Appendix 5

Cultural and Paleontological Resources
Technical Report (Public Version)
CULTURAL AND PALEONTOLOGICAL RESOURCES ASSESSMENT FOR THE DEL SUR SOLAR FACILITY, GEN-TIE AND COMMUNICATIONS LINE ROUTES, CITY OF LANCASTER, LOS ANGELES COUNTY, CALIFORNIA

PUBLIC VERSION

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Cogstone Project Number: 3223
Type of Study: Cultural Resources Phase I Survey and Paleontological Literature Search
Localities: None known within the PSA
USGS 7.5' Topographic Quadrangles: Del Sur
Total Area of Impact: 725 acres
Key Words: Quaternary alluvium- PFYC 2 low sensitivity, Younger alluvial and alluvial fan- PFYC 3a moderate; patchy, CA-LAN-4245, P-19-189928
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EXECUTIVE SUMMARY

At the request of Aspen Environmental Group, Cogstone Resource Management, Inc. (Cogstone) conducted a Phase I cultural resources assessment and paleontological literature study for the Del Sur Solar Project (project or proposed project). This report has been written in support of environmental analyses for a Conditional Use Permit that has been filed with the City of Lancaster Planning Department. The purpose of this assessment was to determine if significant cultural resources or potentially sensitive paleontological sediments are located within the project site and to assess whether or not there is potential these resources will be impacted by the project.

The project is proposed on privately owned land in the City of Lancaster, Los Angeles County, California and would consist of the 725-acre footprint of the proposed 100 megawatt (MW) solar generating facility (SGF). The project also includes potential routes for a 2- to 4-mile generation-tie (gen-tie) and communication lines, which would extend south from the SGF (see Figure 1).

Cogstone conducted a paleontological resources literature review and cultural resources records search for the Area of Potential Impact (API), which included the SGF, potential gen-tie and communication routes (with 500-foot buffer), and an expanded 1000-foot buffer around one of the gen-tie line routes. The API has had extensive study from recent and past projects. Cogstone has been involved with a number of these studies and has been working on projects near the proposed project site since 2007, and is thoroughly familiar with cultural and paleontological resources identified within the project site and surrounding areas. To supplement previous studies, on March 21, 2015 Cogstone conducted an intensive cultural resources pedestrian survey on the portions of the API that had not been previously surveyed as part of other projects. The total area surveyed by Cogstone was 423.48 acres while the remaining acreage of the SGF (301.52 acres) and the proposed routes of the gen-tie and communication lines were previously surveyed as part of other projects and no further surveys of these areas were needed to support the proposed project.

Study Results. The project site is mapped entirely as Holocene to Pleistocene alluvium, dunes, and alluvial fan deposits. The records search did not identify paleontological localities within the project site or within a one-mile radius, but two localities are known from sediments east and north of the project near Lancaster. Based on the fossils recovered from these localities, the Holocene deposits are assigned a Potential Fossil Yield Classification (PFYC) value of 2 with a low sensitivity for fossil resources. However, the fine-grained nature of the Holocene to late Pleistocene alluvial fan deposits near Lake Thompson increases the potential for fossil preservation. As such these sediments are assigned a moderate and patchy potential (3a) based on the sediments and fossils known from the area. No paleontological monitoring is recommended unless excavation below five feet encounters Pleistocene sediments.
Six sites are near or on the perimeter boundaries of the project site for the SGF and the gen-tie line routes. None of the six historic period resources have been evaluated for eligibility for the California Register of Historical Resources; it is recommended that impacts to these resources be avoided. If impacts are unavoidable, testing to determine eligibility should occur. Six isolates (4 prehistoric and 2 historic) were identified; isolates are not eligible for listing on the California Register of Historical Resources and need no further consideration.
INTRODUCTION

PURPOSE OF STUDY

The purpose of this study is to identify potential adverse impacts to cultural and paleontological resources resulting from construction of the proposed Del Sur Solar Project. Specifically the project site is located within the City of Lancaster, Los Angeles County, California (CA) (Figure 1).

Figure 1. Project Vicinity
PROJECT DESCRIPTION

Sustainable Power Group (sPower or applicant) proposes to construct and operate the Del Sur Solar Project (proposed project). The proposed project is a 100 megawatt (MW) utility-scale Solar Generating Facility (SGF) proposed on 725 acres in the City of Lancaster. Solar electricity generated by the proposed project would be delivered by an approximately 2 to 4-mile generation-tie and communication line that would extend to two previously approved substations near the existing Southern California Edison (SCE) Antelope Substation south of the proposed SGF. The project would operate year-round and would produce electricity during daylight hours. The applicant proposes to begin site preparation and construction of the facility in 2015 with construction completed in phases. The first phases of the facility would be commercially operational in late 2015 or early 2016, and the remaining phases would be complete by the end of 2016.

PROJECT LOCATION

The proposed project is located within the City of Lancaster in the Antelope Valley of Los Angeles County. The project area is mapped within Sections 6, 7 and 18 of Township 7 North, Range 13 West and within Sections 1, 12 and 13 of Township 7 North, Range 14 West the San Bernardino Base Meridian on the Del Sur 7.5-minute United States Geological Survey (USGS) topographic map (Figures 2 & 3).

PROJECT PERSONNEL

Cogstone Resource Management Inc. (Cogstone) conducted the cultural and paleontological resources studies. Key personnel resumes are provided in Appendix A. Sherri Gust served as the Principal Investigator for the project and reviewed the report. Gust is a Registered Professional Archaeologist and Qualified Principal Paleontologist. She has a Master of Science in Anatomy (Evolutionary Morphology) from the University of Southern California, a Bachelor of Science in Anthropology from the University of California at Davis and over 35 years of experience in California.

Desiree Martinez is the Principal Archaeologist for the Project and directed the field survey and wrote portions of the report. Ms. Martinez has a Master of Arts in Anthropology from Harvard University and is a qualified archaeologist with 20 years of experience that meets national standards in archaeology set by the Secretary of Interior’s Standards and Guidelines for Archaeology and Historic Preservation.

Kim Scott wrote the paleontological and geological sections of this report. Scott has a Master of Science in Biology with an emphasis in paleontology from California State University, San Bernardino and over 18 years of experience in California paleontology and geology.
Dr. Ian Scharlotta, RPA contributed to the fieldwork results section of the report and helped prepare the site record for the historic farm house. Scharlotta has a Ph.D. in Anthropology (Archaeology) from the University of Alberta, a Master of Arts in Anthropology (Archaeological Science) from California State University, Long Beach, and more than 10 years of experience conducting archaeological investigations throughout California.

Megan Wilson conducted the records search at the South Central Coastal Information Center in Fullerton and prepared some of the report maps. Ms. Wilson is a RPA and holds a Master of Art in Anthropology from California State University, Fullerton. She has four years of experience in California archaeology.

André Simmons prepared some of the GIS maps used in this report. Simmons has a Bachelor of Arts in Anthropology, cross-training in paleontology and more than three years of G.I.S. experience.

Ms. Duke prepared the prehistoric setting section of this report and prepared the site records. Duke has Bachelor of Arts from Simon Fraser University in Archaeology/History and is a qualified archaeologist and cross-trained paleontologist with three years of experience in survey, monitoring, excavation, and the identification of human and faunal skeletal remains.
Figure 2. Project Location on Topographic Map
Del Sur Solar Project
Cultural and Paleontological Resources Assessment

Figure 3. Project Location on Aerial Map
REGULATORY SETTING

This section contains a discussion of the applicable laws, ordinances, regulations, and standards that govern cultural and paleontological resources and must be adhered to both prior to and during project implementation. The report is intended to satisfy the requirements of the California Environmental Quality Act (CEQA) regulations (California Code of Regulations [CCR], Title 14, §15064.5; California Public Resources Code [PRC] §21083.2).

CULTURAL RESOURCES

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act of 1970 (CEQA) declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered. CEQA includes historic and archaeological resources as integral features of the environment.

CALIFORNIA REGISTER OF HISTORICAL RESOURCES AND SIGNIFICANCE CRITERIA

CEQA requires a lead agency to determine whether a project would have a significant effect on one or more historical resources. According to Section 15064.5(a) of the CEQA Guidelines, a "historical resource" is defined as a resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR) (PRC §21084.1); a resource included in a local register of historical resources (14 CCR 15064.5[a][2]); or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (14 CCR 15064.5[a][3]).

Section 5024.1 of the PRC; Section 15064.5 of the State CEQA Guidelines (14 CCR); and Sections 21083.2 and 21084.1 of the CEQA Statutes were used as the basic guidelines for the cultural resources study. PRC 5024.1 requires evaluation of historical resources to determine their eligibility for listing on the CRHR. The purposes of the CRHR are to maintain listings of the State's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR, which were expressly developed to be in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP, per the criteria listed at 36 CFR 60.4), are stated below. 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 that:

1. Are associated with events that have made a significant contribution to the broad patterns of our history; or
2. Are associated with the lives of persons significant in our past; or
3. Embody the distinctive characteristics of a type, period, or method of installation, 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
4. Have yielded, or may be likely to yield, information important in prehistory or history.

According to Section 15064.5(a)(3)(A-D) of the State CEQA Guidelines (14 CCR), a resource is considered historically significant if it meets the criteria for listing in the NRHP (per the criteria listed at 36 CFR 60.4 as stated above). Impacts that affect those characteristics of the resource that qualify it for the NRHP or that would adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered to have a significant effect on the environment.

Impacts to cultural resources from the proposed project are thus considered significant if the project: (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource that contributes to its significance; or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

**SENATE BILL 18**

Senate Bill (SB) 18 *(California Government Code, §65352.3)* incorporates the protection of California traditional tribal cultural places into land use planning for cities, counties, and agencies by establishing responsibilities for local governments to contact, refer plans to, and consult with California Native American tribes as part of the adoption or amendment of any general or specific plan proposed on or after March 1, 2005. Formal consultation under SB 18 was required for this project since an amendment to the General Plan is required.

**HUMAN REMAINS**

Section 7050.5 of the *California Health and Safety Code* provides for the disposition of accidentally discovered human remains. Section 7050.5 states that if human remains are found, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains.
Section 5097.98 of the Public Resources Code (PRC) states that, if remains are determined by the Coroner to be of Native American origin, the Coroner must notify the Native American heritage Commission within 24 hours which, in turn, must identify the person or persons it believes to be the most likely descended from the deceased Native American. The descendants shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

California Environmental Quality Act (CEQA) states that: It is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects.

PALEONTOLOGICAL RESOURCES

Paleontological resources are also afforded protection by CEQA. Appendix G (Part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, stating that a project will normally result in a significant impact on the environment if it will “…disrupt or adversely affect a paleontologic resource or site or unique geologic feature, except as part of a scientific study.”

PUBLIC RESOURCES CODE SECTION 5097.5

California’s Public Resources Code Section 5097.5 states that: No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological, or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological, or historical feature, situated on [lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof], except with the express permission of the public agency having the jurisdiction over the lands. Violation of this section is a misdemeanor.

PROFESSIONAL GUIDANCE ON FOSSIL SIGNIFICANCE

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer 2003; Scott et al. 2004).

**METHODS**

**PALEONTOLOGICAL RESOURCES RECORDS SEARCH**

A paleontological records search for the project site was requested from the Natural History Museum of Los Angeles County Department of Vertebrate Paleontology (LACM; McLeod 2015; See Appendix B). Record searches of available online databases and published materials were conducted by Cogstone staff.

**CULTURAL RESOURCES RECORDS SEARCH AND FIELD SURVEY**

**Records Search**

A cultural resources records search was completed by Megan Wilson at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton on February 24, 2015 for the Del Sur 7.5’ USGS topographic sheet. The records search materials contain information collected from the California Historical Resources Information System and includes locations of previous cultural resources surveys and archaeological sites as well as listings of the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), California Historic Landmarks, and California Points of Historic Interest. Additionally the West Antelope Valley Historical Society and the Antelope Valley Conservancy were contacted for history of the area.
A Sacred Lands File search was requested from the Native American Heritage Commission (NAHC) by Cogstone on February 20, 2015 (see Appendix C). Consultation letters were sent to the tribal entities and persons listed within NAHC’s response.

**FIELD SURVEY**

The area of potential impact (API) is located on privately owned land and consists of the footprint of the Del Sur Solar Generation Facility and the preferred and alternative gen-tie routes, including a 1000-foot buffer around the expanded gen-tie area. Since much of the project area has been previously surveyed by other projects (see Table 6), Cogstone conducted an intensive cultural resources pedestrian survey only of the areas that have not been previously surveyed (see Figure 5). The survey areas were sequentially lettered A-F for organizational purposes to better discuss the potential impacts to cultural resources in this report.

The survey was conducted by Cogstone staff and archaeology students from California State University, Long Beach (CSULB) on March 21, 2015. Table 1 shows the names of the field survey crew, their affiliation and their highest level of education.

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Highest Degree Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holly Duke</td>
<td>Cogstone</td>
<td>BA Archaeology/History</td>
</tr>
<tr>
<td>Desiree Martinez</td>
<td>Cogstone</td>
<td>BA Anthropology; MA Anthropology</td>
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<tr>
<td>Janell Mort</td>
<td>Cogstone</td>
<td>BA Anthropology; MA Anthropology</td>
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<tr>
<td>Ryan Mortiz</td>
<td>Cogstone</td>
<td>BA Anthropology</td>
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<tr>
<td>Claudia Ochoa</td>
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<tr>
<td>Candice Brennan</td>
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<td>BA Anthropology</td>
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<td>Jennifer McElhoes</td>
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<td>Enadina Lozano</td>
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<td>Isabel Kott</td>
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<td>Merlin Krause</td>
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<td>Maia Matheu</td>
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<td>Undergraduate</td>
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<tr>
<td>Miguel Duidualo</td>
<td>CSULB</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>Jamie Bach</td>
<td>CSULB</td>
<td>MA Anthropology</td>
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<tr>
<td>Marty Kooistra</td>
<td>CSULB</td>
<td>Undergraduate</td>
</tr>
<tr>
<td>Kiersten Knust-Graichen</td>
<td>CSULB</td>
<td>Undergraduate</td>
</tr>
</tbody>
</table>

Transects were spaced 15 meters apart on a north to south axis. Overview digital photographs were taken of the project site with an Apple iPad and Global Positioning System (GPS) points
were taken with a Trimble© GeoXH 2008-3000 using the North American Datum (NAD) 1983. Newly identified cultural resources were documented using the Department of Parks and Recreation (DPR) 523 Series forms and the Instructions for Recording Historical Resources (Office of Historic Preservation 1995). Previously recorded and substantially changed cultural resources within the survey area were also re-documented using DPR forms.

BACKGROUND

The project site is located in the Antelope Valley subsection of the western Mojave Desert, which is a broad, flat valley with an average elevation of 2,953 feet above sea level. This region is characterized by dry weather with the mean annual precipitation between six and eight inches, mainly in the form of rain during the winter and summer months. The mean annual temperature is between 60 and 66 degrees Fahrenheit (Miles and Goudey 1997). Native vegetation within the project site is dominated by low, widely spaced shrubs and is dominantly the Creosote Bush with white bursage.

GEOLOGIC SETTING

The project site lies within the Mojave Desert Geomorphic Province which consists of fault bounded isolated mountain ranges and large expanses of desert. The project site lies north of the San Andreas Fault Zone and east of the Garlock Fault Zone, both of which impact the alignment of the nearby mountain ranges (Wagner 2002). The project site is mapped entirely as Holocene to Pleistocene alluvium, dunes, and alluvial fan deposits (see Figure 4; Hernandez 2010).

HOLOCENE ALLUVIUM
Holocene (<11,000 years old) alluvial deposits (Qa) primarily consist of yellowish grey to brown, unconsolidated, moderately sorted, medium to coarse grained sand. Clasts range from silts to cobbles depending on how close the deposit is to the uplands (Figure 4; Hernandez 2010).

HOLOCENE DUNES
Holocene eolian deposits (Qe) consist of very fine to medium grained sand with some silt. These windblown dune deposits are up to 2 meters thick and may appear light grey to dark yellowish brown (Figure 4; Hernandez 2010).

HOLOCENE ALLUVIAL FAN
Weakly consolidated to unconsolidated, cobbles to silts, form as active alluvial fans (Qf) adjacent to canyons exiting the highlands (Figure 4; Hernandez 2010).

YOUNGER ALLUVIUM
Holocene to late Pleistocene (~5,000 to 120,000 years old) alluvial deposits (Qya) primarily consist of dark yellowish brown, unconsolidated, sands and gravels (Figure 4; Hernandez 2010).
**Younger Alluvial Fan**
Both clay-rich (Qyfc) and silt-rich (Qyfs) Holocene to late Pleistocene alluvial fans occur within the Project.

**Clay-rich Younger Alluvial Fan**
Dark yellowish-brown, consolidated, silty to fine sands with clay and calcium carbonate occur at the margins of the former Lake Thompson (Figure 4; Hernandez 2010).

**Silt-rich Younger Alluvial Fan**
Brown to dark yellowish-brown, consolidated, silty to fine sands occur as distal alluvial fan deposits (Figure 4; Hernandez 2010).
Figure 4. Geology Map
PREHISTORIC SETTING

The Mojave Desert is characterized by broad swaths of relatively unproductive habitat punctuated by resource patches of uncertain value unlike the rest of the Great Basin which shows strong vertical zoning in plant communities, more regular water sources and greater uniformity in spatial and temporal distribution of subsistence resources. As such, particular sub-regions can vary significantly across not only seasons but between years and longer intervals. Modern climatic data suggest that period of reduced rainfall in one sector of the desert may have been balanced by enhanced conditions in another area.

During the Late Pleistocene (about 18,000 to 8,000 B.C.), conditions in the Mojave Desert were generally cool and wet. During the Early Holocene (about 8,000 to 6,000 years B.C.), conditions were somewhat cooler and moister than today. The Middle Holocene (about 6,000 to 3,000 years B.C.) witnessed a much warmer and drier climate than modern times. The climate became moderately cooler and wetter again during the Late Holocene (about 3,000 years B.C. to present), punctuated with periods of drought.

Short and long term trends in environmental productivity must have had strong influences on the mode and tempo of occupation strategies affecting local and regional land use patterns. To the extent that prehistoric populations could monitor the location and magnitude of storm tracks or precipitation levels, they must have been able to predict which habitats and resources would produce the highest net foraging returns. It is possible that large tracts of the desert were effectively abandoned or rarely visited during particular periods of time. In some cases, these climatic changes are thought to have been coincident with major technological or subsistence adjustments.

MOJAVE DESERT CULTURAL SYSTEMS BY TIME PERIOD

The Pleistocene

The only cultural complex dating to the Pleistocene that has been confidently identified in the Mojave Desert is Clovis (ca. 10,000 to 8000 years B.C.; see Table 2). It is marked by characteristic fluted projectile points of the same name. Fluted points appear more often in the north and west than in other sectors of the Mojave with concentrations in the drainage basins of Pleistocene China Lake and Thompson Lake. These are areas of substantial external stream runoff that would have been well watered into the Early Holocene. The nature of Paleo-Indian cultural systems remains poorly defined but they were probably a highly mobile people, living in small, temporary camps near then permanent water sources.
The Early Holocene

The only coherent pattern during this time is the Lake Mojave complex dating between 8000 and 6000 years B.C. (see Table 2). This complex is characterized by projectile points of the Great Basin Stemmed series (e.g., Lake Mojave and Silverlake) and abundant bifaces, as well as steep-edged unifaces, crescents, occasional cobble-core tools and ground stone implements. Flaked stone artifacts in the Lake Mojave assemblages include tools that are consistent with long-term use and transport. Extralocal materials are common and suggest extensive annual foraging ranges; marine shell beads likewise imply wide spheres of interaction. Small numbers of ground stone implements occur regularly within these components, although wear on these tools is often light and suggests there was little reliance on vegetal resources.

Extensive residential accumulations are known in addition to workshops and small camps. The large sites appear to be functionally the same as smaller ones and represent locations of recurrent use rather than different settlement types. Thus, the Lake Mojave pattern appears to reflect a forager-like strategy organized around relatively small social units. Available settlement data indicate it was not extensive lakeside marshes that attracted human occupation, but rich resource patches in a host of environmental situations. Faunal remains from archaeological sites dating to this period reflect reliance on smaller taxa such as jackrabbits, rabbits, rodents and some reptiles. However, this focus on smaller taxa seems inconsistent with the abundance of heavy projectile points, bifaces and formalized scrapers that appear geared toward large game.

The Middle Holocene

This time period is more complex than previously envisioned with multiple culturally and technologically distinct populations inhabiting and exploiting the Mojave Desert. The primary cultural complex heretofore associated with the Middle Holocene is called Pinto. Data from a number of sites in the central and northern Mojave Desert indicate a temporal overlap between Lake Mojave and Pinto complexes with Pinto slightly later in time. Nevertheless, the two complexes appear to be distinct, with statistically different obsidian hydration ranges and consistently different site distributions.

The Pinto complex has the most widespread expression of any of the early cultural complexes (see Table 2). There appears to be a broad continuity in the flaked stone technologies of the Lake Mojave and Pinto complexes, both of which are characterized by extensive use of toolstones other than obsidian and cryptocrystalline silica, and by the regular use of bifacial and unifacial core/tool forms. The signature stemmed, indented-base Pinto series projectile points show high levels of blade reworking and appear to have used the tips for thrusting spears rather than as darts. Reduced toolstone diversity implies a reduction in foraging range although the continuing presence of marine shell indicates regular interaction with coastal groups.
The most important distinction between the Lake Mojave and Pinto assemblages relates to the prevalence of ground stone implements. Milling tools are moderately abundant in nearly all known Pinto deposits and sometimes occur in high frequency. Revised dating indicates intensive levels of plant processing began by ca. 7000 years B.C. This coincides with emergence of similar economies along the coast.

Sites of the Pinto complex occur in a diverse range of topographic and environmental zones. Larger sites, which appear to correlate with well-watered locations, contain substantial middens and a breadth of cultural debris not present at smaller sites. These data are consistent with residential bases that were occupied for prolonged periods by moderate to large numbers of people. Such groups probably consisted of multiple families, inferring a collector-like settlement strategy with centralized site complexes in favorable locations to stage logistical forays into surrounding resource patches. Judging by high frequencies of milling tools at many of these bases, access to plant resources must have been a key determinant for site placement. Patterns of animal exploitation remain similar to those of the Lake Mojave complex, although deer frequencies drop and reliance on small fauna increases slightly.

The Deadman Lake complex appears to have been a separate cultural complex within the Middle Holocene. In contrast to the Pinto Complex which was widespread, the Deadman Lake complex has thus far been recognized only at Twentynine Palms in the southeastern Mojave Desert. It may represent close cultural connections to the Southwest Archaic that become increasingly weak to the north and west. Deadman Lake assemblages are characterized by small to medium sized contracting-stemmed or lozenge-shaped points, extensive concentrations of battered cobbles and core tools, abundant bifaces, simple flake tools, and milling implements (Table 2). Toolstones used demonstrate considerable quantities of nonsilicate materials including igneous rock and obsidian. Simple shell beads present take origin from both the Pacific coast and the Sea of Cortez. Processing of plant foods appears to have involved extensive crushing or pulping activities. Animal exploitation is dominated by small animals like those of Pinto complex sites.

**The Late Holocene**

The earliest Late Holocene complex is called Gypsum and is defined by the presence of a range of corner-notched (Elko), concave base (Humboldt) and well-shouldered contracting-stemmed (Gypsum) point forms (see Table 2). It dates roughly between 2000 years B.C. and A.D. 200. The most confounding aspect of the Gypsum complex is its evident scarcity in the southern and eastern reaches of the desert.
Table 2. Mojave Desert Cultural Complexes and Associations (From Sutton et al. 2007)

<table>
<thead>
<tr>
<th>Temporal Period</th>
<th>Cultural Complex</th>
<th>Approximate Dating</th>
<th>Previously Known As</th>
<th>Marker Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleistocene</td>
<td>Pre-Clovis</td>
<td>Pre-10,000 cal b.c.</td>
<td>Early Man, Early Humans, Pre-Projectile Point</td>
<td>Unclear</td>
</tr>
<tr>
<td></td>
<td>(hypothetical)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Paleo-Indian</td>
<td>10,000–8000 cal b.c.</td>
<td>Clovis, Early Systems, Big Game Hunting Tradition, Malpais</td>
<td>Fluted points (Clovis)</td>
</tr>
<tr>
<td>Early Holocene</td>
<td>Lake Mojave</td>
<td>8000–6000 cal b.c.</td>
<td>Western Pluvial Lakes Tradition, Western Lithic Co-tradition, Western Stemmed Tradition, Playa Complex, San Dieguito Complex, Lake Mohave Complex, Early Archaic, Death Valley I, Period I</td>
<td>Stemmed points (e.g., Lake Mojave, Silver Lake)</td>
</tr>
<tr>
<td></td>
<td>Pinto</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle Holocene</td>
<td></td>
<td>7000–3000 cal b.c.</td>
<td>Little Lake, Amargosa I, Period II, Death Valley II</td>
<td>Pinto Series points</td>
</tr>
<tr>
<td></td>
<td>Deadman Lake</td>
<td>N/A</td>
<td></td>
<td>Contracting stemmed and leaf-shaped points</td>
</tr>
<tr>
<td></td>
<td>Late Prehistoric</td>
<td>cal A.D. 1100–Contact</td>
<td>Yuman, Hakataya, Patayan, Period IV, Prehistoric Shoshonean, Protohistoric, Shoshonean, Marana, Cottonwood</td>
<td>Desert Series points, ceramics</td>
</tr>
</tbody>
</table>
The Gypsum complex emerged during a time when conditions were somewhat wetter and cooler than during the Middle Holocene. During the early part of this complex, it is thought that settlement and subsistence were centered near streams. At the same time, it appears that there were increases in trade and social complexity. Gypsum sites are more numerous than those of preceding occupations and are found over a more diverse array of locations. Artifact assemblages include evidence of ritual activities including quartz crystals, paint and rock art, as well as numerous bifaces. Exploitation of deer, jackrabbits, cottontails, and rodents is also evident.

The Rose Springs complex is marked by regional appearance of the bow and arrow beginning about A.D. 200. Common artifacts include Eastgate and Rose Springs series projectile points, stone knives, drills, pipes, bone awls, various milling implements, marine shell ornaments, and large quantities of obsidian. Rose Spring sites are commonly found near springs, along washes, and sometimes along lakeshores. Evidence of architecture includes wickiups, pit houses, and other types of structures suggesting intensive occupations. Populations in the desert appear to have reached their peak during this time. Most of the obsidian has been sourced to the Coso Volcanic Field demonstrating either travel to the southern Owens Valley or trade with peoples living in that vicinity. Animal exploitation was dominated by use of jackrabbits, rabbits and rodents. As lakes began to desiccate, settlement patterns seem to have shifted from association with permanent water sources to more ephemeral ones.

After about A.D. 1100, environmental conditions continued to deteriorate, populations appear to have declined, new technologies were introduced, and a number of separate cultural complexes emerged that are believed to represent the prehistoric aspects of known ethnographic groups. Late Prehistoric occupation sites represent a variety of types including a few major villages with associated cemeteries, special purpose sites, and seasonal sites. Artifact assemblages consist of Desert series projectile points, buffware and brownware ceramics, shell and steatite beads, slate pendants, incised stones and a variety of milling tools. Obsidian use dropped off, while use of cryptocrystalline silica increased.

ETHNOGRAPHY

The proposed project site lies in the southwestern edge of the Antelope Valley which lies within the Tataviam tribal territory, near the confluence of the Tataviam and Kitanemuk tribal boundaries. The Tataviam territory extended as far north as to include the southwestern fringes of the Antelope Valley, however the majority of the Antelope Valley was probably held by Kitanemuk and Vanyume speakers (King and Blackburn 1978: 535). The Tataviam will be the primary focus of this section as the Kitanemuk territory is slightly north of the project site.

The Kawaiisu to the north called the Kitanemuk and the Tataviam pitadi or “southerners”, however, by historic times the Tataviam language had become so distinct that a Kitanemuk
informant expressed that the language was as foreign to him as English. Although the Tataviam and Kitanemuk lived within close proximity of one another, it appears that these two groups had less in common with each other than they did with other neighboring groups. The Tataviam are described as resembling their Takic neighbors in the types of artifacts used in social interactions as well as the internal organization of cemeteries and villages. However, archaeological data suggests that the Tataviam started to differentiate from the other southern California Takic speakers around 1000 B.C. (King and Blackburn 1978: 535).

The subsistence activities of the Tataviam were generally similar to neighboring groups and they primarily exploited the *Yucca whippelei* (baked in earthen ovens) in addition to acorns, sage, juniper berries, *islay* (*Prunus illicifolia*), small mammals, deer, and possibly antelope (King and Blackburn 1978: 536). The exploitation of the *Yucca whippelei* as the primary food source is likely due to the degree of slope-exposure (degree of exposure to sunlight present on a slope) within the Tataviam region, which was conducive to an abundance of yucca being more available within this area than it was in neighboring groups (King and Blackburn 1978: 535).

Tataviam villages varied in size from large centers with up to 200 people to medium settlements of 20-60 people and small settlements of 10 to 15 people dispersed around the large habitation centers. As with many other California tribes, the Tataviam came into direct contact with Europeans through the Spanish mission system, which slowly led to the decline of traditional subsistence and settlement patterns. By 1810 nearly all of the Tataviam had been baptized at the San Fernando Mission and by 1834 the descendants of the missionized Tataviam had married into other groups within the mission or in the Tejon region (King and Blackburn 1978: 536). Interestingly, during the post-mission period the Tataviam intermarried with the Kitanemuk, despite having been described as “foreign” to each other at the time of European contact (King and Blackburn 1978: 535-536).

**HISTORIC SETTING**

**EARLY HISTORIC SETTING (BEFORE 1796)**
The written account of the land known as California came from Juan Cabrillo, the first European to sail along the coast in 1542. Cabrillo was followed in 1602-1603 by Sebastian Vizcaino exploring islands and inlets up and down the coast (Bean and Rawls 1993). Spanish exploration inland began with Portolá-Crespi in 1769 and colonization by Spain began in earnest with the establishment of missions.

Spanish Period (1796-1821)The San Fernando Mission was the seventeenth mission founded in California in September of 1797 in present-day Mission Hills, Los Angeles County, California by Father Fermin Lasuén. The mission’s influence extended into the traditional home of the Tataviam people, which greatly affected their traditional way of life. As mentioned above, by
1810, nearly all of the Tataviam had been baptized by the San Fernando mission, which demonstrates that the San Fernando Mission had a drastic impact on the people living in the surrounding area in a short period of time.

**MEXICAN PERIOD (1821-1848)**

In 1821 Mexico won its independence from Spain and worked to lessen the wealth and power held by the missions. The Secularization Act was passed in 1833, giving the vast mission lands to the Mexican governor and downgrading the missions’ status to that of parish churches. The governor then redistributed the former mission lands, in the form of grants, to private owners (Bean and Rawls 1993; Robinson 1948).

**AMERICAN PERIOD (AFTER 1848)**

The American Period is characterized by an increase in population of Americans and Europeans. In 1848 gold was discovered at Sutter’s Mill near Coloma on the south fork of the American River. By 1849 the rush to California’s gold had begun. The southern route to reach California came by way of Santa Fe or Salt Lake City, and essentially followed the Old Spanish Trail to cross the Mojave Desert and enter the southern California valleys through Cajon Pass. This trail had previously been used to trade goods from Santa Fe and Mexican horses and mules from Los Angeles (Latta 1932). In the 1850s and 1860s, the Eastern and Western Mojave Desert was home to ranchers raising beef and sheep; gold, silver, lead, and borax miners; and small settlements of homesteaders and merchants.

**PROJECT SITE HISTORY**

Not long after California joined the Union in 1850, the U.S. Congress directed the United States Army to send teams of skilled land surveyors to investigate potential railroad routes not only to connect the east to the west, but other routes as well. For two years, from 1853 to 1854, Lieutenant Robert Stockton Williamson of the United States Army Corps of Topographical Engineers and his team surveyed all the potential wagon road and railroad routes on the Pacific Coast between the Columbia River and San Diego (United States War Department).

After the Central Pacific Railroad and Union Pacific Railroad collaborated to construct a transcontinental line to connect the east to the west in 1869, the newly formed Southern Pacific Railroad ran a line from its terminal in Lathrop (south of Sacramento), through the Tehachapi Mountains east to Barstow, and then south through the Cajon Pass to their switching station in Colton, San Bernardino County. The Southern Pacific Railroad connected northern and southern California in 1876.

Following the completion of the Southern Pacific Railroad, a water stop was established in Lancaster and soon after the Western Hotel, then known as the Gilwyn, was built (City of
By 1890 Lancaster was quite prosperous, which only increased in 1898 when gold was discovered in the hills north of Lancaster and borax was found in the mountains surrounding the Antelope Valley. The discovery of gold attracted prospectors and the discovery of borax led to the creation of the world’s largest open-pit borax mine (City of Lancaster 2014). Following the gold rush and borax discoveries, the city of Lancaster has grown steadily since the 1930’s due to the presence of the Air Force at Edwards Air Force Base (previously known as Muroc Air Force Base).

**RESULTS**

**PALEONTOLOGICAL RECORDS SEARCH RESULTS**

No paleontological localities are recorded within the project site nor within a one-mile radius (Natural History Museum of Los Angeles County Department of Invertebrate Paleontology 2015; Paleobiology Database 2015; University of California Museum of Paleontology 2015; Jefferson 1991a, b). McLeod (2015) reports that two vertebrate localities were recovered from sediments east of the project site. An extinct camel (*Camelops hesternus*) was recovered at 4 feet below current ground surface on the north side of Lancaster. Additionally a small fauna of reptiles, small mammals, and fish were recovered at 3 feet below current ground surface (see Table 3).

Fossil localities are known regionally from Pleistocene (2.59 million - 11,700 years ago) deposits similar to those that underlie the project site. These Pleistocene sediments have produced extinct taxa including large mammals such as mammoth, ancient camel, and western horse, as well as a large array of small extant vertebrates including rodents, reptiles, fish, and birds (Jefferson 1991a, b; Scott and Gust 2010, 2014).

Paleontological resources are considered to be significant if they provide new data on fossil animals, distribution, evolution or other scientifically important information. Best current professional practice to characterize paleontological sensitivity utilizes the federal Potential Fossil Yield Classification system (Bureau of Land Management 2007) which has a multi-level scale based on demonstrated yield of fossils (see Table 4). Knowledge of the geological formations gleaned from geological maps and records of previous fossils recovered from the area were the basis for determining the paleontological sensitivity of the sediments found within the project site.

The Holocene deposits of the project site are assigned a low potential (2) as they are too young to contain fossils. However they do cover Pleistocene sediments that may contain fossils. The fine-grained nature of the Holocene to late Pleistocene alluvial fan deposits near Lake Thompson
increases the potential for fossil preservation. As such these sediments are assigned a moderate and patchy potential (3a) based on the sediments and fossils known from the area (see Table 5).

Table 3. Paleontological Localities Near the Project Site
† indicates that the species is extinct

<table>
<thead>
<tr>
<th>Locality</th>
<th>Group</th>
<th>Common Name</th>
<th>Taxon</th>
<th>Depth; Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>LACM 7884</td>
<td>large mammal</td>
<td>yesterday’s camel</td>
<td>† Camelops hesternus</td>
<td>4’ deep; McLeod 2015</td>
</tr>
<tr>
<td>LACM 7853</td>
<td>small mammals</td>
<td>Audobon’scottontail rabbit</td>
<td>Sylvilagus audobonni</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>wood rat</td>
<td>Neotoma sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>field mouse</td>
<td>Peromyscus sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>pocket gopher</td>
<td>Thomomys bottae</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>kangaroo rat</td>
<td>Dipodomys sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>pocket mouse</td>
<td>Perognathus sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>reptiles</td>
<td>western whiptail lizard</td>
<td>Aspidocelis tigris</td>
<td>3’ deep; McLeod 2015</td>
</tr>
<tr>
<td></td>
<td></td>
<td>desert iguana</td>
<td>Dipsosaurus dorsalis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>desert spiny lizard</td>
<td>Sceloporus magister</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>side blotched lizard</td>
<td>Uta stansburiana</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>desert night lizard</td>
<td>Xantusia vigilis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>skink</td>
<td>Plestiodon sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>whip snake</td>
<td>Masticophis sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>leaf-nosed snake</td>
<td>Phyllorhynchus sp.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>western lyre snake</td>
<td>Trimorphodon biscutatus</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>fish</td>
<td>Osmeridae</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Potential Fossil Yield Classification Rankings

<table>
<thead>
<tr>
<th>PFYC Rank</th>
<th>PFYC Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Very Low. The occurrence of significant fossils is non-existent or extremely rare. Includes igneous or metamorphic and Precambrian or older rocks. Assessment or mitigation of paleontological resources is usually unnecessary.</td>
</tr>
<tr>
<td>2</td>
<td>Low. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils. Includes rock units too young to produce fossils, sediments with significant physical and chemical changes (e.g., diagenetic alteration) and having few to no fossils known. Assessment or mitigation of paleontological resources is not likely to be necessary.</td>
</tr>
<tr>
<td>3b</td>
<td>Potentially Moderate but Undemonstrated Potential. Units exhibit geologic features and preservational conditions that suggest fossils could be present, but no vertebrate fossils or only common types of plant and invertebrate fossils are known. Surface-disturbing activities may require field assessment to determine appropriate course of action.</td>
</tr>
<tr>
<td>3a</td>
<td>Moderate Potential. Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered and of low abundance. Common invertebrate or plant fossils may be found. Surface-disturbing activities may require field assessment to determine appropriate course of action.</td>
</tr>
<tr>
<td>4</td>
<td>High. Geologic units containing a high occurrence of significant fossils. Fossils must be abundant per locality. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities.</td>
</tr>
<tr>
<td>5</td>
<td>Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. On-the-ground surveys prior to authorizing any surface disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities.</td>
</tr>
</tbody>
</table>
Table 5. Paleontological Sensitivity

<table>
<thead>
<tr>
<th>Potential Fossil Yield System Levels</th>
<th>5 very high</th>
<th>4 high</th>
<th>3a moderate; patchy</th>
<th>3b moderate; undemonstrated</th>
<th>2 low</th>
<th>1 very low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock Units</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holocene alluvium (Qa)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holocene dunes (Qe)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holocene alluvial fans (Qf)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger (Holocene to late Pleistocene) alluvium (Qya)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger (Holocene to late Pleistocene) alluvial fan (Qyfc, Qyfs)</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CULTURAL RESOURCES RECORDS SEARCH RESULTS

The records search indicates six prior studies included a portion of the API, while an additional 69 cultural resources investigations have been completed previously within a one-mile radius of the project area (see Table 6). Of these, 14 were completed within a 0.25-mile radius of the project area, 23 investigations were completed within a 0.5-mile radius of the project area, and 32 studies were undertaken between a 0.5-mile and 1-mile radius of the project area.

The results of these studies indicate there are twelve sites near or at the perimeter boundaries of the project site: the Antelope-Vincent No.1 220 kV transmission line, the Saugus-Del Sur 66 kV Transmission line, a section of a three wire domestic voltage Edison powerline, three historic farms/ranches, two remnants of historic buildings, two historic dirt roads, one historic two-track road, and one prehistoric isolate. Twenty-nine additional cultural resources were located within the one-mile search radius (see Table 7 for further descriptions). These include 13 resources within a 0.25 mile radius of the project site, 11 resources within a 0.5 mile radius of the project site, and five resources documented in a radius of between 0.5 and 1 mile of the project site. Of the 36 resources documented outside of the project site, one is a prehistoric site, three are prehistoric isolates, 25 are historic sites, five are historic isolates, and three are historic structures.
### Table 6. Previous Cultural Resources Studies within a One-Mile Radius

<table>
<thead>
<tr>
<th>Report No. (LAN-)</th>
<th>Year</th>
<th>Author</th>
<th>Report Title</th>
<th>Distance from PA</th>
<th>Project Site Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>2503</td>
<td>1990</td>
<td>Love, Bruce and William H. De Witt</td>
<td>Cultural Resources Evaluation for Lancaster EIR Group 7, Lancaster, Los Angeles County</td>
<td>In PA</td>
<td>Solar Generating Facility</td>
</tr>
<tr>
<td>2059</td>
<td>1990</td>
<td>Singer, Clay and John E. Atwood</td>
<td>Cultural Resources Survey and Impact Assessment for Six Properties in the City of Lancaster, Los Angeles County, California</td>
<td>1 mile</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>2987</td>
<td>1987</td>
<td>Woods, Clyde M, Andrew York, Rebecca apple, Tirso Gonzalez, Stephen Van Wormer, tom Demere, and James H. Cleland</td>
<td>Bicep Transmission Project Magunden to Vincent/Pardree alternative Corridor Study: Archaeology, Ethnology, History, and Paleontology Technical Reports (draft)</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>3137</td>
<td>1994</td>
<td>Whitley, David S. and Joseph M. Simon</td>
<td>Phase I Archaeological and Cultural Resources Assessment of a 40 Acres Parcel in Palmdale, Los Angeles County, California</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>3705</td>
<td>1969</td>
<td>Coleman, R.G., J. Jones, and T.F. King</td>
<td>An Archaeological Reconnaissance of Southern California Edison Company's Vincent Transmission, From Bakersfield to Glendale, California</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>6642</td>
<td>1994</td>
<td>Whitley, David S. and Tamara K. Whitley</td>
<td>Phase I Archaeological Survey and Cultural Resources Assessment of Tentative Tract 47771, Palmdale, Los Angeles, CA</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>6643</td>
<td>2002</td>
<td>Unknown</td>
<td>Draft Environmental Impact Report Sch No. 2000081119 Westview Estates, Lancaster, Los Angeles County</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>7291</td>
<td>2005</td>
<td>McKenna, Jeanette A.</td>
<td>Phase I Cultural Resources Investigations for Assessor Parcel Numbers 3219-024-020, 3203-001-003, and 3203-01-004, approximately 120 Acres in the City of Lancaster, Los Angeles County, California</td>
<td>1/4 mile</td>
<td>Solar Generating Facility; Proposed Gen Tie Route</td>
</tr>
<tr>
<td>8168</td>
<td>2007</td>
<td>Jordan, Stacey C.</td>
<td>Archaeological Survey Report for Southern California Edison Company Antelope-Bailey Reconductoring Project, Los Angeles County, California</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>8186</td>
<td>2004</td>
<td>Whitley, David S. and Joseph M. Simon</td>
<td>Phase I Archaeological Survey of Del Sur Ranch, Lancaster, Los Angeles County, California</td>
<td>In PA</td>
<td>Solar Generating Facility</td>
</tr>
<tr>
<td>8426</td>
<td>2007</td>
<td>Cooley, Tacheodore G.</td>
<td>Archaeological Survey Report for Southern California Edison Company Antelope-Quartz Hill No. 2 66kV Line Project, Los Angeles County, California (job#3196 0468)</td>
<td>1/4 mile</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>8935</td>
<td>2006</td>
<td>Sanka, Jennifer M.</td>
<td>Phase I Cultural Resources Assessment and Paleontological Records Review TTM 062762, Lancaster, Los Angeles County, California</td>
<td>1 mile</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>9393</td>
<td>2008</td>
<td>Parr, Robert E.</td>
<td>Archaeological Assessment of 21 Deteriorated Power Pole Poles on the Southern California Edison Godde, Lariat, Zappa, Stealth, Museum, Force, Petan, Yoda, and Hughes Lake 12kV Circuits, Los Angeles County, California</td>
<td>1 mile</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>9705</td>
<td>2007</td>
<td>Anonymous</td>
<td>Cultural Resources Inventory of the Southern California Edison Company Tehachapi Renewable Transmission Project, Kern, Los Angeles, and San Bernardino Counties, California, ARR #05-01-01046</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>9762</td>
<td>2008</td>
<td>Gust, Sheri and Stephen McCormick</td>
<td>Supplemental Archaeological Assessment to Pardree Segment 2 Tehachapi Renewable Transmission Line Relocation, Los Angeles County, California</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>9763</td>
<td>2008</td>
<td>Harper, Veronica</td>
<td>Supplemental Archaeological Assessment, Segment 3A of Tehachapi Renewable Transmission Project, Wreck Out 25-5 Variance, Los Angeles County, California</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>Report No. (LAN-#)</td>
<td>Year</td>
<td>Author</td>
<td>Report Title</td>
<td>Distance from PA</td>
<td>Project Site Component</td>
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<td>------</td>
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<td>------------------</td>
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<td>9792</td>
<td>2008</td>
<td>Harper, Veronica</td>
<td>Supplemental Archaeological Assessment Segment 3A of Tehachapi Renewable Transmission Project, Wreck Out 25-5 Variance, Los Angeles County, CA</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>10175</td>
<td>2009</td>
<td>Unknown</td>
<td>Confidential Cultural Resources Specialist Report for the Tehachapi Transmission Project</td>
<td>1/4 mile</td>
<td>Proposed Gen Tie Route</td>
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<td>10210</td>
<td>2006</td>
<td>Ahmet, Koral and Roger Mason</td>
<td>Cultural Resources Survey Report for the Antelope-Pardee 500-kV Transmission</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>10211</td>
<td>2009</td>
<td>Harper Veronica, Nancy Sikes</td>
<td>Supplemental Cultural and Paleontological Resources Assessment, Segment 9, Tehachapi Renewable Transmission Project, Variance for Antelope Substation Expansion and 66kV Relocation, Los Angeles County, California</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>10490</td>
<td>2010</td>
<td>Orfilia, Rebecca</td>
<td>Archaeological Survey for the Southern California Edison Company Replacement of Four Detreated Power Pole on the Roosevelt 12kV, Pronghorn 12kV, Hovey 12kV, and Hughes Lake 12kV Circuits Near Lancaster, Los Angeles County, California</td>
<td>1/4 mile</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>10493</td>
<td>2010</td>
<td>Orfilia, Rebecca</td>
<td>Archaeological Survey for the Southern California Edison Company: Replacement of Ten Deteriorated Power Poles on the Hughes Lake 12kV, Lloyd 12kV, Grubstake 12 kV, Pronghorn 12kV, Snowden kV, and Fairmont kV Circuits Near Lancaster, Los Angeles County</td>
<td>1/4 mile</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>10494</td>
<td>2010</td>
<td>Orfilia, Rebecca</td>
<td>Archaeological Survey for the Southern California Edison Company: Replacement of Six Deteriorated Power Poles on the Hovey 12kV, Hughes Lake 12kV, Lucerne 12kV, and Queensland 12kV Circuits, Near Lancaster, Los Angeles County, California</td>
<td>1/4 mile</td>
<td>Proposed Gen Tie Route</td>
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<td>10758</td>
<td>2010</td>
<td>Fulton, Phil</td>
<td>Cultural Resource Study of the EMT Upgrades Project for 32 Towers on the Midway-Vincent No.1, Midway-Vincent No.2, and Midway-Vincent 3 Transmission Lines in the Counties of Kern and Los Angeles, California</td>
<td>1 mile</td>
<td>Proposed Gen Tie Route</td>
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<td>10859</td>
<td>2007</td>
<td>Tinsley, W.</td>
<td>NRHP/CRHR Review, Southern California Edison Company Antelope Substation, Lancaster, California</td>
<td>1/4 mile</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>11061</td>
<td>2010</td>
<td>Case, Robert P.</td>
<td>Archaeological Survey Report for the Tuusso Energy Solar Photovoltaic Generation Facility Project, City of Lancaster, Los Angeles County, California</td>
<td>In PA</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>11168</td>
<td>2011</td>
<td>Parr, Robert</td>
<td>Cultural Resource Assessment for the Replacement of Twenty Southern California Edison Company Detreated Power Poles in Los Angeles and Kern Counties, California</td>
<td>1 mile</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>11455</td>
<td>2011</td>
<td>Orfilia, Rebecca</td>
<td>Archaeological Survey for the Southern California Edison Company: Thirty-nine (39) Deteriorated Power Poles Near Lancaster, Los Angeles County, California</td>
<td>1/4 mile</td>
<td>Solar Generating Facility</td>
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<tr>
<td>11824</td>
<td>2012</td>
<td>Romani, John</td>
<td>Phase I Cultural Resources Investigation for Approximately 1,200 Meter Long (3,937 feet) by 30 Meter Wide (98.4 feet) Corridor along 90th Street West, Lancaster, Los Angeles County, California</td>
<td>1 mile</td>
<td>Proposed Gen Tie Route</td>
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<tr>
<td>11849</td>
<td>2011</td>
<td>Tejada, Barbara</td>
<td>Cultural Resources Survey Letter Report for the Wire String Site Relocation at CT51 Variance Request, Segment 4, Tehachapi Renewable Transmission Project, Los Angeles County, California</td>
<td>1/2 mile</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>11976</td>
<td>2011</td>
<td>Dice, Michael and Kenneth Lord</td>
<td>Cultural Resources Survey of Silverado Powers Proposed Solar Panel Stations, with Paleontological Impact Recommendations Following CEQA Guidelines Final Version, with Addendum Study as Appendix G</td>
<td>1 mile</td>
<td>Proposed Gen Tie Route</td>
</tr>
<tr>
<td>11980</td>
<td>2010</td>
<td>Schneider, Tim and John Holson</td>
<td>Supplemental archaeological Survey Report #2, Tehachapi Renewable Transmission Project, Segment 4, Kern and Los Angeles Counties, California</td>
<td>1/4 mile</td>
<td>Solar Generating Facility</td>
</tr>
</tbody>
</table>
Table 7. Previously Recorded Cultural Resources within One-Mile Radius of the Project Area

<table>
<thead>
<tr>
<th>Primary No. (P-19-)</th>
<th>Trimonial (CA-LAN-)</th>
<th>Site Description</th>
<th>Date Recorded</th>
<th>USGS Quad</th>
<th>Proximity to Project Area</th>
<th>Site Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1579</td>
<td>1579H</td>
<td>Historic Del Sur Cemetery (1850)</td>
<td>1989</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>1612</td>
<td>1612H</td>
<td>Historic ranch with an early adobe.</td>
<td>1989</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>2541</td>
<td>2541H</td>
<td>Historic refuse, remnants of a building. The site is associated with farming activities.</td>
<td>2012</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>Primary No. (P-19-)</td>
<td>Trinomial (CA-LAN-)</td>
<td>Site Description</td>
<td>Date Recorded</td>
<td>USGS Quad</td>
<td>Proximity to Project Area</td>
<td>Site Type</td>
</tr>
<tr>
<td>--------------------</td>
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<td>------------------</td>
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<td>-----------</td>
<td>--------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>3119</td>
<td>3119H</td>
<td>Historic trash scatter (1914-1945)</td>
<td>2010</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>3122</td>
<td>3122H</td>
<td>Historic compound composed of five historical structure features, earthen mounds, and historic refuse</td>
<td>2010</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>3477</td>
<td>3477H</td>
<td>Historic Antelope Substation</td>
<td>2005</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic Structure</td>
</tr>
<tr>
<td>3479</td>
<td>3479H</td>
<td>Historic trash scatter and row of wood stakes dating to the 1950's</td>
<td>2005</td>
<td>Del Sur</td>
<td>Within 1 mile</td>
<td>Site; Historic Trash Scatter</td>
</tr>
<tr>
<td>3657</td>
<td>3657H</td>
<td>Historic farm (early 20th century) site with concrete foundations, earthen reservoirs, and irrigation/water conveyance features.</td>
<td>2006, 2010</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>3690</td>
<td>3690H</td>
<td>Historic water tower, concrete pad, and building debris.</td>
<td>2007, 2014</td>
<td>Del Sur</td>
<td>Within 1 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>3983</td>
<td>3983</td>
<td>Historic trash scatter</td>
<td>2009</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4223</td>
<td>4223</td>
<td>Historic water retention basin, remnant residential foundation and barn/outbuilding foundation, and historic trash scatter</td>
<td>2011, 2012</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4244</td>
<td>4244H</td>
<td>Historic can scatter</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4245</td>
<td>4245H</td>
<td>Historic graded dirt roads</td>
<td>2011, 2014</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4249</td>
<td>4249H</td>
<td>Historic graded dirt roads</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4250</td>
<td>4250H</td>
<td>Historic two-track road</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4251</td>
<td>4251H</td>
<td>Historic, asphalt-paved road</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4252</td>
<td>4252H</td>
<td>Historic, graded dirt road</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4253</td>
<td>4253H</td>
<td>Historic, graded dirt road</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4254</td>
<td>4254H</td>
<td>Historic, graded dirt road</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 1 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4272</td>
<td>4272H</td>
<td>Historic trash scatter</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4288</td>
<td>4288</td>
<td>Lithic scatter, groundstone</td>
<td>2012</td>
<td>Del Sur</td>
<td>Within 1 mile</td>
<td>Site; Prehistoric</td>
</tr>
<tr>
<td>4318</td>
<td>4318H</td>
<td>Historic trash deposit</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4463</td>
<td></td>
<td>Remains of a historic concrete/cobble building footing and historic trash scatter</td>
<td>2014</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4464</td>
<td></td>
<td>Historic well site and irrigation system</td>
<td>2014</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>Primary No. (P-19-)</td>
<td>Trinomial (CA-LAN-)</td>
<td>Site Description</td>
<td>Date Recorded</td>
<td>USGS Quad</td>
<td>Proximity to Project Area</td>
<td>Site Type</td>
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<tr>
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<td>-----------</td>
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<tr>
<td>4465</td>
<td></td>
<td>Historic concrete reservoir</td>
<td>2014</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>4466</td>
<td></td>
<td>Earthen reservoir, three concrete stand pipes, steel water tank, a small concrete foundation, and small concrete box</td>
<td>2014</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>100632</td>
<td></td>
<td>Edge modified chert scraper</td>
<td>2007</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Isolate; Prehistoric</td>
</tr>
<tr>
<td>100919</td>
<td></td>
<td>Historic, crushed steel rotary opened sanitary can</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Isolate; Historic</td>
</tr>
<tr>
<td>100920</td>
<td></td>
<td>Historic, crushed, church-key-opened beverage can</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Isolate; Historic</td>
</tr>
<tr>
<td>100925</td>
<td></td>
<td>Historic, crushed steel, church key beverage can</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Isolate; Historic</td>
</tr>
<tr>
<td>100926</td>
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<td>Historic, church-key-opened beverage can</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Isolate; Historic</td>
</tr>
<tr>
<td>100927</td>
<td></td>
<td>Two historic, crushed steel, church-key-opened beverage cans</td>
<td>2011</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Isolate; Historic</td>
</tr>
<tr>
<td>100975</td>
<td></td>
<td>Rhyolite biface, possibly a Cottonwood Leaf-shaped point</td>
<td>2012</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Isolate; Prehistoric</td>
</tr>
<tr>
<td>101209</td>
<td></td>
<td>Dark gray chert primary flake</td>
<td>2014</td>
<td>Del Sur</td>
<td>Within 1 mile</td>
<td>Isolate; Prehistoric</td>
</tr>
<tr>
<td>101213</td>
<td></td>
<td>Grayish-white chalcedony core fragment</td>
<td>2014</td>
<td>Del Sur</td>
<td>Within 0.5 mile</td>
<td>Isolate; Prehistoric</td>
</tr>
<tr>
<td>186876</td>
<td></td>
<td>The Antelope-Vincent No. 1 220kV Transmission Line is an 18.7 mile long linear arrangement of steel lattice transmission towers extending generally southward through the Angeles National Forest from the vicinity of SCE's Vincent Substation near Acton, to Pasadena.</td>
<td>2003, 2010, 2011, 2012, 2013</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>189425</td>
<td></td>
<td>0.62 mile segment of the Saugus-Del Sur 66 kV Transmission line, H frame and lattice steel towers.</td>
<td>2012</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
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<tr>
<td>189437</td>
<td></td>
<td>Historic, one story, single family house (1929)</td>
<td>2010</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>189928</td>
<td></td>
<td>Section of a 3 wire domestic voltage historic Edison powerline (1948)</td>
<td>2012</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
</tr>
<tr>
<td>190001</td>
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<td>Historic farm complex with single residence and outbuilding</td>
<td>2012</td>
<td>Del Sur</td>
<td>Within Project area</td>
<td>Site; Historic</td>
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<tr>
<td>190693</td>
<td></td>
<td>Pre-WWII Del Sur Substation and associated distribution lines operated by Southern California Edison. Includes wood H frames</td>
<td>2014</td>
<td>Del Sur</td>
<td>Within 0.25 mile</td>
<td>Site; Historic</td>
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Table 8. Other Resources Consulted

<table>
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<tr>
<th>Source</th>
<th>Results</th>
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<tbody>
<tr>
<td>National Register of Historic Places (NRHP)</td>
<td>Positive; P-19-186876, the Antelope-Vincent No. 1 220kV Transmission Line is within the Project area</td>
</tr>
<tr>
<td>Historic USGS Topographic Maps</td>
<td>Negative</td>
</tr>
<tr>
<td>Historic US Department of Agriculture Aerial Photographs</td>
<td>Negative</td>
</tr>
<tr>
<td>California Register of Historical Resources (CRHR; 1992-2014)</td>
<td>Negative</td>
</tr>
<tr>
<td>California Historical Resources Inventory (CHRI; 1976-2014)</td>
<td>Negative</td>
</tr>
<tr>
<td>California Historical Landmarks (CHL)</td>
<td>Negative</td>
</tr>
<tr>
<td>California Points of Historical Interest (CPHI)</td>
<td>Negative</td>
</tr>
<tr>
<td>Caltrans Historic Bridge Inventory (Caltrans 2014)</td>
<td>Negative</td>
</tr>
<tr>
<td>West Antelope Valley Historical Society</td>
<td>No response as of 3/22/2015</td>
</tr>
<tr>
<td>Antelope Valley Conservancy</td>
<td>No response as of 3/22/2015</td>
</tr>
</tbody>
</table>

NATIVE AMERICAN CONSULTATION

The NAHC responded on March 6, 2015 that a search of the Sacred Lands File failed to indicate the presence of Native American cultural resources within the immediate project site. The NAHC did recommend contacting three Native American individuals and/or tribes indigenous to the surrounding area (Appendix C). Cogstone mailed a letter to each contact on March 6, 2014 requesting any information on cultural resources in the area. Follow-up phone calls and/or emails were made/sent on March 16, 2015. No responses have been received as of the date of this report.

CULTURAL RESOURCES SURVEY RESULTS

Over all the weather conditions were clear with the temperature recorded at 81 degrees and winds recorded at 15 mph. A portion of the proposed survey area could not be accessed since it was fenced and currently being used by other projects (see Figure 5). Below, each survey area is discussed separately. As noted earlier, the survey results presented below address areas not previously surveyed by past projects. The majority of the proposed project site has been studied by previous surveys and as part of other projects; there is a lot of information for the project site and surrounding area with regard to cultural and paleontological resources, Therefore, the survey for the proposed project addressed areas not previously studied.

SURVEY AREA A

Surface visibility varied throughout the survey area; from 100% within the dirt road to 10% due to dense vegetation. The sediments covering the area were described as coarse sand with
granules and pebbles on the north. The south end was covered with fine wind-blown sand and contained a number of dirt mounds created by burrowing animals (see Figure 6). Modern trash and modern cow and medium mammal skeletal parts were visible throughout the area. Vegetation consisted of invasive grasses, fox tails, unspecified wildflowers, poppies, and mushrooms. No new cultural resources were identified within Survey area A.
Figure 5. Areas Surveyed
Previously Identified Cultural Resources

P-19-100632
P-19-100632 was previously identified as an isolated edge modified chert scraper. The scraper was not relocated during this survey (see Figure 7).
CONFIDENTIAL MAP

Figure 7. Cultural Resources Identified During Cultural Resources Survey
SURVEY AREA B

Surface visibility was similar to Survey Area A; from 100% within the dirt road to 10% due to dense vegetation. The sediments covering the area were described as coarse sand with granules and pebbles on the north. The south end was covered with fine wind-blown sand and contained a number of dirt mounds created by burrowing animals (see Figure 8). Modern trash and modern cow and medium mammal skeletal parts were visible throughout the area. Vegetation consisted of invasive grasses, fox tails, unspecified wildflowers, poppies, and mushrooms. One prehistoric isolate (2015HAD0321.1) was identified within Survey Area B.

![Figure 8. Overview of Survey Area B Showing Small Dirt Mounds, Facing Southeast](image)

Newly Identified Cultural Resources

2015HAD0321.1
One chalcedony core measuring 3.5 cm x 3.4 cm x 3.1 cm was identified (see Figure 9). No other artifacts were identified in proximity to this artifact. This may represent a true isolate in that it is not associated with any other temporally similar artifacts, or it could be a remnant of prehistoric resources that had been previously identified in proximity to the project area but effectively destroyed by agricultural activities. Given the level of historic and modern disturbance to the area, it likely is not possible to determine the origin of this resource or how it was partially destroyed.
SURVEY AREA C

Area C was a .8 km (.5 mi.) long and a 30 m. (100 ft.) wide corridor centered on the existing distribution line. The sediments covering the area were described as coarse sand with granules and pebbles (see Figure 10). Surface visibility varied throughout the survey area; from 100% within the dirt road to 0% due to dense vegetation. Modern debris was observed including: ceramics, rusted barbed wire, office chairs, mattresses as well as cow skeletal parts. Vegetation consisted of invasive grasses, fox tails, unspecified wildflowers, poppies, and mushrooms. An approximately 1.5 m. wide irrigation ditch runs along the whole length of the south side of Survey Area C. A 111 meter long and 1 meter wide irrigation ditch was located on the north side starting from 110th Street West heading to the east. One previously identified historical resource was relocated and one new prehistoric isolate was identified.

Previously Identified Cultural Resources

P-19-189928
This historic resource is located along West Avenue H (see Figure 10). The resource was recorded by Michael Brandman Associates in 2010 (Dice 2010) and updated by BCR Consultants in 2014 (Brunzell 2014a). The resource consists of a portion of the electrical system related to the pre-World War II Del Sur Substation (P-19-190693) and associated distribution lines, operated by Southern California Edison. The substation acts as a distribution load center for the Saugus-Del Sur 66kV Transmission line, which connects to the Antelope Substation. The Del Sur substation distributes power via the 12kV Lloyd Distribution line along the east side of 90th Street West to the north of the substation, and via the 12kV Pronghorn Distribution line along the east side of 90th Street West to the south. The substation contains modern transformer equipment and a control building, which have been substantially altered since the station’s original construction (ca. 1930s). The associated Lloyd and Pronghorn distribution lines each
contain H-frame wood towers, many of which have been recently constructed or substantially altered. The wooden towers contained inspection tags which indicate approximate dates of inspection. The oldest inspection tag from the Lloyd line was from 1945, and the oldest from the Pronghorn line was also from 1945. The inspection tags certainly occurred sometime after the original construction, which indicates that both the Lloyd and the Pronghorn lines were probably constructed concurrently with the Del Sur Substation, prior to WWII. The section in the project site consists of 3-wire domestic voltage power lines constructed by Edison in 1948 during their rural electrification period. Individual poles are spaced about 325 feet apart. These original 40-foot poles were treated with creosote and protected in a few instances by a ground-based steel shroud. The line brought power to rural homes and wells along West Avenue H.

This site was relocated by Cogstone during the survey. The resource was found to extend westward to 110th Street West following results of the survey. A site update form will be prepared (see Appendix D).

Figure 10. Overview of Survey Area C, P-19-189928 to the Right, Facing East
Newly Identified Cultural Resources

**2015CMB3021.4**

One brown chert flake with retouching was observed on the ground surface, within the dirt road that runs parallel to the distribution line. It is located to the northeast of Southern California Edison (SCE) power pole #1295275E (see Figure 11). No other artifacts were identified in proximity to this artifact. This may represent a true isolate in that it is not associated with any other temporally similar artifacts, or it could be a remnant of prehistoric resources that had been previously identified in proximity to the project area but effectively destroyed by agricultural activities. Given the level of historic and modern disturbance to the area, it likely not possible to determine which is the case. The artifact was relocated approximately 15 meters north, outside of the Project area.

![Figure 11. Isolate 2015CMB3021.4 Brown Chert Flake with Retouching, Ventral View. Photo # 2015DRM0321.44](image)

**SURVEY AREA D**

**Previously Identified Cultural Resources**

**CA-LAN-1612H**

This historic resource was first recorded in 1989 by Pyramid Archaeology (Lillard, S. and R. Norwood 1989) who described the resource as containing old adobe structures and additions, carport/workshop, reservoir, pump and water tank, horse barn, stalls and pens, bunkhouse, exercise track, haybarn, and pastures.

This site was not relocated by Cogstone during the survey since the site had been developed as a solar field. No update to the site records will be necessary at this time.
CA-LAN-3657H
This historic resource was recorded in 2006 by Michael Brandman Associates (Sanka 2006), and updated by both ICF International (Shaver 2010a) and Hudlow Cultural Resource Associates in 2010 (Hudlow 2010a). The site is comprised of the remnants of a water control system. The central features of this site are standpipes associated with water conveyance, wells, and detention basins. Five east-west rows of standpipes were noted, as well as a series of wells to the north of an unnamed east-west dirt road. There are also several areas enclosed by berms that served as water retention basins.

Feature 1 is located at the intersection of 100th Street West and Avenue H and consists of a large, hand-hewn water retention basin, lined along the northern and northwestern edges by a wall. The wall was approximately 5-6 courses (stacked layers) tall and comprised of various sizes of local rock, concrete chunks, and fragments of standpipes. This small wall likely served to reinforce the sides of the basin. A small concrete trough is located to the northwest, and a concrete pad is situated directly north of the retention basin, directly south of Avenue H. This feature is likely related to agricultural practices in the area and to control water. Review of the Bouquet Reservoir, California 15-minute topographic quadrangle (1958) shows three structures at this location. Structural remains may have been used to construct the north and northwestern wall of the retention basin.

Feature 2 consists of five rows of east-west standpipes. Each row varied in number of intact pipes, and more may have existed in the recent past. The majority of the observed standpipes were situated individually; however, one larger grouping of standpipes was noted to the north of the unnamed east-west dirt road. A refuse dump was located to the north of the grouping of standpipes and the dirt road. This scatter included modern deposits, such as: chunks of concrete, wooden drawers, lawnmowers, and plastic. Several cans were noted, but the cans were in poor condition and non-diagnostic styles. This material was deposited in an area bordered by berms that may have served as a water retention basin.

This site was not relocated by Cogstone during the survey since the site had been developed as a solar field. No update to the site records will be necessary at this time.

Survey Area E

Only 257.90 acres of Survey Area E were surveyed because 38.14 acres were inaccessible due to use by other solar projects in the area (see Figures 5 & 12). Visibility was 0-10%. No new cultural resources were identified and one previously recorded historic site was relocated (CA-LAN-4245H).
Previously Identified Cultural Resources

CA-LAN-4245H
This historic site is located at the north side of Avenue J, between 100th and 110th Streets West (see Figures 14 & 15). This site was first recorded in 2011 by Statistical Research, Inc. (Stanton 2011a) and updated by BCR Consulting (Leonard 2014a). This historic site consists of two parallel graded-earth driveways. The driveways provide access to a cluster of historic period homes located several hundred meters north of Avenue J. Only 330-foot segments of these original driveways fell within the specific project area at the time they were recorded. The roads were generally well maintained with site disturbances limited to normal wear and tear from traffic.

This site was relocated by Cogstone during the current survey. No significant changes in condition of the roads as originally recorded were noted, except for the removal of the metal chain-link gates that straddled the road. The site record will be updated to include the historic structures located to the north of the roads. Based on conversations with the Larry Berger,
caretaker for the current owner, the farm house and various outbuildings were built in the 1930. Examples of two of these buildings are included (see Figures 14 and 15), with additional information included in the site update form (see Appendix D). One building, possibly the farm house, is visible on the 1937 Lake, CA USGS 7.5 Topographic map (see Figure 13). Many of the buildings are in extreme deterioration, with a few that have completely collapsed. The site was not formally evaluated during this survey. Historical significance and resource eligibility will need to be determined.

Figure 13. CA-LAN-4245 on 1937 7.5’ Lake Topographic Quadrangle
Figure 14. Overview of Farm House Associated with CA-LAN-4245H, Facing East

Figure 15. Guest House and Silo Foundation Associated with CA-LAN-4245H, Facing Northwest
Portions of this historic resource run through the southern half of the project area. The resource was recorded in 2003 by Compass Rose (Schmidt and Schmidt 2003), updated in 2006 by ECORP (Ahmet 2006), in 2010 by Pacific Legacy (Holm 2010) and again by Urbana Preservation and Planning in 2011 (Tinsley Becker 2011a). The resource consists of an approximately 18.7 mile long linear arrangement of steel lattice transmission towers extending generally southward through the Angeles National Forest from the vicinity of SCE’s Vincent Substation near Acton to Pasadena. The corridor is serviced by a series of Forest Roads that have recently been recorded and can be accessed from various intersections with Aliso Canyon Road, Mount Gleason Road, Big Tujunga Canyon Road, the Angeles Forest Highway, and the Angeles Crest Highway.

In general the corridor follows the ridges east of Gleason Canyon southward across the shoulder of Mount Gleason to follow the ridges above the North Fork, Mill, and Fall Creek drainages into Big Tujunga Canyon. From Big Tujunga the line crosses the Clear Creek drainage, the Angeles Crest Highway, and Dark Canyon to follow the western ridge above the Arroya Seco into the Pasadena area.

The earliest extant Edison transmission lines crossing the Angeles National Forest are the modern-looking lattice steel Big Creek lines, the first two of which passed from the San Joaquin Valley over the Tehachapi Mountains to Eagle Rock Substation near Pasadena, generally following Interstate 5. A third Big Creek line was constructed between 1925 and 1927, but its route diverged from the first two lines at Magunden Substation near Bakersfield, taking an easterly tack through Antelope Valley and crossing over the San Gabriel Mountains from eastern Soledad Canyon to Pasadena. The Eagle Rock-Pardee 230kV transmission line is a remnant of that third Big Creek line that was reconstructed or modified in 1974.

This site was relocated by Cogstone during the survey. No significant changes in the assemblage of cultural materials or condition of the site were noted. No update to the site records will be necessary at this time.

A portion of this historic resource runs through the southern half of the project area. The resource was recorded in 2010 by ICF International (Shaver 2010b), in 2011 by Statistical Research, Inc. (Stanton 2011c), in Urbana Preservation and Planning (Tinsley Becker 2011b), in 2012 by Rincon Consultants (Hunt 2012), and again in 2014 by BCR Consulting (Leonard 2014d). The resource consists of portions of a 66kV overhead transmission line that is first depicted on the 1934 Esperanza School 7.4’ series USGS quadrangle. On the 1934 quad, the transmission line departs the Del Sur Substation in a southwesterly direction (209º) and proceeds over the northern end of the San Gabriel Mountains. In 1952, the Antelope Substation (P-19-
003477) was built and the line altered and rerouted to the Antelope Substation 0.4 miles to the southeast. The remaining portion that crosses the San Gabriel Mountains remains intact and also enters the Antelope Substation following a parallel route.

The towers used in the original line include both H-frame wood and lattice steel, are common and do not represent technological advancements nor are they the last of their kind. As noted by Tinsley (2007), after exhaustive research, no important person or event has been associated with the engineering or construction of the Saugus-Del Sur 66kV Transmission Line. The resource does not hold the potential to yield additional information important to the understanding of local history, nor does it retain significant integrity as the seminal structure linking these substations. This site was relocated by Cogstone during the survey. No significant changes in the assemblage of cultural materials or condition of the site were noted. No update to the site records will be necessary at this time.

**P-19-100919**
This historic resource is located approximately 30 m north of Avenue J and 930 m east of 110th Street West. The resource was recorded in 2011 by Statistical Research, Inc. (Stanton 2011c), and updated by BCR Consulting in 2014 (Leonard 2014b). This resource comprises an isolated historic period crushed steel sanitary can with rotary opening marks. The sides of the can were reported as being smooth.

This site was not relocated by Cogstone during the survey. The site record will be updated to state that it was not relocated during the current survey.

**Newly Identified Cultural Resources**

**2015HAD0321.02**
Isolate 2015HAD0321.03 was identified as a piece of reddish brown chert shatter measuring 6 cm x 2.5 cm x 2.5 cm. Platform was visible. No photo was taken. No other information is available.

**2015HAD0321.03**
Isolate 2015HAD0321.03 is a smashed rusted beverage cone-top can (see Figure 16). First manufactured by the Continental Can Company in 1935, cone-top cans were used until the late 1950’s (Maxwell 1993). A more precise type and date for 2015HAD0321.03 could not be determined because of its smashed state. No other artifacts were identified in proximity to this artifact.
Survey Area F
Survey Area F was located on both sides of West Avenue J. Visibility was 0-100% and highly disturbed by road construction and electrical line installation. The survey corridor was truncated by the paved road and private property fences. No new cultural resources were identified and one previously recorded cultural resource was relocated.

Previously Identified Cultural Resources

P-19-004463
This historic resource is located northwest of the intersection between Avenue J and 90th Street West. The site was recorded by BCR Consulting (Leonard 2014c). This resource consists of a small portion of a concrete/cobble building footing accompanied by a historic period refuse scatter. The building footing is six inches wide and four feet long. The refuse included 30+ sun-colored amethyst glass bottle fragments, 50+ brown glass bottle fragments, 15+ aqua glass bottle fragments, two brown glass bottle finishes (screw-top with seam through the finish), 150+ sanitary cans (non-diagnostic), and 15+ non-diagnostic ceramic and porcelain fragments. One brown bottle base was embossed with “Federal Law Prohibits Sale or Reuse of this Bottle.” Temporally diagnostic items include sun-colored amethyst glass (manufactured 1880-1916; Rock 1990:17), seam-through finish bottle fragments (after 1903; Rock 1990:9), and the federal prohibition label (common between 1932 and 1964; Rock 1990).
The resource is in poor condition and is located in sandy silt surrounded by Russian thistle and seasonal grasses. The artifacts are scatter over any area approximately 60 feet by 33 feet in an east-west orientation. Disturbances include mechanical excavation, erosion, and vegetation growth. The ages of the items in the deposit differ considerably, and in combination with the extent of disturbance possibly indicate that multiple historic deposits have been consolidated into a single secondary refuse deposit. The number of dumping episodes cannot be determined by discrete depositional areas within the scatter, or other artifact associations.

This site was relocated by Cogstone during the survey. No significant changes in the assemblage of cultural materials or condition of the site were noted. No update to the site records will be necessary at this time.

**CONCLUSIONS AND RECOMMENDATIONS**

**PALEONTOLOGICAL RESOURCES**

No fossils are known within the project site nor within a one-mile radius of the project site. The Holocene deposits are assigned a low potential as they are too young to contain fossils. However they do cover Pleistocene sediments that may contain fossils. The fine-grained nature of the Holocene to late Pleistocene alluvial fan deposits near Lake Thompson increases the potential for fossil preservation. As such these sediments are assigned a moderate and patchy potential (3a) based on the sediments and fossils known from the area. No paleontological monitoring is recommended unless excavation below five feet encounters Pleistocene sediments.

**CULTURAL RESOURCES**

Six sites and six isolates are near or at the perimeter boundaries of the project site (see Table 9). None of the six historic period resources have been evaluated for eligibility for the California Register of Historical Resources. It is recommended that impacts to these resources be avoided. If impacts are unavoidable, testing to determine eligibility should occur. Six isolates (4 prehistoric and 2 historic isolates) were identified; isolates are not eligible for listing on the California Register of Historical Resources and need no further consideration.

In the event that cultural resources are encountered during earth disturbing activities, all work must halt at that location until the resources can be properly evaluated by a qualified professional. Further, if human remains are unearthed during excavation, state law requires all work halt immediately and the county coroner be notified.
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<th>P Number (19-)</th>
<th>Trinomial (CA-LAN-)</th>
<th>Temporary Number</th>
<th>Description</th>
<th>Site Type</th>
<th>Management Recommendation</th>
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<td>Small portion of a concrete/cobble building footing accompanied by a historic period refuse scatter</td>
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<td>Unevaluated; avoid impacts</td>
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<td>Unevaluated; avoid impacts</td>
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<td></td>
<td>The Eagle Rock-Pardee 230kV Transmission Line (remnant of that third Big Creek Transmission Line).</td>
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<td>Cone-top beverage can</td>
<td>Isolate; Historic</td>
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United States Geological Survey (USGS)

University of California Museum of Paleontology

Wagner, D. L.

Warren, C. N.

Warren, C. N. and R. H. Crabtree

APPENDIX A. QUALIFICATIONS
EDUCATION
1994 M. S., Anatomy (Evolutionary Morphology), University of Southern California, Los Angeles
1979 B. S., Anthropology (Physical), University of California, Davis

SUMMARY QUALIFICATIONS
Gust is a Registered Professional Archaeologist and Qualified Professional Paleontologist with 35 years of experience in California. She holds California statewide BLM cultural and paleontology permits. She meets national standards in archaeology set by the Secretary of Interior. She is accepted as a principal investigator for both prehistoric and historical archaeology by the State Office of Historic Preservation’s Information Centers. Her expertise includes historical archaeology of California (statewide) and prehistoric archaeology in central and southern California. Tasks personally performed include research, record searches, survey, assessment of impacts/effects, application of NRHP/CRHR significance criteria and archaeological site evaluation, management plans, mitigation implementation, research designs, treatment plans, human osteological identification and analysis, faunal identification and analysis and archaeological site damage assessments. She has special expertise in the identification and analysis of fossil and bone.

SELECTED PROJECTS
High Desert Corridor, Caltrans Districts 8 & 7, San Bernardino and Los Angeles Counties, CA. Prepared final cultural and paleontological documents for a proposed new 63 miles freeway and rail alignment from Apple Valley to Palmdale. These included the Archaeological Survey Report and Historic Resources Evaluation Report, both with site records, and the overarching Historic Properties Survey Report. A combined Paleontological Identification and Evaluation Report was also prepared. Project Manager and Principal Investigator. 2014

Cultural Resources Survey of 14, 316 acres and National Register Evaluation of Archaeology Site, GSA, Ft. Irwin, San Bernardino County, CA. Section 110 survey and site evaluations for cultural resources inventory of Ft. Irwin. Performed record searches, research design, survey, site records, site evaluations and prepared final report. Authored final report. Project Manager and Principal Investigator. 2012-13

Sweeney Granite Cove, University of California at Riverside, Barstow vicinity, San Bernardino County, CA. Archaeology and historic resources assessment of core field biology research station for an expansion project. Performed record searches, research, survey, evaluation and prepared final technical report. Co-authored final report. Project Manager and Principal Investigator. 2012-2013

Yucca Valley Cultural Resources, Yucca Valley, San Bernardino County, CA. Assessment of cultural and paleontological resources for general plan update EIR. Performed record searches, research, impact assessment and prepared final technical report including recommendations and mitigation measures. Co-authored report. Project Manager and Principal Investigator. 2011-2012

Falcon Ridge Substation, Southern California Edison, Fontana, San Bernardino County, CA. Assessed potential impacts for three alternative substation locations. Performed record searches, research, survey, site records, impact assessment and prepared final technical report including recommendations. Project Manager and Principal Investigator. 2012

Regional Recharge & Replenishment and Oro Grande Recharge & Replenishment, Mojave Water Agency/Bureau of Reclamation, Victorville to Apple Valley, San Bernardino County, CA. Cultural and paleontological resources assessment for two water facilities projects with partial federal funding. Performed record searches, Native American consultation, survey, site records, and final reports with management plans. Subsequently providing monitoring during construction and prepared final mitigation compliance report. Project Manager and Principal Investigator. 2010-2012
DESIREÉ RENÉE MARTINEZ  
Principal Archaeologist

**EDUCATION**

1999  M.A., Anthropology (Archaeology), Harvard University, Cambridge  
1995  B.A., Anthropology, University of Pennsylvania, Philadelphia

**SUMMARY QUALIFICATIONS**

Ms. Martinez is a qualified archaeologist with 20 years of experience in archaeological fieldwork, research, and curation. She has expertise in the planning, implementation, and completion of all phases of archaeological work and has participated in archaeological investigations as a crew member, tribal monitor, and principal researcher. She meets national standards in archaeology set by the Secretary of Interior’s *Standards and Guidelines for Archaeology and Historic Preservation*. Her experience also includes compliance with CEQA, NEPA, NAGPRA, SB 18 and other cultural resource laws. In addition, Ms. Martinez has vast experience in lab analysis and museum collections management. Ms. Martinez also has extensive experience consulting with Native American leaders and community members in a variety of contexts.

**SELECTED PROJECTS**

High Desert Corridor/ SR-138 Widening Project, Caltrans District 7 On-Call (07A3145)/LA Metro, Los Angeles and San Bernardino Counties, CA. This project proposed by Caltrans and Metro involves construction of a new, approximately 63-mile long, east-west freeway/expressway and rail line between SR-14 in Los Angeles County and SR-18 in San Bernardino County. Phase II/III testing and data recovery at the three sites that will be directly impacted by the project. Analyzed lithic material. Compliance with Section 106 of the NHPA and CEQA are required. Sub to Parsons Transportation Group. Principal Archaeologist. 2015-ongoing

Renewable Generation Interconnection Program, Southern California Edison, Monrovia, CA. Provided regulatory oversight and project management of cultural and paleontological resources for over 47 small capital and field engineering renewable power interconnection projects. Lead In-house Consultant Archaeologist. 2010-2015

Metropole Vault Replacements, Southern California Edison, Avalon, Catalina Island, Los Angeles County, CA. Archaeological monitoring and coordinating with Native American monitors during ground disturbing activities. The site is located within the boundaries of a Tongva tribal village. Facilitated recovery and reburial of remains discovered on-site. Managed negotiation with Most Likely Descendent regarding analysis permitted, processing of all materials and report. Created the lithics catalog, supervised laboratory analysis, performed and reviewed lithic analysis. Principal Investigator. 2014

Jasper Substation Project, Southern California Edison, Lucerne Valley, San Bernardino County, CA. Provided regulatory oversight and project management regarding cultural and paleontological resource management during project licensing and scoping. Identified potential impacts to cultural and paleontological resources, developed appropriate mitigation measures in preparation for, and projected alternative conclusions to project teams. Lead In-house Consultant Archaeologist. 2010-2013

1147 9th Street Project Residential Improvements, Mitigation Monitoring Plan, Data Recovery, and Monitoring, Los Osos, San Luis Obispo County, CA. Supervising archaeological and Native American mitigation monitoring and excavation during construction. Principal Investigator. 2015

580 Rosina, Los Osos, CA. Preparing cultural resources mitigation monitoring plan for a improvements to a residential property. Principal Investigator. 2015

Soboba Band of Luiseño Indians, San Jacinto, CA. Responsible for on-call daily monitoring for archaeological resources during construction activities, daily documentation and coordination with project team. Trained tribal monitors on the documentation of cultural resources using California Department of Parks and Recreation forms. Cultural Resources Monitor. 2009-2012
Kim Scott  
Field & Lab Director for Paleontology

**Educaton**

2013  M.S., Biology with a paleontology emphasis, California State University, San Bernardino  
2000  B.S., Geology with paleontology emphasis, University of California, Los Angeles

**Summary Qualifications**

Scott has more than 18 years of experience in California paleontology. She is a qualified geologist and field paleontologist with extensive survey, monitoring and fossil salvage experience. In addition, she has special skills in fossil preparation (cleaning and stabilization) and preparation of stratigraphic sections and other documentation for fossil localities. Scott serves as company safety officer and is the author of the company safety and paleontology manuals.

**Selected Projects**

**Los Angeles Metropolitan Transportation Authority, Purple Line Extension (Westside Subway), Exploratory Test Shaft, Los Angeles, CA.** Supervised paleontological field monitoring of exploratory test shaft activities in the La Brea Deposit area using ground penetrating radar. She recovered and processed over 500 fossils. Cogstone prepared a Paleontological Mitigation Plan (PMP) to provide guidelines for paleontological monitoring, fossil recovery and subsequent studies to offset adverse impacts to significant paleontological resources. Cogstone also prepared the Memorandum of Understanding (MOU) with Page Museum. The Federal Transit Administration (FTA) is the lead agency for the project. Sub to Parsons Brinckerhoff. Field and Laboratory Director. 2012-2014


**SR 41 Widening, Caltrans District 6, near Kettleman City.** Directed monitoring for widening and rehabilitating of an 8.5 mile segment of Highway 41 near Kettleman City. Supervised preparation of about 800 vertebrate, invertebrate and plant fossils recovered, prepared stratigraphic columns and contributed to report. Field / Lab Director and Report Co-author. 2012

**Geospatial Paleontology Database, Caltrans District 6, 9, and 10.** Conducted paleontological research for 15 counties in central and eastern California for paleontological screening tool. Paleontology Researcher. 2011-2012

**Devers-Mirage 115 KV System Split Project, Southern California Edison, Riverside County.** Performed preconstruction paleontological survey, directed paleontological monitoring during construction activities and co-authored monitoring compliance report associated with electrical systems upgrade in of Cathedral City, Indian Wells, Palm Desert, Palm Springs, Rancho Mirage, Thousand Palms and unincorporated Riverside County. Field and Lab Director and Report Co-author. 2011

**Eldorado-Ivanpah Transmission Line, Southern California Edison, Eldorado, NV to Ivanpah, CA.** Conducted paleontological survey and prepared assessment report for 71 miles of SCE electrical lines and associated telecommunications across both BLM and private lands. Field and Lab Director. 2010

**Tehachapi Renewable Transmission Project, Segments 1-3.** Paleontological resources management plans, paleontological monitoring, fossil recovery, lab work, multiple supplemental survey and variance reports for construction of new electrical transmission facilities in Los Angeles and Kern Counties. Paleontology Field and Lab Director. 2007-9
HOLLY DUKE
Archaeologist and Cross-trained Paleontologist

EDUCATION

2009    B.A., Archaeology/History, Simon Fraser University, Canada

SUMMARY QUALIFICATIONS
Ms. Duke is a qualified archaeologist and cross-trained paleontologist with experience in survey, monitoring, and identification of human and faunal skeletal remains. Laboratory experience includes cleaning and degreasing bones for inclusion in a faunal collection; measuring and cataloging lithic technology and pottery fragments; washing, sorting, and identifying seeds; fossil preparation and stabilization. She has set up spreadsheet databases to organize project site records. Duke has also been responsible for organizing, filing, scanning and archiving project records and daily reports.

SELECTED PROJECTS

Cascade Renewable Interconnection Project, Southern California Edison, Sunfair, San Bernardino County, CA.
Performed archaeological and paleontological monitoring during installation of new transmission poles. Archaeological/ Paleontological Monitor. 2013

Metropole Vault Replacements, Southern California Edison, Avalon, Catalina Island, Los Angeles County, CA.
Archaeological monitoring and coordinating with Native American monitors during ground disturbing activities of a 30,000 s.f. APE for replacement of two underground electrical vaults. The site is located in proximity to the original Tongva tribal village on the island. Archaeological/ Paleontological Monitor. Jan 2014-Sept 2014

Eldorado Ivanpah Transmission Line, Southern California Edison, Mountain Pass, CA to Boulder, NV. Created schedule look ahead to determine how many field technicians were needed for upcoming monitoring activities. The project involves construction monitoring during grading and excavation activities for the construction of electrical facilities and additional transmission capacity needed to interconnect and deliver up to 1,400 megawatts of new renewable generation (primarily solar) near the southern California-Nevada border. Archaeology Technician. Nov 2012

Big Rock 16kV Distribution Circuit Extension, Southern California Edison, Oat Mountain/Santa Susana Mountains, Chatsworth, Los Angeles County, CA. Performed records search and completed tables for report for a Phase I cultural resource survey of a 5-acre area for the proposed 16kV line extension on Oat Mountain, within the Santa Susana Mountains, north of the City of Chatsworth. Archaeology Technician. Feb 2013


Fort Irwin, U.S. Army National Training Center/GSA Region 9, San Bernardino County, CA. Class III Cultural Resources Inventory Survey and National Register Evaluation of Archaeology Sites. Supervising cultural resources inventory of 10,372 acres. Conducting survey, site recording and site evaluation to Section 106 standards. 2015. Archaeology Technician. Sept 2014-ongoing

High Desert Corridor/ SR 138 Widening Project, FHWA/Caltrans District 7, Los Angeles and San Bernardino Counties, CA. The project involves construction of a new, approximately 63-mile long, east-west freeway/expressway between SR 14 in Los Angeles County and SR 18 in San Bernardino County. Field pedestrian survey for Extended Phase I (XPI) Testing, subsurface testing of four archaeological sites in the Area of Potential Effects (APE), and lab work. Caltrans is the lead federal and state agency; compliance with Section 106 and CEQA required. Sub to Parsons Transportation Group. Archaeology Technician. 2014-2015
ANDRE-JUSTIN C. SIMMONS  
GIS Specialist, Archaeologist and Cross-trained Paleontologist

**EDUCATION**

2014       M.A., Anthropology: Specializing in Anthropological Archaeology, California State University, Fullerton  
2010       B.A., Anthropology and History, California State University, Fullerton, graduated cum laude  
2012       Certificate in Geographic Information Systems, California State University, Fullerton

**SUMMARY QUALIFICATIONS**

Mr. Simmons is a qualified archaeologist and cross-trained paleontologist with extensive field experience in survey, monitoring, faunal analysis, and excavation. He exceeds the qualifications required by the Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation. Further, he is certified in Geographic Information Systems (GIS) and specializes in ESRI’s ArcGIS software. Mr. Simmons is responsible for supervising GIS data collection and management, geospatial analysis, and the production of GIS maps and databases for large and small-scale projects. His key research interests include settlement patterns and use of space among Paleoindians, the American Southwest, early historic and prehistoric California, and historical Mexico. He has over six years of experience in California Archaeology and paleontological monitoring and over four years of GIS experience.

**SELECTED PROJECTS**

**Eldorado-Ivanpah Transmission Project, Southern California Edison, Eldorado, NV to Ivanpah, CA.** Performed paleontological monitoring for project that involves construction of 195 miles of new transmission lines and associated fiber optic lines across BLM and private lands. Paleontological Monitor. 2012-2013

**Paradise Valley Specific Plan, Riverside County, CA.** Prepared GIS maps for an assessment encompassing approximately 5,411 acres to determine the potential effects on paleontological, archaeological, and historical resources by the development of a resort community in an unincorporated area of Riverside County near Indio. GIS Technician. 2011

**Pioneer High School Project, Whittier, Los Angeles County, CA.** Conducted a cultural resources records search, prepared GIS maps, and authored a resources assessment report for a stadium improvement project. GIS & Archaeology Technician. 2013

**California High School Project, Whittier, Los Angeles County, CA.** Conducted a cultural resources records search, prepared GIS maps, and authored a resources assessment report for a stadium improvement project. GIS & Archaeology Technician. 2013

**Trabuco Canyon Project, Orange County.** Conducted a paleontological and cultural resources survey, prepared GIS maps, and authored portions of a resources assessment report for a 0.5 acre residential development project. GIS & Field Technician. 2012

**Washington Place Project, Culver City, Los Angeles County.** Conducted an archaeological survey and prepared GIS report maps as part of a cultural resources technical study for a proposed commercial space development project. GIS & Archaeology Technician. 2012

**Desert Restoration Archaeological Survey, Bodie Hills, Bureau of Land Management, Bishop Field Office, Mono County, CA.** Performed all GIS work, produced all maps and uploaded the GIS data to the BLM system for an intensive field survey of approximately 3,500 acres of BLM lands in the Bodie Hills region, near Bridgeport. The project involved recordation of over 40 new archaeological sites, updated conditions assessment of 17 previously recorded sites and provided initial NRHP eligibility recommendations to Principal Investigator. GIS Specialist. 2013–2014

**Fort Irwin, National Training Center, San Bernardino County, CA.** Prepared GIS maps of sites and artifacts recorded during an intensive 14,367 acre archaeological field survey on the Fort Irwin Training Center in the Mojave Desert. Prepared GIS survey coverage maps. Archaeology Field Technician. 2012-2013
EDUCATION
2014  M.A. Anthropology, California State University, Fullerton *cum laude*
2013  GIS Certificate, California State University, Fullerton
2006  B.A., Anthropology, University of California, Los Angeles *cum laude*

SUMMARY QUALIFICATIONS
Ms. Wilson is a Registered Professional Archaeologist and cross-trained paleontologist with experience in survey, excavation, and laboratory preparation/curation analysis. Her key research areas include prehistoric subsistence and settlement patterns of coastal southern California, protohistoric and historic archaeology of southern California and the Great Basin, and paleoenvironmental reconstructions based on archaeological flora and faunal analysis. She is GIS proficient and assists with the digitizing and mapping of spatial data for archaeology projects. Ms. Wilson has five years of experience in southern California archaeology and is an expert in prehistoric and historic Orange County archaeology and artifact identification.

SELECTED PROJECTS

Aliso Woods Wilderness Park
This Project consisted of entry way and trail improvement. Conducted spot checks for ground disturbing activities. 2014

Laguna Canyon Creek Erosion Control and Habitat Restoration, Laguna Beach, Orange County, CA. Conducted NAHC consultation and follow up. The project involved archeological and built-resources records search, Sacred Lands search, NAHC consultation, pedestrian survey and technical report to the City. NHPA Section 106 and USACE compliance. Sub to Michael Baker/RBF Consulting. Archaeologist. 2014

Agua Dulce Canyon Restoration Due Diligence, Mountains Recreation and Conservation Authority, Angeles National Forest, Los Angeles County, CA. Conducted records search for inclusion in the cultural resources due diligence report. Cogstone analyzed potential effects under section 106 of the NHPA regarding the proposed restoration areas. Archaeologist. 2014

Lopez Canyon Restoration Due Diligence, Mountains Recreation and Conservation Authority, Angeles National Forest, Los Angeles County, CA. Conducted records search for inclusion in the cultural resources due diligence report. Cogstone analyzed potential effects under section 106 of the NHPA regarding the proposed restoration areas in a 9-acre APE. Archaeologist. 2014

OC-44 Pipeline Rehabilitation/Replacement, Mesa Water District, Newport Beach, Orange County, CA. Conducted NAHC consultation follow-up and prepared the related section of the Phase I Cultural Resources Assessment report. Cogstone determined the potential for adverse effects to historic properties during rehabilitation and replacement of the pipeline beneath San Diego Creek. Cogstone conducted records search, Sacred Lands search, NAHC consultation, intensive-level pedestrian survey and GIS mapping of the ~15.75 APE with negative results. Sub to Michael Baker/RBF Consulting. Archaeologist. 2014

Marriott Springhill Suites Hotel, Huntington Beach, Orange County, CA. Conducted records search, sacred land search and NAHC consultation for inclusion in the initial assessment of cultural and paleontological resources constraints report. The proposed Project consists of construction of a four-story, 126 room hotel on a 1.98 acre site. Cogstone conducted a pedestrian survey and mapping. Sub to ACMC. Archaeologist. 2014
APPENDIX B. PALEONTOLOGY RECORD SEARCH
Cogstone Resource Management, Inc.
1518 West Taft Avenue
Orange, CA 92865-4157

Attn: Megan Wilson, Archaeologist and GIS Technician

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed Del Sur Solar Project, Cogstone Project # 3223, near Del Sur, Los Angeles County, project area

Dear Megan:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Del Sur Solar Project, Cogstone Project # 3223, near Del Sur, Los Angeles County, project area as outlined on the portion of the Del Sur USGS topographic quadrangle map that you sent to me via e-mail on 20 February 2015. We do not have any vertebrate fossil localities that lie directly within the project boundaries, but we do have localities nearby from the same sedimentary deposits that occur in the proposed project area.

The entire proposed project area has surface deposits that consist of younger Quaternary Alluvium, derived as alluvial fan deposits primarily from the Antelope Buttes area hills to the west. Typically, these deposits do not contain significant vertebrate fossils in the uppermost layers, but they may well contain significant fossil vertebrate remains at depth. Our closest vertebrate fossil locality from these deposits is LACM 7884, due east of the proposed project area on the north side of Lancaster, that produced a fossil specimen of camel, Camelops hesternus, from only four feet below the surface. Slightly farther to the east-southeast of the proposed project area, and north-northeast of locality LACM 7884 in Lancaster, but from only three feet deep in the younger quaternary deposits, our vertebrate fossil locality LACM 7853 produced fossil specimens of smelt, Osmeridae, western whiptail lizard, Aspidocelis tigris, desert...

Even shallow excavations in the younger Quaternary Alluvium exposed in the proposed project area may well uncover significant fossil vertebrate remains. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Because some of the nearby localities from similar sedimentary deposits have produced only very small fossils that would be missed in paleontological monitoring of typical construction projects, it is recommended that sediment samples be collected to determine the small vertebrate fossil potential in these rock units. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice
APPENDIX C. NATIVE AMERICAN CONSULTATION
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<tr>
<th><strong>COGSTONE SACRED SITES INFO REQUEST</strong></th>
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<tr>
<td><strong>DATE</strong></td>
<td>2/20/2015</td>
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<tr>
<td><strong>COGSTONE PROJECT NUMBER:</strong></td>
<td>3223</td>
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<tr>
<td><strong>COGSTONE PROJECT NAME:</strong></td>
<td>Del Sur Solar Project</td>
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**PROJECT DESCRIPTION:**
The proposed Project is located within the City of Lancaster in Los Angeles County, in an area known as the Antelope Valley. The proposed Project would consist of construction, operations and maintenance, and decommissioning. The Project would be constructed in phases and would operate for a period of 35 years. The Sustainable Power Group proposes the Del Sur Solar Project which will install and operate a utility scale Solar Generating Facility (SGF) that will generate solar electricity which will ultimately be delivered to the existing Southern California Edison (SCE) Antelope Substation.

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<tr>
<th><strong>USGS 7.5’ QUAD:</strong></th>
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<td><strong>COUNTY:</strong></td>
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| **ACRES:** | 141 |

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<th><strong>TYPE OF SEARCH:</strong></th>
<th>Sacred Lands</th>
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| **1:30,000 map attached** | √ |

Thank you.

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<th><strong>Please Mail to:</strong></th>
<th>Megan Wilson</th>
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<td>1518 W. Taft Ave.</td>
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<td></td>
<td>Orange, CA 92865</td>
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<td>(714) 974-8300 x108</td>
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<td></td>
<td>(714) 974-8303 fax</td>
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<td></td>
<td><a href="mailto:MWilson@cogstone.com">MWilson@cogstone.com</a></td>
</tr>
</tbody>
</table>
March 6, 2015

Megan Wilson
Cogstone
1518 W. Taft Ave.
Orange, CA 92865

Sent by Fax: (714) 974-8303
Number of Pages: 2

Re: Cogstone Project Number: 3223, Project Name, Del Sure Solar Project, Los Angeles County.

Dear Ms. Wilson,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file 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.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. 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 or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

[Signature]

Katy Sanchez
Associate Government Program Analyst
Native American Contact List
Los Angeles County
March 6, 2015

San Manuel Band of Mission Indians
Lynn Valbuena, Chairwoman
26569 Community Center Serrano
Highland, CA 92346
(909) 864-8933

(909) 864-3370 Fax

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall, CA 91322
P.O. Box 221838
Newhall, CA 91322
Fernandeño
Tataviam
Serrano
Tataviam
Serrano
Vanyume
Kitanemuk

(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax

tsen2u@hotmail.com

San Manuel Band of Mission Indians
Daniel McCarthy, M.S., Director-CRM Dept.
26569 Community Center Drive Serrano
Highland, CA 92346
dmccarthy@sanmanuel-nsn.gov
kmccarthy@sanmanuel-nsn.gov
(909) 864-8933 Ext 3248

(909) 862-5152 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5997.94 of the Public Resources Code and Section 5897.98 of the Public Resources Code.

This list is only applicable for contacting locative Americans with regard to cultural resources for the proposed Cogstone Project Number: 3223, Cogstone Project Name: Del Sur Solar Project, Los Angeles County.
March 6, 2015

AMENDED

Megan Wilson
Cogstone
1518 W. Taft Ave.
Orange, CA 92865

Sent by Fax: (714) 974-8303
Number of Pages: 2

Re: Cogstone Project Number: 3223, Project Name, Del Sur Solar Project, Los Angeles County.

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Sincerely,

Katy Sanchez
Associate Government Program Analyst
Native American Contact List
Los Angeles County
March 6, 2015

San Manuel Band of Mission Indians
Lynn Valbuena, Chairwoman
26569 Community Center Serrano
Highland, CA 92346
(909) 864-8933
(909) 864-3370 Fax

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838 Fernandeño
Newhall, CA 91322 Tataviam
tsen2u@hotmail.com Serrano
(661) 753-9833 Vanyume
(760) 885-0955 Kitanemuk
(760) 949-1604 Fax

San Manuel Band of Mission Indians
Daniel McCarthy, M.S., Director-CRM Dept.
26569 Community Center Drive Serrano
Highland, CA 92346
dmccarthy@sanmanuel-nsn.gov
(909) 864-8933 Ext 3248
(909) 862-5152 Fax

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.6 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.93 of the Public Resources Code.

This list is only applicable for contacting local Americans with regard to cultural resources for the proposed Cogstone Project Number: 3223, Cogstone Project Name: Del Sur Solar Project, Los Angeles County.

Received Time Mar. 10, 2015 10:31AM No. 1604
March 10, 2015

San Manuel Band of Mission Indians
Daniel McCarthy, M.S., Director-CRM Dept.
26569 Community Center
Highland, CA 92346

Re: Del Sur Solar Project (Cogstone No. 3223), City of Lancaster, Los Angeles County, California

Dear Mr. McCarthy,

The Sustainable Power Group proposes the Del Sur Solar Project, which will install and operate a utility scale Solar Generating Facility (SGF) that will generate solar electricity which will ultimately be delivered to the existing Southern California Edison (SCE) Antelope Substation. The Project would be constructed in phases and would operate for a period of 35 years. The Del Sur Solar Project is located within the City of Lancaster in Los Angeles County, in an area known as the Antelope Valley. The proposed Project would consist of construction, operations and maintenance, and decommissioning.

The Native American Heritage Commission (NAHC) was contacted on February 20, 2015 to conduct a Scared Lands File Search. The NAHC responded on January March 9, 2015 that they had no record of Native American Sacred Lands in the immediate vicinity of the Project Area. The NAHC provided a list of Native American individuals and organizations that may have knowledge of cultural resources within the project area and recommended that we contact you.

A record search of the Project Area and a one-mile radius was conducted at the SCCIC on February 24, 2015. The record search determined that there is one prehistoric isolate (an edge modified chert scraper) located within the Project Area (P.A.). Two prehistoric isolates are located within a half-mile radius and one prehistoric site and one prehistoric isolate are located within a one-mile radius of the P.A. The remaining 38 sites are historic resources.

We would appreciate your providing any comments, issues and/or concerns relating to cultural resources within the Project Area. All information provided regarding cultural and historic sites or other areas of concern will be confidential. Please contact me by phone (714-974-8300 x. 108), or email, mwilson@cogstone.com. Your response within two weeks of receipt of this letter will be appreciated. Thank you for your assistance.

Sincerely,

Megan Wilson, M.A., R.P.A
Archaeologist and GIS Technician
(714) 974-8300 x.108
MWilson@cogstone.com
March 10, 2015

San Manuel Band of Mission Indians
Lynn Valbuena
26569 Community Center
Highland, CA 92346

Re: Del Sur Solar Project (Cogstone No. 3223), City of Lancaster, Los Angeles County, California

Dear Ms. Valbuena,

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Sincerely,

Megan Wilson, M.A., R.P.A
Archaeologist and GIS Technician
(714) 974-8300 x.108
MWilson@cogstone.com
March 10, 2015

John Valenzuela, Chairperson  
San Fernando Band of Mission Indians  
P.O. Box 221838  
Newhall, CA 91322

Re: Del Sur Solar Project (Cogstone No. 3223), City of Lancaster, Los Angeles County, California

Dear Mr. Valenzuela,

The Sustainable Power Group proposes the Del Sur Solar Project, which will install and operate a utility scale Solar Generating Facility (SGF) that will generate solar electricity which will ultimately be delivered to the existing Southern California Edison (SCE) Antelope Substation. The Project would be constructed in phases and would operate for a period of 35 years. The Del Sur Solar Project is located within the City of Lancaster in Los Angeles County, in an area known as the Antelope Valley. The proposed Project would consist of construction, operations and maintenance, and decommissioning.

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We would appreciate your providing any comments, issues and/or concerns relating to cultural resources within the P.A. All information provided regarding cultural and historic sites or other areas of concern will be confidential. Please contact me by phone (714-974-8300 x. 108), or email, mwilson@cogstone.com. Your response within two weeks of receipt of this letter will be appreciated. Thank you for your assistance.

Sincerely,

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APPENDIX D. DPR FORMS

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