting



evaluation and/or additional treatment of the resource. A copy of the report shall be provided to the lead agency and to the SSJVIC.

MM CUL-3: If human remains are uncovered during Project construction, the Owner/operator shall immediately halt all work on the site, contact the Kern County Coroner to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the CEQA Guidelines. The lead agency shall be notified concurrently. If the coroner determines that the remains are Native American, the Project proponent shall contact the Native American Heritage Commission, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641). The NAHC shall designate a MLD for the remains per PRC 5097.98. Per PRC 5097.98, the Owner/operator, in coordination with the landowner, shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located, is not damaged or disturbed by further development activity until the discussion and conference with the MLD as required by PRC 5097.98 has occurred, if applicable, taking into account the possibility of multiple human remains. If the remains are determined to be neither of forensic value to the coroner nor of Native American origin, provisions of the California Health and Safety Code (7100 et. seq.) directing identification of the next-of-kin will apply. In the event human remains are uncovered, the surface owner shall be notified immediately.



8 Summary

Stantec conducted a cultural resources study for the Project pursuant to CEQA requirements. The purpose of this study was to identify historical resources, archaeological resources, and human remains in the API, as well as the potential to identify such resources during Project ground disturbance. The archaeological study consisted of a records search of the SSJVIC database; a review of the NAHC Sacred Lands File; a review of relevant archaeological, ethnographic, historical, and environmental literature relevant to the Project site; and an intensive pedestrian survey of the API to identify cultural resources.

Stantec's study identified four cultural resources within the API, one of which—precontact site P-15-010099—is considered a CEQA historical resource for purposes of this Project. Potential Project impacts to P-15-010099 as well as to previously unrecorded archaeological deposits unearthed during construction would result in a potentially significant impact under CEQA. Therefore, Stantec has provided recommended mitigation measures (Section 7 of this report) to reduce these potential impacts to less than significant.



9 References Cited

- Atwater, B., D. Adam, J. Bradbury, R. Forester, R. Mark, W. Lettis, G. Fisher, K. Gobalet, S. Robinson. 1986. "A Fan Dam for Tulare Lake, California, and Implications for the Wisconsin Glacial History of the Sierra Nevada." *Geological Society of America Bulletin* 97: 97-109.
- Beardsley, R. 1954a. *Temporal and Areal Relationships in Central California Archaeology*. Berkeley: Reports of the University of California Archaeological Survey No. 24.
- . 1954b. *Temporal and Areal Relationships in Central California Archaeology*. Berkeley: Reports of the University of California Archaeological Survey No. 25.
- Bennyhoff, J. 1977. *Ethnography of the Plains Miwok*. Davis: Center for Archaeological Research at Davis Publication No. 5.
- Brantly, J. E. 1971. *History of Oil Well Drilling*. Houston: Gulf Publishing.
- California Code of Regulations (CCR). 2018. *California Environmental Quality Act: Statutes and Guidelines*. Accessed XXX 2025. Retrieved from:
https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf
- California State Council of Defense. 1917. *Report of the Committee on Petroleum*. Sacramento: California State Printing Office.
- Cogswell, H. 1977. *Water Birds of California*. Berkeley: University of California Press.
- Cook, S. F. 1955. *The Aboriginal Population of the San Joaquin Valley, California*. Berkeley: University of California Press.
- . 1978. "Historical Demography In California, edited by R. F. Heizer." In *Handbook of North American Indians*, Vol. 8, by W.C. Sturtevant, 91-98. Washington: Smithsonian Institute.
- Croft, M. G. 1968. "Geology and radiocarbon ages of late Pleistocene lacustrine clay deposits, southern part of San Joaquin Valley, California." *Geological Survey Research* B151-156.
- Culleton, B. J. 2006. "Implications of a freshwater radiocarbon reservoir correction for the timing of late Holocene settlement of the Elk Hills, Kern County, California." *Journal of Archaeological Science* 33 (9): 1331-1339.
- Dibblee, Thomas W., and J. A. Minch. 2005s. "Geologic map of the East Elk Hills and Tupman quadrangles, Kern County, California. Scale 1:24,000. Dibblee Foundation Map DF-103."
- . 2005b. "Geologic map of the Taft and Mouth of Kern quadrangles, Kern County, California. Scale 1:24,000. Dibblee Foundation Map DF-95."
- Driver, H. E. 1937. "Cultural Element Distributions: VI, Southern Sierra Nevada." 1(2): 53-154. Berkeley: University of California Anthropological Records.



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9 References Cited

- Elsasser, A. 1962. Indians of Sequoia and Kings Canyon National Parks. Three Rivers: Sequoia Natural History Association.
- Felton, E. 1965. California's Many Climates. Palo Alto: Pacific Books.
- Fenenga, F. 1952. "The Archaeology of the Slick Rock Village, Tulare County, California." *American Antiquity* 17:339-347.
- . 1993. "Test Excavations at the Witt Site (CA-KIN-32)." In *Contributions to Tulare Lake Archaeology II, Finding the Evidence: The Quest for Tulare Lake's Archaeological Past*, by William J. Wallace and Francis A. Riddell, 24-28. Redondo Beach: Tulare Lake Archaeological Research Group.
- Fenenga, G. 1991. "A Preliminary Examination of Faunal Remains From Early Sites in the Tulare Lake Basin." In *Contributions to Tulare Lake Archaeology I, Background to a Study of Tulare Lake's Archaeological Past*, edited by Wallace and Francis A. Riddell William J, pp. 11-22. Redondo Beach: Tulare Lake Archaeological Research Group.
- . 1994. "Alternative Interpretations of Late Pleistocene Paleoecology in the Tulare Lake Basin, San Joaquin Valley, California." *Kern County Archaeological Society Journal* 5: 105-117.
- Fredrickson, D. 1974. "Cultural Diversity in Early Central California: A View from the North Coast Ranges." *Journal of California Anthropology* Vol. 1 41-54.
- Fredrickson, D. A., and J. Grossman. 1977. "A San Dieguito Component at Buena Vista Lake, California." *Journal of California and Great Basin Anthropology* 4 173-190.
- Gayton, A. H. 1930. "Yokuts-Mono Chiefs and Shamans." *University Publications in American Archaeology and Ethnology* 24 361-420.
- . 1948. "Yokuts and Western Mono Ethnography." *University of California Anthropological Records* 10 1-290.
- Gifford, E. W. and Schenck, W. E. 1926. "Archaeology of the Southern San Joaquin Valley." *University of California Publications in American Archaeology and Ethnology* 23(1): 1-122.
- Glennan, W. S. 1987a. "Concave-Based Lanceolate Fluted Projectile Points from California." Edited by R.W. Robinson. In *Prehistory of the Antelope Valley, California: An Overview No. 1: (Antelope Valley Archaeological Society, Occasional Papers)* 21-24.
- Glennan, W. S. 1987b. "Evidence for Paleoeastern Culture Type in the Southwestern Great Basin." Edited by R. W. Robinson. In *Prehistory of the Antelope Valley, California: An Overview No. 1: (Antelope Valley Archaeological Society, Occasional Papers)* 11-20.
- Google Earth Pro. 2025. Satellite images, Kern County, California. May 13.
- Harrington, John Peabody. 1981 - 1996. "The Papers of John Peabody Harrington in the Smithsonian 1981 - 1996 Institution, 1907 - 1957, Volumes 1 -10." *Yokuts Ethnographic Notes (Reels 99 - 101)*. Kraus International Publications [Microfilm]. <https://anthropology.si.edu/naa/harrington/index.html>
- Hewes, G. 1941. "Archaeological Reconnaissance of the Central San Joaquin Valley." *American Antiquity* 7: 123-133.



CalCapture CCS Project – Cultural Resources Study

9 References Cited

- Horne, S. P. 1981. "The Inland Chumash: Ethnography, Ethnohistory and Archaeology." Ann Arbor: Ph.D. dissertation, UCSB.
- Jones, T. L., G. M. Brown, L. M. Raab, J. L. McVickar, W. G. Spaulding, D. J. Kennett, A. York, and P. L. Walker. 1999. "Demographic Crisis in Western North America during the Medieval Climatic Anomaly." *Current Anthropology* 40: 137-170.
- Kern County Economic Development Foundation. 2021. "The Economic Contribution of the Oil and Gas Industry in Kern County." https://kernedc.com/wp-content/uploads/2021/04/KEDF-Economic-Contribution-of-the-Oil-and-Gas-Industry-in-Kern-County_-2021.pdf
- Kern County Planning and Natural Resources Department 2023. Carbon TerraVault I Environmental Impact Report. On file with the Kern County Planning and Natural Resources Department, Bakersfield, California.
- King, C., C. Smith, and T. King. n.d. Archaeological Report Related to the Interpretation of Archaeological Resources Present at the Vasquez Rocks County Park. Report on file, UCLA AIC.
- Kroeber, A. L. 1925. Handbook of the Indians of California. Washington: Bureau of American Ethnology Bulletin No. 78.
- Latta, F. 1976. Tailholt Tails. Santa Cruz: Bear State Books.
- . 1977. Handbook of the Yokuts Indians. Santa Cruz: Bear State Books.
- Melley, Brian. 2021. "Kern County OKs plan for thousands of new oil and gas wells over environmental objections." Los Angeles Times, March 9. <https://www.latimes.com/environment/story/2021-03-09/kern-county-approves-new-oil-and-gas-wells-over-environmental-objections>
- Meyer, J., D. Young, and J. Rosenthal. 2010. "Volume I: A Geoarchaeological Overview and Assessment of Caltrans Districts 6 and 9 - Cultural Resources Inventory of Caltrans District 6/9 Rural Conventional Highways - EA 06-0A7408 TEA Grant."
- Moratto, M. 1984. California Archaeology. New York: Academic Press.
- Moratto, Michael J, Alan P Garfinkel, Jon M Erlandson, Alexander K Rogers, Michael F Rondeau, Jeffrey Rosenthal, Craig Skinner, Tim Carpenter, and Robert M Yohe. 2018. "Fluted and Basally Thinned Concave-Base Points of Obsidian in the Borden Collection from Inyo County, Alta California: Age and Significance." *California Archaeology* 10 (1): 27-60.
- Moyle, P. 1976. Inland Fishes of California. Berkeley: University of California Press.
- National Cooperative Soil Survey. 2025. NCSS Soil Characterization Database. May 13. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
- National Park Service. 1997. National Register Bulletin: How to Apply the National Register Criteria for Evaluation. U.S. Department of the Interior, Washington, D.C.
- Osborne, R. 1992. "An Ethnographic Overview of the Southern Valley Yokuts." *Kern County Archaeological Society Journal* 3: 36-65.



CalCapture CCS Project – Cultural Resources Study

9 References Cited

- Pacific Legacy, Inc. 2001. Cultural Resources Inventory, Evaluation, and Mitigation Plan for the Water Supply Line (Route 2), Elk Hills Power Project (99-AFC-1): Addendum to the Elk Hills Power Project Cultural Resources Monitoring and Mitigation Plan. Submitted to Elk Hills Power, LLC., 4026 Skyline Rd, Tupman, California 93276.
- . 2006. Southern San Joaquin Valley Oil Fields Comprehensive Study. Manuscript on file, BLM Bakersfield Office.
- Powers, Stephen. 1971. "The Yokuts Dance for the Dead." In *The California Indians: A Source Book* (second edition), by R. F. Heizer and M. A. Whipple, 513-519. Berkeley (original 1877): University of California Press.
- . 1976. *Tribes of California*. Washington: United States Geographical and Geological Survey of the Rocky Mountain Region.
- Preston, W. 1981. *Vanishing Landscape Areas*. Berkeley: University of California Press.
- Rintoul, William. 1976. Spudding. In *Recollections of Pioneer Days in the California Oil Fields*. San Francisco: California Historical Society.
- . 1978. *Oildorado: Boom Times on the West Side*. Fresno: Valley Publishers.
- . 1990. *Drilling Through Time: 75 Years with California's Division of Oil and Gas*. Sacramento: California Department of Conservation.
- Rosenthal, J. S., G. G. White, and M. Q. Sutton. 2007. "The Central Valley: A View from the Catbird's Seat." Edited by T. L. Jones and K. A. Klar. In *California Prehistory: Colonization, Culture and Complexity* (AltaMira Press) 147-163.
- Schiffman, R. A., and A. P. Garfinkel. 1981. "Prehistory of Kern County: An Overview." *Bakersfield College Publications in Archaeology* No. 1.
- Siefkin, Nelson. 1999. *Archaeology of the Redfeldt Mound (CA-KIN-66), Tulare Basin, California*. Master's thesis, Department of Sociology and Anthropology, California State University, Bakersfield.
- Sutton, M. Q. 1988. "On the Late Prehistory of the Western Mojave Desert." *Pacific Coast Archaeological Society Quarterly* 24 (1): 22-29.
- . 1997. "A Background for Archaeological Investigations at Buena Vista Lake, Southern San Joaquin Valley, California." *Kern County Archaeological Society Journal* 8: 3-21.
- Sutton, M. Q., and Phillip J. Wilke. 1984. "New Observations on a Clovis Point from the Central Mojave Desert, California." *Journal of California and Great Basin Anthropology* 6 (1): 113-115.
- Sutton, M., J. Gardner, and K. Gobalet. 2010. "Archaeological Investigations at the Big Cut Site (CA-KER-4395), Buena Vista Lake California." *Pacific Coast Archaeological Society Quarterly* Vol. 46, No. 1-2.
- Taylor, T. 1993. "Cultural Management Plan for Southern California Edison Company's Kern River No. 1 Hydroelectric Project, Kern County, California (FERC Project No. 1930)." Report on file at Southern California Edison Company, Monrovia.



CalCapture CCS Project – Cultural Resources Study

9 References Cited

- Twisselmann, E. 1967. *A Flora of Kern County, California*. San Francisco: University of San Francisco Press.
- W & S Consultants. 1994. Phase II Test Excavations and Determinations of Significance at CA-LAN-2133, -2233, -2234, -2236, -2240, -2241, and -2242, Los Angeles County, California. Report on file with SCIC/Tejon Ranchcorp.
- . 1999. Class III Inventory/Limited Archaeological Testing Program for the Ducor Telephone Project, Kennedy Meadows, Tulare County, California. Report on file with the SSJVIC.
- . 2004. Class II Inventory of the Carrizo Plain National Monument, San Luis Obispo County, California. Report on file with SSJVIC/BLM BKFO.
- Wedel, W. 1941. "Archaeological Investigations at Buena Vista Lake, Kern County, California." *Bureau of American Ethnology* No. 130.
- Whitley, D. S. 2000. *The Art of the Shaman: Rock Art of California*. Salt Lake City: University of Utah Press.
- Whitley, D. S., and M. P. Beaudry. 1991. "Chiefs on the Coast: The Development of Complex Society in the Tiquisate Region in Ethnographic Perspective." In *The Development of Complex Civilizations in Southeastern Mesoamerica*, by W. Fowler, 101-120. Orlando: CRC Press.
- Whitley, D. S., G. Gumerman IV, J. Simonn, and E. Rose. 1988. "The Late Prehistoric Period in the Coso Range and Environs." *Pacific Coast Archaeological Society Quarterly* 24(1): 2-10.
- Whitley, D. S., J. Simon, and J. H. N. Loubser. 2007. "The Carrizo Collapse: Art and Politics in the Past." Edited by R. L. Kaldenberg. In *A Festschrift Honoring the Contributions of California Archaeologist Jay von Werlhof* (Maturango Museum Publication No. 20) 199-208.
- Yohe, Robert M., and Jill K. Gardner. 2016. "Recently Discovered Clovis Points in the Indian Wells Valley on the Naval Air Weapons Station China Lake, Southeastern Alta California." *California Archaeology* 8 (1): 91-109.
- Yohe, Robert M. 1998. "The Introduction of the Bow and Arrow and Lithic Resource Use at Rose Spring (CA-INY-372)." *Journal of California and Great Basin Anthropology*.
- Zimmerman, K. L., C. L. Pruett, and M. Q. Sutton. 1989. "A Clovis-Like Projectile Point from the Southern Sierra Nevada." *Journal of California and Great Basin Anthropology* 11: 89-91.



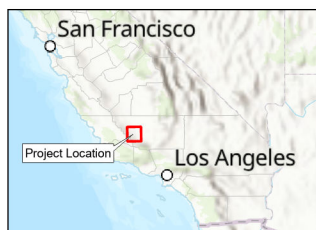
Appendices



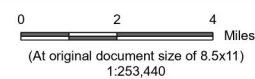
Appendix A Project Maps



V:\185806775_CRC_CalCapture03_data\gis_cad\gispro\Cultural\Cultural_Figures.aprx Revised: 2025-06-18 By: mdeseo



 Project Area



Project Location Prepared by MMD on 2025-06-18
Kern County, CA TR by CT 2025-06-18
IR by CR on 2025-06-18

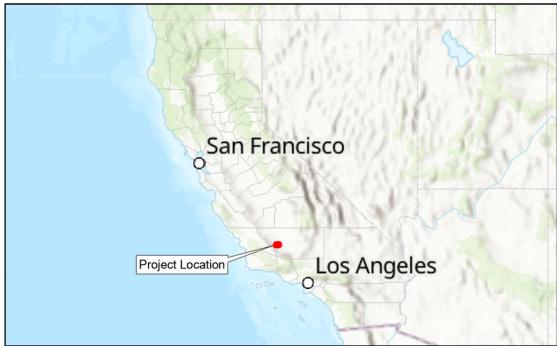
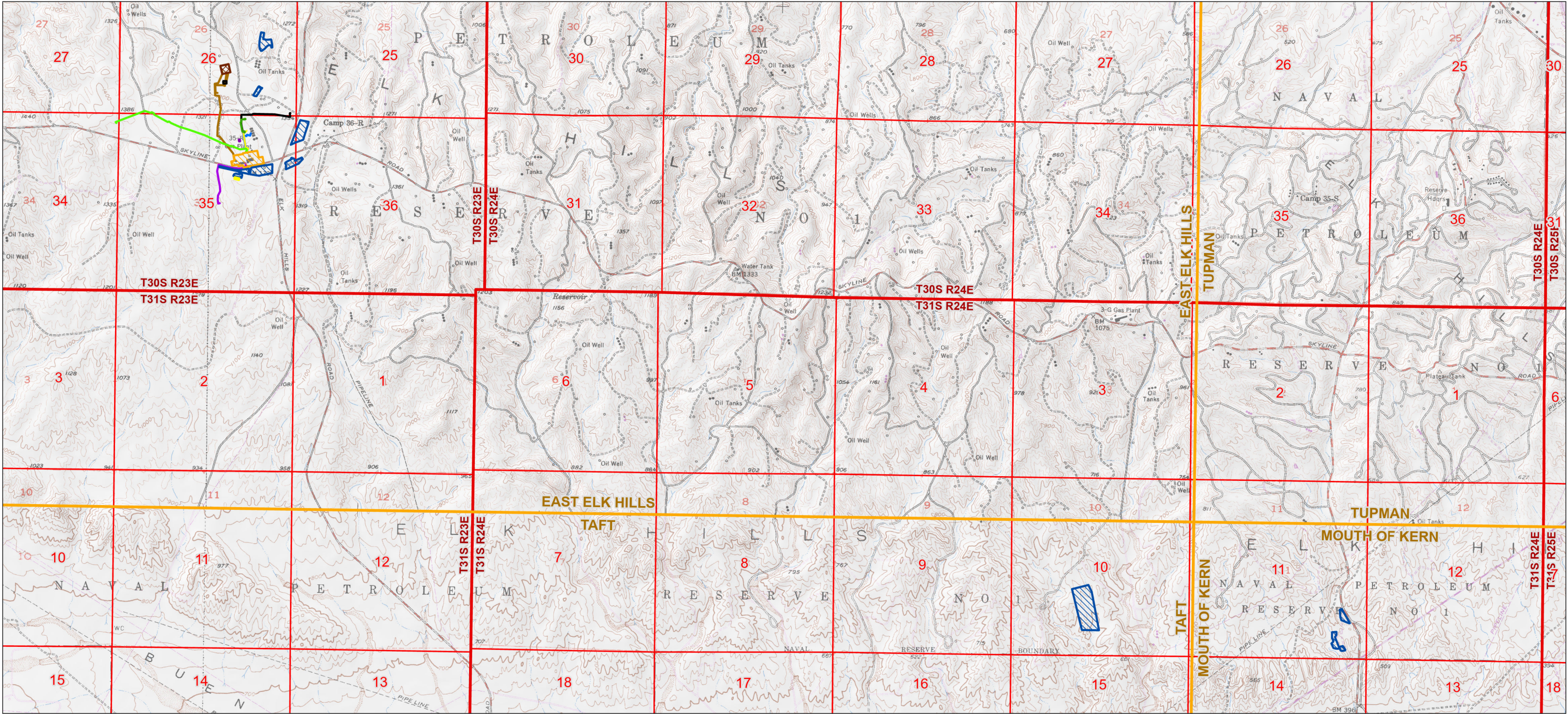
Client/Project 185806775
California Resources Corporation
CalCapture Carbon Capture and Sequestration Project
Cultural Resources Study

Figure No.
1

Title
Project Location and Vicinity

Notes
1. Coordinate System: NAD 1983 StatePlane
California V FIPS 0405 Feet
2. Data Sources: Stantec, USGS, 2025.
3. Background: Esri, GEBCO, NOAA, National
Geographic, Garin, HERE, Geonames.org
Copyright:©2013 National Geographic Society, i-
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Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.



Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2025, Township/Section/ data from BLM 2018. Quadrangle data from USGS 2017.
3. Background: Esri, GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org
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- USGS 7.5' Quadrangle
- Township and Range
- Section

Project Areas

- Capture Facility
- Temporary Parking, Office, and Staging Areas
- Proposed Sub Location (250 x 250)
- Substation Extension Proposal
- New BPSTG & Transformer
- Warehouse
- Cooling Water Sump

- Proposed Electrical Lines
- Proposed CO2 Line
- Proposed CWR Line
- Proposed CWS Line
- Proposed Condensate Line
- Proposed HP Steam Line
- Proposed LP Steam Line
- Proposed Raw Water Line
- Proposed Waste Water Line
- Cooling Water Sump Line

0 1,500 3,000 Feet
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Project Location
Kern County, CA
Client/Project
California Resources Corporation
CalCapture Carbon Capture and Sequestration Project
Cultural Resources Study

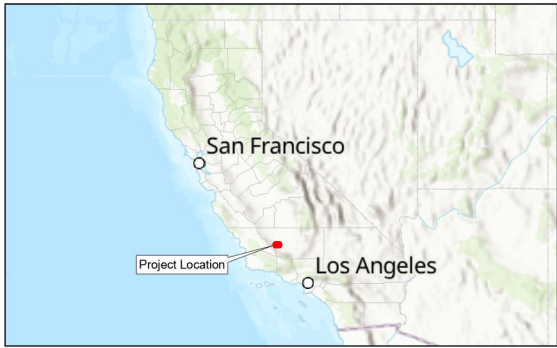
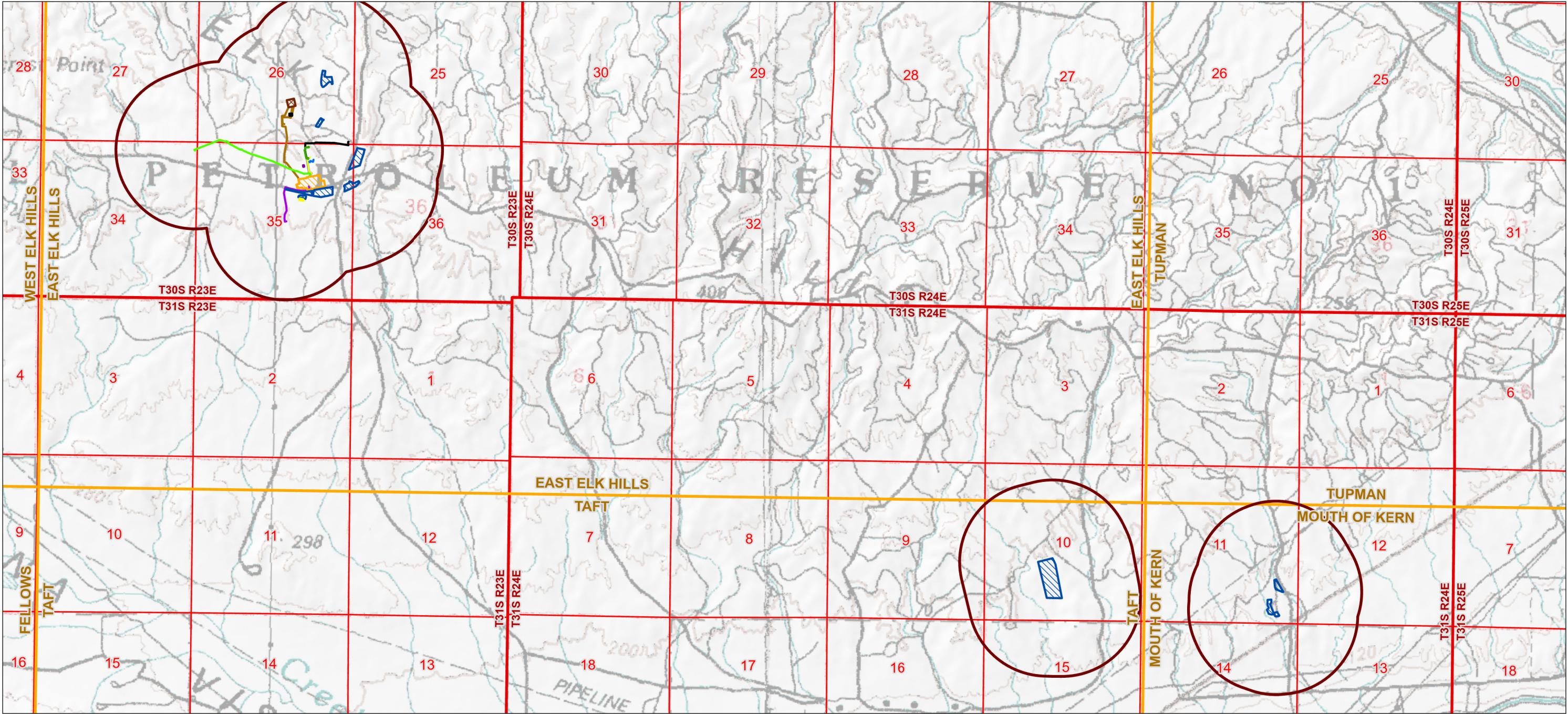
Prepared by MMD on 2025-06-18
TR by CT 2025-06-18
IR by CR on 2025-06-18
185806775

Figure No.

2

Title

Project Location



Notes
1. Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
2. Data Sources: Stantec 2025, Township/Section/ data from BLM 2018. Quadrangle data from USGS 2017.
3. Background: Esri, GEBCO, NOAA, National Geographic, Garin, HERE, Geonames.org
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- USGS 7.5' Quadrangle
- Township and Range
- Section

- Records Search Area (0.5 Mile)
- Project Areas**
- Capture Facility
- Temporary Parking, Office, and Staging Areas
- Proposed Sub Location (250 x 250)
- Substation Extension Proposal
- New BPSTG & Transformer
- Warehouse
- Cooling Water Sump

- Proposed Electrical Lines
- Proposed CO2 Line
- Proposed CWR Line
- Proposed CWS Line
- Proposed Condensate Line
- Proposed HP Steam Line
- Proposed LP Steam Line
- Proposed Raw Water Line
- Proposed Waste Water Line
- Cooling Water Sump Line

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1:40,800



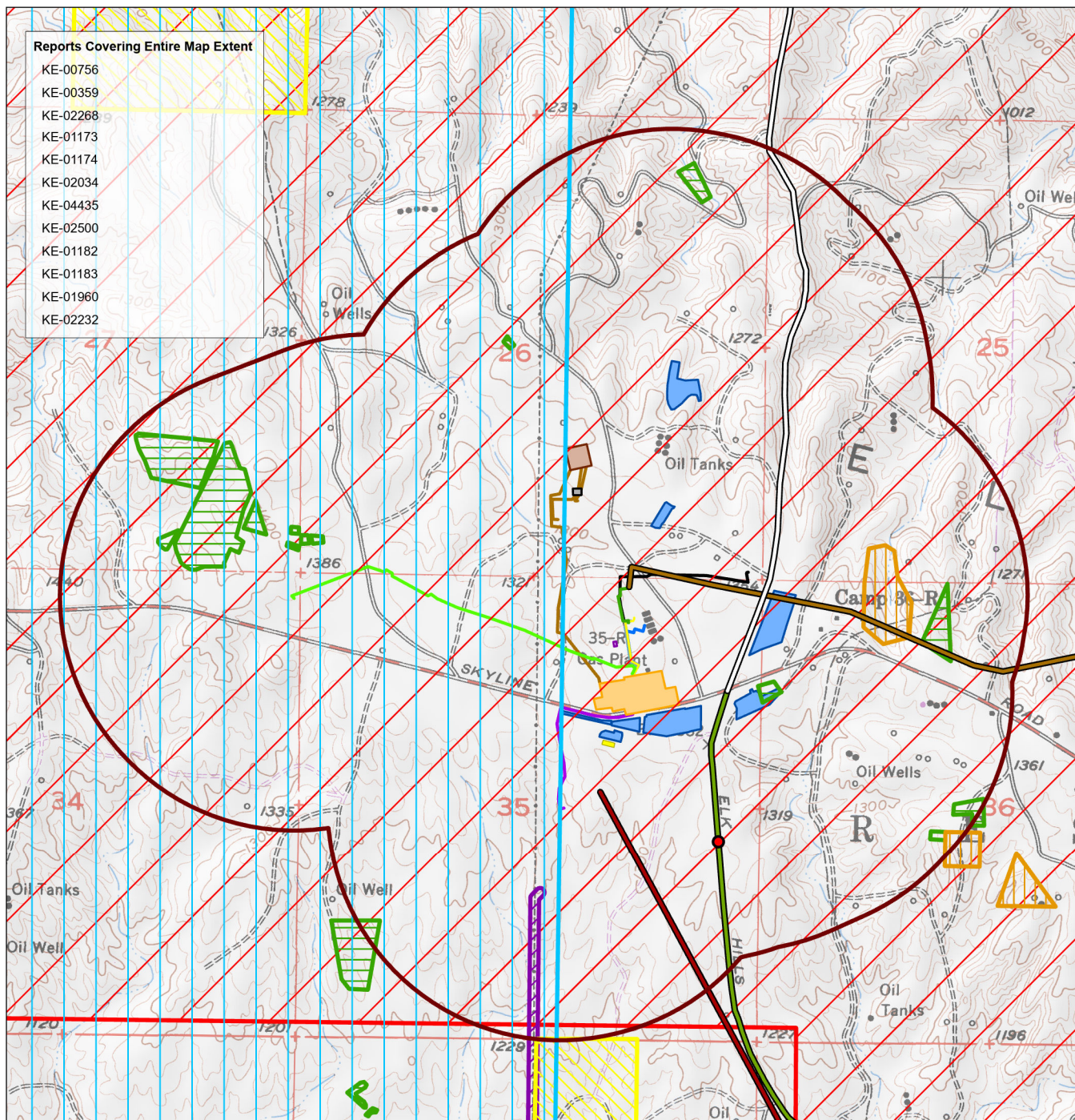
Project Location Prepared by MMD on 2025-06-18
Kern County, CA TR by CT 2025-06-18
IR by CR on 2025-06-18

Client/Project 185806775

California Resources Corporation
CalCapture Carbon Capture and Sequestration Project
Cultural Resources Study

Figure No.
3

Title
Project Area



- Records Search Area (0.5 Mile)
- Capture Facility
- Temporary Parking, Office, and Staging Areas
- Proposed Sub Location (250 x 250)
- Substation Extension Proposal
- New BPSTG & Transformer
- Warehouse
- Cooling Water Sump

- Proposed Electrical Lines
- Proposed CO2 Line
- Proposed CWR Line
- Proposed CWS Line
- Proposed Condensate Line
- Proposed HP Steam Line
- Proposed LP Steam Line
- Proposed Raw Water Line
- Proposed Waste Water Line
- Cooling Water Sump Line

Reports Within Project APE

- KE-04916
- KE-00321
- KE-02581
- KE-04376
- KE-04512
- KE-00924
- KE-02055
- KE-02269
- KE-04661
- KE-05122
- KE-02026

0 875 1,750 Feet
(At original document size of 8.5x11)
1:21,000



Project Location Kern County, CA
Prepared by MMD on 2025-06-18
TR by CT 2025-06-18
IR by CR on 2025-06-18
185806775

Client/Project California Resources Corporation
CalCapture Carbon Capture and Sequestration Project
Cultural Resources Study

Figure No. 4a

Cultural Record Search Results - Reports

Notes

- Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet
- Data Sources: Stantec 2025, Township/Section/ data from BLM 2018. Quadrangle data from USGS 2017. Cultural records and reports from SSJVIC, 2024/2025.
- Background: Esri, GEBCO, NOAA, National Geographic, Garmin, HERE, Geonames.org
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Figures 4b, 4c, 5a, and 5b are not included due to confidential nature of the contents.



Appendix B (CONFIDENTIAL) Cultural Resource Site Records



Appendix C Native American Heritage Commission Sacred Lands File Search Results





NATIVE AMERICAN HERITAGE COMMISSION

January 10, 2025

Colin Rambo
Stantec Consulting Services Inc.

Via Email to: colin.rambo@stantec.com

Re: California Resources Corporation CalCapture Carbon Capture Project, Kern County

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: melina.carlos@nahc.ca.gov

Sincerely,

Melina Carlos

Melina Carlos
Cultural Resources Analyst

Attachment

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki,
Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Bennae Calac
Pauma-Yuima Band of
Luiseño Indians

ACTING EXECUTIVE
SECRETARY
STEVEN QUINN

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Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

