

CULTURAL RESOURCES MONITORING AND TREATMENT PLAN

SANGER SUBSTATION EXPANSION PROJECT

Fresno County, California



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TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY.....	ii
2.0	INTRODUCTION	1
2.1	Project Description and Location	1
3.0	REGULATORY FRAMEWORK.....	2
3.1	State Regulatory Setting	2
3.1.1	California Environmental Quality Act	2
3.1.2	State of California Public Resources Code	6
3.1.3	California Health and Safety Code	7
4.0	ARCHAEOLOGICAL CONTEXT	7
4.1	Cultural Setting.....	7
4.1.1	Prehistoric Background.....	7
4.1.2	Ethnographic Background	8
4.1.3	Historic Background	9
5.0	ARCHAEOLOGICAL SENSITIVITY.....	10
5.1	Previous Investigations	10
5.2	Inventory of Known Resources	10
5.3	Area of Potential Archaeological Sensitivity.....	11
5.4	Description of Expected Resources	11
6.0	METHODS.....	11
6.1	Pre-Construction Worker Training.....	13
6.2	Responsibilities of the Archaeological PI and Monitors	13
6.3	Procedures for Inadvertent Discoveries.....	14
6.3.1	Inadvertent Impacts to Cultural Resources	14
6.4	Procedures for Discoveries of Human Remains	17
6.5	Undiscovered Potential Tribal Cultural Resources.....	17
6.6	Disposition of Collected Artifacts.....	17
6.7	Reporting Requirements	18
7.0	REFERENCES.....	19

TABLES

Table 1. Conceptual Construction Schedule	2
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FIGURES

Figure 1. Project Overview Map.	3
Figure 2. Project Location Map.....	4
Figure 3. Areas of Potential Archaeological Sensitivity	12



1.0 EXECUTIVE SUMMARY

This Cultural Resources Monitoring and Treatment Plan (CRMTP) describes the measures that shall be implemented to minimize impacts to cultural resources during construction of the Sanger Substation Expansion Project (Project). The Project is located southeast of the City of Fresno in unincorporated Fresno County, at the northwest corner of the intersection of East Jensen Avenue and South McCall Avenue.

This CRMTP was prepared by Paleo Solutions under contract to Parsons. The purpose of this document is to provide a description of the work procedures that will be employed to reduce potential impacts of the PG&E Project activities on cultural resources to below the level of significance, pursuant to the California Environmental Quality Act (CEQA). In particular, this document describes how cultural resources protection measures will be executed as required by the CPUC in order to fulfill the CPUC's responsibilities as the lead agency under CEQA. All work will be conducted in compliance with applicable regulations, PG&E guidelines, Applicant Proposed Measure (APM) CUL-4, and Mitigation Measures (MMs) CUL-1, CUL-2, and CUL-5, of the Project's Mitigation Monitoring, Compliance, and Reporting Program (MMCRP).

The Project is integral to the Central Valley 115 kV transmission system because it serves as a strategic hub for routing Fresno's hydroelectric and natural gas-generated electricity to the Manchester, Barton, Airways, California, Malaga, McCall, and Reedley substations. Sanger Substation's twelve 115 kV power lines have the capacity to carry approximately 200 megawatts of generation annually, providing a critical energy path between Fresno metropolitan north and south areas. The new breaker-and-a-half bus configuration would provide maximum reliability for power lines coming into and out of the substation. The Project includes Substation Expansion, Substation Equipment Removal, Power Line Reconfiguration, Existing Substation Changes, and Telecommunications Receiver.

This CRMTP provides an overview of pertinent state regulations governing the protection and management of cultural resources, summarizes previous investigations that have been conducted to identify and evaluate cultural resources within the Project area, provides procedures to be implemented to avoid impacts to cultural resources, and describes the sensitivity of the Project area to contain buried or previously unknown archaeological materials. Should inadvertent finds be encountered during construction, the CRMTP defines the protocols and procedures for evaluating the find and subsequent documentation, including describing the role and responsibilities of monitors and the procedures to be followed, should monitoring become necessary during construction. It states the Project policy for the collection, treatment, and disposition of collected artifacts and details procedures to be implemented if human remains are encountered. Reporting requirements are also specified.



2.0 INTRODUCTION

This CRMTP was prepared by Paleo Solutions under contract to Parsons. The purpose of this document is to provide a description of the work procedures that will be used to reduce potential impacts of the PG&E Project activities on cultural resources to below the level of significance pursuant to CEQA. In particular, this document provides a description of the work that will be completed in accordance with the mitigation measures that are required by the CPUC in order to fulfill their responsibilities as the lead agency under CEQA. All work will be conducted in compliance with applicable regulations, PG&E guidelines, APM CUL-4, and MMs CUL-1, CUL-2, and CUL-5, of the Project's MMCRP.

This Plan was prepared by Paleo Solutions' Principal Investigator (PI), Liz Denniston, M.A., RPA with contributions by Cultural Resources Program Director, Evelyn Chandler, M.A., in accordance with MM CUL-1. Ms. Denniston is an archaeologist with 21 years of experience in cultural resources management. She holds a Master's degree in Anthropology and is a Registered Professional Archaeologist. Ms. Chandler holds a Master's degree in Archeology and Heritage and has 25 years of professional experience in cultural resources management. Both Ms. Chandler and Ms. Denniston exceed the Secretary of Interior's (SOI) Professional Qualification Standards for Archaeology.

2.1 PROJECT DESCRIPTION AND LOCATION

The Project is located southeast of the City of Fresno in unincorporated Fresno County, at the northwest corner of the intersection of East Jensen Avenue and South McCall Avenue (Figures 1 and 2). The Project includes:

- **Substation Expansion:** PG&E would install equipment, including circuit breakers, switches/disconnects, steel support structures for disconnect switches, bus supports and Capacitor Coupling Voltage Transformer equipment, two Modular Protection Automation Control buildings, and a microwave tower for communications. PG&E would also elevate the existing transfer bus and make alterations to interconnect reconfigured power lines.
- **Substation Equipment Removal:** PG&E would remove obsolete circuit breakers, switches, steel support structures, and the concrete control building at the existing substation.
- **Power Line Reconfiguration:** PG&E would rearrange existing power lines leading to the substation by removing 17 existing lattice steel towers (LSTs) and 18 wood poles and installing 28 tubular steel poles (TSPs) and two wood poles in a different alignment. Existing power lines would be relocated to change their angle.
- **Existing Substation Changes:** On transformer bank 1, PG&E would remove wood poles that support a temporary line from the dead-end structure and would replace them with a new TSP to terminate the new 115-kilovolt (kV) line for bank 1. On transformer bank 3, PG&E would relocate the existing dead-end structure to terminate at the new 115 kV line for bank 3 using new TSPs.
- **Telecommunications Receiver:** PG&E would install two antenna dishes on an existing microwave tower at the Fence Meadow Repeater Station. PG&E is proposing the Project to accommodate a new breaker-and-a-half bus configuration. As the proposed work at the repeater station does not involve ground disturbing activities, no impacts to cultural resources are anticipated.



The Project is integral to the Central Valley 115 kV transmission system because it serves as a strategic hub for routing Fresno’s hydroelectric and natural gas-generated electricity to the Manchester, Barton, Airways, California, Malaga, McCall, and Reedley substations. Sanger Substation’s twelve 115 kV power lines have the capacity to carry approximately 200 megawatts of generation annually, providing a critical energy path between Fresno metropolitan north and south areas. The new breaker-and-a-half bus configuration would provide maximum reliability for power lines coming into and out of the substation.

Construction is anticipated to begin fall of 2018 and will be constructed in five phases. Construction would last over a period of up to approximately 35 months. The upgraded Sanger Substation would be in service in April of 2021, and the Project would be completed by August 2021 under the anticipated schedule (Table 1).

Table 1. Conceptual Construction Schedule

Construction Activity	Work Duration* (months)	Maximum Period Over Which Work Will Occur (months)	Estimated Schedule
Phase 1: Substation Site Grading, Access, and Security Fencing	5-6	6	October 2018 – March 2019
Phase 2: Substation Foundation and Footing	3-4	3-4	February 2019 – April 2019
Phase 3: Substation Equipment and Footing	12-15	24	May 2019 – April 2021
Phase 4: Power Line Reconfiguration	6**	24	
Phase 5: Existing Substation Equipment Removal and Post-Construction Cleanup	4-5	4-5	May 2021 – August 2021
Total	30	35	October 2018 – August 2021

*Work duration does not include potential periods of inactivity during construction phases.

**Phase 4 would occur at the same times as Phase 3 and would take approximately 6 months.

3.0 REGULATORY FRAMEWORK

3.1 STATE REGULATORY SETTING

3.1.1 California Environmental Quality Act

This Project is subject to CEQA, and the CPUC, as the lead agency, is required to comply with the CEQA Statute and Guidelines (as amended through 2015) by determining whether cultural resources might be affected by Project activities, and if any such resources are “historically significant” and potentially subject to significant impacts from Project activities (Title 14 California Code of Regulations [CCR], § 15064.5[b]). To this end, the CPUC required that PG&E produce a Proponents Environmental Assessment (PEA) and used that PEA as the basis to develop its own Initial Study/Mitigation Negative Declaration (IS/MND). This plan is a requirement of the IS/MND.

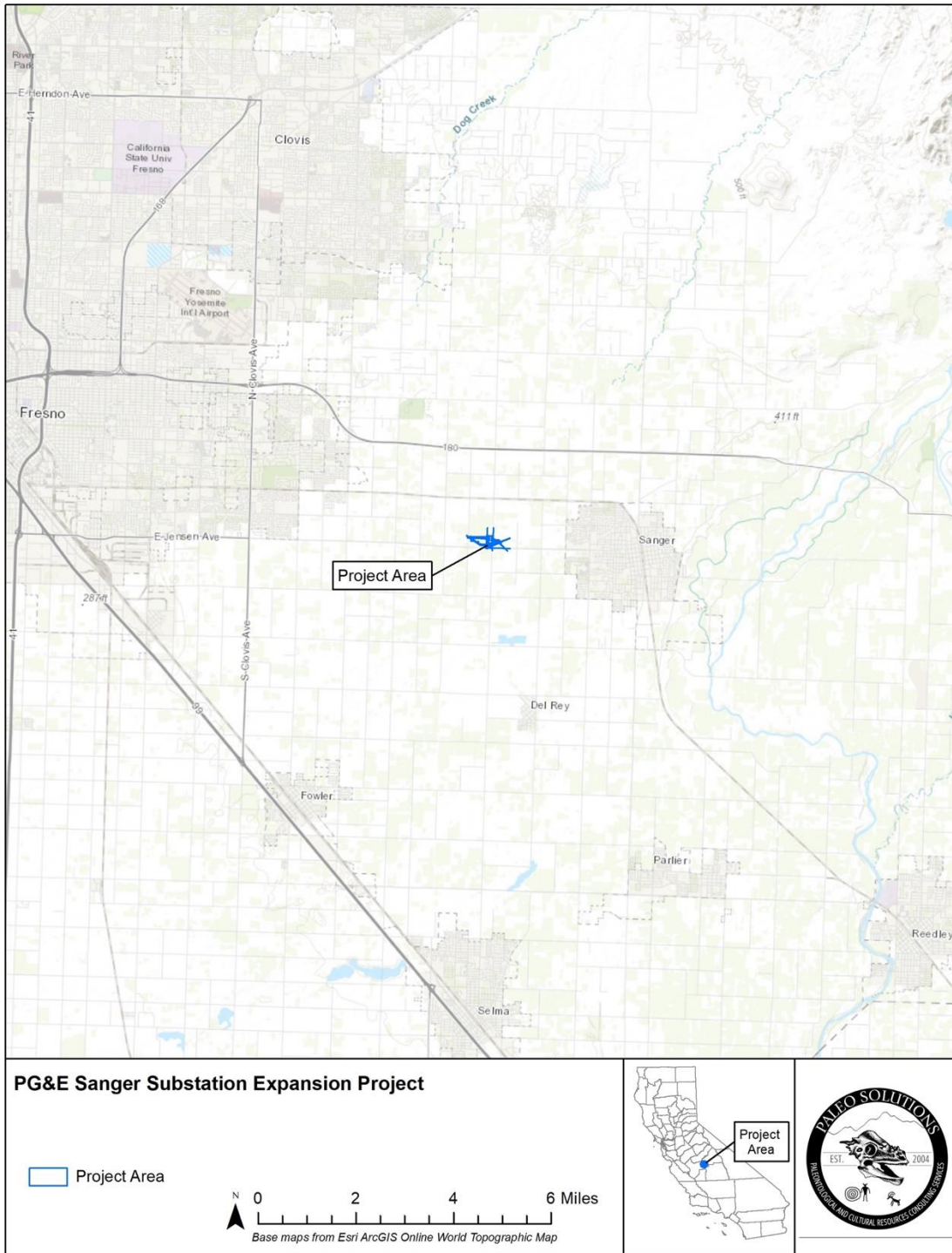


Figure 1. Project Overview Map.

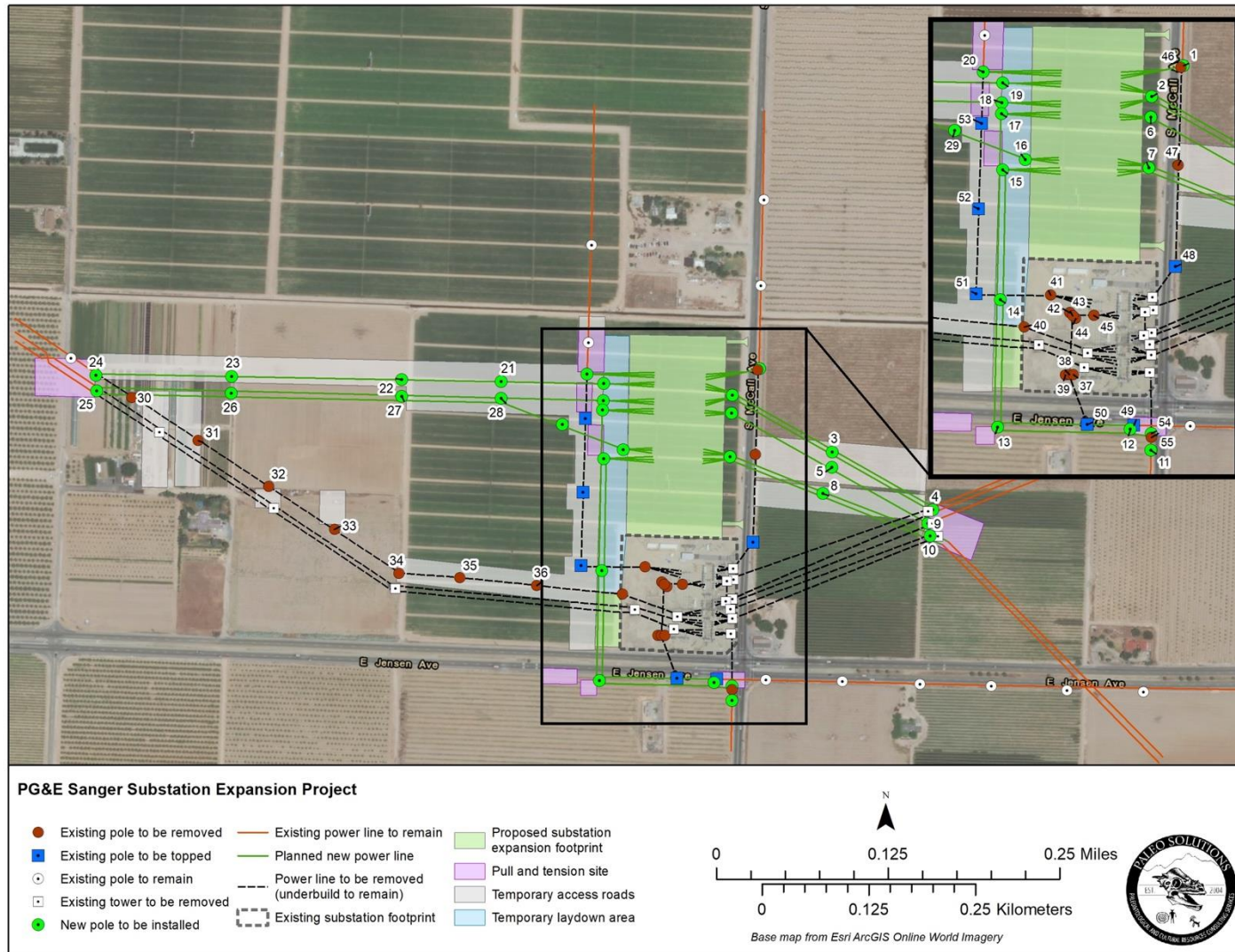


Figure 2. Project Location Map.



A cultural resource is considered “historically significant” if the resource is 50 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and meets the requirements for listing in the California Register of Historical Resources (CRHR) under any one of the following criteria (Title 14 CCR, § 15064.5):

- 1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- 2) Is 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 value; or,
- 4) Has yielded, or may be likely to yield, information important in prehistory or history.

Additionally, the CRHR consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed in the NRHP and those formally Determined Eligible for the NRHP.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the Office of Historic Preservation and have been recommended to the State Historical Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include:

- Historical resources with a significance rating of Category 3 through 5 (Those properties identified as eligible for listing in the NRHP, the CRHR, and/or a local jurisdiction register).
- Individual historical resources.
- Historical resources contributing to historic districts.
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

The fact that a resource is not listed in or determined to be eligible for listing in the CRHR or is not included in a local register of historical resources, does not preclude a lead agency from determining that the resource may be a historical resource.

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.



In addition, CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the County Coroner be called in to assess the remains. If the County Coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the most likely descendant (MLD), if any, as identified by the NAHC. Section 15064.5 directs the lead agency (or project proponent), under certain circumstances, to develop an agreement with the MLD for the treatment and disposition of the remains, or to rebury the remains in an area not subject to further disturbance, if the MLD fails to make a recommendation within 48 hours of being granted access to the remains.

3.1.2 State of California Public Resources Code

In addition to those measures documented in the IS/MND for this project, archaeological and historical sites are managed pursuant to policies and regulations enumerated under the California PRC and inform the decisions made in the creation of this document. Should Native American resources or unique archaeological resources be identified during construction activities, California Public Resources Code (PRC) Sections 5097.9-.993 and 21083.2(a)–(c) will be implemented if and as appropriate.

California PRC Sections 5097.9–5097.993 provide protection to Native American historical and cultural resources and sacred sites and detail the powers and duties of the NAHC. These may include notification to descendants of discoveries of Native American human remains and the treatment and disposition of human remains and associated grave goods.

PRC Section 21083.2(g) defines an “unique archaeological resources” as an archaeological artifact, object, or site with a high probability of:

- 1) Containing information needed to answer important scientific research questions with a demonstrable public interest in that information.
- 2) A special and particular quality such as being the oldest of its type or the best available example of its type.
- 3) Being directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state (PRC 21083.2(a)-(b)). To the extent that they cannot be left undisturbed, mitigation measures pursuant to PRC Section 21083.2(c) are required.

3.1.2.1 California State Assembly Bill (AB) 52

AB 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that “tribal cultural resources” (TCRs) must be considered under CEQA and requires that the lead agency engage in consultation with tribes to identify such resources. Section 21074 describes a TCR as a site, feature, place, cultural landscape, sacred place, or object that is considered of cultural value to a California Native American Tribe and that is either:

- On or determined to be eligible for the California Register of Historical Resources or a local historic register; or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1.



AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project site, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Unlike Section 106, AB 52 does not contain provisions for agencies to delegate this responsibility to others.

Section 1 (a)(9) of AB 52 establishes that “a substantial adverse change to a tribal cultural resource has a significant effect on the environment.” Effects on TCRs should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures “capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource.” Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

3.1.3 California Health and Safety Code

The California Health and Safety Code Section 7050.5(b) specifies protocol when human remains are discovered outside a dedicated cemetery. It states that “in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined the appropriate course of action.”

4.0 ARCHAEOLOGICAL CONTEXT

The information in this section is included to inform cultural resources training, as well as to assist project staff in better understanding potential signs that may indicate the presence of a cultural resource.

The Project is on the eastern periphery of the San Joaquin Valley near the base of the Sierra Nevada foothills. The area is relatively flat with elevations ranging from 345 feet above mean sea level (amsl) to 355 feet amsl (Morlet et al. 2012).

4.1 CULTURAL SETTING

4.1.1 Prehistoric Background

The earliest human use of the San Joaquin Valley is indicated by a few projectile points similar to Clovis spear points. Elsewhere in North America, Clovis points are dated 11,550 to 9,550 Before Present (B.P.). In addition, hundreds of early concave base points were found along a past shoreline of Tulare Lake in association with human bone that has been dated to 13,800 to 9,400 B.P. This indicates that small bands of hunters were present around Tulare Lake at this early time period (Rosenthal et al. 2007:151). The Lower Archaic Period (8,550 to 5,550 B.P.) is also represented archaeologically by individual flaked stone tools, including stemmed points, concave base points, and crescents around Tulare Lake. No evidence of camp sites or other residential sites has been found. A site near Buena Vista Lake (approximately 120 miles to the south) yielded three crescents, a stemmed projectile point, and several small flaked stone tools. Animal bones indicated use of fish, waterfowl, freshwater mussels, and artiodactyls (probably deer and pronghorn antelope) (Rosenthal et al. 2007:151). Though the closest of the lakes, Tulare, was located approximately 30 miles to the south of the Project area, it was fed in part by the Kings River and its



associated marshes, the delta of which is located 4 miles to the east of the Project, and it is likely that the early inhabitants of the area explored these waterways as well as the lake itself.

During the Middle Archaic Period (5,550 to 550 B.P.), warmer, drier conditions prevailed. Tulare Lake decreased in size and eventually dried completely. Toward the end of this period in the northern San Joaquin Valley, habitation sites are found along the rivers in the valley with temporary camps elsewhere. Specialized fishing technology, including gorge hooks, composite bone hooks, and spears, are found in these sites, along with abundant fish bone (Rosenthal et al. 2007:152-155).

Cooler, wetter conditions returned at the beginning of the Upper Archaic Period (550 B.P. to A.D. 1,000), and Tulare, Buena Vista, and Kern Lakes filled with water. Two sites excavated at Buena Vista Lake in the 1930s date to the Upper Archaic Period and have house floors and subsistence waste indicating exploitation of both aquatic and terrestrial environments (Rosenthal et al. 2007:155, 157). These sites have roasting pits, charmstones, bone strigils and bipoints, limpet shell ornaments, and Olivella half-shell and saucer beads (Moratto 1984:186).

The cultures in place at the time of European contact developed during the Emergent Period (A.D. 1,000 to the Historic Period). Sites from this period include villages with numerous house pits, triangular arrow points, an elaborate steatite industry, and pottery (Moratto 1984:188).

4.1.2 Ethnographic Background

The Project area vicinity was historically inhabited by the Northern Valley Yokuts, whose territory extended along the San Joaquin River from present-day Stockton south to Fresno (Wallace 1978:462). Yokuts settlements were located on the tops of low mounds near the banks of the prominent watercourses, such as the Kings River delta and marshland to the east of the Project area. Although the elevated positions generally protected the settlements from seasonal flooding, resources were occasionally overcome as water breached the river banks.

Abundant local riverine resources allowed a largely sedentary lifestyle, with seasonal trips made by small groups for harvesting wild plants. Typical dwellings were small, lightly built structures covered with mats made from woven tule stalks. Other structures included large, earthen-covered sweathouses and ceremonial assembly chambers (Wallace 1978:464-466).

Salmon was a staple for the Northern Valley Yokuts, and sturgeon, river perch, and pike were also fished. Fishing techniques employed tule rafts, dragnets with stone sinkers, and bone or antler-tipped harpoons. Abundant river fowl supplemented their diet, as did the occasional hunting of elk and antelope. The predominant plant food was acorns from groves of valley oaks. Tule roots and a variety of seeds were gathered (Wallace 1978:464).

Goods not available locally were obtained through trade. Trading relations with the neighboring Miwok to the north and east yielded baskets and bows and arrows. Mussels and abalone shells were obtained from the Costanoan and Salinan groups to the west. Overland transport was facilitated by a network of trails, and tule rafts were used for water transport (Wallace 1978:465).

Most Yokuts groups had their first contact with Europeans in the early 1800s, when the Spanish began exploring the region. The gradual erosion of Yokuts culture began during the mission period and continued during the Mexican period. Introduction of European diseases played a large role in the decimation of the native peoples, with a particularly harsh epidemic in 1833 that decimated entire communities (Wallace 1978:469).



4.1.3 Historic Background

4.1.3.1 Local History

The Sanger Railroad Depot was built in 1887, next to the Southern Pacific Railroad line that connected Fresno to Porterville (*Sanger Herald* 1920a). A total of 800 acres were deeded to the Southern Pacific Railroad for its construction and in 1888, these acres were divided into small parcels and sold off.

In 1890 the Kings River Lumber Company built a log flume to transport lumber from the High Sierras to Sanger. That year more than 75 buildings were erected. By 1891, the town had grown to a population of 1,000 and included two livery stables, a blacksmith shop, a large hotel, several boardinghouses, a Masonic Hall, and many small businesses such as a furniture store, restaurants, barber shops, a drug store, a jeweler, a tobacconist, a bakery, a bicycle shop, general merchandise, and grocers (*Sanger Herald* 1920a).

Between 1907 and 1916 the population of Sanger doubled, and by 1908 Sanger contained a grammar school, a high school, seven churches, two newspapers, an opera house, a bank, grain warehouses, packing houses and two physicians (*Sanger Herald* 1920b). During the last quarter of the nineteenth century, many entrepreneurs developed electric services for their communities, Sanger included. In March 1921, Sanger Substation was put into operation. Between 1902 and 1929, three residential cottages, each with a detached garage, were built to the west of the substation control building (NETR 2018).

Since 1941, Sanger Substation equipment has been repeatedly upgraded and moved around on the site to address increased demands. Transformers, condensers, cooling pumps, capacitor banks, and a new bus were installed to replace older equipment. The new equipment had to first be installed and put into operation in order for the older equipment to be decommissioned and removed. With the removal of older equipment and installation of newer technology, the water tank, water cooling towers, cottages, garages, and other related structures were no longer needed and were subsequently removed. All that remains of the original 1921 Sanger Substation today is the control building.

4.1.3.2 Site Geologic Setting

In addition to the known sites, archaeological materials may exist that have been buried through alluviation, colluviation, or aeolian processes and would not have been found during the surface inventories conducted for the Project. The sensitivity of the area to contain buried archaeological material can be estimated based topography, surface sediment types, and proximity to water.

Geologic mapping by Matthews and Burnett (1965) indicates that the Project area is underlain by Pleistocene-age nonmarine sedimentary deposits of the Riverbank Formation. However, during a survey of the Project area conducted on March 19, 2015, it was observed that the Riverbank Formation was completely obscured by alluvial soil and sediments disturbed by agricultural activities to a depth of approximately 5 feet below the ground surface. Although alluvial processes may obscure archaeological deposits, these overlay a Pleistocene-aged formation within the Project area. The Pleistocene-aged formation is very unlikely to hold any remains of human activity, as it generally predates all but the earliest evidence of humans in North America. Taken with the results of the archaeological investigations performed for the PEA, this area appears to have low sensitivity for archaeological resources.



5.0 ARCHAEOLOGICAL SENSITIVITY

This section discusses the cultural resources investigations that have been conducted for the Project and summarizes the results of those studies. It also identifies resources that have been identified within the Project area.

5.1 PREVIOUS INVESTIGATIONS

In 2012, Applied Earthworks (AE) completed a cultural resources study for the proposed Project to determine whether cultural resources will be affected by the proposed construction (Morlet et al. 2012). The study included a records search and archival research to identify previously recorded resources and prior studies in the Project area, a Sacred Lands File search by the NAHC and coordination with Native Americans identified by the NAHC, pedestrian archaeological and architectural survey, and evaluation of Sanger Substation for eligibility to the CRHR. The records search did not identify any previous investigations or previously recorded resources within the Project area. The results of the search of the Sacred Lands File did not identify any Native American cultural resources within the Project area.

In March 2012 and September 2015, PG&E contacted tribes previously identified by the NAHC, with additional follow-up contact in November 2015. None of the six contacted tribal representatives requested further Project participation, although an individual from the Table Mountain Rancheria tribe requested notification of discovery and identification of cultural resources. Additionally, during PG&E's outreach to the tribes, an individual from the Santa Rosa Rancheria Tachi Yokut Tribe recommended that construction be monitored by an archaeologist, and that all involved parties be made aware of the prescribed actions to be taken in the event of an unanticipated discovery of any cultural resources. Native American monitoring is not required per the IS/MND; however, one may be required should resources be identified.

5.2 INVENTORY OF KNOWN RESOURCES

No prehistoric or historic age archaeological resources were identified either within the Project area, or within 0.5 mile as a result of the records search. No archaeological resources were identified as a result of the 2012 inventory. Field technicians did observe an occasional glass or ceramic fragment during the survey that may be older than 50 years; however, due to the fragmentary nature and lack of temporal traits, none of these items could be definitively assigned to the historic era. Two shards of aqua glass were observed near the southwestern corner of the current Sanger Substation in the vicinity of nonextant cottages that date to the 1920s. Their proximity may indicate a possible association with these past structures.

Inventory of the built environment identified one architectural resource: Sanger Substation. As detailed in Section 4.1.3.2, the original Sanger Substation was constructed in 1921 and consisted of a tank house, control building, cooling tower, shed, and three residential cottages, each with a detached garage. Between 1956 and 1968, components of the original Sanger Substation were replaced with components associated with the existing Sanger Substation, with the exception of the control building (1921 control building). The 1921 control building and the existing Sanger Substation were formally recorded and recommended not eligible for the CRHR because neither meet any of the four criteria defined in Section 5024.1 of the PRC (Morlet et al. 2012).

As part of the architectural inventory of the wider study area, several historic (i.e., 50 years old or older) structures and one historic-age canal were identified within, or directly adjacent to, the larger study area.



However, because none of these structures will be affected by the proposed Project, they were not formally recorded or evaluated for listing on the CRHR.

5.3 AREA OF POTENTIAL ARCHAEOLOGICAL SENSITIVITY

Historic aerial photography and archival research indicates three cottages once stood in the western portion of the existing substation. Two shards of aqua glass were observed during the 2012 pedestrian survey near the southwestern corner of the current Sanger Substation. Their proximity to the now nonextant cottages may indicate a possible association with these past structures, though their lack of clear temporal markers and the presence of similar materials on agricultural fields throughout the San Joaquin Valley makes it impossible to clearly associate them. As a result, there may be an increased probability of finding historic-age archaeological materials in the southwest corner of the Project area as compared to the rest of the parcel (Figure 3). Construction crews will be notified of this and will be cautioned to be on the lookout for evidence of intact archaeological deposits and/or features (i.e. trash dumps, privies, etc.).

5.4 DESCRIPTION OF EXPECTED RESOURCES

The types of archaeological resources that could be encountered within the Project area are predicted based on documented resources in the vicinity and known information about the prehistoric and historic use of the region. A review of these data sets indicates that the following resources could be encountered within the Project area. Additional materials not identified here are possible.

Prehistoric Resources. Although no prehistoric resources were identified as a result of the records search, Native American outreach, or field inventory, prehistoric materials may be obscured by alluvial soil and sediments disturbed by agricultural activities. Prehistoric materials that could be encountered include lithic scatters and stone tools, ground stone/milling implements, such as manos and metates, midden deposits, hearths or rock rings, cut or burned bone, and shell or bead ornaments.

Historic-age Resources. The AE historical research on Sanger Substation revealed that three cottages dating to the 1920s once stood in the western portion of the existing substation. Although these structures were removed in the late 1950s and 1960s, there is no surface evidence of their existence (e.g., foundations, debris piles, or artifact concentrations); it is possible that historical archaeological features or refuse associated with these cottages may be discovered during subsurface construction activities.

Historic-age materials that could be encountered include cans; bottles; ceramics; household items, such as pots, wash basins, lanterns; personal items, such buttons, combs, clothing; toys; mining implements; ranching-related items, such as horseshoes, tackle, pieces of barbed wire; nails; electricity generation-related items; and spent cartridge shells. Buried irrigation features or features related to electricity generation or ranching may also be present.

6.0 METHODS

This section describes the methods to be employed before and during construction to identify any previously unknown resources; to implement monitoring, should it become necessary; and to develop a treatment plan for the Project should inadvertent finds be encountered during construction. The objectives of this plan are to avoid and minimize potential impacts to cultural resources.

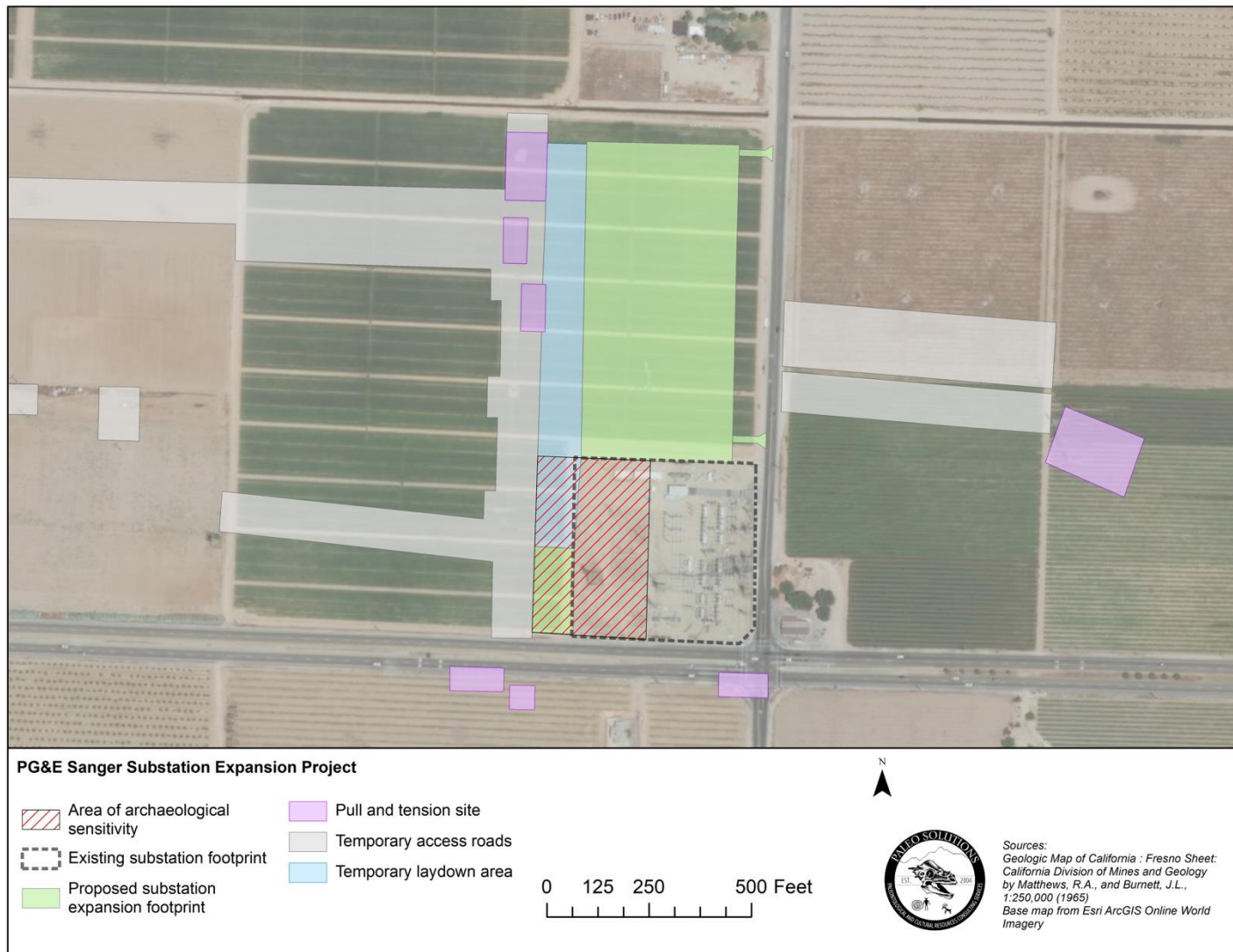


Figure 3. Areas of Potential Archaeological Sensitivity



6.1 PRE-CONSTRUCTION WORKER TRAINING

In accordance of MM CUL-2, prior to any Project excavation, a Worker Environmental Awareness Program (WEAP) training shall be presented to all on-site construction personnel and their managers. The WEAP will be presented to inform of the possibility for archaeological discoveries. The program will be provided as a PowerPoint presentation, which can be presented to new personnel, as necessary, over the lifetime of the Project. The program will inform personnel of the following:

- An overview of the archaeology, history, prehistory and Native American cultures associated with historical resources in the Project vicinity;
- A review of the types of resources that could be uncovered in the area, including historical artifacts associated with the nonextant historical complex at the Sanger Substation site;
- A review of applicable local, state, and federal ordinances, laws, and regulations pertaining to historic preservation and Native American resources;
- A discussion of procedures to be followed in the event that unanticipated cultural resources or human remains are discovered during implementation of the Project;
- A discussion of disciplinary and other actions that could be taken against persons violating historic preservation laws and PG&E policies; and
- A statement by the construction company or applicable employer agreeing to abide by the Worker Education Program, PG&E policies and procedures, and other applicable laws and regulations.

6.2 RESPONSIBILITIES OF THE ARCHAEOLOGICAL PI AND MONITORS

The CPUC-approved Archaeological PI will meet or exceed the SOI standards for archaeology. The Archaeological PI will either be under contract to PG&E; or be the PG&E Cultural Resource Specialist, as needed. The term “Archaeological PI” will refer to whomever is filling that role. Should the Archaeological PI be under contract to PG&E, all work will be completed in consultation with the PG&E Cultural Resource Specialist.

Full-time construction monitoring is not anticipated. Rather, an Archaeological PI shall be on-call and available in the event of a potential discovery. Should inadvertent finds be encountered during construction, the Archaeological PI, in consultation with the CPUC, will assess the find and may deem archaeological monitoring necessary. Archaeological monitors shall be available as needed to respond if archaeological materials are encountered and if monitoring is deemed necessary. For the purposes of this CRMTP, archaeological construction monitoring is defined as on-the-ground, close-up observation by an SOI-qualified archaeological monitor, working under the direction of the Archaeological PI.

The role of the Archaeological PI is to coordinate with PG&E and the CPUC to ensure that any impacts to known Historical Resources (i.e., resources listed in or eligible for listing in the CRHR) or unique archaeological resources within the Project area are less than significant. Additionally, the Archaeological PI shall ensure that unanticipated discoveries are adequately identified, recorded, and evaluated (if necessary) in accordance with the provisions of this CRMTP and MM CUL-1. The Archaeological PI oversees measures taken to address new discoveries along with any potential archaeological monitoring activities.

Should monitoring become necessary, the Archaeological PI also ensures the accurate and timely completion of all daily monitoring logs and the monitoring report, as described in Section 6.7. The Archaeological PI shall be available to respond to unanticipated discoveries, shall report new finds to PG&E and the CPUC, and shall make CRHR eligibility recommendations, as appropriate. The



Archaeological PI shall prepare and implement any needed archaeological monitoring, research designs, or treatment or avoidance plans (with the assistance of appropriate PG&E personnel). The Archaeological PI is assumed to be a contractor, though the role may also be filled by the PG&E Cultural Resource Specialist.

The responsibilities of the Monitor and Archaeological PI include the procedures described in Sections 6.3, 6.4 and 6.5 for the unexpected discovery of archaeological and/or human remains.

6.3 PROCEDURES FOR INADVERTENT DISCOVERIES

This section discusses the procedures that shall be implemented if unknown/undocumented cultural resources are discovered during Project construction. In addition, this section provides guidance to differentiate between cultural resources that would not require avoidance (isolated finds and selective sites previously determined not to hold the potential to be a Historical Resource/Unique Archaeological Resource), and resources that will require avoidance.

In accordance with MM CUL-1, in the event of an archaeological discovery, work shall be halted and excluded from within 100 feet of the find. Protective barriers shall be installed with signage identifying the area as an “environmentally sensitive area” (ESA). The Archaeological PI and CPUC shall be notified of the find. The Archaeological PI will be brought to the location of the find and will report back to the CPUC. The CPUC shall determine, in consultation with the Archaeological PI, if there is a potential for the resource to be a historical (CEQA Guidelines section 15064.5(a)) and/or a unique archaeological resource (PRC 21083.2(g)), and if archaeological monitoring is deemed necessary. The CPUC will notify parties who have requested notification of the find to the extent allowed, in consideration of confidentiality requirements. Total avoidance of the resource is preferred, and no additional mitigation is necessary, if it is avoided. The resource shall be recorded by the archaeologist on California Department of Parks and Recreation (DPR) 523 forms and filed at the South San Joaquin Valley Information Center.

6.3.1 Inadvertent Impacts to Cultural Resources

Although it is the goal to protect known and unknown (buried) cultural resources from Project-related impacts to the extent possible, circumstances may arise when construction or other Project-related activities cause inadvertent impacts to cultural resources. The term “impacts” as used in this CRMTP means the intentional or unintentional destruction of, damage to, or dislocation of in situ cultural resources or Native American human remains and associated grave goods as a result of Project-related activities.

If the resource cannot be avoided, the Archaeological PI will consult with the PG&E Cultural Resource Specialist, who will work in consultation with CPUC to determine if there is a potential for the resource to be a historical resource (CEQA Guidelines section 15064.5(a)) or a unique archaeological resource (PRC 21083.2(g)) and if archaeological monitoring is deemed necessary. The CPUC must provide a response to the Archaeological PI within seven days regarding a resource that the archaeologist has found not to be potentially historical or a unique archaeological resource. If the resource is not potentially a historical or unique archaeological resource, work can resume after the CPUC’s concurrence.

Proper implementation of the procedures described in Sections 6.3, 6.4, and 6.5 shall avoid or minimize inadvertent impacts to previously undiscovered resources and human remains. If an inadvertent impact occurs to a cultural resource, the following procedures shall be implemented.

If the resource is potentially a historical or unique archaeological resource, the Archaeological PI shall prepare an Evaluation Plan that details the procedures to be used to determine whether the resource is a historical or unique archaeological resource. The PG&E Cultural Resource Specialist shall submit the



Evaluation Plan to the CPUC for review. The CPUC will approve or request changes to the Evaluation Plan within 7 days of submittal by PG&E. Once approved, the Evaluation Plan shall be implemented, and a report shall be prepared that indicates whether the resource is a historical resource or unique archaeological resource.

If the discovery is not historical or a unique archaeological resource and the CPUC concurs with that determination, work may proceed in the area of the discovery. If the discovery is a historical resource or a unique archaeological resource, the Archaeological PI shall prepare a Data Recovery Plan that would reduce impacts to less than significant.

The Data Recovery Plan shall be prepared in accordance with CEQA Guidelines section 15126.4(b)(3)(C) and PRC Section 21083.2 and shall describe methods that will yield relevant information. The PG&E Cultural Resource Specialist shall submit the Data Recovery Plan to the CPUC for review and approval. The CPUC will approve or request changes to the Data Recovery Plan within 7 days of submittal by PG&E. Once approved, the Data Recovery Plan shall be implemented.

When the field work is completed, the Archaeological PI shall prepare a Data Recovery Field Memo that briefly describes the data and materials recovery. The PG&E Cultural Resource Specialist shall submit the Data Recovery Field Memo to the CPUC for review and approval. The CPUC will approve or request changes to the Data Recovery Field Memo within 7 days of submittal by PG&E. Once the Data Recovery Field Memo has been approved, construction may proceed in the area of the discovery. A more detailed Data Recovery Report shall be prepared within 90 days of the Data Recovery Field Memo. The Data Recovery Report shall present thorough results of the data recovery efforts, conclusions drawn from the work, and where materials will be curated and shall also contain completed California DPR 523 forms. The PG&E Cultural Resource Specialist shall submit the Data Recovery Report to the CPUC for review and approval. Once approved, the Data Recovery Report and DPR 523 forms shall be filed with the South San Joaquin Valley Information Center.

Unanticipated Discoveries that would Require Avoidance

Inadvertent, unanticipated, or emergency discoveries that would require avoidance until appropriate treatment is determined by the Project's Archaeological PI in conjunction with PG&E and the CPUC are defined as follows:

- Previously unidentified archaeological sites that consist of three or more artifacts, one of which must be diagnostic of time and/or purpose, within a 10-square-meter area and/or one or more features.
- Any evidence of human remains and/or associated funerary objects, regardless of context of discovery. All discoveries of bone are to be treated by construction personnel as potential human remains until a determination can be made by the Archaeological PI, PG&E Cultural Resource Specialist, a qualified osteologist or forensic anthropologist, and/or Fresno County Coroner, as described below in Section 6.4.

Diagnostic and exceptional isolated (i.e., one or two items only) prehistoric or historic finds that are unique, associated with a specific setting or environment, or may contribute to the understanding and appreciation of California's prehistory and history, shall be avoided or collected. The following list includes examples of such potential diagnostic and/or isolated artifacts that would merit avoidance or collection:

Prehistoric - ceramics (e.g., decorated, rim, or basal sherds, lugs, figurines, ear spools, complete vessels); lithics (e.g., projectile points, exceptional/unusual ground stone, exceptional/unusual chipped-stone artifacts); ceremonial items (e.g., shell or bead ornaments, carved bone).



Historic - ceramics (decorated rim or basal sherds, makers marks, complete vessels), glass (complete vessels, vessel bases with makers marks, body fragments with labels), buttons, marbles, pipes, figurines, or doll parts, and identifiable metal (tools, gun parts, machine parts, hinges, nails, buckles, flatware, wagon hardware, horse tack) that are clearly 50 years of age or older.

Unanticipated Discoveries Where Avoidance Is Not Required

Unanticipated discoveries that are determined by the Project's Archaeological PI in conjunction with the CPUC to hold no potential to be exceptional and/or significant include the following prehistoric and historic-age isolated finds:

- Isolated (i.e., just one or two artifacts), unexceptional prehistoric flaked stone and groundstone artifacts, burned rock, or non-human bone clearly outside the boundaries of previously defined archaeological sites.
- Isolated, non-diagnostic and unexceptional historic artifacts clearly outside the boundaries of previously defined archaeological sites.

Avoidance of the above items is not required; however, complete recordation and mapping of the items shall be completed.

In addition, all of the materials listed below are less than 50 years of age and, unless of exceptional significance, will not be considered historical resources and will not require avoidance. The following materials shall not be reported unless exceptional:

- Plastic products limited to Styrofoam® and other foamed polystyrene products, Velcro®, Teflon® coated cookware, polyvinylchloride (PVC) pipe, high-density polyethylene, polypropylene, polyimide, thermoplastic polyester, linear low-density polyethylene, liquid crystal polymers, and products marked with resin codes.
- Cans made from aluminum or bi-metal, or those with pull-tab or push-tab (metal or plastic) openings.
- Aluminum foil.
- Synthetic tires, car parts.
- Modern electronics (CD players, VCRs, electronic appliances, personal electronics, computers, printers).
- Compact disks, floppy computer disks, magnetic tape media.
- Unidentifiable metal fragments.
- Rubber and rubberized metal.
- Clothing or shoes made of plastic or synthetic materials.

Any cultural resources that are found with materials older than 50 years of age shall be reported to the Archaeological PI and CPUC and documented as appropriate. All recordation will be reviewed by the Archaeological PI. If there is any doubt regarding the age of a discovery, the Archaeological PI shall discuss this with the CPUC when providing notice of the find.

All efforts shall be made to avoid or limit construction delays. If an archaeological site is encountered that will require additional work for evaluation and/or treatment, the Archaeological PI will coordinate with the Construction Supervisor to allow work to continue outside the established ESA until the required work has been completed.



6.4 PROCEDURES FOR DISCOVERIES OF HUMAN REMAINS

In accordance with APM CUL-4, PG&E and the CPUC shall ensure that any human remains encountered during construction of the Project are treated in a respectful manner and consistent with applicable laws. The procedures and protocols set forth in CEQA Guidelines §15064.5(e)(1) shall be followed. If human remains are discovered, all work within 165 feet (50 meters) of the find shall immediately be halted, and the CPUC shall be notified by the PG&E Cultural Resource Specialist. An ESA shall be established around the remains, and PG&E shall protect the remains from further disturbance. PG&E shall immediately contact the Fresno County coroner to evaluate the remains, including a determination if an investigation of the cause of death is needed. If the county coroner determines that the remains are Native American, the Archaeological PI, PG&E, or the coroner/CPUC shall contact the NAHC, in accordance with Health and Safety Code §7050.5, subdivision (c), and Public Resources Code §5097.98 (as amended by AB 2641). The CPUC shall consult with the MLD, as identified by the NAHC, regarding treatment or potential reburial of the remains. PG&E shall ensure that the ESA remains in place and the human remains are not damaged or disturbed by further construction activity until the CPUC has approved removal/mitigation of the ESA.

6.5 UNDISCOVERED POTENTIAL TRIBAL CULTURAL RESOURCES

In accordance with MM CUL-5, the following procedure shall be employed (after stopping work and following the procedure for determining eligibility in Section 6.3) if a resource is encountered and determined by the Project's Archaeological PI to be eligible for the CRHR or a local register of historic resources and is associated with a California Native American Tribe(s) with a traditional and cultural affiliation with the geographic area of the proposed Project.

PG&E's Cultural Resource Specialist shall notify the CPUC for appropriate action. PG&E will assist the CPUC if needed to identify the lead contact person for the California Native American Tribe(s) potentially associated with the cultural resource and with a traditional and cultural affiliation with the geographic area of the proposed Project. The CPUC will contact the Tribe(s)' lead contact person to set up a meeting with the CPUC.

The Project's Archaeological PI shall participate with the CPUC in discussions with the California Native American Tribe(s) whether the resource is a TCR as defined by PRC Section 21084.3(b) and the tribe(s)' preferred method of mitigation, if the resource is determined to be a TCR. If no agreement can be reached for mitigation after discussions with the California Native American Tribe(s) or it is determined that the tribe(s)' preferred mitigation is not feasible, PG&E will implement one of the example mitigation measures listed in PRC Section 21084.3(b), or other feasible mitigation.

6.6 DISPOSITION OF COLLECTED ARTIFACTS

As will be outlined in the Discovery Plan outlined in Section 6.3.1, above, any recovered artifacts of scientific value shall be curated in a manner consistent with the requirements of 36 Code of Federal Regulations (CFR) Part 79. A curation agreement shall be obtained from the identified curation facility prior to collection of artifacts, if possible. If a curation agreement cannot be procured in time, then the artifacts will be maintained in an appropriate fashion until the facility can be identified and an agreement reached. Curation fees shall be funded by PG&E.

Prior to disposition of recovered artifacts, all collected items shall be photographed and cataloged. If appropriate, items shall be prepared for curation in accordance with terms of the curation facility. A detailed artifact catalog documenting all recovered items shall be prepared. A copy of the catalog shall be submitted to the curation facility with the artifacts to be curated and shall be appended to the monitoring report.



6.7 REPORTING REQUIREMENTS

Should monitoring be necessary, monitors shall maintain a daily monitoring log of Project-related construction monitoring and other cultural resource related activities. Copies of daily monitoring logs shall be provided to the PG&E Cultural Resource Specialist and CPUC upon request. The daily logs will include the following:

- Date, time of work, and amount of time spent at a construction monitoring location.
- Area of work.
- Type of work, equipment used, and name of Construction Supervisor.
- Construction activities performed.
- Monitoring activities performed (e.g. protection of resources).
- Activities in which there are cultural resource issues.
- Identification of an unanticipated discovery, if applicable.
- Color digital photographs shall be taken (as appropriate) to document construction and monitoring activities.
- Monitors shall provide their monitoring logs daily to the Archaeological PI.

In the event of an unanticipated discovery, the Archaeological PI shall prepare a find reports when cultural materials are encountered during construction. This report will be as simple as possible and may constitute an email with appropriate attachments. The find reports shall describe the find and treatments recommended for the find, if applicable. The find reports shall be delivered to the CPUC by PG&E within 48 hours of discovery of the find. The Archaeological PI shall oversee preparation of DPR 523 site records for all new finds.

At the completion of all monitored ground-disturbing activities, a cultural resources summary report shall be prepared that documents the methods and results of all cultural resources monitoring conducted for the Project. The report shall list the dates and locations of monitoring, construction activities monitored, and surface and subsurface sediments observed throughout the Project area. Any inadvertent impacts to cultural resources that may have occurred during construction shall be documented in detail, along with measures taken to reduce or mitigate the impact(s). All finds encountered during monitoring shall be described in detail, with DPR 523 records included as a confidential appendix to the report. The final disposition of all recovered artifacts shall be documented with the artifact catalog included as an appendix. The PG&E Cultural Resource Specialist shall submit the report to the CPUC for review and approval.



7.0 REFERENCES

Matthews, R.A., and Burnett, J.L.

1965 Geologic Map of California, Fresno Sheet: California Division of Mines and Geology, scale 1:250,000.

Morlet, Aubrie, Andrew Monastero, Mary Clark Baloin, and Josh Smallwood

2012 Cultural Resources Studies for Sanger Substation Expansion Project, Fresno County, California. Prepared by Applied EarthWorks, Inc. for Pacific Gas and Electric Company.

Moratto, Michael J.

1984 *California Archaeology*. Academic Press, New York.

Nationwide Environmental Title Research (NETR)

2018 1923 Topographic Quadrangle. Available on line at: <https://www.historicaerials.com/viewer>. Accessed July 2018.

Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton

2007 The Central Valley: A View from the Catbird's Seat. In *California Prehistory: Colonization, Culture, and Complexity*, edited by T. L. Jones and K. A. Klar, pp. 147-163. Altamira Press, Lanham, Maryland.

Sanger Herald

1920a Sanger from the Early Eighties. 18 November:4. Sanger, California.

1920b Twenty Years Ago in Sanger. 14 October:1. Sanger, California.

Wallace, William J.

1978 "Northern Valley Yokuts." In *Handbook of North American Indians, Volume 8, California*. Edited by Robert F. Heizer, pp. 462-470. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.