

**BEACON SOLAR ENERGY PROJECT (08-AFC-02)
CEC STAFF DATA REQUEST NUMBERS 30, 32 and 34**

Technical Area: Cultural Resources

Supplemental Response Date: October 23, 2008

Data Request 30:

To enable staff to complete its review of the project's potential to affect California Register-eligible prehistoric site components, please provide the results of the excavation program agreed to on February 28, 2008 (February 28, 2008 Report of Conversation, TN 46670).

Response:

An extension was requested for the preparation and submittal of the report containing the results of the excavation program. The completed Cultural Resources Evaluation Report containing these results is provided as Attachment DR-32. Note, the confidential appendices to this report have been provided under separate cover.

Two potentially eligible prehistoric sites (Site 6 and Site 54) that could be affected by the project will be avoided. Ten other potentially eligible prehistoric sites were assessed for significance. Five of these sites, Site 8, Site 9, Site 11, Site 12, and Site 13, are recommended eligible for the California Register of Historical Resources under Criterion 4. The remaining five sites, Site 10, Site 17, Site 18, Site 19, and Site 59, are recommended not eligible.

Data Request 32:

To enable staff to complete its review of the project's potential to affect California Register-eligible historic site components, please provide the results of the excavation program agreed upon on February 28, 2008.

Response:

As noted above, an extension was requested for the preparation and submittal of this report. The completed Cultural Resources Evaluation Report is provided as Attachment DR-32. Note, the confidential appendices to this report have been provided under separate cover.

Two potentially eligible historic sites (CA-KER-3366H and Site BSPL-H-2) that could be affected by the project will be avoided. Four other potentially eligible historic sites were assessed for significance. None of the four sites, CA-KER-5264H, Site 3, Site 16, and Site BSPL-H-1, are recommended eligible for the California Register of Historical Resources.

**BEACON SOLAR ENERGY PROJECT (08-AFC-02)
CEC STAFF DATA REQUEST NUMBERS 30, 32 and 34**

Technical Area: Cultural Resources

Supplemental Response Date: October 23, 2008

Data Request 34:

Please provide a discussion of the historical geomorphology of the project site to better evidence a consideration of the potential there for buried archaeological deposits. The discussion should describe the development of the alluvial landforms and the lake bed deposits on which the project area is proposed with a focus on the character of local depositional regimes since the Late Pleistocene era. The basis for the discussion should be data on the geomorphology, sedimentology, pedology, and stratigraphy of the project area or the near vicinity. The source of these data may be a combination, as necessary, of extant literature or primary field research.

Response:

The geomorphology study was previously provided in the supplemental responses submitted on August 18, 2008 (Attachment DR-34).

Attachment DR-34

Evaluation of Cultural Resources

**EVALUATION OF CULTURAL RESOURCES
FOR BEACON SOLAR ENERGY PROJECT
KERN COUNTY, CALIFORNIA**

Beacon Solar Energy Project Docket #08-AFC-02

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October 2008

Key Words: Kern County, Hearths, Trail, Lithic Scatter, Historic Debris, Scatter

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EXECUTIVE SUMMARY

Beacon Solar, LLC (Beacon) is proposing to construct a solar electric generating facility in the Fremont Valley, Kern County, California. In addition to the plant, linear facilities include a transmission line and a natural gas pipeline.

In accordance with California Energy Commission (CEC) guidelines an archaeological resources study was conducted for the project area and buffer areas. The field survey identified 59 sites, 18 of which are in areas that may be subject to ground disturbance associated with the Beacon Solar Energy Project (BSEP). This report addresses evaluation of the sites that could potentially be affected by BSEP and is intended to supplement the Archaeological Resources Report (Apple and Glenny 2008) that was provided in the Application for Certification.

Of the 18 sites potentially affected by BSEP, based on surface observations and documentation, six sites (CA-KER-5264H, Site 16, Site 17, Site 18, Site 19, and Site BSPL-H-1) are recommended not eligible for the California Register of Historical Resources (CRHR) and do not meet California Environmental Quality Act (CEQA) criteria for uniqueness. All of the sites are small archaeological resources that do not have significant associations and lack significant data potential.

The remaining 12 potentially eligible sites that could be affected by BSEP are CA-KER-3366H, Site 3, Site 6, Site 8, Site 9, Site 10, Site 11, Site 12, Site 13, Site 54, Site 59, and Site BSPL-H-2. Beacon has committed to avoiding CA-KER-3366H, Site 6, Site 54, and Site BSPL-H-2. The remaining eight sites were evaluated and results of the evaluation are documented in this report.

Based on discussions with CEC cultural resource staff, a testing program incorporating additional documentation, hand excavation, and mechanical trenching was carried out. Field work identified subsurface hearth features dating between 190 ± 40 before present (B.P.) and 880 ± 40 B.P. in conventional radiocarbon years. Based on these investigations Site 8, Site 9, Site 11, Site 12, and Site 13 are recommended eligible for the CRHR under Criterion 4 (Table ES-1). Subsequent to the evaluation program, Beacon has determined that Site 8 will be avoided. Site 3, Site 10, and Site 59 do not meet the criteria for the CRHR or CEQA criteria for uniqueness and are recommended not eligible.

**Table ES-1
Site Summary**

Site Designation	Site Type	Eligibility Recommendation
15-003366/CA-KER-3366H	Southern Pacific Railroad	Potentially eligible*
15-006415/CA-KER-5264H	Debris scatter	Not eligible
Site 3	Historic debris and lithic scatter	Not eligible
Site 6	Lithic scatter and historic debris	Potentially eligible*
Site 8	Fire-affected rock and lithic	Eligible*
Site 9	Fire-affected rock	Eligible
Site 10	Camp	Not eligible
Site 11	Fire-affected rock	Eligible
Site 12	Fire-affected rock	Eligible
Site 13	Fire-affected rock, groundstone, biface	Eligible
Site 16	Refuse scatter	Not eligible
Site 17	Lithic scatter	Not eligible
Site 18	Lithic scatter	Not eligible
Site 19	Lithic scatter	Not eligible
Site 54	Lithic scatter	Potentially eligible*
Site 59	Trail	Not eligible
Site BSPL-H-1	Debris scatter	Not eligible
Site BSPL-H-2	Foundation and refuse	Potentially eligible*

* BSEP will avoid

CHAPTER 1 INTRODUCTION

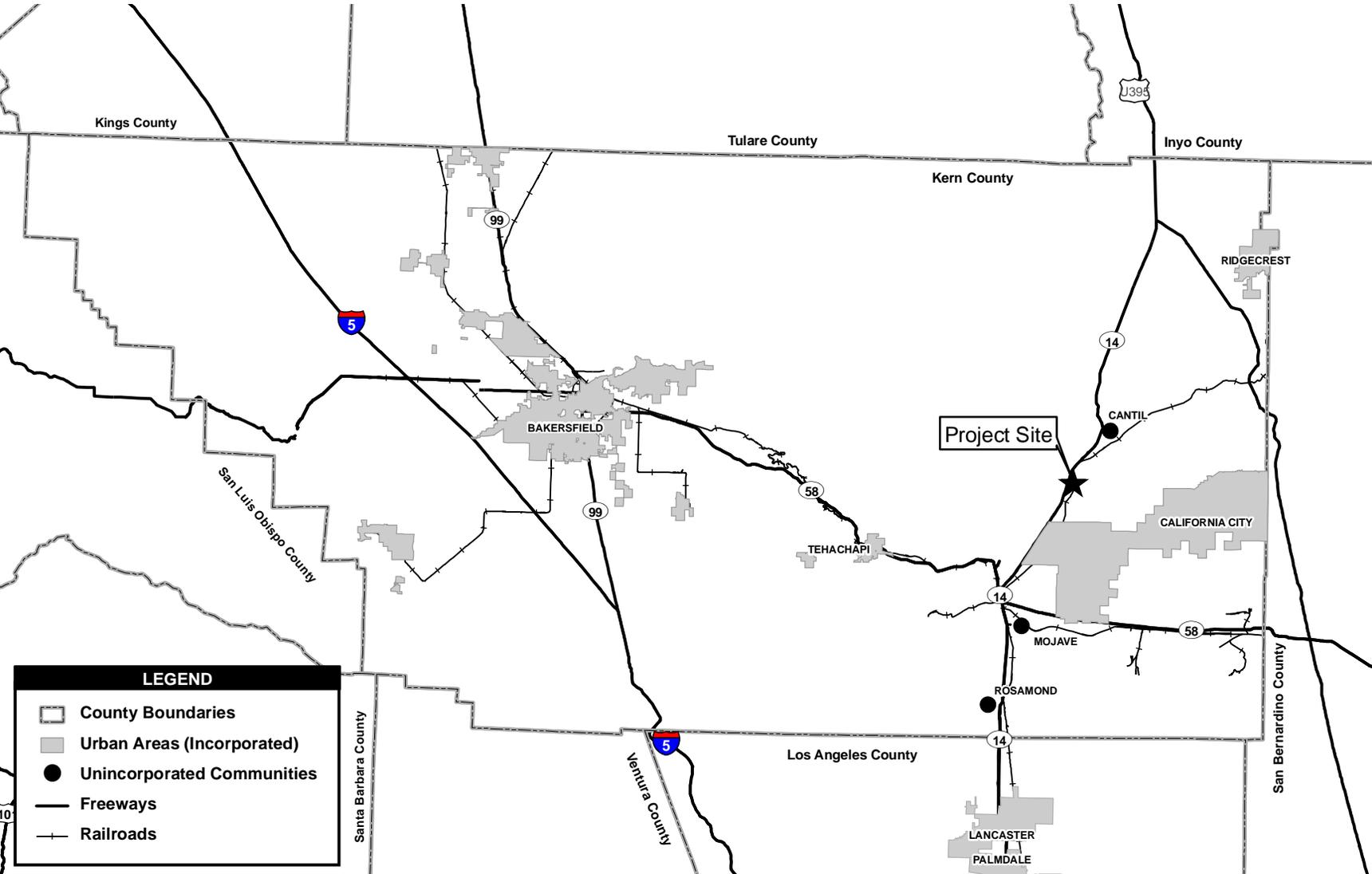
Beacon Solar, LLC, a Delaware limited liability company (herein “Beacon Solar” or “Applicant”), is proposing to construct, own and operate the Beacon Solar Energy Project (herein “BSEP” or “Project”). ENSR prepared an Application for Certification (AFC) for the California Energy Commission (CEC) for the Project. ENSR retained EDAW, Inc. (EDAW) to conduct cultural resources studies, including an archaeological survey in support of the AFC (Apple and Glenny, 2008). The evaluation program documented in this report was prepared in further support of the AFC.

PROJECT DESCRIPTION

The Project is a concentrated solar electric generating facility proposed on approximately 2,012 acres in Fremont Valley, Kern County, California (Figure 1 and Figure 2). Koehn Lake is located approximately 5 miles to the east-northeast and Red Rock Canyon State Park is located approximately 4 miles to the north. The BSEP plant site and its general environs are essentially undeveloped and have been significantly disturbed from past agricultural activities that occurred up to the early 1980s. There are several abandoned structures in a small developed area west of the plant site boundary and east of State Route 14 (SR 14) near the site access point from the highway. The site is relatively flat, with elevations ranging from approximately 2,220 feet above mean sea level (amsl) in the southwest to 2,025 feet amsl in the northeast. Pine Tree Creek, a dry desert wash, trends north-northeast to south-southwest through the center of the site. There is also a fault zone crossing the site from southwest to northwest resulting in up to a 10-foot step change in elevation across the fault zone.

The BSEP will use parabolic trough solar thermal technology to concentrate the sun’s energy on a linear receiver located at the center point of each parabolic solar subarray. Energy collected in the array is used to generate steam, driving a turbine which generates electricity. This solar array would be located east of the railroad tracks, which run parallel to and east of SR 14. The Project’s electrical generation facilities (i.e., solar array and power block) would be located on approximately 2,012 acres of private land.

Two options are under consideration for a short transmission line which will be constructed from the solar array across SR 14 to interconnect with the Los Angeles Department of Water and Power’s (LADWP) existing transmission system west of the site. Three evaporation ponds, used



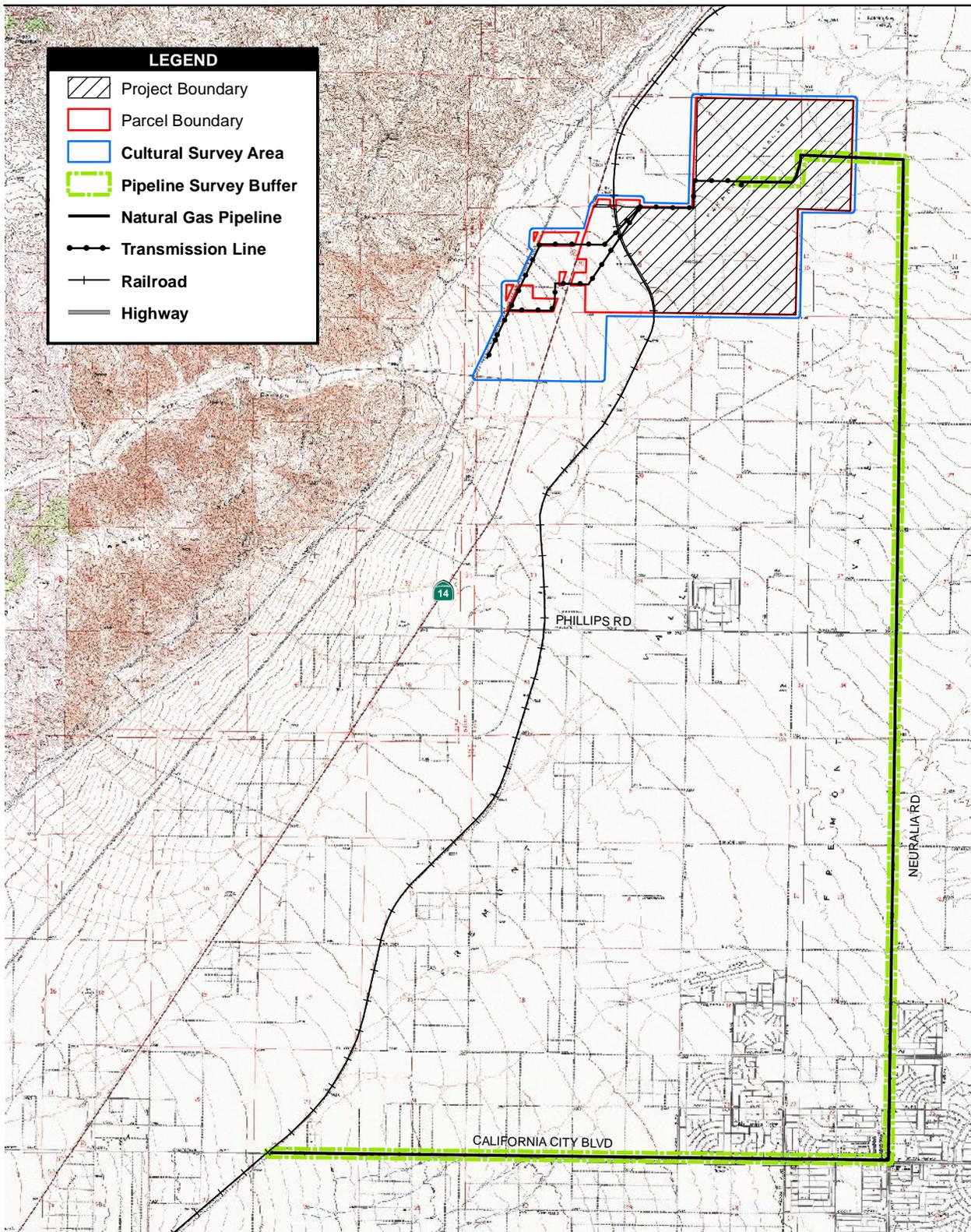
LEGEND

- County Boundaries
- Urban Areas (Incorporated)
- Unincorporated Communities
- Freeways
- Railroads

Source: ESRI 2007; Kern County 2007



Figure 1
Regional Setting



Source: California City North (1973), California City South (1973); Cantil (1973), Cinco (1994), and Mojave NE (1994), Sanborn (1973) Calif., USGS 7.5' Series Quadrangles

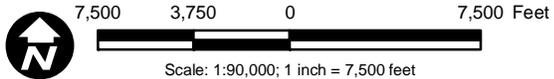


Figure 2
Project Area

Evaluation of Cultural Resources for Beacon Solar Energy Project Kern County, California

Path: P:\2008\08080001 FPLE Proj Beacon Solar\5GIS\MXD\Cultural\Figures\Archaeological Resources\Figure 2 Survey Area.mxd, 10/21/08, Sorensen/J

to manage the cooling tower blowdown stream, are planned within a highly disturbed portion of the survey area. A 17.6-mile, eight-inch natural gas line will be constructed, connecting an existing Southern California Gas pipeline west of California City with the Project, to provide fuel for startup and to provide freeze protection for the solar heat transfer fluid.

No other linear facilities are currently proposed for the Project. The Project intends to use ground water as its cooling water supply source and septic tanks for sanitary waste water disposal, which would eliminate the need for the installation of off-site water supply and sewer pipelines to the site.

REGULATORY SETTING

Numerous laws, ordinances, regulations, and standards (LORS), on Federal, State and local levels, seek to protect and target the management of cultural resources. The BSEP will comply with applicable LORS throughout construction and operation. CEC Siting Regulations provide direction for project environmental compliance and projects licensed by the CEC are reviewed for compliance with applicable laws. For this project, where there is no federal involvement, the applicable LORS are State and local. Applicable LORS are summarized in the survey report provided as Appendix G in the AFC (Apple and Glenny 2008).

All resources nominated for listing must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling and association. It must also be judged with reference to the particular criteria under which a resource is proposed for nomination.

PERSONNEL

Rebecca Apple MA, RPA served as Co-Principal Investigator with James H. Cleland, PhD, RPA. Wayne Glenny, MS directed the field work. Tiffany Contreras, Clare Fritz, and Collin Tuthill participated in the field work. Andrew York, MA, RPA provided senior review. Resumes of key personnel are provided in Attachment 1.

During Native American consultation for the project, tribal representatives expressed interest in monitoring the excavation activities. Jovan Mia of Seven Feathers monitored all ground disturbing activities associated with the archaeological investigations.

NATIVE AMERICAN PARTICIPATION

Consultation with local Native American groups and interested parties has been initiated. A letter was sent to the Native American Heritage Commission (NAHC) in October 2007, requesting information on sacred lands, traditional cultural properties and a list of Native American individuals and organizations that might have knowledge or concerns with cultural resources within the project area. At that time the NAHC files did not reveal any specific site information. Seven Native American representatives were identified by the NAHC. Letters were sent to these individuals, along with a project map, response form, and return envelope. The letter asked for their input and concerns. Copies of the correspondence are provided as Appendix G of the AFC (Apple and Glenny 2008:G.1, Attachment 3).

Follow up telephone calls were made to Native American representatives and are provided in Attachment 2 of this report. Based on discussions with John Valenzuela, Chairman of the San Fernando Band of Mission Indians, a monitor was identified. As discussed above, Jovan Mia of Seven Feathers monitored all ground disturbing activities related to the cultural resources investigations.

REPORT ORGANIZATION

Chapter 1 of this report provides a description of the proposed Project. Chapter 2 is a discussion of the physical and cultural setting. Next, a research design is provided in Chapter 3. Field and analytical methods and the results of fieldwork are summarized in Chapter 4. Chapter 5 includes site descriptions and evaluation results. Chapter 6 is a discussion of the results. Chapter 7 provides management recommendations. A copy of the report is also being sent to the Southern San Joaquin Valley Archaeological Information Center at California State University, Bakersfield as a permanent record.

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CHAPTER 2

ENVIRONMENTAL AND CULTURAL SETTING

An Environmental and Cultural Setting for BSEP was provided in the Archaeological Resources Report (Apple and Glenny 2008) submitted with the AFC. The following briefly summarizes key points. For more complete documentation readers are directed to the survey report (Apple and Glenny 2008).

ENVIRONMENTAL SETTING

The BSEP is located in the Fremont Valley of Kern County in the western portion of the Mojave Desert, California. The Mojave is situated between two major fault lines- the Garlock Fault to the north and the San Andreas Fault to the west. Mountain ranges are visible throughout the Mojave Desert and the floor is primarily alluvial fill eroded from the surrounding mountains (Schoenherr, 1992).

Physiology

Fremont Valley is bounded by the Rosamond Hills and Antelope Valley to the south, the southern Sierra Nevada and Tehachapi Mountains to the west, the El Paso Mountains to the north and the Rand Mountains to the east (Sutton, 1991). Fremont Valley itself is deeply-filled with alluvium that originates in the El Paso and Rand mountains (Sutton, 1991). Cajon loamy sand and Rosamond clay are the most widespread soils in the valley. These soil types are most prevalent in areas that have been impacted upon by agriculture (Sutton, 1991).

Hydrology

Fremont Valley is a closed basin that contains one playa, Koehn Lake (Sutton, 1991). Three major drainages flow into the lake; from the west, Cottonwood and Cache creeks, and a wash enters the lake from the east, draining the eastern Rand and El Paso mountains (Sutton, 1991). Although the importance of these drainages to prehistoric population groups is uncertain, known prehistoric habitation sites in the area are located near fairly large drainages, or next to the shoreline of Koehn Lake (Sutton, 1991). This seems to indicate that water availability would have had a significant influence in determining the location of prehistoric habitation sites.

Climate

Knowledge of the paleoenvironment is essential in understanding prehistoric human occupation patterns on the landscape. Climatic changes through time, influenced by temperature and moisture variations, would have determined the distribution and subsistence practices of these human populations. Evidence of paleoenvironmental change for the Great Basin, Mojave Desert and Sierra Nevada region has been well documented (Anderson, 1990; Anderson et al., 1985; Mehringer, 1986). Through these studies a general picture of environmental change has emerged for the last 10,000 years. Little evidence of human activity from the earlier time periods was encountered during the BSEP investigations, therefore the focus here is on more recent conditions.

The Late Holocene (ca. 3,000 B.P. to present), is characterized by moderately cooler and wetter conditions with punctuated periods of drought (Sutton et al., 2007). Evidence from the Great Basin suggests that there was much environmental variability; including periods of rapid and severe climatic change during the past 3,000 years (Grayson, 1993).

Today the Mojave is a warm temperature desert situated between the subtropical Sonoran Desert to the south and the cold temperature Great Basin to the north. The Mojave Desert is characterized by extreme variations in daily temperatures and more arid conditions than other American desert regions. Freezing temperatures occur during the winter, particularly in higher elevation regions. Summers tend to be hot, dry, and windy. Precipitation in the region is highly variable from one year to the next (ranging from 3 to 5 inches per year). Almost all precipitation arrives in the winter, but the region also experiences rare, intense summer thunderstorms. It is during these rare flood events that some of the most dramatic changes take place on the desert landscape.

Fremont Valley is within the rain shadow of the Sierra Nevada Mountains. The climate is semi-arid with low humidity. Temperatures have an extremely wide range with diurnal summer time temperatures from 120°F to diurnal winter temperatures of 0°F (Sutton, 1991). Rainfall is similar to that of Antelope Valley averaging about three inches per year on the valley floor (Stones, 1964).

Flora and Fauna

The Mojave has a typical mountain-and-basin topography with sparse vegetation. Although a large portion of the Project area is marked by creosote bush (*Larrea tridentate*) which is the dominant plant species of the Mojave Desert (Warren, 1984), extant vegetative resources are

characterized by moderate species diversity. Lower elevations are dominated by creosote bush, while higher elevations contain yuccas and agaves and then pinion-juniper habitats (Warren, 1984). Plant communities within proximity of springs, marshes and streambeds produce tules, cattail and various grass species (Warren, 1984).

Large fauna species are rare in the Mojave Desert. Rodents, reptiles and birds are more common and are found along the desert floor. Rodent species include various pocket mice (*Perognathus spp.*), whitetail antelope squirrel (*Ammospermophilus leucurus*), and kangaroo rats (*Dipodomys spp.*). Reptile species present include the desert tortoise (*Xerobates agassizii*), desert iguana (*Dipsosaurus dorsalis*), common king snake (*Lampropeltis getulus*) and the Mojave rattlesnake (*Crotalus scutulatus*). Other species found in the Mojave include the blacktail jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*) and the coyote (*Canis latrans*).

CULTURAL SETTING

Prehistory

Prehistoric human settlement patterns in the Mojave Desert have been influenced by environmental change. Major climatic periods influenced prehistoric spatial settlement patterns and resource exploitation. Archaeological investigations have indicated that although the area had limited prehistoric resources and surface water, the region supported a long and occasionally dense human population (Moseley and Smith, 1962). Archaeological remains tend to be widely scattered and sparse and are usually located along the margins of pluvial lakes (Warren, 1990; Willig, 1988). Although research in the Mojave has produced a wide array of cultural sequences, for the purpose of this report, a broad terminology is used to provide temporal context to the region. The sequence consists of the Paleoindian period, Pinto period, Gypsum period, and the Protohistoric period.

Paleoindian Period (12,000 to 7000 years B.P.). This period is the earliest documented evidence of human occupation in the Mojave Desert and has been referred to as the Western Pluvial Lakes Tradition (WPLT) (Sutton, 1991). The WPLT encompasses a broad geographic region from the western Great Basin to southern California and north to Oregon. Evidence suggests that Paleoindian period population groups were highly mobile, with settlement patterns that reflect a dependency upon lacustrine resources (Sutton 1991; Sutton et al., 2007; Warren, 1990).

Pinto Period (7000 to 4000 B.P.). A period of dramatic environmental change has been posited for the Pinto period. The environment changed from pluvial to arid conditions, rivers and lakes

dried up and animal and plant life changed. This period is seen by Warren (1984) as marking the beginnings of cultural adaptations to the desert. Desert humans either adapted to this change or relocated to areas with more favorable environmental conditions. This depopulation of the area seems evident in the small size of Pinto period sites, which are often limited to surface deposits. These ephemeral sites suggest temporary or seasonal occupations by small groups of people (Moratto, 1984), focusing on a forager like strategy (Sutton et al., 2007).

Gypsum Period (4000 to 1500B.P). The Gypsum period is marked by an increase in the number of archaeological components, and increased diversity in assemblage and site setting (York, 1995). Occupations in the Antelope Valley during this period are indicative of large permanent or seasonally occupied villages, with smaller seasonally based special purpose sites including rock rings, lithic scatters and milling stations (Sutton, 1980; Warren, 1986). The appearance of large village and special purpose sites in the Antelope Valley has been attributed by Warren (1986) to refined hunting methods and seed processing technologies that raised the regional carrying capacity and facilitated population growth.

Rose Spring Period (ca. 1500 to 1000 B.P.). Archaeological evidence for the Rose Spring period indicates a major population increase, changes in artifact assemblages, and well developed middens (Sutton, 1988). The introduction of small projectile points into assemblages in the Mojave Desert and the Great Basin, appear to mark the introduction of the bow and arrow and the decline of the atlatl and spear weaponry.

Protohistoric Period (1000 B.P to the time of European contact). There is an increase in the ethnic and linguistic complexity within the Mojave Desert during this period. Desert Side-notched points and Brownware ceramics become more widely distributed throughout the Mojave Desert and the Great Basin. This development, combined with linguistic evidence is associated with the Numic-speaking Paiute and Shoshone expansion throughout most of the area (Bettinger and Baumhoff, 1982).

Ethnohistory

The Kawaiisu occupied the southern Sierra Nevada south of the Kern River and into the northern Tehachapi Mountains. They also claimed a major portion of the western Mojave Desert, including the Fremont Valley during the ethnographic period (Sutton, 1991). Neighboring groups included the Tubatalubal to the north, the Southern Yokuts to the west and the Kitanemuk and Serrano groups to the south. The notion of distinct cultural boundaries was foreign to the Kawaiisu, and the overlapping of groups was customary (Zigmond, 1986). Interaction and

intertribal relations were peaceful and cooperative, with combined annual hunting expeditions for game drives being commonplace (Voegelin, 1938).

Historical Background

European and American exploration into the Fremont Valley began in the late 18th century. Later exploration into the valley included visits by John C. Fremont (Fremont, 1845).

European and American exploration into eastern California established trails and wagon roads utilized throughout the 19th century. Early trails were used in conjunction with mining, early commerce, and railroad development. Portions of the Owens River Road run through the Fremont Valley. The road was established as a result of intense prospecting taking place in the eastern California. Two stops along the Owens River Road are located in the Fremont Valley. The first is at Nadeau Springs, west of the town of Mojave. This was originally a wagon stop along the road between Los Angeles and the mines located at Inyo. Later the Southern Pacific Railroad established a stop north of Mojave called Nadeau station (Warren and Roske, 1981).

Mining had a significant influence on the development of the valley. The discovery of gold in California, including the mountains surrounding Fremont Valley, resulted in a large influx of Euroamericans into the region (Sutton, 1991). Early mining exploited borax and later efforts focused on potash (Wynn, 1963). Major mining districts were established in both the Rand and El Paso mountains (see Hall and Barker, 1975). The development of mining districts in the mountains surrounding the Mojave Desert contributed to the development of towns as stops along the roads running from the mining districts back to southern California. For instance, the 20-Mule Team Borax Road was one such road that crossed the valley (Wynn, 1963).

The next major development in the Fremont Valley is associated with the construction of the Southern Pacific Railroad. The construction of a rail line through the valley proved to be a boon for development. Construction of rail lines often corresponds to previously established trails and wagon roads. The town of Mojave was founded in 1876 and is directly connected to the construction of the railroad (Wynn, 1963).

Farming and agricultural demands as well as the demands for water in the city of Los Angeles necessitated the construction of an aqueduct. The Owens River was identified as the best source for Los Angeles' increasing water needs and construction was begun on the First Los Angeles Aqueduct in 1908 (Bevill et al., 2003). Construction took five years and thousands of workers of various backgrounds. Construction was completed in 1913, when water was delivered to Los Angeles by a gravity flow aqueduct (LADWP, 1996). The completion of the aqueduct stands as

one of the major contributing factors to the expansion of the city of Los Angeles in the early 20th century. Expansions of the First Los Angeles Aqueduct began in 1940 and extended the system 105 miles north to Mono Basin, culminating in the Second Los Angeles Aqueduct in 1970.

CHAPTER 3

RESEARCH DESIGN

To apply the CRHR criteria to archaeological sites, the sites' cultural and historical associations must be determined to the extent possible, and the potential importance of the information contained in the sites must be evaluated. This chapter presents a Research Design for making these determinations, laying out current regional research issues and specific research questions that will be addressed in the evaluation program.

RESEARCH ISSUES – PREHISTORIC/NATIVE AMERICAN SITES

Chronology

The ability to place a prehistoric site within a temporal framework is often of critical importance in assessing significance. Establishing the date a site was occupied is necessary in describing the site's cultural context and in assessing its research potential.

Within the BSEP survey area, the following data sets may be relevant to establishing temporal affiliation:

- Presence of organic materials suitable for radiocarbon dating – Radiocarbon dating remains the most reliable chronometric tool available for the BSEP region. Presence of suitable organic material substantially increases a site's research value.
- Presence of stratified deposits – Stratified cultural deposits, which are quite useful in developing regional chronological sequences, are relatively rare in the region. Many habitation sites are found on relatively stable surfaces, resulting in a lack of clear stratigraphic separation between occupation periods.
- Presence of prehistoric ceramics – Prehistoric brown ware ceramics have been found within the Fremont Valley (Lyneis, 1991). However, they are relatively rare and additional studies are necessary to better assess their cultural affiliation.
- Presence of typable projectile points and other formal tools – Despite challenges to the basic assumptions of projectile point seriation in the Great Basin (Flenniken and Wilke, 1989), cross-dating of point types through associated radiocarbon dates and, in the western Great Basin, directly through obsidian hydration dating, continues to support the temporal utility of point types (Bettinger et al., 1991). However, several types, including

some Pinto/Gatecliff and Elko series points, appear to vary in their temporal placement across the broad expanse of the Great Basin (see Beck, 1994). Notwithstanding this problem, the point sequence used by Warren and Crabtree (1986) remains generally valid for the Mojave Desert.

- Presence of obsidian suitable for hydration dating – The Project area is relatively close to the Coso obsidian source, and it is expected that flaked tools and debitage from this source could be recovered. This source of volcanic glass has been intensively studied for hydration dating purposes (Basgall, 1990; Cleland, 2006; Gilreath and Hildebrandt, 1997; Rogers, 2006). Despite numerous problems, hydration analysis of Coso obsidian has been generally successful producing results accurate enough for chronological ordering (seriation) and placement of assemblages within a reliable range of dates.

Research Questions

For the BSEP evaluation effort the following research questions can be asked at each site:

1. What is the best available information relevant to the temporal placement of each site?
2. Is there evidence that the site is single component? If not, can the components be segregated (vertically and/or horizontally) for analytical purposes?
3. Is there evidence relevant to the length of occupation of each component?

Site Structure

Assessing the horizontal and vertical organization of cultural materials at a site is necessary in determining whether there are multiple periods of occupation at the site or distinct activity loci. Proper understanding of site structure requires the consideration of the geomorphic context of the sites, especially with regard to the processes affecting deposition and erosion. The prehistoric sites tested in the BSEP area lie on the surface of a dry lake bed near Koehn Lake playa, which was a small pluvial lake in the latest Pleistocene, ca 12,000 BP (Grayson, 1993; Kleinfelder, 2008), fed by run-off from the Tehachapi and El Paso mountains. The lake had dried by 8700 B.P. (Kleinfelder, 2008) and probably earlier to due its small size (see Grayson, 1993), but continued to hold intermittent water in response to precipitation cycles through the historic period. Down-warping along the Garlock fault creates a generally accretionary depositional environment (Kleinfelder, 2008). This process of basin in-filling, however, could be counter-balanced to some degree by aeolian erosion of the finer sediments such as those on the lake-bed itself. An additional consideration for the lake-bed is that 20th century agricultural practices,

including plowing, have resulted in the disturbance of the upmost sediments an estimated depth of 50 cm or so.

Horizontal Structure

Where distinct occupations or activities can be isolated, the informational value of associated materials is enhanced. For example, discrete artifact accumulations may reflect multiple temporal occupations or synchronic organization of space within a short-term habitation site. Similarly, discrete flaking stations may be more useful in analyzing lithic reduction than generalized lithic scatters. In the BSEP case, horizontal structure may persist even through repeated modern period plowing, or plowing may be so severe as to smear the cultural deposit to the point where horizontal patterning is no longer useful.

Subsurface Materials

Depending upon the depth of the deposit, surface materials may not adequately expose the full informational potential of the site. Sites with a distinctive subsurface deposit are likely to contain useful information in addressing a variety of regional research questions. Moreover, the presence of substantial numbers of subsurface artifacts may be indicative of the presence of buried features that can only be detected with more intensive subsurface methods (Ahlstrom, 2006; Schroedl, 2006). The BSEP evaluation program will include both manual excavation and controlled mechanical excavation to search for and investigate subsurface cultural deposits.

Research Questions

The following research questions will be addressed during the BSEP evaluation:

1. Are cultural materials in their primary context or substantially redeposited?
2. Are there distinct artifact concentrations indicative of distinct loci of human activity?
3. Is there evidence for constructed features?
4. Is there evidence of a subsurface component, and if so, what depositional mechanism may account for it?
5. Are there buried features such as fire-pits or cache pits that retain integrity after plowing?

Subsistence, Settlement, and Mobility

This research theme addresses the role the BSEP area served in prehistoric subsistence activities, recognizing that site locations, artifact assemblages, and associated ecofactual evidence reflect in part the ways that prehistoric societies organized their subsistence activities.

Land Use at the Desert/Mountain Interface

The archaeological evidence suggests that by late Gypsum period times the western Mojave Desert was utilized by groups whose core territory also included the major mountain ranges to the west – the Transverse ranges and the southern Sierra Nevada (Sutton et al., 2007). The BSEP area lies very close to the foot of the Tehachapi Mountains, near the mouth of Pine Tree Canyon, a prominent canyon which yields access to the mountains. As such the project area could be relatively easily exploited from logistical base camps located within the canyon or nearby foothills. Resource gathering and processing sites would be expected under that type of scenario. Alternatively, residentially more mobile groups may have established temporary residences within the project area. Distinguishing among these site types is difficult, but assemblage richness and composition, site structure, and floral and faunal remains are important data sets to consider.

The BSEP sites' open location on the valley floor and the presence of fragmentary groundstone and scatters of fire-affected rock are suggestive that subsistence activities may have focused on the procurement and processing of floral resources. Residues in hearth features could provide important information on specifically targeted resources. Additionally, Sutton and colleagues (2007) have drawn attention to climatic variability as important in understanding changing land-use in the western Mojave. Paleoenvironmental proxies suggest that latest period of prehistory (ca. 800 to 200 BP) was particularly prone to decadal to century-long variability in precipitation with two particularly significant drought cycles occurring during the Medieval Climatic Anomaly (Jones, et al. 1999; Stine, 1994). It can be expected that the BSEP sites might show increased utilization during relatively mesic environmental conditions and reduced use during more arid periods.

Other Factors Affecting Site Distributions

Most settlement pattern studies in the Mojave Desert start with the premise that prehistoric site distributions primarily reflect the organization of subsistence activities. However, in marginal environments it is important as well to consider nonsubsistence activities (Cleland, 2004). For example, the BSEP area may have been located along a travel corridor connecting the Tehachapi Mountains with the desert to the east. Additionally, it is noteworthy that a rock art complex is

found in nearby Jawbone Canyon, suggesting the possibility that ceremonial activities could contribute to the distribution of sites in the Project area.

Research Questions

The following research questions relevant to this research theme will be addressed during the BSEP evaluation:

1. What subsistence related activities, if any, are represented at each site?
2. Are there nonportable artifacts or features present?
3. Is there evidence of domestic habitation debris indicative of residential use? If so, is there any evidence present relevant to the length of stay or seasonality?
4. Is there any evidence of caching in the sites tested?
5. To what degree can the archaeological remains in the BSEP survey area aid in the classification of regional settlement and mobility systems with respect to mobility type, frequency, and range?
6. Does the frequency or intensity of occupation of the BSEP sites correlate with reconstructed patterns of paleoenvironmental change?
7. Is there evidence to suggest that the site is primarily related to nonsubsistence functions?

Lithic Technology and Utilization

Flaked and groundstone tools and waste products are relatively rare on the surface of the sites within the BSEP survey area. However, agricultural disturbance may obscure more robust assemblages, and even simple assemblages can be useful in reconstructing resource procurement and mobility strategies.

Flaked Stone Technology

The ways that hunter-gatherers chose to organize the procurement, manufacture, and discard of flaked stone tools varies in relationship to several factors, including the relative availability and quality of toolstone within their territorial range, intended tool functions, the frequency and nature of residential moves, organization of work groups, and division of labor (e.g., Bamforth, 1990; Beck et al., 2002; Eerkens et al., 2007; Kelly, 1988). Hence, the recording of lithic

technology can be useful in addressing more general questions regarding territoriality, mobility, settlement patterns, and down-the-line exchange. For example, highly mobile peoples may “gear up” when they encounter knappable toolstone (Kelly and Todd, 1988). In doing so they discard curated tools, often from distant sources. Changes in toolstone procurement behavior may be reflective of intensified subsistence procurement within more restricted territories and/or changes in the scheduling and directionality of seasonal subsistence-related residential mobility. Since the location of the BSEP sites was not likely a source of usable toolstones, any flaked or groundstone material would have to have been brought to the site and would thus be useful in reconstructing mobility and resource procurement strategies.

Desert pavements in the western Mojave often contain sources of knappable toolstones, including cryptocrystalline silicates (e.g., chert and chalcedony) and basalt. California City, near the BSEP area is known as a source of such lithic materials. Also as mentioned above, the Coso obsidian source is within a possible range of direct procurement, or may have been relatively obtainable through exchange networks. Excavations near the BSEP area yielded relatively high frequencies of chalcedony, rhyolite, and obsidian (Sutton, 1991).

Groundstone Technology

Because of high transport costs, groundstone tools are often cached or left in situ in places to which mobile groups intend to return. As such these tool types may be good indications of a location of relatively frequent and/or long-term use. Also, because of transport costs, toolstones from distant sources are particularly noteworthy in terms of the implications for regional mobility and exchange relationships.

Research Questions

The following research questions relevant to this research theme will be addressed during the BSEP evaluation program:

1. What types of raw materials were utilized in the production of flaked and groundstone tools?
2. Can the sources of these materials be identified?
3. Is the use and/or production of bifaces present? If so, what production stages are present?
4. Are expedient core/flake technologies present? If so, what stages of production are present?

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5. Is there evidence on-site for procurement of locally available toolstone?
 6. What can be inferred about prehistoric settlement and mobility patterns from the toolstone assemblages?

Cultural Affiliation and Linguistic Prehistory

For at least 50 years archaeologists, linguists, and Native American groups have debated whether the Numic branch of the Uto-Aztecan language family originated in the southwestern Great Basin and adjacent mountain ranges and spread northward and eastward until most of the region during the past 1,000 years (Lamb, 1958; Rhode and Madsen, 1994). The BSEP area is within the area generally considered to be the possible homeland of the southern Numic languages, and archaeological sites within this general area may have data relevant to the debate. Particularly relevant would be evidence for population growth within the purported homeland, evidence for changes in interaction spheres, and evidence for the development of new adaptive strategies (Bettinger and Baumhoff, 1982). Sutton and others (2007) have suggested that the expansion of Numic-speaking people out of the southwestern Great Basin may have been correlated with the drought cycles of the Medieval Climatic Anomaly.

Research Questions

1. Is there evidence of significant changes in population density or settlement patterns?
2. Is there evidence of reorganization of economic networks? Changes in the frequency of Coso obsidian might be particularly relevant to this issue, since the frequency of this toolstone declines fairly rapidly to the east.
3. Are there sources of genetic information at any of the sites? In the unlikely event that human remains are present in the Project area, the landowner would need to consult with the state-appointed Most Likely Descendants about respectful treatment. In the context of this consultation it should be determined if DNA-extraction would be permissible. If so, this could be an important data source in the Numic-spread debate.

RESEARCH ISSUES – HISTORIC SITE

Only a single historic period resource is included in the evaluation program, the historic component of the dual component Site 3. This historic component consists of three partially buried refuse deposits that are tightly clustered next to a dirt road that leads from SR-14 to the base of the Tehachapi Range. Historical archaeology research issues are discussed below.

Historical Archaeology

When the historical context of refuse deposits, such as BSS-03, can be determined, then analysis of the assemblage content can yield important insight into social and economic behavior that is difficult or impossible to gain through the study of the documentary record alone (Caltrans, 2007; Praetzelis, 1994; Spencer-Wood, 1987). Deetz (1988:367) pointed out, "... [the] refinement [of historical explanation] is best accomplished by maintaining a balance between the documentary and the material evidence, being always mindful that, to be a productive exercise, the results should provide a more satisfactory explanation than would be forthcoming from either set of data alone." With regard to refuse deposits, historical documents may assist in identifying the household or commercial unit that was likely the consumer of the waste products deposited at the site and, in addition, can outline the socioeconomic characteristics of that unit. By contrast, the archaeological record preserves a glimpse of the actual consumption patterns that occurred in the past and often sheds light on the everyday lives of common people whose stories remain largely untold in historical documents.

Documentary Research

Documentary research will focus on determining whether there is record of a household residence or commercial activity associated with the road leading past Site 3. If such a location can be identified, then additional research will be undertaken to assess the socioeconomic context. Accordingly, the following research questions will be addressed:

1. Can a socioeconomic unit be identified as the likely depositor of the refuse?
2. If so, is it a domestic residence or commercial establishment?
3. What does the documentary record indicate about the dates of occupation?
4. Is the site associated with 20th century agricultural use of the dry lake-bed?

Patterns of Refuse Disposal

In rural/desert contexts such as at Site 3, household refuse was often simply dumped on the surface in a deserted area accessible by car or pick-up truck. In the case of Site 3, though, it appears that more effort went in to disposal practice, that is, pits were dug to contain the refuse. The archaeological investigation will more fully describe this disposal practice, addressing the following questions:

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1. Can the depth of the disposal pit be determined?
 2. Was it mechanically excavated?
 3. What kinds of materials were disposed of in the trash dumps? Are there sets of artifacts not represented in the trash refuse?
 4. What can be determined about the socioeconomic unit responsible for the disposal

Consumer Behavior

Detecting the kinds of items purchased or owned by a population, and the ways in which these items are obtained, has been termed “consumer studies.” Historical archaeologists have noted the development of a consumer-oriented culture within the United States during the late 19th century, due to a general wide availability of consumer goods (Spencer-Wood, 1987). This trend has continued into the 20th century and is discernable in both rural and urban contexts, although some researchers have noted different emphases on purchasing behavior (Van Wormer, 1991). Cultural items from a recognizable historical context have potential for illuminating behavioral patterns and preferences of a residential population. The following research questions are applicable:

1. Does the artifact assemblage reflect the range of artifacts expected to be consumed in a rural household?
2. Do the artifacts identified give any indication of the economic status of the household unit?
3. How do the types and numbers of artifacts compare with other known rural sites in southern California?
4. Is there evidence of food consumption?
5. Is there evidence of products consumed by specific age, gender or ethnic groups?
6. What can the archaeological deposits tell us about the daily life of the residents, and their choices of available consumer goods?

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CHAPTER 4

FIELD AND ANALYTICAL METHODS

INTRODUCTION

This chapter outlines the basic approaches used for the acquisition of data necessary to address the research questions identified in the research design. This program has three main constituents: identification of intact deposits, acquisition of datable materials, and an assessment of CRHR eligibility. These constituents are dictated by management needs and the desire to increase our understanding of human activity in the area

These objectives can be summarized as follows:

- Identify the potential for cultural features that may be present,
- Assess the potential for chronological control,
- Assess the potential for spatial variability, and
- Assess eligibility for the CRHR.

To meet the information requirements of each of the questions identified within the research design, surface and subsurface investigations were conducted accordingly for each of the sites.

ARCHIVAL RESEARCH

Archival research was undertaken in an effort to identify a building location and ultimately the identity of the people associated with the material identified at Site 3. EDAW archaeologist Christy Dolan reviewed historical topographic maps to determine whether there were any structures that could be related to the refuse found at the site. The maps that showed the area around Site 3 included the following:

- 1915 Mojave 1:125000 scale topographic map;
- 1923 Mojave 1:125000 scale topographic map;
- 1943 Cross Mt. 1:50000 scale topographic map;
- 1947 Mojave 1:50000 scale topographic map; and
- 1956 Mojave 1:16500 scale topographic map.

These maps were reviewed to determine when the northwest-southeast trending road just south of Site 3 was established and whether there were any structures in the vicinity, including the foothills west of Site 3.

FIELD METHODS

Surface Documentation

Prior to any subsurface work or collection, a resurvey at 3-m intervals was conducted of the site area and its immediate surroundings. The site boundaries were refined based upon the surface findings. Surface artifact concentrations or other cultural features were marked using pinflags during the close-interval survey. The spatial relationship among features within multicomponent sites is considered critical information in evaluating the sites. This is particularly true for materials associated with trails but also applies to the distribution of lithic materials, ceramics, and rock features. Accurate mapping is necessary to assess whether spatial associations are fortuitous or represent different activities within a single period of occupation. Mapping of cultural features was accomplished with the assistance of a submeter Global Positioning System (GPS). This mapping method was also used for the site boundaries, surface collection, and subsurface tests (see below). California Department of Parks and Recreation (DPR) primary and archaeological site records were completed to reflect the results of the surface mapping and subsurface investigations.

Many of the sites in the project area appear to be shallow surface deposits. At such sites surface collection is an appropriate method to sample the artifact assemblage. Since no dense artifact concentrations were encountered during the evaluation program, surface collection was accomplished by point proveniencing individual diagnostic artifacts. Collected artifacts were GPS-mapped as they were collected and bagged in accordance with a unique numerical designation, which was entered into the GPS database and recorded in the field notebook.

Excavations

Shovel Test Pits (STPs)

At Site 10 where there was a surface artifact scatter and a potential for a subsurface scatter, initial subsurface exploration was accomplished through the excavation of STPs. An STP, as defined herein, consists of a 30 cm in diameter circular excavation, removed in 10 cm increments, designed to detect the presence or absence of subsurface artifacts. Excavated soils were dry-screened through 1/8-inch wire mesh. All excavated areas were backfilled. STPs were

placed at intervals along the north-south and east-west axes of Site 10 and were excavated to depth sufficient to demonstrate the presence or absence of a subsurface component. Due to the shallow soils in most of the Project Area, an excavation depth of 30 to 40 cm was sufficient.

Test Excavation Units (TEUs)

Subsurface deposits were explored at one site (Site 13) through the use of two hand excavated trenches. These trenches were divided into fifteen 0.5-by-1-m TEUs in order to further delineate deposits. Stratigraphic profiles were made of at least one wall of each trench. The profiled sidewall of each trench was also photographed. A unit excavation notebook was completed describing each of the excavated units. All excavated areas were backfilled. Archaeologists used GPS to map the hand-excavated trench locations. All recovered cultural materials were recorded by provenience and transported to the EDAW facilities for processing.

Mechanical Excavation

A total of eight archaeological trenches were mechanically excavated in north-south and east-west transects across four sites (Site 8, Site 9, Site 11, and Site 12). Trench locations at each site were carefully selected to achieve maximum coverage of fire-affected rock (FAR) concentrations. The backhoe trenches were each approximately 10 m in length. Trench depth was typically no greater than 1 m to allow safe access for recordation. Stratigraphic profiles were made of at least one wall of each trench, along with plan views of all exposed features. The profiled side-wall of each trench was photographed and all identified features were photographed. All excavations were recorded using GPS to map trench locations. Trenches were backfilled prior to leaving the project area. All recovered cultural materials were recorded by provenience and transported to the EDAW facilities for processing.

ANALYTICAL METHODS

Identification and cataloging of materials was completed by EDAW staff under the direction of the project archaeologist. A standard system of cataloging cultural material was used to document the recovered artifacts. Flotation was conducted on a bulk soil sample collected from Site 12 using 1/16-inch mesh hardware cloth. The sample was micro-sorted and carefully examined for small residue.

Each artifact or group of artifacts was counted, weighed, and/or measured and given consecutive catalog numbers. Each item was analyzed for specific attributes particular to that material class.

A computerized master catalog was created in a database program and is included in Attachment D. All items are temporarily stored at EDAW.

SPECIAL STUDIES

When present, a sample of organic materials suitable for radiometric dating was processed from each site and submitted to Beta Analytic for dating. Due to the sample sizes, Accelerated Mass Spectrometer (AMS) dating was necessary to achieve reliable results.

The one obsidian artifact collected was submitted for sourcing and hydration analysis. Copies of specialist studies are appended to this report as attachments.

CURATION

Material collected from the BSEP will be curated at qualified curatorial facility in southern California. Material will be labeled and stored in archival materials. A copy of the catalog will accompany the collection.

CHAPTER 5

SITE DESCRIPTIONS AND RESULTS

INTRODUCTION

The BSEP survey identified 59 archaeological resources. Of these sites, 18 could be affected by the Project. DPR forms for these resources, including site maps are provided in Attachment 4. Based on surface observations, six sites (CA-KER-5264H, Site 16, Site 17, Site 18, Site 19, and Site BSPL-H-1) were recommended as not eligible based on survey-level data (Apple and Glenny, 2008). The remaining 12 sites appear to possess the potential to qualify for the CRHR but could not be definitively evaluated on the basis of the surface survey. Four of these sites, CA-KER-3366H, Site 6, Site 54, and Site BSPL-H-02 will be avoided and were not evaluated. The current investigations address the evaluation of the remaining eight resources.

Survey-Level Assessments

Eighteen of the sites identified during the survey could potentially be impacted by the Project. Based on surface observations and documentation, six of these are recommended not eligible for the CRHR and not significant under the uniqueness criterion of the California Environmental Quality Act (CEQA) (see Chapter 7, Management Recommendations). The remaining 12 sites were recommended potentially eligible (Apple and Glenny, 2008). Table 1 lists the sites, with a description and assessment of each site provided below.

CA-KER-5264H

This site was originally recorded as a small historic debris scatter, measuring 180 feet east-west by 90 feet north-south. Reported artifacts included approximately 75 glass fragments, approximately 15 pieces of ceramics, round nails, a glove, and some unidentifiable metal. The site area is slightly impacted by a dirt track directly beneath the utility lines. The current survey did not relocate the artifacts listed at CA-KER-5464H. It appears the material was collected as part of the Fremont Valley Pipeline Project (Smith and Raven-Jennings, 1997).

Based on proximity of the artifacts to the utility line and the presence of a glove, CA-KER-5264H may be associated with the construction of the wooden pole utility line that crosses the site, but there is no clear indication of this. Even if an association did exist, it would not be significant. Since the site artifacts appear to have been collected, the site does not retain integrity.

Table 1
Archaeological Site Assessments Based on Surface Documentation

P-Number/ Trinomial or Temporary Number	Site Type	Date	Eligibility Recommendation	Action
15-003366/CA-KER-3366H	Southern Pacific Railroad	Late 19 th to 20 th century	Potentially eligible	Avoid; No evaluation
15-006415/CA-KER-5264H	Debris scatter	20 th century	Not eligible	None
Site 3	Historic debris and lithic scatter	Prehistoric/late 19 th to mid 20 th century	Potentially eligible	Evaluate
Site 6	Lithic scatter and historic debris	Prehistoric/early to mid 20 th century	Potentially eligible	Avoid; No evaluation
Site 8	Fire-affected rock and lithic	Prehistoric	Potentially eligible	Evaluate
Site 9	Fire-affected rock	Prehistoric	Potentially eligible	Evaluate
Site 10	Camp	Prehistoric	Potentially eligible	Evaluate
Site 11	Fire-affected rock	Prehistoric	Potentially eligible	Evaluate
Site 12	Fire-affected rock	Prehistoric	Potentially eligible	Evaluate
Site 13	Fire-affected rock, groundstone, projectile point	Prehistoric	Potentially eligible	Evaluate
Site 16	Refuse scatter	Early to mid 20 th century	Not eligible	None
Site 17	Lithic scatter	Prehistoric	Not eligible	None
Site 18	Lithic scatter	Prehistoric	Not eligible	None
Site 19	Lithic scatter	Prehistoric	Not eligible	None
Site 54	Lithic scatter	Prehistoric	Potentially eligible	Avoid; No evaluation
Site 59	Trail	Prehistoric	Potentially eligible	Evaluate
Site BSPL-H-1	Debris scatter	Early to mid 20 th century	Not eligible	None
Site BSPL-H-2	Foundation and refuse	20 th century	Potentially eligible	Avoid; No evaluation

Site CA-KER-5264H lacks clear or significant associations with important events or people. It does not qualify under Criterion 3. The site's data content is limited and without significant associations it does not qualify under Criterion 4. This site is recommended not eligible for the CRHR.

Site 16

Site 16 is a debris scatter consisting of both modern and historic artifacts in a 15 m by 20 m area. The historic component contains aqua, green and brown glass, and ceramics. The modern debris consists of non diagnostic metal fragments, modern auto parts, and a modern can opener. The

site appears to be the result of multiple debris dumps, with no clear associations. The site is situated in an old agricultural field. The area has been impacted by past agricultural activities.

This site does not meet Criterion 1, 2, or 3 of the CRHR. The only CRHR criterion that Site 16 might be eligible under is Criterion 4. The site's integrity and data content, however, are limited. Based on the site's low potential to contribute to regional research, Site 16 is recommended not eligible for the CRHR.

Site 17

Site 17 consists of a low density lithic scatter covering a 15 m by 20 m area. The site is situated in an old agricultural field. Artifacts include three flakes and a bifacial tool. All the items are CCS. The site has been impacted by agricultural activities and the area is deflated. The site possesses a low potential for an intact significant buried deposit.

This site does not meet CRHR Criteria 1, 2, or 3. The only criterion that Site 17 might be eligible under is Criterion 4. However, the site's integrity and data content are very limited. Based on the site's low potential to contribute to regional research, Site 17 is recommended not eligible for the CRHR.

Site 18

Site 18 is a low density lithic scatter measuring 18 m by 45 m. The site is located in an old agricultural field in low sand dunes. Observed artifacts include a core chopper, a core fragment, and four CCS flakes. The area is deflated and barren and has been impacted by past agricultural activities.

Site 18 does not qualify for the CRHR under the first three criteria of the CRHR. The only criterion that this site might be significant under is Criterion 4, but the site's integrity and data content are limited. Based on Site 18's low potential to contribute to regional research, it is assessed as not eligible for the CRHR.

Site 19

This site consists of a low density lithic scatter encompassing a 13 m by 35 m area. Six CCS flakes were observed. The area is deflated, leaving numerous small natural rocks exposed on the surface (Plate 1). The site possesses a low potential for a significant intact buried deposit. The site is located in an old agricultural field. The area has been impacted by past agricultural activities.



Plate 1. Site 19 overview. View to the west.

This site does not meet CRHR Criteria 1, 2, or 3. The only criterion that Site 19 could potentially be eligible under is Criterion 4. However, the site's integrity and data content are very limited. Based on its low potential to contribute to regional research, Site 19 is recommended not eligible for the CRHR.

Site BSPL-H-01

This site is a historic refuse concentration with cans, glass, and some non diagnostic metal fragments. The site measures approximately 20 m by 20 m and is situated in an area with sparse creosote with burro grass and bottle bush. The site contains material from the 1920s through the 1960s. Observed items include white ceramics, window glass, tobacco cans, green aqua glass and some hole-in-top cans.

Site BSPL-H-01 appears to reflect more than one disposal event. None the material is very diagnostic. Given its location, it most likely represents roadside dumping. This site does not meet any of the CRHR criteria. It has no important associations; does not represent a type, period, region, or method of construction, or the work of an important creative individual, or

possess high artistic values; and has limited data potential. Site BSPL-H-01 is recommended not eligible for the CRHR.

Assessments Based on Additional Documentation and Excavation

The recent evaluation efforts involved an intensive surface survey and at some sites, subsurface excavations using STPs, TEUs, and mechanical equipment. Resurvey and detailed mapping were carried out at the sites. Each cultural resource and the investigations performed there were documented on the appropriate DPR forms (Attachment 4). Additional archival research was also conducted for Site 3.

Fieldwork associated with this evaluation program was carried out July 30 through August 14, 2008. Each of the cultural resources in this study was examined using the methodology outlined in the preceding sections. Table 2 summarizes the level of effort for each site.

**Table 2
Evaluation Level of Effort**

Site No.	Description	Area (m ²)	Research/ Documentation	Surface Collection	STPs	TEUs	Mechanical Trenches
3	Historic debris scatter and lithics	3,690	Yes	No	0	0	0
8	Fire-affected rock	480	Yes	No	0	0	2
9	Fire-affected rock	79	Yes	No	0	0	2
10	Camp	1,790	Yes	Yes	11	0	0
11	Fire-affected rock	100	Yes	No	0	0	2
12	Fire-affected rock	275	Yes	No	0	0	4
13	Fire-affected rock	852	Yes	Yes	0	15	0
59	Trail	-	Yes	No	0	0	0

Each site was examined to determine the extent of its surface features and associated artifact scatters. Results of the field observations, surface collections, and excavations are presented in this chapter.

As discussed in more detail below, the subsurface investigation identified buried cultural features at four prehistoric sites interpreted to have been hearths. These consisted of pits filled with fire-affected rock and/or charcoal stained earth.

As discussed in more detail below, the subsurface investigation identified buried cultural features at four prehistoric sites interpreted to have been hearths. These consisted of pits filled with fire-affected rock and/or charcoal stained earth.

Site 3

Site 3 is a mixed historic and prehistoric site with three concentrations of historic domestic debris and automotive parts. The prehistoric component consists of a sparse lithic scatter. The resource is approximately 20 miles north of the town of Mojave, along SR 14. This site encompasses a 3,690 m² area situated on a gently sloping alluvial fan on the eastern side of the Tehachapi range (Plate 2). Creosote dominates the vegetation in this vicinity.



Plate 2. Site 3 overview. View to the south.

Previous Investigations

In October 2007, EDAW archaeologists conducted an intensive pedestrian survey that identified this site. At that time, this site was recorded and marked with a nail at the datum, and its coordinates were taken with a submeter GPS unit.

Current Investigations

Currently no residences or other structures that date to the early to mid-20th century are located in close proximity to the site. The three concentrations of historic debris evidence a similar disposal method, and the overall similarity of materials in all three concentrations suggests that the historic materials may have had one source and were most likely placed at the site by the same individual or individuals in a relatively short time span. The site's placement near a dirt road connecting SR 14 and the foothills of the Sierras seem to indicate that a probable source for the material might be a dwelling in the nearby mountains.

Archival research was undertaken in an effort to identify a building location and ultimately the identity of the people associated with the material. A series of USGS maps for the area were reviewed. The 1915 and 1923 maps did not show the road nor did they show any structures. The 1943 and 1947 maps showed the road beginning at what was then called Route 6 (along the current alignment of SR 14) and continuing approximately 1,100 ft to the northwest and terminating at a wash. No structures are shown within a mile of the area. The 1956 map showed the road heading northwest from Route 6 approximately 2,800 ft where it appears to terminate at the intersection with what would be the transmission line road today. There are no structures shown in the vicinity.

Surface Elements

The surface component of this site consists of three artifact concentrations, which appear to be partially buried. Concentration 1 has both prehistoric and historic artifacts, while Concentrations 2 and 3 only contain historic artifacts. Concentration 1 measures 5.5 m north-south and 6 m east-west. The prehistoric component consists of eight flakes, one core, and one unmodified nodule of obsidian. The historic component includes bottle glass fragments, ceramic fragments, automotive parts, hardware, a bullet casing, tin cans, a railroad spike, and milled lumber. Concentration 2 measures 4 m north-south and 3 m east-west, and consists of ceramic tile fragments, automotive parts, hardware, and tin cans. Concentration 3 measures 5 m north-south and 5 m east-west and consists of glass fragments, ceramic tile fragments, automotive parts, hardware, a bottlecap, and three nails. Although many of the items are not temporally

diagnostic, those that are indicate a date span of early to mid-20th century. Although some household refuse is included, the assemblage is dominated by construction-related debris and miscellaneous hardware.

A trail (Site 59 see below) is approximately 10 m east of Site 3. There is no indication that the two sites are associated.

Subsurface Elements

No subsurface investigation was conducted at this site.

Evaluation

This site appears to be the result of three incidences of early to mid-20th century dumping of miscellaneous debris. One of the dump episodes co-occurred with the location of a small lithic scatter. The surface inspection indicated that shallow depressions were excavated and filled with debris and then partially covered by backfilling. The native soil is cobbly and it would have taken some effort to excavate and backfill the pits, suggesting that mechanical equipment may have been used. Given this and the apparent single source of the material, archival research was conducted in an attempt to establish associations for the historic period material. No likely sources of the material were found. As such, Site 3 does not have any distinctive historical association and does not contain important information. Accordingly, it does not meet any of the criteria for the CRHR.

Site 8

This scatter of FAR encompasses a 630 m² area situated on the floor of Fremont Valley, in an area now devoid of vegetation (Plate 3). The site is situated approximately 20 miles north of the town of Mojave along SR 14.

Previous Investigations

In October of 2007, EDAW archaeologists conducted an intensive pedestrian survey that identified this site. At that time, this site was recorded and marked with a nail at the datum, and its coordinates were taken with a submeter GPS unit.



Plate 3. Site 8 overview. View to the north.

Current Investigations

Mechanical trenching was conducted at Site 8.

Surface Elements

The surface component of this site consists of two concentrations of FAR: Concentration 1 and Concentration 2. Concentration 1 consists of approximately 350 pieces of FAR and measures 12 m north-south and 10 m east-west. Concentration 2 consists of approximately 150 pieces of FAR and measures 5 m north-south, and 7 m east-west. The FAR in these concentrations are fist-sized and smaller, round and subangular and are made up of granite and basalt. A close interval survey of the area located one volcanic flake. No other artifacts were identified on the surface.

Subsurface Elements

Mechanical trenching was conducted in Concentration 1. A north-south trench measuring 10.25 m and an east-west trench measuring 8.6 m were excavated by backhoe. The trenches

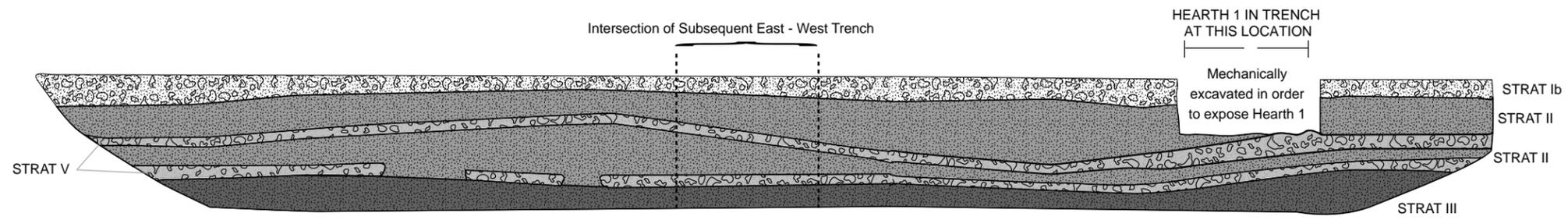
were approximately 1 m wide and had a maximum depth of approximately 1 m. The trenches intersected in approximately the center of the concentration.

The soil at this site is composed of silty sand with varying levels of compaction and moisture. There are three different strata: plow zone, root zone, and lake bed. There is a general trend towards an increase in both moisture and compaction with depth.

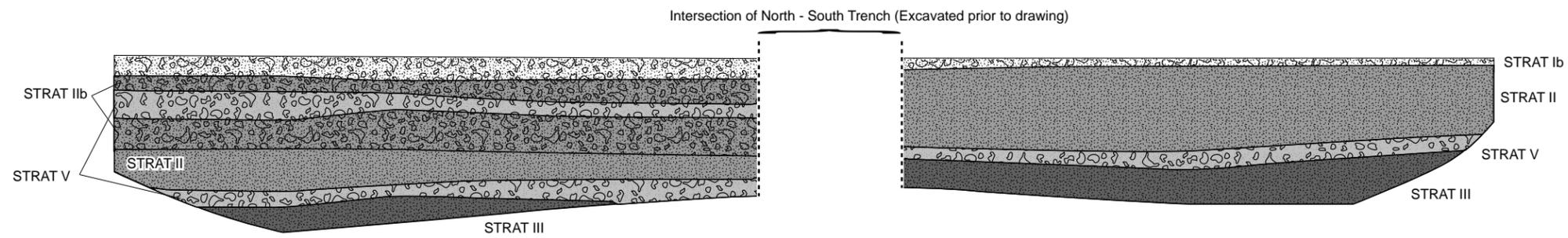
Mechanical excavation at Site 8 exposed a single fire-affected rock feature, interpreted as a hearth (Hearth 1) in the east wall of the north-south trench (Plate 4). The hearth was found in stratigraphic layer II and III (Figure 3) with the top of the hearth measuring 70 cm from surface and the bottom 85 cm from surface. The hearth consisted of 67 pieces of FAR and measured approximately 79 cm north-south and 84 cm east-west. There was evidence of charcoal staining in the matrix directly above the hearth (stratigraphic layer I). A total net weight of 3.9 g of charcoal was collected from the hearth. The collected charcoal sample was bagged and taken back to EDAW facilities. No additional artifacts were recovered.



Plate 4. Hearth at Site 8.



North - South Trench, East Wall



East - West Trench, North Wall

- STRAT Ib TAN / SILTY SAND WITH GRAVEL / SLIGHT COMPACTION / PLOW ZONE
- STRAT II TAN / SILTY SAND / MEDIUM COMPACTION / SLIGHT MOISTURE / ROOT ZONE
- STRAT Ib TAN / SILTY SAND WITH GRAVEL / MEDIUM COMPACTION / SLIGHT MOISTURE / ROOT ZONE
- STRAT III TAN / FINE GRAINED SILTY SAND / MEDIUM COMPACTION / SLIGHT MOISTURE / LAKE BED
- STRAT V WHITE AND TAN / MOTTLED CALICHE, SAND, AND LARGE GRAINED GRAVEL / HARD COMPACTION



Figure 3
Site 8, Trench Profile

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The charcoal sample (Beta-248247) from Hearth 1 yielded a conventional radiocarbon date of 560 ± 40 B.P. Calibrated to 2-sigma this would date to A.D. 1290 to 1420.

Evaluation

Although there is a very low density of artifacts (other than FAR) at this site, mechanical testing has demonstrated that at least one subsurface prehistoric feature is present, retaining good integrity. The surface scatter of FAR is sufficiently dense and widespread to indicate that additional subsurface features (Site Structure Research Issue) may be present. A charcoal sample recovered from Hearth 1 was of sufficient size for radiocarbon dating, using Accelerator Mass Spectrometry (AMS), showing that the site can be placed within a temporal framework (Chronology Research Issue). Additional organic residues are likely to exist within the subsurface features and these would be useful in addressing the Subsistence, Settlement, and Mobility Research Issue and the Cultural Affiliation and Linguistic Prehistory Research Issue. Accordingly, this site has the potential to yield important archaeological information; it is evaluated as eligible for the CRHR under Criterion 4.

Site 9

This scatter of FAR encompasses a 78 m² area situated on the valley floor of Fremont Valley, east of the foot of the Tehachapi Mountains. The surface has been deflated and lacks any vegetation.

Previous Investigations

In October of 2007, EDAW archaeologists conducted an intensive pedestrian survey that identified this site. At that time, this site was recorded and marked with a nail at the datum, and its coordinates were taken with a submeter GPS unit.

Current Investigations

Mechanical trenching was conducted at Site 9.

Surface Elements

The surface component of this site consists of a concentration of FAR measuring 10 m north-south and 10 m east-west. It is made up of approximately 150 pieces of fist-sized, and smaller, rounded, angular and subangular fire blackened rock that range between 5 cm and 8 cm in size.

Subsurface Elements

Mechanical trenching was conducted at this site (Plate 5). A north-south trench measuring 7.2 m and an east-west trench measuring 8.2 m were excavated with a backhoe with the two trenches intersected in the center of the concentration. The trenches were approximately 1 m wide and had a maximum depth of approximately 1 m.



Plate 5. Trenching at Site 9. View to the northwest.

The soil at this site is composed of silty sand with varying levels of compaction and moisture. It is broken generally into three different strata: plow zone, root zone, and lake bed. There is a general trend toward an increase in both moisture and compaction with depth.

A single feature (Hearth 1), consisting primarily of a shallow pit filled with charcoal-stained earth, was exposed in the west sidewall of the north-south trench at Site 9 (Plate 6). The hearth was found in stratigraphic layer I with the top of the hearth measuring 25 cm from surface and the bottom 35 cm from surface. The matrix immediately surrounding the hearth was charcoal stained and differed from stratigraphic layer I in compaction and color. The matrix was therefore

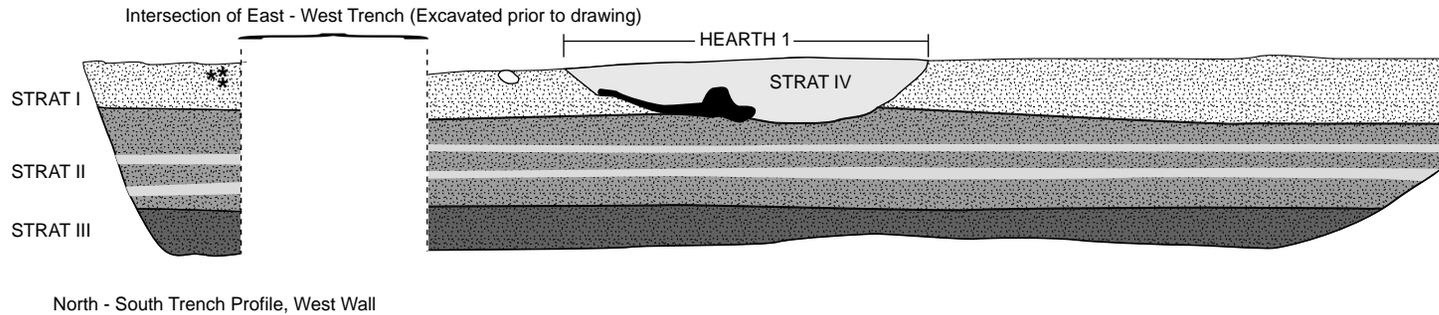
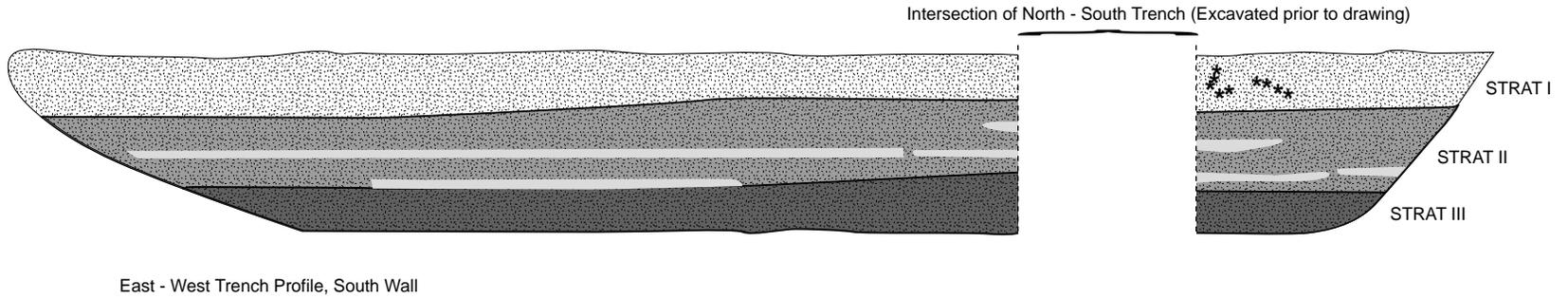
represented as a different stratigraphic layer, stratigraphic layer IV (see Figure 4). The hearth measured 75 cm north-south. No charcoal was collected from the feature.



Plate 6. Hearth at Site 9. View to the west.

Evaluation

Although no artifacts or FAR was found directly associated with the hearth feature, it is clearly of cultural origin. Mechanical testing has demonstrated that at least one subsurface prehistoric feature is present, retaining good integrity. The surface scatter of FAR surrounding this feature is sufficiently dense to indicate the likelihood of additional subsurface features (Site Structure Research Issue). Abundant charcoal observed in Hearth 1 demonstrates that the site can be placed within a temporal framework (Chronology Research Issue). Additional organic residues are likely to exist within this and other subsurface features, and these would be useful in addressing the Subsistence, Settlement, and Mobility Research Issue and the Cultural Affiliation and Linguistic Prehistory Research Issue. Accordingly, this site has the potential to yield important archaeological information; it is evaluated as eligible for the CRHR under Criterion 4.



- STRAT I TAN / SILTY SAND / SLIGHT COMPACTICION / SLIGHT MOISTURE / PLOW ZONE
- STRAT II TAN / SILTY SAND / MEDIUM COMPACTION / SLIGHT MOISTURE / ROOT ZONE
- STRAT III TAN / FINE GRAINED SILTY SAND / MEDIUM COMPACTION / SLIGHT MOISTURE / LAKE BED
- STRAT IV MEDIUM BROWN / CHARCOAL STAINED SILTY SAND / MEDIUM COMPACTION
- PINKISH OXIDIZED SOIL WITH HEAVY CHARCOAL STAINING / SILTY SAND / MEDIUM COMPACTION / HEARTH MATERIAL
- **
* CHARCOAL FLECKS
- FIRE AFFECTED ROCK
- SILT DEPOSIT - LIGHT BROWN TO TAN SILT / MEDIUM TO HEAVY COMPACTION / VERY FINE GRAINED



Figure 4
Site 9
Trench Profile

Site 10

This site encompasses an irregularly shaped 2,262 m² area situated on a low ridge on the valley floor of Fremont Valley, east of the foot of the Tehachapi Mountains. Almost no vegetation is visible on the site surface, which consists of a rocky surface with plow furrows visible across the site (north-south). The site slopes south-north with a gentle gradient. The area is made up of deflated sandy, clayey soil (Plate 7).



Plate 7. Site 10 overview. View to the north.

Previous Investigations

In October of 2007, EDAW archaeologists recorded this site as consisting of a prehistoric lithic scatter, with flaked and groundstone artifacts including four bifaces, one utilized flake, one core, one mano fragment, and approximately 30 flakes.

Current Investigations

Close interval survey was conducted and limited surface collection were conducted at Site 10, along with excavation of 11 STPs.

Surface Elements

In July of 2008, EDAW archaeologists revisited this site. Close interval survey revealed that the surface component was found to be the same as previously recorded.

Four CCS biface fragments were mapped and collected from the surface. All are in varying stages of manufacture. Three of these appear to have been broken prior to completion, while the fourth ([Site 10]-4) may have been reworked. Artifact (Site 10)-1 is a biface preform fragment, split longitudinally. The material is a yellow CCS. It measures 5.7 cm in length and about 1.5 cm thick. It is bi-convex in cross section, with no pressure flaking evident.

Biface (Site 10)-2 is a yellow CCS preform. The biface is 4.7 cm long, 2.7 cm wide, and 1.3 cm thick. It has been roughly shaped, but has little evidence of thinning. It is also bi-convex in cross section. Hinge fractures along one margin may have been the reason for its being discarded.

Artifact (Site 10)-3 is the tip of a CCS biface, with a bending break. The biface measures 2.5 cm in length and is relatively thin and flat. A manufacturing error has removed a portion of the tip. Pressure flaking is evident on both surfaces, and it is plano-convex in cross section. This specimen appears to have been near completion when broken.

Artifact (Site 10)-4 appears to be a biface tip fragment of yellow CCS. One margin is straight and the other is curved, resulting in an off-center tip. It has been thinned by pressure flaking, and is plano-convex in cross section. A series of flakes along the dorsal surface of the curved margin terminated in hinge fractures, leaving a ridge paralleling the margin. It has a bending break through the mid section and was likely being reworked prior to this final fracture.

Subsurface Elements

Eleven STPs were excavated across this site. Ten of the STPs were arranged at 20 m intervals in two lines: a north-south line and an east-west line. An eleventh STP was placed between the first and second STPs on the north line. The STPs yielded two CCS biface thinning flakes. Both were from STP 1, one flake at 10 to 20 cm and one flake at 20 to 30 cm.

Evaluation

This sparse scatter of flaked and groundstone yielded no evidence of a subsurface deposit and no material that can be used to place the site in a temporal framework. There is no evidence regarding associations or that it contains important information. Consequently, it is evaluated as not eligible for the CRHR.

Site 11

This site encompasses an approximately 100 m² area situated on the valley floor of Fremont Valley, east of the foot of the Tehachapi Mountains. The surface soils are deflated and consist of silts. Vegetation in the area consists of small patches of ankle-high desert grass, and there is a low density of rock in the area other than those associated with the feature (Plate 8).



Plate 8. Site 11 overview. View to the north.

Previous Investigations

In October of 2007, EDAW archaeologists conducted an intensive pedestrian survey that identified this site. At that time, this site was recorded and marked with a nail at the datum, and its coordinates were taken with a submeter GPS unit.

Current Investigations

Mechanical trenching was conducted at Site 11.

Surface Elements

The surface component of this site consists of a concentration of FAR measuring 16 m north-south and 8 m east-west. It is made up of approximately 230 pieces of FAR that range in size from 2 cm to 8 cm.

Subsurface Elements

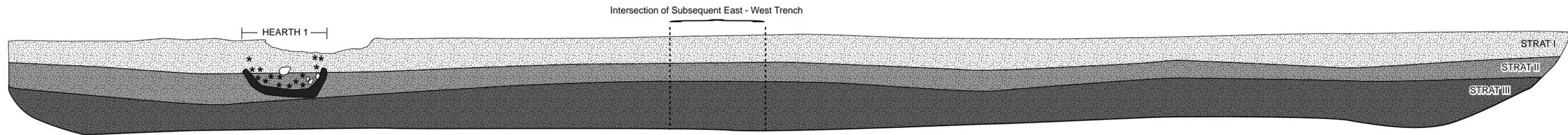
Mechanical trenching was conducted at this site. A north-south trench measuring approximately 16.4 m and an east-west trench measuring 9 m were excavated with a backhoe. The trenches were approximately 1 m wide and had a maximum depth of approximately 1 m (the two trenches intersected in the center of the concentration).

The soil at this site is composed of silty sand with varying levels of compaction and moisture. It is broken generally into three different strata: plow zone, root zone, and lake bed. There is a general trend toward an increase in both moisture and compaction with depth. (The stratigraphic profiles of the trench walls are shown in Figure 5)

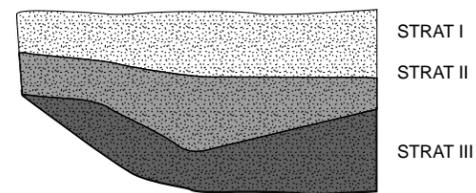
Three subsurface features, interpreted as hearths, were identified in the course of trenching. No artifacts were identified in association with the hearths, but charcoal was present and samples were collected (Table 3).

Table 3
Cultural Materials Summary

Provenience	Charcoal (gm)
Hearth 1	47.8
Hearth 2	66.2
Hearth 3	27.2
Total	141.2

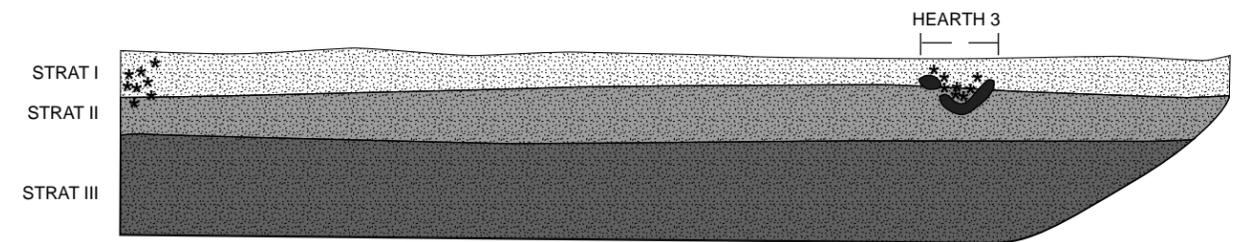
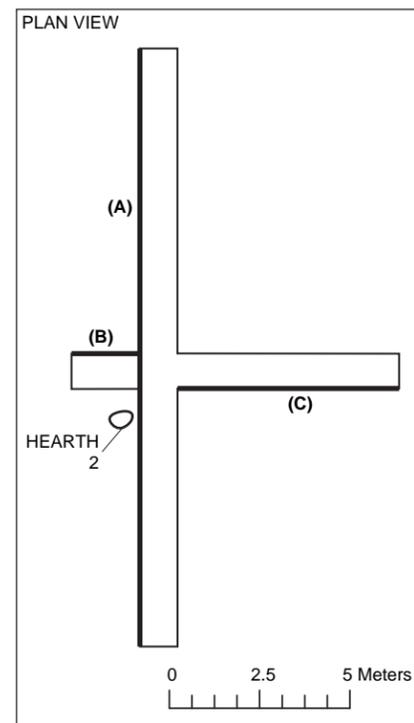


(A) North - South Trench, West Wall



(B) East - West Trench, Western Segment, North Wall

NOTE: THE SOUTH WALL OF THIS PORTION OF THE EAST-WEST TRENCH WAS DESTROYED IN ORDER TO EXPOSE HEARTH 2



(C) East - West Trench, Eastern Segment, South Wall

- STRAT I TAN / SILTY SAND / SLIGHT COMPACTION / PLOW ZONE
- STRAT II TAN / SILTY SAND / MEDIUM COMPACTION / SLIGHT MOISTURE / ROOT ZONE
- STRAT III TAN / FINE GRAINED SILTY SAND / MEDIUM COMPACTION / SLIGHT MOISTURE / LAKE BED
-  CHARCOAL FLECKS
-  PINKISH OXIDIZED SOIL WITH HEAVY CHARCOAL STAINING / SILTY SAND / MEDIUM COMPACTION / HEARTH MATERIAL
-  FIRE AFFECTED ROCK

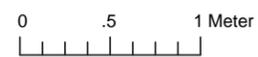


Figure 5
Site 11, Trench Profile

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Hearth 1

Hearth 1 (Plate 9) was exposed in the north-south trench at Site 11. The hearth was found in stratigraphic layers I and II (see trench profile), 2.5 m from the southern extent of the north-south trench. The top of the hearth measures 30 cm from the surface and the bottom of the hearth measures 55 cm from the surface. The feature consists of 30 FAR pieces and measures 86 cm north-south and 55 cm east-west. A total net weight of 50 g of charcoal was collected from the hearth. In addition, a single avian bone fragment was found within the hearth. Analysis of the bone fragment suggests that the bone is intrusive as there is no evidence of burning or soil staining. The collected sample was bagged and taken back to EDAW facilities.



Plate 9. Hearth 1 at Site 11.

Hearth 2

Hearth 2 (Plate 10) was exposed in the north-south trench of Site 11. The hearth was found in stratigraphic layers I and II, 0.5 m north of Hearth 1. The top of the feature measures 25 cm from the surface and the bottom of the feature measures 40 cm from the surface. The hearth consists of 35 pieces of FAR and measures 42 cm north-south and 62 cm east-west. A total net

weight of 67.9 g of charcoal was collected from the feature. In addition, a single avian bone fragment was found within the hearth. Analysis of the bone fragment suggests that the bone is intrusive as there is no evidence of burning or soil staining. All cultural material was collected, bagged, and taken back to the EDAW facilities.



Plate 10. Hearth 1 remnant in sidewall of trench at Site 11.

Hearth 3

Hearth 3 was exposed in the sidewall of the southern segment of the east-west trench at Site 11. The hearth was found in stratigraphic layers I and II, with the top of the hearth measuring 13 cm from surface and the bottom of the hearth measuring 25 cm from surface. The hearth measures 45 cm east-west.

A sample of charcoal from Hearth 1 was submitted for AMS dating. Sample Beta-245914 produced a conventional radiocarbon date of 480 ± 40 B.P. At a 2-sigma calibration, this would date from A.D. 1270 to 1320 or A.D. 1350 to 1390.

Evaluation

Testing at Site 11 revealed three distinct hearth features retaining good integrity. Although this is a small site, the presence of multiple features in the test trenches indicates the likelihood that additional subsurface features exist there (Site Structure Research Issue). The radiocarbon date shows that the site can be placed within a temporal framework (Chronology Research Issue). Charcoal samples from the other hearths are also of sufficient size for AMS dating, which will refine and possibly extend the temporal placement of the site. Additional organic residues are likely to exist within the subsurface features and these would be useful in addressing the Subsistence, Settlement, and Mobility Research Issue and the Cultural Affiliation and Linguistic Prehistory Research Issue. Accordingly, this site has the potential to yield important archaeological information; it is evaluated as eligible for the CRHR under Criterion 4.

Site 12

This site encompasses a 275 m² area situated on the valley floor of Fremont Valley, east of the southern Sierras. The site sits in a currently unused agricultural field barren of vegetation except for dead grasses. The surface has very few rocks in the area that are not related to the feature (Plate 11).

Previous Investigations

In October of 2007, EDAW archaeologists conducted an intensive pedestrian survey that identified this site. At that time, this site was recorded and marked with a nail at the datum, and coordinates were taken with a submeter GPS unit.

Current Investigations

Mechanical trenching was conducted at Site 12.

Surface Elements

The surface component of this site consists of two concentrations of FAR, Concentration 1 and Concentration 2. Concentration 1 consists of approximately 330 pieces of FAR and measures 10 m north-south and 12 m east-west. Concentration 2 consists of approximately 250 pieces of FAR and measures 12 m north-south, and 8 m east-west. The FAR in these concentrations are fist-sized and smaller, round and subangular, and are made up of granite and basalt.



Plate 11. Site 12 overview. View to the southeast.

Subsurface Elements

Mechanical trenching was conducted in both FAR concentrations at this site. In Concentration 1, a north-south trench measuring 14 m and an east-west trench measuring 12.5 m were excavated (the two trenches intersected in the center of the concentration). In Concentration 2, a north-south trench measuring 13.3 m and an east-west trench measuring 8.5 m were excavated (the two trenches intersected in a T pattern in the center of the concentration). In both concentrations, the trenches were excavated with a backhoe. They were approximately 1 m wide and had a maximum depth of approximately 1 m.

The soil at this site is composed of silty sand with varying levels of compaction and moisture. It is broken generally into three different strata: plow zone, root zone, and lake bed. There is a general trend toward an increase in both moisture and compaction with depth.

A single hearth was exposed in the north-south trench at Site 12. The hearth was found in stratigraphic layers I and II, with the top of the hearth measuring 36.5 cm from the surface and the bottom of the hearth measuring 50 cm from the surface. The hearth consists of four large

pieces of FAR and measures 46 cm north-south and 46 cm east-west. A total net weight of 13 g of charcoal was collected from the feature. The collected sample was bagged and taken back to the EDAW facilities.

A charcoal sample from the hearth was submitted for AMS dating. It yielded a conventional date of 190 ± 40 B.P. (Beta-247915). Calibrated to 2-sigma this would date from A.D. 1650 to 1950.

Evaluation

Mechanical testing has demonstrated that at least one subsurface prehistoric feature is present, retaining good integrity. The surface scatter of FAR is sufficiently dense and widespread to indicate that additional subsurface features (Site Structure Research Issue) are likely. A charcoal sample recovered from Hearth 1 was of sufficient size for AMS dating, showing that the site can be placed within a temporal framework (Chronology Research Issue). Additional organic residues are likely to exist within the subsurface features and these would be useful in addressing the Subsistence, Settlement, and Mobility Research Issue and the Cultural Affiliation and Linguistic Prehistory Research Issue. Accordingly, this site has the potential to yield important archaeological information; it is evaluated as eligible for the CRHR under Criterion 4.

Site 13

This scatter of fire-affected rock encompasses a 852 m² area situated on the valley floor in Fremont valley, east of the southern Sierras. The surface has been deflated and the soils are dry and cracking and consist of loose silt. There are no other rocks in the area and creosote and desert grasses are the dominant flora (Plate 12).

Previous Investigations

In October of 2007, EDAW archaeologists conducted an intensive pedestrian survey that identified this site. At that time, this site was recorded and marked with a nail at the datum, and its coordinates were taken with a submeter GPS unit.

Current Investigations

Field work at Site 13 included survey, limited surface collection, and excavation of test units.



Plate 12. Site 13 overview. View to the north.

Surface Elements

The surface component of this site consists of a scatter of FAR and artifacts over a 31 by 35 m area. The FAR scatter is made up of approximately 25 pieces of fire blackened and cracked granite and schist that are fist-sized and smaller, rounded, angular, and subangular and range in size between 2 cm and 8 cm. A metate fragment and an obsidian biface were collected from the surface.

The biface ([Site 13]-3) is a tip and midsection fragment resulting from a bending break through the midsection. It measures 4.5 cm in length, 2.2 cm in width, and is 0.8 cm thick. It is unfinished and was broken during manufacture.

A single piece of groundstone ([Site 13]-68) was collected from the surface of Site 13. This metate fragment of volcanic material measures 6.1 cm long, 5.7 cm wide, and 8.3 cm thick. The fragment has remnants of two ground surfaces situated perpendicular to each other, with pecking visible on one of the ground surfaces. The fragment is not large enough to determine if the metate was shaped. The fracturing is from exposure to heat.

Subsurface Elements

Hand trenching was conducted at this site. A north-south trench measuring 12 m and an east-west trench measuring 3.5 m were hand excavated (the two trenches intersected in the FAR concentration).

Subsurface deposits were explored at one site (Site 13) through the use of two hand-excavated trenches. These trenches were divided into sixteen 0.5-by-1-m TEUs to further delineate deposits. Stratigraphic profiles were made of one wall of each trench. The profiled sidewall of each trench was also photographed. All excavations were recorded in meters and centimeters, and each of the excavated units were described in a unit excavation notebook. All excavated areas were backfilled. Archaeologists used GPS to map the hand-excavated trench locations. All recovered cultural materials were recorded by provenience and transported to the EDAW facilities for processing.

The soil at this site is composed of silty sand with varying levels of compaction and moisture. It is broken into three different strata: plow zone, root zone, and lake bed. There is a general trend toward an increase in both moisture and compaction with depth.

No features were identified, but charcoal was scattered throughout the excavated area at depths between 0 and 40 cm. Fire-affected rock was encountered in the subsurface in six of the units (Table 4). A piece of debitage was recovered from 0 to 10 cm below surface in Trench A Unit 9. The volcanic debitage was a 3.1 cm core reduction flake.

A sample of charcoal from the 0 to 10 m level of Unit 3A was submitted for AMS radiocarbon assay. The sample (Beta-247916) dated to 880 ± 40 B.P. in conventional radiocarbon years. A 2-sigma calibration dates to A.D. 1040 to 1240 (920 to 700 B.P.).

Evaluation

Although no distinctive hearth features were identified during trenching, there is sufficient subsurface FAR to suggest that features probably do exist at the site. Additionally, charcoal was found to a depth of at least 30 cm, again suggesting that the site could contain features with sufficient integrity and sufficient site structure to be archaeologically useful. Additionally, radiocarbon dating was successful here and yielded the oldest date from the BSEP, indicating that this site could be important in addressing the Subsistence, Settlement, and Mobility Research Issue and the Cultural Affiliation and Linguistic Prehistory Research Issue. It is

Table 4
Summary of Recovered Materials

Provenience	Biface	Lithics	Groundstone	Charcoal	FAR
Surface Collection 1	1				
Surface Collection 2			1		
Unit A1				4.8	116.5
Unit A2				1.2	
Unit A3				0.5	137.4
Unit A4				3.6	95.2
Unit A5				1.0	
Unit A6				2.2	73.1
Unit A7/B1				1.9	217.9
Unit A8				3.8	305.4
Unit A9		1		5.8	482.8
Unit A10				5.1	156.3
Unit A11				3.5	199.4
Unit A12				2.7	208.7
Unit B2				1.4	302.3
Unit B3				0.6	68.4
Unit B4				0.2	14.8
Total	1	1	1	38.3	2,378.2

considered likely that this site contains additional organic residues that would be important in reconstructing prehistoric land use in Fremont Valley. Consequently, the site is evaluated as eligible for the CRHR under Criterion 4.

Site 59

This site is a prehistoric trail that roughly parallels SR 14 for approximately 2 km. Site 59 would be crossed by Transmission Line Option 1. The trail is approximately 30 cm to 35 cm in width (Plate 13). The preservation of the trail is variable, with some sections clearly visible and other sections obliterated by erosion and/or off-road vehicle tracks.

Previous Investigations

In October of 2007, EDAW archaeologists conducted an intensive pedestrian survey that identified this site. At that time, this site was recorded and its coordinates were taken with a submeter GPS unit.



Plate 13. Site 59 overview. View to the north.

Current Investigations

The trail alignment was intensively surveyed and mapped.

Surface Elements

A close interval survey was conducted along the trail. A submeter GSP was used to map the alignment. Although the trail winds over and between several sites, both historic and prehistoric, no cultural material was identified within the survey corridor along the trail.

Subsurface Elements

No subsurface investigations were conducted.

Evaluation

This trail site lacks distinctive historical associations and does not contain important information beyond what was recorded during the survey and submeter mapping. Consequently, it is evaluated as not eligible for the CRHR.

CHAPTER 6 DISCUSSION

The archaeological evaluation program addressed a total of eight sites, the majority of which are small prehistoric sites located on relatively flat valley floor deposits that had been impacted by 20th century agriculture. While these sites have relatively sparse artifact assemblages, several were found to have subsurface features with relatively good integrity. The following discussion focuses on these sites in the context of the research issues presented in Chapter 4, but addresses briefly the other site types as well.

PREHISTORIC SITES

Chronology

The sites produced sufficient charcoal from well-controlled contexts to provide a useful series of radiocarbon dates (Table 5), data which indicate that this complex of sites was occupied during the Late prehistoric period from possibly as early as A.D. 1040 through the early contact period. Interestingly, at least three of the four radiocarbon dates would place the occupations as possibly falling within the Medieval Climatic Anomaly (A.D. 890–A.D. 1350). This period saw generally elevated temperatures throughout the northern hemisphere and was reflected in much of California by epic drought cycles (Stine, 1994; Jones et al., 1999; West et al., 2007).

**Table 5
Radiocarbon Results**

Sample	Source	Material	Measured Radiocarbon Age	¹³ C/ ¹² C Ratio (0/00)	Conventional Radiocarbon Age
Beta-248247	Site 8 Hearth 1, 70-80 cm	Charred material	560 ± 40 B.P.	-22.9	590 ± 40 B.P.
Beta-247914	Site 11 Hearth, 30-60 cm	Charred material	480 ± 40 B.P.	-12.8	680 ± 40 B.P.
Beta-247915	Site 12 Hearth 1, 30-40 cm	Charred material	100.3±0.5 pMC	-11.8	190 ± 40 B.P.
Beta-247916	Site 13, 0-10 cm	Charred material	650 ± 40 B.P.	-10.9	880 ± 40 B.P.

As noted in Chapter 4, radiocarbon assay is the preferred dating method in the region because it provides the best available precision and reliability. However, chronological studies would also benefit from the presence of other data sources, and the latter are not well represented within the samples collected during the BSEP evaluation investigations. A single obsidian biface was

found within the project area. Sourced to the Coso volcanic field, this biface yielded a mean hydration rim measurement of 5.7 microns. Due to variability in effective hydration temperature and other as yet poorly understood factors (Cleland, 2006; Rogers, 2006), a single obsidian date is only a weak temporal indicator. Nonetheless, applying the most widely used hydration rate for Coso obsidian would suggest the possibility of a somewhat earlier occupation than has been shown so far in the radiocarbon results. A 5.7 micron rim would suggest a Saratoga Springs or late Gypsum date. Beyond the sites with fire affected rock,, the lithic scatter and the trail failed to yield any evidence of temporal affiliation.

Site Structure

While the sites with fire affected rock have been impacted on the surface by agricultural plowing, the testing program demonstrated that subsurface features retain stratigraphic integrity below the plow zone. Additionally, there was shown to be a high correspondence between surface scatters of FAR and the presence of subsurface features. This association suggests that, while plowing disrupted the vertical integrity of plow zone, horizontal integrity remains somewhat intact. For short term occupations, such as those expected to prevail at these sites, the retention of horizontal integrity suggests that assemblages would not be expected to be highly mixed due to plowing and that the investigation of intersite variability would be possible. Also relevant to the site structure issue would be input regarding the depositional and erosional context of the sites. The investigations that have been done to date indicate that the lakebed and the fans to the west are accretionary environments (Kleinfelder, 2008, and that late period sites can be found below the lakebed surface..

Subsistence, Settlement, and Mobility

In Chapter 4, it was suggested that Native American groups with logistical base camps in the canyons issuing from the Tehachapi Mountains could have exploited resources available in the BSEP area. The assemblage composition of the sites supports this suggestion. The low artifact density alone argues against the alternative scenario that residential camps were established within the Project area. However, if data recovery is required, additional excavation would be necessary to recover sufficient information to make a definitive analysis of site function. In particular, block exposures in areas where intact features have been found would be necessary to recover related artifact assemblages. If data recovery is conducted, equally important, residue analysis of intact FAR features and charcoal lenses would be useful to identify the botanical resources that were being targeted by prehistoric populations.

Prehistoric Native American settlement systems probably responded to paleoclimatic change. As noted in Chapter 4, the project area would be expected to have a greater resource potential during more mesic times rather than more arid cycles. The radiocarbon data indicates that many of the sites with fire affected rock were occupied during the MCA, when drought cycles prevailed but were temporarily ameliorated by more mesic conditions. This certainly suggests that the sites have a high potential to provide very useful data on Native American adaptive strategies during the MCA. It is noteworthy in this regard that one of the radiocarbon samples yielded a $^{13}\text{C}/^{12}\text{C}$ ($\delta^{13}\text{C}$) ratio of -22.9 ‰, which is consistent with a C_3 carbon path. This path is typically found in marsh vegetation, but not in arid land plants. The $\delta^{13}\text{C}$ ratio of the other three samples is consistent with arid land plants.

Chapter 4 pointed out that nonsubsistence-related activities may also influence Native American land-use patterns. To date, there is no evidence to suggest ceremonial or other nonsubsistence activities were important determinants of the site locations. Nonetheless, if data recovery is required, residue analysis of the hearth features should be conducted to better define their function.

Lithic Technology and Utilization

Too few artifacts were found during the testing program to provide much insight into this research issue. It does not appear that the BSEP sites offer a good potential to address this issue.

Cultural Affiliation and Linguistic Prehistory

Very little data are available at the BSEP sites to address this research issue directly. However, recent archaeological interpretations of the possible late spread of the Numic languages out of the southwestern Mojave Desert have focused on the role of climate change during the MCA (Sutton et al., 2007). Because many of the small BSEP sites appear to date to this period, they could provide an important test of these archaeological reconstructions.

HISTORIC PERIOD SITE

Documentary research conducted for a single historic period site addressed during the evaluation program failed to find information relevant to its historical associations. The two partially buried refuse dumps at this site appear to have building materials as well as some domestic trash. Surface examination yielded no clues as to the sociocultural context. Thus, this site has little information to add about the research issues of Patterns of Refuse Disposal or Consumer Behavior.

CHAPTER 7

MANAGEMENT RECOMMENDATIONS

INTRODUCTION

CEQA directs lead agencies to first determine whether a cultural resource is a “historically significant” cultural resource. The current evaluation program assessed sites that might be affected by BSEP.

EVALUATION CRITERIA

CEQA defines a historical resource as:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in the CRHR.
- A resource included in a local register of historical resources identified as significant in a historical resources survey shall be presumed to be historically or culturally significant. Public agencies must treat any resource significant unless the preponderance of evidence demonstrated that it is not historically or culturally significant.
- Any object, building, structure, site area, record, or manuscript which a lead agency determines to be historically significant to significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency’s determination is supported by substantial evidence in light of the whole record. Generally, a cultural resource shall be considered by the lead agency to be “historically significant” if the resources meets the criteria for listing on the CRHR, including the following:
 - (1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
 - (2) Is associated with the lives of persons significant in our past;
 - (3) Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of an important creative individual, or possesses high artistic value; or

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

For most archaeological resources this involves evaluation of their ability to address important research questions (Criterion 4). For sites with built or historic period components, this can involve assessment under one or several of the other criteria.

Under CEQA, an archaeological resource can also be a “unique archaeological resource” as defined as:

An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

EVALUATIONS

Nine sites are recommended not eligible for CRHR and not unique under CEQA (Table 6). Four sites (CA-KER-3366H, Site 6, Site 54, and Site BSPL-H-2) are identified as potentially eligible and will be avoided by BSEP. Five sites, Site 8, Site 9, Site 11, Site 12, and Site 13, are recommended eligible for the CRHR under Criterion 4 based on their potential to yield information about prehistory.

MANAGEMENT RECOMMENDATIONS

BSEP will avoid four potentially eligible sites and one eligible site (Site 8) and potentially impact four sites recommended eligible for the CRHR (Table 6). The four eligible sites that will potentially be affected, Site 9, Site 11, Site 12, and Site 13, are all fire affected rock scatters. Hearths and/or dateable material were identified at these sites. If avoidance is not feasible, mitigation in the form of archaeological data recovery is recommended. Any investigations should be conducted under a research design focused on the data potential of the sites.

Table 6
Management Recommendations for Archaeological Sites Potentially Affected by BSEP

P-Number/ Trinomial or Temporary Number	Site Type/Context	CRHR Recommendation	Project Facility	Recommendation
15-003366/CA-KER-3366H	Southern Pacific Railroad/Historic travel in the Mojave Desert	Potentially significant under Criterion 1 of CRHR	Plant site	Avoid
15-006415/CA-KER-5264H	Debris scatter/Historic occupation of the Mojave Desert	Not eligible	Plant site	None
Site 3	Historic debris and lithic scatter/Historic and prehistoric occupation of Mojave Desert	Not eligible	Transmission Line Option 2 (southern)	None
Site 6	Lithic scatter and refuse/ Prehistoric and historic occupation of Mojave Desert	Potentially significant under Criterion 4 of CRHR	Transmission Line Option 2 (southern)	Avoid
Site 8	Fire-affected rock/Prehistoric occupation of Mojave Desert	Eligible under Criterion 4 of CRHR	Plant site/ Rerouted wash	Avoid
Site 9	Fire-affected rock/Prehistoric occupation of Mojave Desert	Eligible under Criterion 4 of CRHR	Plant site/ Rerouted wash	Avoid or data recovery
Site 10	Camp/Prehistoric occupation of Mojave Desert	Not eligible	Plant site/ Rerouted wash	None
Site 11	Fire-affected rock/Prehistoric occupation of Mojave Desert	Eligible under Criterion 4 of CRHR	Plant site/ Rerouted wash	Avoid or data recovery
Site 12	Fire-affected rock/Prehistoric occupation of Mojave Desert	Eligible under Criterion 4 of CRHR	Plant site/ Rerouted wash	Avoid or data recovery
Site 13	Fire-affected rock/Prehistoric occupation of Mojave Desert	Eligible under Criterion 4 of CRHR	Plant site	Avoid or data recovery
Site 16	Refuse scatter/Historic occupation of Mojave Desert	Not eligible	Plant Site	None

P-Number/ Trinomial or Temporary Number	Site Type/Context	CRHR Recommendation	Project Facility	Recommendation
Site 17	Lithic scatter/Prehistoric occupation of Mojave Desert	Not eligible	Plant Site	None
Site 18	Lithic scatter/Prehistoric occupation of Mojave Desert	Not eligible	Plant Site	None
Site 19	Lithic scatter/Prehistoric occupation of Mojave Desert	Not eligible	Plant Site	None
Site 54	Lithic scatter/Prehistoric occupation of Mojave Desert	Potentially significant under Criterion 4 of CRHR	Transmission Line Option 1 (northern)	Avoid
Site 59	Trail/Prehistoric travel in Mojave Desert	Not eligible	Transmission Line Option 2 (southern)	None
Site BSPL-H-1	Refuse scatter/Historic occupation of the Mojave Desert	Not eligible	Pipeline	None
Site BSPL-H-2	Foundation and refuse/Historic occupation of Mojave Desert	Potentially significant under Criterion 4 of CRHR	Pipeline	Avoid

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ATTACHMENT 1
RESUMES OF KEY PERSONNEL

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REBECCA MCCORKLE APPLE, RPA
Principal/Manager, Cultural Resources Group/
Senior Archaeologist

SUMMARY

Expertise with CEQA/NEPA requirements
Experience with Section 106 compliance and mitigation programs
Over 20 years experience in cultural resource management

EDUCATION

MA, Anthropology, San Diego State University, 1990
BA, Anthropology, San Diego State University, 1978

AFFILIATIONS

Society for American Archaeology
Society for California Archaeology

CERTIFICATIONS

Register of Professional Archaeologists
Certified Archaeology Consultant, County of San Diego

ACADEMIC AWARDS AND

SCHOLARSHIPS
Phi Kappa Phi
Phi Beta Kappa
University Scholar, 1987 and 1988

PAPERS AND PUBLICATIONS

Mapping and Managing Pathway to the Past. Paper presented at the 22nd Annual ESRI International User Conference, San Diego, California (2002).

Introduction to Recent Archeological Investigations at the Salton Sea Test Base, Imperial County California. Proceedings of the Society for California Archaeology, Volume 12. Fresno, California (1999).

Introduction to Recent Archaeological Investigations at Salton Sea Test Base, Imperial County, California. Paper presented at the 32nd Annual Meeting for Society for California Archaeology, San Diego (1998).

A Lake Mojave Period Site Near Silver Lake, California (with A. York). Presented at the 26th Annual Meeting of the Society for California Archaeology, Pasadena (1992).

Recent Archaeological Investigations in the North Las Vegas Valley (with J.H. Cleland and M.S. Kelly). In *Crossing the Borders: Quaternary Studies in Eastern California and Southwestern Nevada*. San Bernardino County Museum Association Special Publication (1991).

Preliminary Project Results of the San Diego County Studies for the Southwest Powerlink Transmission Project. Presented at the 17th Annual Meeting of the Society for California Archaeology, San Diego (1983).

Rebecca Apple has over 20 years of experience in cultural resource management and serves as senior archaeologist for EDAW. Her experience includes managing cultural resources compliance efforts for large complex projects. She is knowledgeable in the procedures and guidelines associated with implementation of NHPA and CEQA. She has managed numerous cultural resource projects, including prehistoric, historic, and ethnographic studies. She has directed inventories, evaluations, data recovery efforts, and monitoring programs. She has also prepared management plans and conducted feasibility studies. Her work frequently includes consultation with municipal, state, and federal agencies, as well as Native American representatives and the public. As part of interdisciplinary teams, she has managed cultural resources investigations and authored cultural resource sections for ISs, EAs, EIRs, and EISs. Her experience includes cultural resource investigations for pipelines, transmission lines, power plants, highways, landfills, water resource facilities, military installations, and commercial and residential development.

ENERGY AND TRANSMISSION PROJECTS

Beacon Solar, California City, CA
Task Manager

CLIENT: ENSR/Beacon Solar, LLC/FPLE
Responsible for oversight of archaeological and architectural surveys, technical reports, coordination with CEC staff, and preparation of AFC sections for a 2,000-acre solar project.

Yuma Lateral Pipeline Project, Yuma, AZ
Project Manager

CLIENT: North Baja LLC (TransCanada)
Responsible for cultural services, conducting records searches, archival research, Native American consultation, and survey of the preferred alignment. Identified resources included the Yuma Valley Railroad, a National Register-eligible property.

Harper Lake Cultural Resources Constraints Study,
San Bernardino County, CA

Task Manager
CLIENT: ENSR/Harper Lake, LLC
Responsible for field reconnaissance and constraints analysis for a proposed 3,300-acre specific plan area. Potential development included a diary and energy park.

North Baja Pipeline Project, Ehrenberg, Arizona to Mexican Border
Project Manager

CLIENT: Foster Wheeler
Responsible for cultural services, conducting records searches, archival research, Native American consultation, survey of the preferred alignment and alternatives, site evaluation, and data recovery.

DeAnza Pipeline Constraints and Permitting Analysis,
Ehrenberg, AZ to Calexico, CA

Resource Manager
CLIENT: AEP
Responsible for cultural services, providing information on distribution of natural and cultural resources along the proposed pipeline corridor in report

REBECCA MCCORKLE APPLE

format, with accompanying maps showing these resources and other constraints.

SEMPRA On-call Cultural Services, CA

Resource Manager

CLIENT: **SEMPRA Energy**

Resource manager for cultural resource task orders. Most recent task order dealt with artifact curation for a City project.

Imperial Irrigation District Cultural Survey, Imperial County, CA

Project Manager

CLIENT: **Imperial Irrigation District**

Responsible for cultural resources component of two transmission line studies. Survey and testing were conducted in conjunction with pole replacement along the R and L transmission lines.

Mead-Adelanto Transmission Line, Clark County, NV,

and San Bernardino County, CA

Resource Manager

CLIENT: **Los Angeles Department of Water and Power**

Cultural resource survey.

Sycamore Canyon Substation to Rancho Carmel Substation 69-kV

Transmission Line Project, San Diego County, CA

Project Manager

CLIENT: **San Diego Gas & Electric**

Responsible for cultural resources component of a PEA document for submittal to the CPUC that evaluated the potential environmental impacts of a proposed 69-kV transmission line.

Coso Known Geothermal Resource Area, Inyo County, CA

Resource Manager

CLIENT: **Los Angeles Department of Water and Power**

Responsible for data recovery investigations at two geothermal well-pads located in the Sugarloaf Mountain Obsidian Source National Register District.

Santa Ynez Unit Development, Santa Barbara County, CA

Field Director

CLIENT: **Exxon Corporation**

Supervised data recovery excavations of a prehistoric coastal site.

Big Creek Expansion Project Transmission Line, South Central, CA

Data Manager

CLIENT: **Southern California Edison**

Responsible for cultural resource impact assessment of alternative routes for a proposed transmission line from the Big Creek Hydroelectric Project in the Sierras to the Los Angeles Basin.

Kern River Gas Transmission Project, WY, UT, NV, and CA

Task and Resource Manager

CLIENT: **Kern River Gas Transmission Company**

Inventory, evaluation, data recovery, and construction monitoring for California portion of this Class I overview.

Argus Cogeneration Expansion, San Bernardino and Inyo Counties, CA

Project Archaeologist

CLIENT: **Kerr-McGee**

Supervised cultural resource survey and documentation for a water pipeline.

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Geothermal Public Power Line Project, North Central CA
Resource Manager

CLIENT: Sacramento Municipal Utility District

Responsible for cultural resource surveys for a proposed transmission line from the Geysers Geothermal Area to Sacramento.

Southwest Powerlink 500-kV Transmission Line EIR/EIS,
Imperial and San Diego Counties, CA

Resource Manager

CLIENT: San Diego Gas & Electric

Participated in Section 106 compliance activities, including data recovery, analysis, and report preparation.

MILITARY PROJECTS

Integrated Cultural Resources Management Plan and Cultural Affiliation Study, Chocolate Mountains Aerial Gunnery Range, Marine Corps Air Station Yuma, Riverside, and Imperial Counties, CA
Co-Principal Investigator

CLIENT: U.S. Navy, Naval Facilities Engineering Command, Southwest and MCAS Yuma

Preparing an ICRMP for CMAGR to guide cultural resources compliance efforts to facilitate CMAGR mission. ICRMP will summarize existing inventory and provide a process to streamline the inventory and evaluation process. Components of the ICRMP are a Regional Archaeological Research Design and a Cultural Affiliation Study.

Archaeological Evaluation of Sites on San Clemente Island,
Los Angeles County, CA

Principal Investigator

CLIENT: U.S. Navy Southwest Division and Navy Region Southwest
Responsible for National Register of Historic Places Evaluation of four archaeological sites on San Clemente Island.

Cultural Resources Survey and Evaluation for Spring Hill and Associated Access Roads, Riverside County, CA

Principal Investigator

CLIENT: U.S. Navy, Naval Facilities Engineering Command, Southwest and MCAS Yuma

Directed archaeological resource survey of proposed facility to improve communications for aircraft and vehicles with the Chocolate Mountain Aerial Gunnery Range (CMAGR). Two sites were evaluated for eligibility to the National Register of Historic Places. One site appeared to contain very limited information potential and did not qualify for the NRHP. Site CA-RIV-8236 appeared to possess information relevant to addressing regional research issues and was recommended eligible for the NRHP.

Integrated Cultural Resources Management Plan Naval Base Point Loma, San Diego, CA

Project Manager

CLIENT: U.S. Navy, Naval Facilities Engineering Command and Naval Base Point Loma

Preparing an ICRMP for CMAGR to guide cultural resources compliance efforts to facilitate CMAGR mission. ICRMP will summarize existing inventory and provide a process to streamline the inventory and evaluation process. Components of the ICRMP are a Regional Archaeological Research Design and a Cultural Affiliation Study.

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Archaeological Survey for the Chocolate Mountains Aerial Gunnery Range Central Training Area, Marine Corps Air Station Yuma, Imperial County, CA

Resource Manager

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Responsible for cultural resource survey of proposed central training area on CMAGR. The 1,580-acre survey identified four sites on R-2507S and four on R-2507 N. One of the sites on the South Range (the remains of a ranch complex) and three of the sites on the North Range (rock art, ceramics scatter, and a rock ring) were identified as potentially eligible for the National Register of Historic Places.

Chocolate Mountains Aerial Gunnery Range: Cultural Resources Survey of 12 Targets and Monitoring of 14 Archaeological Sites, Riverside and Imperial Counties, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Directed cultural resource survey of 1,523 acres and site monitoring program on CMAGR. Inventoried site types were lithic scatters, trail segments, pot-drops, rock features, and a mining area. Monitoring program included lithic scatters, rock art, cleared circles, mining complexes, and a segment of historic road.

Cultural Resources Survey of Six Areas on the Chocolate Mountains Aerial Gunnery Range, Imperial County, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Directed cultural resource survey of proposed Forward Air Reporting Position, range access, and target areas.

Evaluation of 24 Sites at the Chocolate Mountains Aerial Gunnery Range, Imperial County, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Responsible for National Register of Historic Places evaluation of 24 sites in the Chocolate Mountains.

Historic and Archaeological Resources Protection Plan, Chocolate Mountain Aerial Gunnery Range, Imperial and Riverside Counties, CA

Project Manager

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Directed archival archaeological research and field visit for the Chocolate Mountain Aerial Gunnery Range. Prepared HARP Plan for the installation.

Evaluation of Two Sites, MCAS Yuma, AZ

Project Manager

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Evaluation of two archaeological sites near the MCAS Yuma airfield.

San Clemente Island Operations Management Plan EIS, Naval Auxiliary Air Field, San Clemente Island, Los Angeles County, CA

Resource Manager

CLIENT: U.S. Navy, Southwest Division and SRS Technologies

Assessed current cultural resource inventory and supplemented in specific areas. Project involved preparation of technical report documenting inventory efforts, including shipwreck study. Impact analysis conducted for existing and proposed military operations on San Clemente Island.

REBECCA MCCORKLE APPLE

Indefinite Quantity Contract for Cultural Resource Services, CA and AZ
Project Manager

CLIENT: U.S. Navy, Southwest Division

Contract manager for multiple task orders on a variety of projects involving archaeological surveys and archaeological evaluations throughout California and Arizona. Tasks include managing budget, overseeing staff, acting as point of contact, and preparation of final reports.

Archaeological Support for Environmental Assessment of Wind Farm Project, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA

Resource Manager

CLIENT: U.S. Navy, Southwest Division

Prepared cultural resource portion of the EA and placed protective signs at nine archaeological sites near or adjacent to the Wind Farm construction area.

Special Warfare Training and Range Survey, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA

Senior Archaeologist

CLIENT: U.S. Navy, Southwest Division

Performed cultural resource survey of proposed training ranges on San Clemente Island. Prepared technical report in support of an EA.

Evaluation of Six Sites near the Missile Impact Range, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA

Project Manager

CLIENT: U.S. Navy, North Island, Natural Resources Office

Provided technical assistance for the NRHP evaluation of six archaeological sites on the Central Plateau of San Clemente Island.

Historic and Archaeological Resources Protection Plan, MCAS Yuma, AZ

Project Manager

CLIENT: U.S. Navy, Southwest Division and MCAS Yuma

Directed archival archaeological research and building inventory for MCAS Yuma. Lead author on Historic and Archeological Resources Protection Plan for the installation.

Pumped-Hydro Storage Wind/Energy System, Naval Auxiliary Air Field, San Clemente Island, Los Angeles County, CA

Resource Manager

CLIENT: U.S. Navy, Southwest Division

Relocated and recorded 76 archaeological sites in proposed water storage and wind/energy development area. Prepared existing conditions report.

Tactical Aircrew Combat Training System Range Upgrade, MCAS Yuma, AZ

Project Manager

CLIENT: U.S. Navy, Southwest Division

Performed cultural resource survey of proposed transmission line and 17 threat emitter stations. Prepared testing plan.

Cultural Resource Inventory Survey at Salton Sea Test Base, Imperial County, CA

Project Archaeologist

CLIENT: U.S. Navy, Southwest Division

Conducted intensive cultural resource survey for approximately 6,000 acres and evaluation program for 170 sites. Survey and test excavations were conducted in compliance with the NHPA, NAGPRA, and other federal regulations.

REBECCA MCCORKLE APPLE

Historic and Archeological Resources Protection Plans, Los Angeles, Imperial, and San Diego Counties, CA
Resource Manager

CLIENT: U.S. Navy, Southwest Division

Prepared HARP Plans for the following six Naval installations: Morris Dam Test Facility, Azusa; Naval Air Facility, El Centro; Naval Shipyard, Long Beach; Point Loma Complex, San Diego; Naval Station, San Diego; and the Naval Radio Receiving Facility, Imperial Beach.

Cultural Resources Technical Studies, MCAS Yuma, Yuma Training Range Complex, AZ and CA

Project Archaeologist

CLIENT: U.S. Navy, Southwest Division

Directed cultural resource sample survey in the Chocolate Mountains Gunnery Range.

Mission Trails Regional Park Explosive Ordnance Demolition Environmental Assessment, San Diego County, CA

Project Manager

CLIENT: U.S. Army Corps of Engineers

Directed cultural resource survey in support of an environmental assessment addressing the removal of ordnance from the former location of Camp Elliott.

Archeological Survey of Sierra I Impact Area, MCB Camp Pendleton, San Diego County, CA

Resource Manager

CLIENT: U.S. Marine Corps

Performed cultural resource survey of approximately 2,500 acres on the northern portion of MCB Camp Pendleton.

WATER PROJECTS

Emergency Storage Project, San Diego County, CA

Resource Manager

CLIENT: San Diego County Water Authority

Responsible for the cultural Resources Evaluation Program and Treatment Program. Assisted SDCWA with Native American consultation, implementation of a programmatic agreement, and coordination with ACOE. Project involved evaluation of over 20 cultural resources including San Vicente Dam. Under a Historic Properties Treatment Plan prepared by EDAW, research designs were prepared and carried out for prehistoric and historic period resources. Treatment measures included data recovery, site stabilization, and preparation of Historic American Engineering Record documentation for San Vicente Dam. Prepared Public Interpretive Plan.

North City Water Treatment Plant, San Diego, CA

Resource Manager

CLIENT: City of San Diego Water Department

Managed cultural resource component of the North City Water Treatment Plant EIR. Project included survey and limited testing.

Balboa Park Wastewater Treatment, San Diego County, CA

Archaeologist

CLIENT: City of San Diego

Participated in cultural resource documentation for a facility siting study.

Mission Valley Water Reclamation Plant, San Diego County, CA

Resource Manager

CLIENT: City of San Diego

Responsible for archaeological testing and monitoring program in an area of potential archaeological sensitivity.

REBECCA MCCORKLE APPLE

North Metro Interceptor Sewer, San Diego County, CA
 Resource Manager
 CLIENT: City of San Diego
 Responsible for cultural resource investigations for constraints analysis of proposed sewer alignments.

Freeman Junction, Kern County, CA
 Resource Manager
 CLIENT: Los Angeles Department of Water and Power
 Responsible for the survey of portions of 1st Los Angeles Aqueduct for cap strengthening project.

Eastern Sierra Hydroelectric Relicensing, Mono and Inyo Counties, CA
 Field Director
 CLIENT: Southern California Edison
 Participated in assessment of 22 sites within three hydroelectric project areas.

Pit 3, 4, and 5 Hydroelectric Relicensing Project, Shasta County, CA
 Project Archaeologist
 CLIENT: Pacific Gas and Electric Company
 Directed limited data recovery efforts at six archaeological sites threatened by shoreline erosion prior to stabilization.

Rose Canyon Trunk Sewer EIR, San Diego County, CA
 Archaeologist
 CLIENT: City of San Diego
 Conducted windshield reconnaissance and records search and prepared overview for proposed sewer.

Pamo Dam and Reservoir, San Diego County, CA
 Archaeologist
 CLIENT: San Diego County Water Authority
 Assisted in preparation of research design and conducted archaeological monitoring of geotechnical investigations.

Reservoir 657-2, San Diego County, CA
 Archaeologist
 CLIENT: Otay Water District
 Supervised survey and report preparation of proposed covered reservoir site in Spring Valley.

Mokelumne River Hydroelectric Relicensing, Alpine, Amador, and Calaveras Counties, CA
 Crew Chief
 CLIENT: Pacific Gas and Electric Company
 Participated in archaeological test excavations and NRHP evaluations.

TRANSPORTATION PROJECTS

Southern Nevada Supplemental Airport EIS, Clark County, NV
 Co-Principal Investigator
 CLIENT: ENSR, VHB, and Clark County Department of Aviation
 Responsible for cultural resource inventory of over 17,000 acres for a BLM and transfer. Class III survey also included Radar and Navaid facilities and retention basins. Class I studies for multiple alternatives. Project involved consultation with BLM, USFS, FAA, SHPO, Native American groups, and 106 other interested parties.

REBECCA MCCORKLE APPLE

SR-76 East, San Diego County, CA

Principal Investigator

CLIENT: Caltrans and SANDAG

Responsible for the cultural resource inventory and evaluation program for the SR-76 East widening project. Oversaw the survey of three alternative routes for archaeological and architectural resources, along with Extend Phase I excavations, ASR, HRER, and HPSR.

SR-56, San Diego County, CA

Resource Manager

CLIENT: City of San Diego

Responsible for the cultural resource evaluation program for the SR-56 EIR. Evaluated 16 sites along two alternative freeway alignments.

La Costa Avenue/I-5 Interchange, San Diego County, CA

Project Archaeologist

CLIENT: Caltrans

Directed an archaeological survey of proposed interchange improvements in the City of Carlsbad. The project requires close coordination with City and Caltrans staff.

SA 680/SF 728 Roadway Project Environmental Studies/EIR,
San Diego County, CA

Project Archaeologist

CLIENT: County of San Diego

Directed the test excavation and NRHP evaluation of four sites on the proposed project alignment. These investigations addressed the potential association of the sites with the Harris Site Complex.

SR-79, Riverside County, CA

Resource Manager

CLIENT: Riverside County Transportation Commission

Responsible for cultural resource investigations for widening and realigning two highway segments. Prepared cultural resource sections for ISs and coordinated archaeological survey reports, historic architectural survey reports, and historic study report.

Victorville La Mesa/Nisqually Road Overpass,

San Bernardino County, CA

Project Archaeologist

CLIENT: City of Victorville

Supervised survey and prepared positive archaeological survey report and historic property survey report.

LANDFILL AND WASTE-RELATED PROJECTS

Elsmere Canyon Landfill, Los Angeles County, CA

Project Archaeologist

CLIENT: Elsmere Corporation

Directed cultural resource assessment for the EIR/EIS.

Southwest San Diego Landfill Siting Study, San Diego County, CA

Resource Manager

CLIENT: County of San Diego

Responsible for cultural resource assessments of potential landfill sites throughout the southwestern quadrant of San Diego County. Ranked the relative sensitivity of each potential site.

REBECCA MCCORKLE APPLE

LAND DEVELOPMENT PROJECTS

Heber Dunes Off-Highway Vehicle Park, Imperial County, CA
Cultural Resources Project Manager

CLIENT: State of California Department of Parks and Recreation Off-Highway Motor Vehicle Recreation Division

State Parks recently acquired Heber Dunes and is in the process of preparing a General Plan and EIR for the Park. As part of these efforts approximately 350 acres were inventoried for cultural resources.

Laborde Canyon Off-Highway Vehicle Park, Riverside County, CA
Cultural Resources Project Manager

CLIENT: State of California Department of Parks and Recreation Off-Highway Motor Vehicle Recreation Division and Riverside County Economic Development Authority

The areas of the SVRA that would be open to some level of OHV use would cover approximately 1,480 acres within the 2,640-acre Laborde Canyon site. EDAW was contracted to conduct environmental studies for the Laborde Canyon site, including a cultural resource records search and an intensive cultural resources pedestrian survey of the proposed OHV park. Two prehistoric sites and the Lockheed Facility (Beaumont Site No. 2) were recorded within the study area during the survey. A preliminary assessment of the complex at Beaumont Site No. 2 was made to determine eligibility for the California Register of Historical Resources.

Data Recovery for Goat Canyon Retention Basin Border Field State Park, San Diego County, CA
Cultural Resources Project Manager

CLIENT: State of California Department of Parks and Recreation

Conducted data recovery under stringent time constraints based on wildlife issues and construction schedule. Excavation of 50 units at CA-SDI-16,047 Locus B indicated that the site was a buried temporary camp whose occupants exploited littoral, near-shore, and terrestrial subsistence resources. Data recovery investigations successfully collected data important in local and regional prehistory. The identification of a single component locus dating to the Archaic-Late transition is an important contribution.

Fairbanks Country Villas, San Diego, CA
Project Manager

CLIENT: Del Mar Land Management Company

Prepared testing plan and implemented testing program for proposed residential development.

Inmate Reception Center, San Diego County, CA
Project Manager

CLIENT: County of San Diego

Responsible for testing and data recovery of half a city block in downtown San Diego.

343 Sansome Street, San Francisco County, CA
Project Archaeologist

CLIENT: Gerald D. Hines Interests

Participated in archaeological data recovery excavations at a Gold Rush-period site in downtown San Francisco.

North Las Vegas Land Transfer, Clark County, NV
Project Archaeologist

CLIENT: City of North Las Vegas

Directed cultural resource survey of 4,000-acre land transfer from the BLM to the City of North Las Vegas.

REBECCA MCCORKLE APPLE

Apex Industrial Park, Clark County, NV
 Project Archaeologist
 CLIENT: Kerr-McGee
 Conducted archaeological survey and NRHP evaluations for BLM land transfer.

Walnut Hills Subdivision, San Diego County, CA
 Archaeological Monitor
 CLIENT: Fargo Industries
 Conducted archaeological monitoring of site preparation and grading in San Marcos.

Alcoholism Service Center, San Diego County, CA
 Project Archaeologist
 CLIENT: Fellowship Center, Inc.
 Conducted archaeological survey of proposed rehabilitation center adjacent to Mission San Luis Rey in Oceanside.

OTHER PROJECTS

Peñasquitos Park, San Diego County, CA
 Archaeologist
 CLIENT: County of San Diego
 Participated in survey, including documentation of three adobes.

Old Town State Historic Park, San Diego County, CA
 Archaeologist
 CLIENT: California Department of Parks and Recreation/FIR
 Participated in excavation before placement of underground utilities in San Diego.

Rancho Guajome Adobe, San Diego County, CA
 Archaeologist
 CLIENT: County of San Diego
 Participated in excavation, cataloging, and analysis for work conducted before building stabilization efforts.

Anza Borrego Desert State Park, Riverside County, CA
 Archaeologist
 CLIENT: California Department of Parks and Recreation
 Participated in resource inventory survey.

Glamis Imperial Project, Imperial County, CA
 Archaeologist
 CLIENT: Glamis Imperial Corporation
 Conducted cultural resource survey for proposed gold mine.

Fort Cady Boric Acid Mining and Processing Facility,
 San Bernardino County, CA
 Project Archaeologist
 CLIENT: Fort Cady Minerals Corporation
 Directed survey, testing, and evaluation of 24 sites in Newberry Springs.

Rialto-to-El Paso Fiber Optics Cable, San Bernardino and
 Riverside Counties, CA
 Archaeologist
 CLIENT: U.S. Sprint
 Conducted cultural resource survey along western extent of project.

REBECCA MCCORKLE APPLE

SELECTED REPORTS

A View Across the Cultural Landscape of the Lower Colorado Desert: Cultural Resource Investigations for the North Baja Pipeline Project (with Jamie Cleland). Prepared for TetraTech and North Baja, LLC. EDAW, Inc., San Diego (2003).

Cultural Resources Evaluation for the North Baja Gas Pipeline (with C. Dolan, J. Underwood, and J.H. Cleland). Prepared for Foster Wheeler Environmental, Inc. EDAW, Inc., San Diego (2001).

Historical and Archeological Resources Protection Plan (HARP) for the Chocolate Mountain Aerial Gunnery Range, Imperial County, California (with J.H. Cleland). Prepared for U.S. Navy Southwest Division, Naval Facilities Engineering Command. EDAW, Inc., San Diego (2001).

Archaeological Resources Evaluation Report State Route 56 Between Coast and Foothill, City of San Diego, California (with J.H. Cleland, A. York, T. Wahoff, and D. James). Prepared for the City of San Diego. KEA Environmental, Inc., San Diego (1997).

Archeological Survey and Evaluation Program for the Salton Sea Test Base, Imperial County, California (with A. York, A. Pignolo, J.H. Cleland, and S. Van Wormer). Prepared for U.S. Navy, Southwest Division, Naval Facilities Engineering Command. KEA Environmental, Inc., San Diego (1997).

Two Sides of the River: Cultural Resources Technical Studies Undertaken as Part of Environmental Documentation for Military Use of the MCAS Yuma Training Range Complex in Arizona and California (with G. Woodall, L. Peterson, and J.S. Bruder). Prepared for the Southwest Division Naval Facilities Engineering Command and MCAS Yuma. Dames & Moore Intermountain Cultural Resource Services Research Paper No. 5, San Diego (1993).

Bank Stabilization at Lake Britton: Limited Data Recovery (with A. MacDougall). Prepared for Pacific Gas and Electric. Dames & Moore, San Diego (1990).

Kern River Pipeline Cultural Resource Survey Report (with J.H. Cleland, A.L. York, and P. Friedman). Submitted to the Federal Energy Regulatory Commission. Dames & Moore, San Diego (1990).

Sugarloaf Mountain in Prehistory: Archaeological Testing and Data Recovery for the Exploratory Drilling Program II and the Unit No. 1 Project (with J.H. Cleland and E. Nilsson). Prepared for the Los Angeles Department of Water and Power. Dames & Moore, San Diego (1990).

An Archaeological Research Design for the Evaluation of Cultural Resources in Pamo Valley, San Diego, California (with J.H. Cleland, J.R. Cook, and J. Schaefer). Wirth Environmental Services, a Division of Dames & Moore, San Diego (1985).

JAMES CLELAND, PHD
Principal

SUMMARY

Principal for archaeological and historical studies
Thirty years of experience directing cultural resource programs
Section 106 compliance specialist
Expert testimony
Award winning projects
Extensive experience with gas transmission and other linear projects

Principal archaeologist for EDAW, Dr. James Cleland has more than 30 years of experience conducting archaeological, historical, and ethnographic studies. He is thoroughly familiar with regulations and guidelines implementing the NHPA, NEPA, and CEQA. He has authored the cultural resources sections of many EAs, EISs, and EIRs and has provided expert testimony before federal and state administrative agencies regarding the consideration of cultural resources in environmental review.

EDUCATION

PhD, Anthropology, University of Virginia, 1977
MA, Anthropology, University of Virginia, 1974
BA, Anthropology, University of Michigan, 1969

Dr. Cleland has directed cultural resources investigations throughout the United States and abroad. He manages the full spectrum of technical studies, including archaeological overviews and surveys, test excavations, historical research, historic structures surveys, Native American contact programs, cultural landscape investigations, evaluations of significance for NRHP eligibility, data recovery excavations, construction monitoring, long-term resource planning, and pure research. Spanning a broad spectrum of development and resource management projects, his work has included military activities, power plants, transmission lines, pipelines, oil and gas processing plants, water resource facilities, highways, timber sales, landfills, and commercial and residential developments. His project work has been recognized for excellence by the American Cultural Resources Association, the California Preservation Foundation, the Earth Sciences Research Institute, and the Association of Environmental Professionals.

AFFILIATIONS

Society for California Archaeology
American Anthropological Association
Society for American Archaeology

Dr. Cleland has presented numerous professional papers on cultural resources management and archaeological research. Topics have included the siting and evaluation of large linear projects, approaches to the evaluation of archaeological significance, obsidian hydration and chronology building, hunter-gatherer cultural adaptation, cultural landscapes, and urban historical archaeology. He is a past-president of the Society for California Archaeology and served on the governor's Heritage Resource Task Force in California, helping to guide the formulation of archaeological and historic preservation policy at the state level.

CERTIFICATIONS

Register of Professional Archaeologists
National Preservation Institute. Identification and management of traditional cultural places
National Preservation Institute – Section 106.
Working with the revised regulations

LAND DEVELOPMENT PROJECTS

Hellman Ranch Specific Plan, Orange County, CA
Principal Investigator

CLIENT: City of Seal Beach

Responsible for archaeological evaluation and data recovery of 10 Native American sites in the coastal zone. Work included Native American consultation, burial repatriation and in situ preservation, and on-site cultural interpretation.

Ballpark Infrastructure and remediation, San Diego, CA
Principal-in-Charge

CLIENT: Centre City Development Corporation

Responsible for the archaeological monitoring and data recovery in the downtown East Village area for the proposed ballpark. Required hazardous materials certification. Project received Award of Excellence for Archaeology from the City of San Diego Historical Resources Board.

West Bench Master Plan, Salt Lake County, UT
Cultural Resource Specialist

CLIENT: Kennecott Land Company

Conducted cultural resources assessment of a 93,000-acre master plan

JAMES CLELAND, PHD

development. Senior review of the cultural resources element of the specific plan.

Bixby Ranch Old Town Center, Orange County, CA

Principal Investigator

CLIENT: City of Seal Beach

Responsible for cultural resources survey, monitoring, and data recovery of proposed commercial development.

101 California Project, San Diego County, CA

Principal Investigator

CLIENT: Catellus, Inc.

Responsible for archaeological testing and data recovery at the San Diego Barracks site (1850 through 1920) for this mid- to high-rise development project in downtown San Diego.

Inmate Reception Center, San Diego County, CA

Principal Investigator

CLIENT: County of San Diego, Department of Public Works

Responsible for major data recovery project at Victorian-Period urban site.

Leopalace Resort, Yona, Guam

Archaeologist and Peer Reviewer

CLIENT: Mayama Development, Inc.

Assisted in the Section 106 consultation with the territorial historic preservation officer, provided peer review of the archaeological data recovery fieldwork, and provided field support to help expedite completion of the archaeological mitigation. Work was done prior to joining EDAW.

North Las Vegas Land Transfer, Clark County, NV

Principal Investigator

CLIENT: City of North Las Vegas

Responsible for cultural resource survey of 4,000-acre land transfer from the Bureau of Land Management to the City of North Las Vegas. Directed cultural resource component of the EIS, assisted Bureau of Land Management in Section 106 consultation, and conducted geoarchaeological testing of an early Holocene spring deposit. Work was done prior to joining EDAW.

Apex Industrial Park, Clark County, NV

Principal Investigator

CLIENT: Kerr-McGee

Responsible for archaeological survey and NRHP evaluations for BLM land transfer. Work was done prior to joining EDAW.

343 Sansome Street, San Francisco County, CA

Principal Investigator

CLIENT: Gerald D. Hines Interests

Directed archaeological test and data recovery excavations at a Gold Rush-Period site in downtown San Francisco. Work was done prior to joining EDAW.

Sierra Vista Development, Cochise County, AZ

Archaeologist

CLIENT: Tenneco

Performed historical and archaeological assessment of a major housing and urban development-assisted project in Fort Huachuca. Work was done prior to joining EDAW.

JAMES CLELAND, PHD

San Diego River Project, San Diego County, CA

Project Director

CLIENT: County of San Diego

Directed cultural resource investigations for a flood control, reclamation, and recreational development master plan. Work was done prior to joining EDAW.

Marina/Columbia Redevelopment Project, San Diego County, CA

Principal Investigator

CLIENT: Centre City Development Corporation

Directed historical research, archaeological site identification, and archaeological test excavations for the 75-block redevelopment area in San Diego. Consulted in the development of a management plan for subsurface cultural resources. Work was done prior to joining EDAW.

ENERGY AND TRANSMISSION PROJECTS

North Baja Pipeline, Ehrenberg, AZ, and Riverside and

Imperial Counties, CA

Principal Investigator

CLIENT: Foster Wheeler Environmental

Cultural resources survey, evaluation, and mitigation for an 80-mile natural gas pipeline, under FERC and BLM guidelines.

Line 1903 All American Pipeline Conversion, Kern, San Bernardino, and

Riverside Counties, CA

Principal Investigator

CLIENT: ENSR International and El Paso Natural Gas

Directed the cultural resources survey and NRHP evaluation of a 250-mile pipeline project, converting from petroleum to natural gas.

Palomar Energy Project, Escondido, CA

Principal Investigator

CLIENT: ENSR International and Sempra Energy

Directed cultural resources investigation for MW cogeneration plant with associated linear facilities in support of California Energy Commission Application for Certification.

Desert Crossing Pipeline, Clark County, NV, and Mohave County, AZ

Principal Investigator

CLIENT: Natural Resources Group

Directed the cultural resources research design for a natural gas pipeline project. Archaeology survey near Red Lake, Arizona, for gas storage facility.

Valley-Rainbow Transmission Project, Riverside and San Diego,
Counties, CA

Principal Investigator

CLIENT: San Diego Gas and Electric Company

Directed cultural resources surveys for the evaluation of alternative transmission line corridors. Included Class I, Class II, and Class III surveys.

Lucerne-to-Big Bear Transmission Line, San Bernardino County, CA

Principal Investigator

CLIENT: USDA Forest Service and Southern California Edison Company

Responsible for cultural resources survey and NRHP evaluation of a 20-mile transmission line through San Bernardino National Forest, and EIR/EIS analysis. Traditional cultural property evaluation of the Gold Mountain-Baldwin Lake district.

JAMES CLELAND, PHD

Mead-Adelanto Transmission Line, Clark County, NV, and
San Bernardino County, CA
Principal Investigator

CLIENT: Los Angeles Department of Water and Power
Responsible for cultural resource survey of a 180-mile interstate transmission
line. Work done prior to joining EDAW.

Questar Southern Trails Pipeline, NM, UT, AZ, and CA
Discipline Manager

CLIENT: ENSR International and FERC
Responsible for cultural resource investigations for FERC third-party EIS
addressing the conversion of an existing crude-oil pipeline to natural gas. The
project runs from northeastern New Mexico to Long Beach, California.

Vector Pipeline EIS, IL, IN, and MI
Discipline Manager

CLIENT: RMI and FERC
Responsible for cultural resource investigations for FERC third-party EIS for a
325-mile corridor of a natural gas pipeline.

Viking Voyageur Pipeline Project, MN, WI, and IL
Discipline Manager

CLIENT: Entrix and FERC
Responsible for cultural resource investigations for FERC third-party EIS for a
770-mile corridor of Viking Voyageur gas transmission pipeline.

Tuscarora Pipeline Project, Klamath County, OR, to
Washoe County, NV

Cultural Resource Coordinator
CLIENT: Tuscarora Gas Transmission Company
Responsible for a 229-mile natural gas pipeline from Malin, Oregon, to Reno,
Nevada. Coordinated and managed survey, evaluation, and data recovery.
Prepared nontechnical public report.

Los Padres National Forest Oil and Gas Leasing, Santa Barbara,
Ventura, and Monterey Counties, CA

Principal Investigator
CLIENT: Los Padres National Forest
Responsible for cultural resource overview of potential lease areas (743,000
acres).

Boulder Line Historical Assessment, San Bernardino County, CA
Principal Investigator

CLIENT: Los Angeles Department of Water and Power
Responsible for NRHP evaluation of Boulder Lines 1 and 2.

Kern River Gas Transmission Project, WY, UT, NV, and CA
Principal Investigator

CLIENT: Kern River Gas Transmission Company
Responsible for cultural resources. Prepared the cultural resources
component of the environmental report submitted to FERC, presented expert
testimony at FERC licensing hearings, directed the intensive archaeological
survey of the 680-mile route, managed the eligibility evaluation of over 250
sites for NRHP, developed and implemented a data recovery research design
for 150 NRHP-eligible resources, directed monitoring of construction in
sensitive areas, and coauthored survey and data recovery reports. Work done
prior to joining EDAW.

JAMES CLELAND, PHD

California-to-Oregon Transmission Project, OR and CA

Principal Investigator

CLIENT: Transmission Authority of Northern California

Directed archaeological, historic, and ethnographic survey of the 340-mile route; archaeological test excavations; and archaeological data recovery.

Work done prior to joining EDAW.

Santa Ynez Unit Development, Santa Barbara County, CA

Principal Investigator

CLIENT: Exxon Corporation

Directed test excavations and significance evaluations of historic and prehistoric sites in oil and gas project area. Prepared historic properties treatment plan, approved by the ACOE, California Office of Historic Preservation, and Advisory Council on Historic Preservation. Work done prior

to joining EDAW.

Coso Known Geothermal Resource Area, Inyo County, CA

Principal Investigator

CLIENT: Los Angeles Department of Water and Power

Directed archaeological survey, evaluation, and data recovery at 12 geothermal well-pads located in the Sugarloaf Mountain Obsidian Source National Register District. Coauthored historic properties treatment plan, and evaluation and data recovery reports. Work done prior to joining EDAW.

Devers-Serrano-Villa Park Proposed 230-kV Transmission Line, Orange, Riverside, and San Bernardino Counties, CA

Principal Investigator

CLIENT: California Public Utilities Commission

Directed cultural resource investigations for the EIR/EIS for Southern California Edison's proposed 230-kV transmission line, including comparative assessment of the impact of alternative routes. Presented expert testimony at CPUC licensing hearings. Work done prior to joining EDAW.

BiCEP Transmission Line, South-Central CA

Discipline Manager

CLIENT: Southern California Edison

Directed cultural resource impact assessment of alternative routes for a proposed transmission line from the Big Creek Hydroelectric Project in the Sierra Mountains to the Los Angeles Basin. Work done prior to joining EDAW.

Argus Cogeneration Expansion, San Bernardino and Inyo Counties, CA

Discipline Manager

CLIENT: Kerr-McGee

Directed cultural resource survey of proposed cogeneration plant site, transmission line, water pipeline, and well-field. Prepared cultural resources sections of AFC for California Energy Commission. Work done prior to joining EDAW.

Geothermal Public Power Line Project, North-Central CA

Discipline Manager

CLIENT: Sacramento Municipal Utility District

Directed cultural resources investigations, including archaeology, history, and ethnography, for siting and licensing of a proposed transmission line from the Geysers Geothermal Area to Sacramento. Included preparation of cultural resource sections of the notice of intent and application for certification, and presentation of testimony for adjudicatory hearings held by the California Energy Commission. Work done prior to joining EDAW.

JAMES CLELAND, PHD

Potrero Unit No. 7, San Francisco County, CA

Principal Investigator

CLIENT: Pacific Gas & Electric Company

Conducted cultural resource inventory and evaluation for proposed combined cycle generating plant, underground 230-kV transmission line, and fuel-oil pipeline. Involved intensive historical documentation for an 8-mile-long study area along San Francisco's urban waterfront. Participated in California Energy Commission public workshop. Work done prior to joining EDAW.

MILITARY PROJECTS

Naval Air Weapons Station, China Lake, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division

Directed archaeological survey of over 8,000 acres and NRHP evaluation of eight archaeological sites.

Naval Postgraduate School, Monterey, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division

Directed archaeological survey and subsurface exploration of the 100-acre laboratory and recreation area.

Chocolate Mountains Aerial Gunnery Range, Imperial and Riverside Counties, California.

Principal Investigator

CLIENT: Naval Facilities Engineering Command, Southwest and Marine Corps Air Station, Yuma

Developed regional archaeological research design, including programmatic approaches to the evaluation of key resource types. Managed the preparation of a cultural affiliation study.

Naval Space Surveillance Field Stations, San Diego, CA, and Gila River, AZ

Principal Investigator

CLIENT: U.S. Navy, Southwest Division

Directed NRHP evaluation of three archaeological sites in San Diego County. Prepared integrated cultural resources management plan for NSSFS Gila River.

Archaeological Test Excavation, Naval Weapons Station, Seal Beach, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division

Responsible for test excavations of three subsurface prehistoric shell middens. National register evaluations.

Air Combat Command Cold War-Era Facilities, Langley Air Force Base, Hampton City Region, VA

Senior Reviewer

CLIENT: U.S. Army Corps of Engineer, Ft. Worth District

Senior reviewer for nationwide historical context development for ACC bomber and fighter facilities.

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Perimeter Vehicle Entry Phased Array Warning System National Register Nomination, Beale Air Force Base, Yuba County, CA
Senior Reviewer

CLIENT: Beale Air Force Base and Parsons Engineering Science
Senior reviewer to NRHP evaluation and nomination of a highly technical, Cold War-era radar facility.

Cultural Resource Inventory Survey at Salton Sea Test Base, Imperial County, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division

Responsible for intensive cultural resource surveys of approximately 6,000 acres. Provided oversight for compliance with NHPA and the NAGPRA.

Evaluation of Six Sites Near the Missile Impact Range, Naval Auxiliary Landing Field, San Clemente Island, Los Angeles County, CA

Principal-in-Charge

CLIENT: U.S. Navy, North Island, Natural Resources Office

Responsible for the NRHP evaluation of six archaeological sites on the Central Plateau of San Clemente Island.

Long Beach Naval Shipyard/Naval Station Base Closure, Los Angeles County, CA

Discipline Manager

CLIENT: U.S. Navy, Southwest Division

Responsible for cultural resource analysis of alternative reuse plans, including development of adaptive reuse alternatives for the Roosevelt Historic District. Adaptive reuse plan won Cultural Resources Award from California Preservation Foundation.

MCAS Yuma Ordnance Storage Expansion, Yuma County, AZ

Principal Archaeologist

CLIENT: U.S. Navy, Southwest Division

Performed cultural resource analysis, including records search, oral history, and draft programmatic agreement.

MCAS El Toro Base Closure, Orange County, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division

Responsible for cultural resource surveys and evaluation.

P-527 Effluent Treatment Project, Camp Pendleton,

San Diego County, CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division

Responsible for archaeological survey, evaluation, and data recovery.

Pumped-Hydro Storage Wind/Energy System, Naval Auxiliary Air Field, San Clemente Island, Los Angeles County, CA

Principal-in-Charge

CLIENT: U.S. Navy, Southwest Division

Responsible for relocating and recording 76 archaeological sites in a proposed water storage and wind/energy development area. Prepared existing conditions report.

JAMES CLELAND, PHD

Historic and Archeological Resources Protection Plans for Various Locations in Southern CA

Principal Investigator

CLIENT: U.S. Navy, Southwest Division

Responsible for HARP Plans for six Naval installations: Morris Dam Test Facility, Azusa; Naval Air Facility, El Centro; Naval Shipyard, Long Beach; Point Loma Complex, San Diego; Naval Station, San Diego; and the Naval Radio Receiving Facility, Imperial Beach.

Space Launch Complex 2W, Vandenberg Air Force Base, San Luis Obispo County, CA

Principal Investigator

CLIENT: McDonnell-Douglas

Directed archaeological survey and historical assessment of the proposed upgrading of the complex to support the launching of Delta II vehicles. Historical assessment included NRHP evaluation of space launch facilities dating to the 1950s and 1960s. Work done prior to joining EDAW.

MCAS Yuma EIS, Imperial County, CA

Project Director for Cultural Resources

CLIENT: U.S. Navy, Southwest Division

Directed cultural resource inventories of areas in California potentially affected by operations at MCAS Yuma, Arizona. Work included archaeological sample survey of the Chocolate Mountains Gunnery Range, identification of traditional cultural properties in low-fly zones, and preparation of the EIS.

Sugarloaf Mountain Archaeological District Cultural Resource Management Plan, Inyo County, CA

Principal Author

CLIENT: U.S. Navy, Southwest Division

Authored management plan for the Sugarloaf Mountain Obsidian Source National Register District. Developed a framework for the survey, evaluation, and treatment of resources that may be affected by geothermal development of the Coso Known Geothermal Resource Area. Work done prior to joining EDAW.

National Training Center, Fort Irwin, San Bernardino County, CA

Project Manager

CLIENT: National Park Service, Interagency Archeological Services Branch
Managed large-scale archaeological survey, evaluation, and data recovery project in support of the development of the National Training Center. Performed intensive survey of 100,000 acres, NRHP evaluation of over 100 sites, and data recovery at 25 sites. Work done Prior to joining EDAW.

Beale Air Force Base Cultural Resource Project, Yuba County, CA

Principal Investigator

CLIENT: National Park Service, Interagency Archeological Services Branch
Prepared cultural resource management plan for the entire base and directed archaeological survey of a 2,000-acre tract proposed for excessing. Work done prior to joining EDAW.

Defense Material Readiness Command (DARCOM) Archaeological Overviews, Lassen, San Joaquin, Sacramento, Stanislaus, and Napa Counties, CA, Umatilla County, OR, and Mineral County, NV

Principal Investigator

CLIENT: National Park Service, Interagency Archeological Services Branch
Prepared archaeological overviews and management plans for seven installations of DARCOM in the western region. Installations included Sierra Army Depot, Hawthorne Army Depot, Umatilla Activity, Sharpe Army Depot,

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Sacramento Army Depot, Riverbank Army Ammunition Plant, and Benecia Army Cemetery. Work done prior to joining EDAW.

WATER PROJECTS

Emergency Storage Project, San Diego County, CA

Principal Investigator

CLIENT: San Diego County Water Authority

Responsible for cultural resources evaluation, archaeological data recovery, and construction monitoring of major water projects involving construction of dams and associated pipelines.

Pit 3, 4, and 5 Hydroelectric Relicensing Project, Shasta County, CA

Principal Investigator

CLIENT: Pacific Gas & Electric Company

Responsible for the evaluation of 22 sites in the Lake Britton National Register District and for data recovery at seven sites affected by shoreline erosion and recreational facilities. Assisted in the development of the cultural resource management plan and directed the data recovery plan, both of which were approved under FERC relicensing stipulations. Work done prior to joining EDAW.

P5EII Pipeline, San Diego County, CA

Principal Investigator

CLIENT: San Diego County Water Authority

Responsible for archaeological testing, data recovery, and construction monitoring.

Lake Hodges Environmental Impact Study, San Diego County, CA

Principal Archaeologist

CLIENT: City of San Diego

Performed cultural resource survey of existing shoreline to assess impacts of changed operations.

Pit 1 Hydroelectric Relicensing, Shasta County, CA

Principal Investigator

CLIENT: Pacific Gas & Electric Company

Directed archaeological and historical evaluation of the project area to support preparation of Exhibit E of the relicensing application. Performed archaeological survey, and limited test excavation and historical evaluation of the operating system. Prior employer.

Mokelumne River Hydroelectric Relicensing, Alpine, Amador, and Calaveras Counties, CA

Principal Investigator

CLIENT: Pacific Gas & Electric Company

Conducted multiple phases of cultural resource investigations to support relicensing application to FERC. Prepared cultural resource survey, NRHP evaluations, Native American resources survey, data recovery research design, and cultural resource management plan; and performed archaeological test excavations. Prior employer.

Elk Creek Dam, Douglas County, OR

Principal Investigator

CLIENT: U.S. Army Corps of Engineers

Principal investigator for the NRHP evaluation of 27 sites in the area of potential effect. Prior employer.

JAMES CLELAND, PHD

Eastern Sierra Hydroelectric Relicensing, Mono and Inyo Counties, CA
Principal Investigator

CLIENT: Southern California Edison

Directed NRHP assessment of 22 sites within three hydroelectric project areas. Prior employer.

Clark County Flood Control Master Plan, NV

Principal Investigator

CLIENT: Clark County Regional Flood Control District

Directed cultural resource investigations for the EIS. Master plan covered the entire county and had a 20-year team horizon. Prior employer.

Gibraltar Dam Upgrade, Santa Barbara County, CA

Principal Investigator

CLIENT: City of Santa Barbara

Directed cultural resource survey and historical assessment of the existing facilities for proposed strengthening and raising of Gibraltar Dam. Prior employer.

Pamo Dam and Reservoir, San Diego County, CA

Principal Investigator

CLIENT: San Diego County Water Authority

Principal investigator for cultural resources. Prepared a research design for testing and evaluating 100 sites in the proposed project area, assisted in the Section 106 consultation with the ACOE and the state historic preservation officer, directed the drafting of a programmatic MOA under 36CFR800, and supervised archaeological monitoring of geotechnical investigations. Prior employer.

Douglasdale Road Wastewater Treatment Plant,

Richmond City Region, VA

Archaeologist

CLIENT: U.S. Army Corps of Engineers, Norfolk District

Conducted archaeological survey and historical assessment of proposed wastewater treatment plant on the James River and Kanawha Canal in Richmond. Prior employer.

TRANSPORTATION PROJECTS

Southern Nevada Supplemental Airport EIS, Clark County, NV

Co-Principal Investigator for Cultural Resources

CLIENT: Federal Aviation Administration, Bureau of Land Management, and Clark County Division of Aviation

Developed cultural context report and research design. Oversaw Class III survey of 17,000 acres in eastern Mojave Desert.

Guadalupe Corridor, State Route 87, Santa Clara County, CA

Senior Reviewer

CLIENT: Caltrans District 4

Senior reviewer for development and implementation of historical properties treatment plan for SR-87 freeway in San Jose. Investigated buried prehistoric and historic archaeological sites, including one of San Jose's China Towns.

JAMES CLELAND, PHD

Sorrento Overhead, Del Mar, CA

Project Manager

CLIENT: City of Del Mar

Managed Caltrans HPSR for seismic retrofit of a National Register-eligible railroad overpass. Provided City of Del Mar consultation regarding Section 4(f) evaluation of project alternatives.

Palomar Street Widening, Chula Vista, CA

Principal Investigator

CLIENT: City of Chula Vista

Principal investigator for cultural resources surveys of Caltrans local assistance project. Preparation of Negative Archaeological Survey Report, Historical Architectural Survey Report, and Historic Properties Survey Report.

SR-56 Middle Segment EIR, San Diego County, CA

Principal Investigator

CLIENT: City of San Diego

Principal investigator for cultural resource survey and evaluation conducted under Caltrans guidelines.

La Costa Avenue Interchange, Carlsbad, CA

Principal Investigator

CLIENT: City of Carlsbad

Principal investigator for I-5 interchange improvement project. Prepared Archaeological Survey Report, Extended Phase I Report and Historic Properties Survey Report under Caltrans guidelines.

Cole Grade Road, San Diego County, CA

Principal Investigator

CLIENT: County of San Diego

Principal investigator for archaeological testing under CEQA.

SA-680 Freeway, San Diego County, CA

Principal Investigator

CLIENT: County of San Diego

Principal investigator for archaeological testing of four sites in the area of potential effect of proposed freeway.

SR-41 South, Fresno County, CA

Principal Investigator

CLIENT: Fresno County Transportation Authority and Caltrans District 6

Principal investigator for archaeological and historical assessment of the widening and possible realignment of Route 41 south of Fresno. Prepared reports to Caltrans' standards, including the archaeological survey report, the historical architectural survey report, and the historic properties survey report. Prior employer.

Interstate 77, Wythe County, VA

Field Director

CLIENT: Virginia Historical Landmarks Commission

Directed data recovery fieldwork at Fort Chiswell historic site. Prior employer.

JAMES CLELAND, PHD

HAZARDOUS WASTE-RELATED AND PROJECTS

Topock Compressor Station Corrective Measures Study EIR
 San Bernardino County, CA
 Cultural Resource Team Leader
 CLIENT: California Department of Toxic Substances Control
 Investigated potential impacts to cultural resources of groundwater and soils remediation alternatives, including potential to the Topock Maze traditional cultural property.

Station A Remediation, San Diego, CA
 Principal Investigator
 CLIENT: Sempra Energy
 Principal investigator for the archaeological monitoring of the remediation of SDG&E's historic Station A. Required hazardous materials certification.

Kettner and Cedar Remediation, San Diego County, CA
 Principal Investigator
 CLIENT: County of San Diego
 Performed cultural resource monitoring of hazardous waste remediation in San Diego.

Edwards Air Force Base Installation Restoration Program,
 Kern County, CA
 Principal Investigator
 CLIENT: Jacobs Engineering
 Directed cultural resource surveys and evaluations of well closures and PRLs. Assisted in the Section 106 consultation. Prior employer.

Elsmere Canyon Landfill, Los Angeles County, CA
 Discipline Manager
 CLIENT: Elsmere Corporation
 Directed cultural resource assessment for the EIR/EIS. Prior employer.

Weldon Canyon Landfill, Ventura County, CA
 Senior Archaeologist
 CLIENT: Waste Management, Inc.
 Conducted cultural resource surveys of proposed landfill site. Prior employer.

Eagle Mine Remediation, Lake County, CO
 Discipline Manager
 CLIENT: Gulf+Western
 Directed historical research of land use at the Eagle Mine Superfund Site in Leadville. Prior employer.

OTHER PROJECTS

Imperial Dunes Cultural Landscape Report, Imperial County, CA
 Principal Investigator
 CLIENT: Bureau of Land Management
 Principal investigator for ethnographic assessment to the Imperial Dunes as a Native American Cultural Landscape.

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San Diego Presidio, Conditions Assessment Report,
San Diego County, CA
Principal Investigator

CLIENT: City of San Diego, Park and Recreation Department
Principal investigator for preparation of conditions assessment report, focusing on current condition and recommendations for preservation of adobe foundations and associated cultural materials.

Glamis Imperial Project, Imperial County, CA
Principal Archaeologist

CLIENT: Glamis Imperial Corporation
Performed cultural resource survey and NRHP evaluation for proposed open pit gold mine. Traditional cultural property evaluation of the Indian Pass-Running Man district.

Zhongshan Mountain National Park, Nanjing China
Cultural Resource Specialist

CLIENT: City of Nanjing Planning Department
Assisted in the development of a master plan for a nationally significant Ming Dynasty cultural landscape.

Outer Continental Shelf Cultural Resource Sensitivity Assessment,
CA, OR, and WA

Principal Investigator

CLIENT: Minerals Management Service

Directed archaeological records search, literature review, and geological investigations to assess the potential for submerged prehistoric sites from Morro Bay to the Canadian border. Compiled data on over 2,700 sites in the onshore coastal zone and identification of offshore areas with archaeological potential. Prior employer.

Crump Memorial Park, Henrico County, VA

Principal Investigator

CLIENT: Henrico County

Conducted test excavation of early Woodland-Period site in the County park. Prior employer.

Ellerson's Millrace, Richmond City Region, VA

Field Director

CLIENT: National Park Service

Directed test excavation of historic millrace in Richmond National Battlefield Park in Richmond. Prior employer.

Pakistan Lithics Project, Indus Valley, Pakistan

Archaeologist

CLIENT: American Institute of Pakistan Studies

Performed comparative analysis of pre-Harappan, early Harappan, and mature Harappan stone tool industries. Prior employer.

Cultural Resource Overview of Shenandoah National Park,
Page County, VA

Archaeologist

CLIENT: National Park Service

Conducted literature review and authored archaeological portion of the overview. Prior employer.

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Allahdino Expedition, Karachi, Pakistan
 Archaeologist
 CLIENT: American Museum of Natural History
 Analyzed flaked stone tools from a Harappan-Period site. Prior employer.

PUBLICATIONS AND PROFESSIONAL PAPERS

Large Scale Cultural Landscapes in Rights-of-Way Management. In *The Eighth International Symposium on Environmental Concerns in Rights-of-Way Management*, edited by John W. Goodrich-Mahoney, Lawrence P. Abrahamson, Jennifer L. Ballard, and Susan M. Tikalsky. Elsevier, Amsterdam (2008).

Settlement Trends and Sociocultural Change on the Southern California Coast: Complementary Views from Seal Beach and Camp Pendleton. Paper presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia (2008).

Chronology and Distribution of Archaeological Components in Seal Beach, California. Paper presented at the 40th Annual Meeting of the Society for California Archaeology, Ventura (2006).

The Confines of Space: Circular Surface Features in the Colorado Desert. Paper presented at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City (2005).

The Radiocarbon Chronology of the North Stallard Site, CA-IMP-7911/H on the Lower Colorado River, California. Paper presented at the Three-Corners Conference, Las Vegas, Nevada (2005).

Preservation of Quechan Cultural Sites. Paper presented at the 38th Annual Meeting of the Society for California Archaeology, Riverside, California (2004).

The Sacred and the Mundane: Cultural Landscape Concepts and Archaeological Interpretation in the Colorado Desert. Paper presented at the 38th Annual Meeting of the Society for California Archaeology, Riverside, California (2004).

Archaeological Investigations at CA-IMP-7911/H, the North Stallard Locality on the Lower Colorado River, California. Paper presented at the 38th Annual Meeting of the Society for California Archaeology, Riverside, California (2004).

Stratified Patayan Sites Near Palo Verde, Lower Colorado River. Paper presented at the 37th Annual Meeting of the Society for California Archaeology, Sacramento, California (2003).

On the Trail of Dreams: Archaeological and Ethnographic Recordation of the Palo Verde Point Petroglyphs and Geoglyphs (with Rebecca Apple). Paper presented at the 36th Annual Meeting of the Society for California Archaeology, San Diego, California (2002).

Protohistoric Recessional Shorelines at Lake Cahuilla, California (with Rebecca Apple and Andrew York). Paper presented at the Millennium Conference: The Human Journey and Ancient Life in California's Deserts, Barstow, California (2001).

The Tides of History: Modeling Native American Use of Recessional Shorelines (with Angela Johnson). Paper presented at the 20th Annual ESRI International Users Conference, San Diego, California (2000).

JAMES CLELAND, PHD

Late Prehistoric and Protohistoric Use of Recessional Shorelines of Lake Cahuilla, California (with A. York, S. Rose, and C. Bowden-Renna). Poster Session Paper presented at the 26th Great Basin Anthropological Conference, Bend, Oregon (1998).

Very Low Elevation Early and Middle Holocene Occupation at the Salton Sea Test Base, California (with R. McCorkle Apple and T. Wahoff). Poster Session Paper presented at the 26th Great Basin Anthropological Conference, Bend, Oregon (1998).

Archaeological Investigations for the Lucerne to Big Bear Transmission Line (with A. York). Paper presented at the 32nd Annual Meeting of the Society for California Archaeology, San Diego, California (1998).

Paleo-Indian to Protohistoric: The Chronology of Human Occupation of the Salton Sea Test Base. Paper presented at the 32nd Annual Meeting of the Society for California Archaeology, San Diego, California (1998).

Resource Intensification, Environmental Stress and the Emergence of Complex Hunter-Gatherers on the Middle Pit River, California. Paper presented at the 61st Annual Meeting of the Society for American Archaeology, New Orleans, Louisiana (1996).

A Summary of Archaeological and Paleoecological Investigations at Lake Britton. Paper presented at the Sacramento River Ecosystem in Prehistory: An Archaeological Symposium, sponsored by the Central California Archaeological Foundation, Chico, California (1996).

Environment, Settlement, and Subsistence Change, Middle Pit River, California (with J.C. Chatters and W.G. Spaulding). Paper presented at the 29th Annual Meeting of the Society for California Archaeology, Eureka, California (1995).

Environment, Settlement, and Subsistence Change on the Middle Pit River, California. Paper presented at the 29th Annual Meeting of the Society for California Archaeology, Eureka, California (1994).

Cultural Resource Management in the Eastern Mojave. Paper presented at the East Mojave Desert Symposium/Workshop, University of California, Riverside (1992).

Recent Archaeological Investigations in the North Las Vegas Valley (with R. McCorkle Apple and M.S. Kelly). *Crossing the Borders: Quaternary Studies in Eastern California and Southwestern Nevada*. San Bernardino County Museum Association Special Publication, Redlands, California (1991).

Obsidian Hydration Dating at Coso: Part III. Paper presented at the 24th Annual Meeting of the Society for California Archaeology, Foster City, California (1990).

Multi-Stage Research in the Siting and Assessment of Linear Projects. Paper presented at the 54th Annual Meeting of the Society for American Archaeology, Atlanta, Georgia (1989).

Induced Hydration Rates for Coso Obsidian: An Update. Paper presented at the 23rd Annual Meeting of the Society for California Archaeology, Los Angeles, California (1989).

Problems in the Hydration Dating of Coso Obsidian at the Source. Paper presented at the 22nd Annual Meeting of the Society for California Archaeology, Redding, California (1988).

JAMES CLELAND, PHD

A Tentative Culture-Historical Sequence for the Mokelumne River Canyon: Proceedings of the Society for California Archaeology 1, edited by S.M. Hector, L.E. Christenson, G.T. Gross, and M.D. Rosen. Society for California Archaeology, San Diego, California (1988).

Achieving Cultural Resource Compliance along Multistate Rights-of-Way in the West (with A.E. Rogge and C.M. Woods). *Proceedings Fourth Symposium on Environmental Concerns in Rights-of-Way Management*, edited by W.R. Byrnes and H.A. Holt. Purdue University, West Lafayette, Indiana (1987).

Direct-Historical and Optimal-Foraging Approaches to Subsistence at Lake Britton. Paper presented at the 21st Annual Meeting of the Society for California Archaeology, Fresno, California (1987).

A Tentative Culture-Historical Sequence for the Mokelumne River Canyon. Paper presented at the 21st Annual Meeting of the Society for California Archaeology, Fresno, California (1987).

Assessing Archaeological Sensitivity and Impacts of Transmission Lines. Paper presented at the Third National Conference on Cultural Resource Management in the Electric Utility Industry, St. Louis, Missouri (1986).

Current Approaches to the Evaluation of Archaeological Significance. Paper presented at the 20th Annual Meeting of the Society for California Archaeology, Santa Rosa, California (1986).

A Systematic Approach to Lithic Analysis in the Indus Region: Archaeological Studies in India and Pakistan, edited by Jerome Jacobson. Oxford and IBH Press, Delhi, India (1986).

The Use of Research Designs in the Evaluation of Archaeological Significance. Paper presented at the 20th Annual Meeting of the Society for California Archaeology, Santa Rosa, California (1986).

Fort Irwin: Research and Management in the Face of Massive Damage (with M.M. Lyneis and C.N. Warren). Paper presented at the Annual Meeting of the Society for American Archaeology, Pittsburgh, Pennsylvania (1983).

Lithic Resource Procurement and Exchange Systems. Symposium Chair. 17th Annual Meeting of the Society for California Archaeology, San Diego, California (1983).

Managing Cultural Resources in a Large Urban Redevelopment Project. Paper presented at the Conference on Archaeology and Local Government, the California Office of Historic Preservation, Ventura, California (1981).

Historical Archaeology in Environmental Planning. Paper presented at the National Conference on Land Use and Resource Management, Edison Electric Institute, Portland, Oregon (1980).

Urban Archaeology and Cultural Resource Management: An Example from Downtown San Diego. Paper presented at the Annual Meeting of the Southwestern Anthropological Association, San Diego, California (1980).

The Use of Geographic Models in Urban Historical Archaeology. Paper presented at the Workshop on Historical Archaeology, Lowie Museum, Berkeley, California (1980).

The Use of Backhoe Trenching in Identifying Buried Historical Sites. Paper presented at the Workshop on Historical Archaeology, University of Nevada, Reno (1979).

JAMES CLELAND, PHD

The Lithic Industry at Allahdino: A Metric and Quantitative Analysis of a Harappan Activity System (with M.A. Hoffman). *Collected Papers of the Allahdino Expedition, #2*, New York, New York (1977).

Preliminary Report on the Fort Chiswell Salvage Project (with T.C. Funk). Quarterly Bulletin of the Archaeological Society of Virginia (1976).

SELECTED REPORTS

Peak to Playa: Southern Nevada Supplemental Airport Environmental Impact Statement Cultural Resources Report. EDAW, Inc., San Diego (2008).

Piecing Together the Prehistory of Land Hill. A Place Remembered, Orange County, California. EDAW Cultural Publications 3, San Diego (2007).

Regional Archaeological Research Design for the Chocolate Mountain Aerial Gunnery Range, Imperial and Riverside Counties, California (with Jackson Underwood and Tanya Wahoff). EDAW, Inc., San Diego (2005).

A View across the Cultural Landscape of the Lower Colorado Desert: Cultural Resources Investigations for the North Baja Pipeline Project (with Rebecca Apple). EDAW, Inc., San Diego (2003).

Imperial San Dunes as a Native American Cultural Landscape (with John Russell, Clyde Woods, and Jackson Underwood). Bureau of Land Management, Sacramento, and EDAW, Inc., San Diego (2002).

Class II Archaeological Survey of Imperial San Dunes (with Jackson Underwood). Bureau of Land Management, Sacramento, and EDAW, Inc., San Diego (2002).

Historic Properties Treatment Plan for the Emergency Storage Project (with Rebecca Apple). San Diego County Water Authority and EDAW, Inc., San Diego (2001).

San Diego Presidio Condition Assessment Report (with A. Crosby, B. Smillie, S. Molentin, and C. Dolan). KEA Environmental Inc., San Diego (1999).

Cultural Resources Investigations for the Lucerne Valley and Big Bear Valley Transmission Line and Substation Project, San Bernardino County, California (with A.L. York and C. Dolan). KEA Environmental, Inc., San Diego, California (1998).

Prehistory of the Middle Pit River, Northeastern California: Archaeological Investigations at Lake Britton, Pit 3, 4 & 5 Project (editor). KEA Environmental, Inc., San Diego, California (1997).

A Research Design for the Evaluation of Archaeological Sites within the Hellman Ranch Specific Plan Area (with A. York and M.G. Baksh). KEA Environmental, Inc., San Diego, California (1997).

Heritage Resources Report for the Oil and Gas Leasing EIS, Los Padres National Forest (with R. Allen, S. Heipel, and R.F. Beck). KEA Environmental, Inc., San Diego, California (1996).

African-American Community and Church (with J. Newland). In: Archaeological Investigations in Downtown San Diego, Horton's Addition Block H. KEA Environmental, Inc., San Diego, California (1995).

JAMES CLELAND, PHD

Mokelumne River Project. Revised Cultural Resource Management Plan (with R. McCorkle Apple). Keller Environmental Associates, Inc., San Diego, California (1993).

Sugarloaf Archaeological District: Cultural Resources Management Plan. Prepared for the Naval Weapons Center, China Lake, California. Dames & Moore, San Diego, California (1991).

Kern River Pipeline Cultural Resource Report, California (with R. McCorkle Apple, A.L. York, and P. Friedman). Submitted to the Federal Energy Regulatory Commission. Dames & Moore, San Diego, California (1990).

Kern River Pipeline, Cultural Resource Report, Nevada (with M.S. Kelly, K.L. Hull, A.J. Macdougall, and P. Friedman). Submitted to the Federal Energy Regulatory Commission. Dames & Moore, San Diego, California (1990).

Mokelumne River Project: Research Design for Data Recovery. Prepared for Pacific Gas & Electric Company. Dames & Moore, San Diego, California (1990).

Sugarloaf Mountain in Prehistory: Archaeological Testing and Data Recovery for the Exploratory Drilling Program II and the Unit No. 1 Project (with R. McCorkle Apple and E. Nilsson). Prepared for the Los Angeles Department of Water and Power. Dames & Moore, San Diego, California (1990).

Cultural Resources Inventory of the California-Oregon Transmission Project (with J.V. Jermann, A.L. York, M.S. Kelly, C.M. Woods, and J.E. Wooley). Prepared for the Transmission Agency of Northern California. Dames & Moore, San Diego, California (1988).

Archaeological Investigations at Lake Britton: Pit 3, 4 and 5 Archaeological Testing Project (with M.S. Kelly and E. Nilsson). Wirth Environmental Services, San Diego, California (1987).

Archaeological Investigations at Sugarloaf Mountain (with M.S. Kelly, E. Nilsson, and A.L. York). Dames & Moore, San Diego, California (1987).

Santa Ynez Unit Development: Archaeological Evaluation Program (with A.L. York, C.M. Woods, and J.G. Costello). Dames & Moore, San Diego, California (1986).

An Archaeological Research Design for the Evaluation of Cultural Resources in Pamo Valley, San Diego, California (with J.R. Cook, J. Schaefer, and R. McCorkle Apple). Wirth Environmental Services, San Diego, California (1985).

Mokelumne River Project: Archaeological Evaluation Program (with A. Pierce and J.C. Smith). Wirth Environmental Services, San Diego, California (1985).

Developing the Bay: An Archaeological and Historical Overview of the Marina/Columbia Redevelopment Area (with D.C. Burkenroad, C.L. Smith, and J.C. Smith). Prepared for the Redevelopment Agency, San Diego, California (1980).

Mokelumne River Project: Cultural Resources Report (with J. Woodward and J.C. Smith). Prepared for Pacific Gas and Electric Company, San Francisco, California (1980).

The San Diego Barracks: An Archaeological Assessment (with D.C. Burkenroad). Prepared for the Redevelopment Agency, San Diego, California (1980).

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Potrero 7: Phase I Archaeological Overview and Inventory (with J.C. Smith and C.A. Smith). On file at Pacific Gas and Electric Company, San Francisco, California (1979).

Archaeological Excavations at 44He91, Crump Memorial Park, Henrico County, Virginia (with L.D. Mouer). On file at Virginia Commonwealth University and the Virginia Historical Landmarks Commission, Richmond, Virginia (1978).

Archaeological Reconnaissance at the Douglasdale Road Water Treatment Plant, Richmond, Virginia. On file with the U.S. Army Corps of Engineers, Norfolk, Virginia (1978).

The Shenandoah National Park as a Cultural Resource: An Evaluation of Past Archaeological Surveys and Work in the Shenandoah National Park (with M.A. Hoffman, T.C. Funk, and R.W. Vernon). Denver Service Center, National Park Service, Colorado (1975)

WAYNE GLENNY
Archaeologist

SUMMARY

Wayne Glenny has over seven years of experience in the fields of anthropology and archaeology. Mr. Glenny is familiar with many aspects of anthropology and archaeology including, human osteology, primate/human evolution, faunal, lithic, ceramic, and isotopic analyses. He has worked extensively on southern African sites dating to the Early, Middle, and Late Stone Age, the Iron Age and historical time period in South Africa. Mr. Glenny worked as an independent consultant on excavations throughout South Africa. The scopes of these projects have included Phase I record searches, sensitivity studies, small and large-scale surveys, site evaluations, and full data recovery investigations in a wide range of regulatory and geographic settings. In addition, he has complemented this work by publishing results of his research in regional forums; presenting papers at academic conferences; and participating in a number of public outreach efforts relating to cultural resources in South Africa.

EDUCATION

The Natal Museum, South Africa, 2006.
Commercial Class IV Dive Qualification.
Required for participation in Maritime Archaeology.

Master of Science, Archaeology, **University of the Witwatersrand**, South Africa, 2004-2005. Master's by Coursework and Research. Research project entailed the faunal analysis of the micromammal assemblage from Sibudu Cave, KZN. This included taphonomic analyses, species identification and palaeo-environmental reconstruction. Coursework included faunal analysis, palaeo-archaeology (landscapes), palaeo-anthropology, and human osteology.

Honours, Archaeology. **University of Cape Town**, South Africa, 2003. Honours project entailed extensive survey and mapping of several shell middens in Holbaai region on the Vredenburg Peninsula, WC. Coursework included human osteology, primate and human evolution, isotopic analysis, philosophy of science and faunal analysis.

Bachelor of Arts, Archaeology/History, Double major in Archaeology and History. **University Of Cape Town (UCT)**, South Africa, 2000-2002. Published undergraduate paper in *Historical Approaches* (2002)

South African National Defense Force, South Africa, Officer/Instructor, 1994-1999. Held the rank of Captain in the South African Armoured Corps. Instructor of junior candidate officers on various armoured weapon systems. Honourably discharged in February 1999.

AFFILIATIONS

Association of Environmental Professionals

CERTIFICATION

Registered Engineer-in-Training, South Carolina, 1987

Wayne Glenny has over seven years of experience in the fields of anthropology and archaeology. Mr. Glenny is familiar with many aspects of anthropology and archaeology including, human osteology, primate/human evolution, faunal, lithic, ceramic, and isotopic analyses. He has worked extensively on southern African sites dating to the Early, Middle, and Late Stone Age, the Iron Age and historical time period in South Africa. Mr. Glenny worked as an independent consultant on excavations throughout South Africa. The scopes of these projects have included Phase I record searches, sensitivity studies, small and large-scale surveys, site evaluations, and full data recovery investigations in a wide range of regulatory and geographic settings. In addition, he has complemented this work by publishing results of his research in regional forums; presenting papers at academic conferences; and participating in a number of public outreach efforts relating to cultural resources in South Africa. Mr. Glenny has been working in southern California on various cultural resource projects. Mr. Glenny has also been teaching the subject of anthropology and archaeology for two years. Mr. Glenny has a Commercial Class IV diving qualification in order to conduct maritime archaeological projects.

ARCHAEOLOGICAL WORK EXPERIENCE

Institute of Cultural Resource Management, South Africa
Associate Archaeologist/Curator

CLIENT: The Natal Museum

Division Leader in the Institute of Cultural Resource Management at the Natal Museum. Supervised and participated in the completion of numerous CRM contracts throughout KwaZulu-Natal. Conducted survey, recording, mapping, monitoring and mitigation of numerous archaeological sites. Liaised with local heritage resource agencies. Duties included the running of the CRM unit, composing proposals and budgets, acquiring clients, writing reports, photography, the completion of site record forms, data capture, and coordinating with contractors, engineers and developers.

The Natal Museum, South Africa
Commercial Class IV Dive Qualification

CLIENT: The Natal Museum

Required for participation in Maritime Archaeology.

University of the Witwatersrand, South Africa
Teaching Assistant

CLIENT: University of the Witwatersrand

Taught freshman and sophomore Anthropology courses. Teaching duties included lecturing twice a week, forming lesson plans, grading, and providing course materials. Lectures consisted of artifact identification, lithic analysis, human osteology, primate and human evolution and evolutionary theory.

Archaeological Resource Management, South Africa
Archaeologist

CLIENT: ARM: The University of the Witwatersrand

Participated in the completion of several CRM contracts throughout Gauteng and Northwestern Provinces. Conducted survey, recording, mapping, and excavation of numerous southern African Iron Age sites.

UCT - Archaeology Contracts Office, South Africa
Archaeologist

CLIENT: ACO: University of Cape Town

WAYNE GLENNY

Excavated numerous historic burials (for later reburial) in conjunction with a property development, over an eight-month period.

SELECTED PROJECT EXPERIENCE

Ladysmith Municipality: Ladysmith KwaZulu-Natal, South Africa.

Associate Archaeologist/Curator

CLIENT: Ladysmith Municipality

Ladysmith – Contracted to conduct a cultural survey and record an Anglo-Boer War (1900-1903) site around the besieged town of Ladysmith. Recorded numerous rock walled embattlements and trenches and conducted test excavations on the site.

DOT (KZN) Richmond KwaZulu-Natal, South Africa

Associate Archaeologist/Curator

CLIENT: Department of Transport

Department of Transport, KZN – Contracted to conduct a cultural survey and monitor the construction of bridge footprints.

Charlestown Burial Relocation, Charlestown Zululand, South Africa

Associate Archaeologist/Curator

CLIENT: S & N Engineering.

Charlestown – Contracted for the emergency excavation and relocation of five historical burials discovered during road construction.

Steam Rail: KwaZulu-Natal, South Africa

Associate Archaeologist/Curator

CLIENT: Spoornet

KwaZulu-Natal – Contracted to document the historical steam-train rail lines between numerous historic towns in KwaZulu-Natal.

Field Schools: Various Locations, South Africa

Archaeologist

CLIENT: University of Cape Town, University of the Witwatersrand.

Field School Experience – Participated in numerous archaeological field schools, including Cederburg (UCT, 2000), Eastern Cape (UCT, 2002), Makapansgat (UCT/Arizona State Univ., 2003), Sibudu (Wits, 2004), and Limpopo Valley (Wits, 2004).

Holbaai: Vredenburg Peninsula, Western Cape, South Africa

Archaeologist

CLIENT: University of Cape Town.

University of Cape Town – Honours project involved an extensive survey of shell mega-middens and stone hearths. Involved surface collection, mapping of the site with EDM, photography and drawing of several features. Project included identification and statistical analysis of shell remains from middens, an analysis of Khoisan ceramics (hunter-gatherer), and a spatial analysis of several sites and their landscape distribution.

Ottosdal: North-west Province, South Africa

Archaeologist

CLIENT: R.A.R.I University of the Witwatersrand

Ottosdal – Mapped, with EDM, several hundred rock engravings. Produced several maps showing the spatial relationship of these engravings.

WAYNE GLENNY

Steelpoort: Mesina, Northern Province, South Africa

Archaeologist

CLIENT: University of the Witwatersrand

Steelpoort – Served as crewmember for the excavation of two Iron Age sites. Site features included an iron smelting furnace and an early Bantu homestead.

Klipriviersburg: Gauteng Province, South Africa

Archaeologist

CLIENT: The University of the Witwatersrand

Klipriviersburg – Surveyed and mapped over fourteen late Iron Age stone-walled settlements with EDM. Completed technical drawings of these homesteads and excavated several units at two of these sites.

Thabazimbi: Thabazimbi, Northern Province, South Africa

Archaeologist

CLIENT: The University of the Witwatersrand

Thabazimbi – Mapped three Iron Age sites with EDM. Completed technical drawings of distribution of site features, including stone walling, furnaces, hut floors, an iron age ochre mine, and grainbin foundations.

DOT (KZN), Zululand/KwaZulu-Natal, South Africa

Archaeologist/Curator

CLIENT: DOT

Zululand – Contracted to conduct a cultural survey of numerous road routes for the department of Transport KwaZulu-Natal.

Prestwich Place, Cape Town, South Africa

Archaeologist

CLIENT: The University of Cape Town

Greenpoint Cape Town: Crew member on an excavation of a historic burial ground.

Ashburton: Pietermaritzburg, KwaZulu-Natal, South Africa

Associate Archaeologist/Curator

CLIENT: Smith and Green Consultants

Ashburton – Contracted to survey of an archaeological sensitive area.

FPLE Project Beacon Solar, Mojave, CA

Field Director

CLIENT: Florida Power and Light Energy, LLC, Kern County, CA

FPLE Project Beacon Solar, Mojave, CA – Cultural survey of an area north of Mojave for proposed solar farm.

PUBLICATIONS

2007. Presented results of M.Sc. research at SASQUA conference.

2006. An analysis of the micromammal assemblage from Sibudu Cave, KwaZulu-Natal. *South African Humanities* 18:279-288.

2003. Poster presentation of Honours project at SAA conference.

2002. Pacifist and Fascist views of World War I: a comparative study of 'All Quiet on the Western Front' and 'The Storm of Steel'. *Historical Approaches Vol: 1*: 71-82

ATTACHMENT 2
NATIVE AMERICAN CONTACTS

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**Beacon Solar Energy Project
Native American Communication Log**

Tribe	Date	Representative	Discussion	Contacted by
Tule River Indian Tribe				
	8/6/08	Neil Peyron, Chairman	Left message offering to update Neil Peyron about the project.	EDAW to Neil Peyron
	8/8/08		Called, but was not available.	EDAW to Neil Peyron
Kern Valley Indian Council				
	8/6/08	Robert Robinson, Historic Preservation Officer	Left message offering to update Robert Robinson about the project.	EDAW to Robert Robinson
	8/8/08		Talked about project and potential for providing future monitors. See ROC from 8/8/08. Also sent email containing maps and contact information.	EDAW to Robert Robinson
Kitanemuk and Yowlumne Tejon Indians				
	8/6/08	Delia Dominguez	Delia is not familiar with the project, and she is also not familiar with the project area. She does not have any input or comment, but would like to receive additional information about the findings of the cultural resource report if future mailings are made to contacts on the NAHC list.	EDAW to Delia Dominguez
San Fernando Band of Mission Indians				
	7/11/08	John Valenzuela, Chairman	Multiple phone calls regarding contract finalization for monitoring via Seven Feathers Corporation.	EDAW to/from John Valenzuela
	7/12/08		Multiple faxes regarding contract finalization for monitoring via Seven Feather Corporation	EDAW to/from John Valenzuela
	7/14/08		Communication via phone and email about a communication error that sent a monitor into the field on Monday 7/14/08 despite no work being done on the project.	EDAW to/from John Valenzuela
	7/16/08		Email sent giving updated information as to when the monitor should meet the crew in the field.	EDAW to John Valenzuela
	7/24/08		Multiple phone calls concerning Seven Feathers Corporation monitoring duties for a CalEd project and possible relationships between the two projects.	EDAW to/from John Valenzuela
	7/25/08		Email sent giving updated information as to when the monitor should meet the crew in the field.	EDAW to John Valenzuela
Tubatulabals of Kern Valley				
	8/6/08	Donna Begay, Chairwoman	Left message offering to update Donna Begay about the project.	EDAW to Donna Begay
	8/8/08		Spoke about project and provided update. The study area is outside of the traditional territory, but could see how the Kern Valley Indian Council would be interested. No specific input at this time.	EDAW to Donna Begay
Independent Contacts				
	8/6/08	Ron Wermuth	Left message to follow up on whether there is any feedback on the project now that a map has been sent.	EDAW to Ron Wermuth

**ATTACHMENT 3
PROJECT MAPS**

(CONFIDENTIAL)

FILED UNDER SEPARATE CONFIDENTIAL COVER

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**ATTACHMENT 4
DPR SITE FORMS**

(CONFIDENTIAL)

FILED UNDER SEPARATE CONFIDENTIAL COVER

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**ATTACHMENT 5
CATALOGS**

(CONFIDENTIAL)

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ATTACHMENT 6
RADIOCARBON DATING

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4985 SW 74 Court
Miami, Florida 33155 USA
Tel: 305 667 5167
Fax: 305 663 0964
Beta@radiocarbon.com
www.radiocarbon.com

Darden Hood
President

Ronald Hatfield
Christopher Patrick
Deputy Directors

September 12, 2008

Ms. Tanya Wahoff
EDAW, Inc.
1420 Kettner Boulevard
Suite 620
San Diego, CA 92101
USA

RE: Radiocarbon Dating Results For Samples 8K001-11-1, 8K001-12-2, 8K001-13-3

Dear Ms. Wahoff:

Enclosed are the radiocarbon dating results for three samples recently sent to us. They each provided plenty of carbon for accurate measurements and all the analyses proceeded normally. As usual, the method of analysis is listed on the report with the results and calibration data is provided where applicable.

As always, no students or intern researchers who would necessarily be distracted with other obligations and priorities were used in the analyses. We analyzed them with the combined attention of our entire professional staff.

If you have specific questions about the analyses, please contact us. We are always available to answer your questions.

Our invoice is enclosed. Please, forward it to the appropriate officer or send VISA charge authorization. Thank you. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,



REPORT OF RADIOCARBON DATING ANALYSES

Ms. Tanya Wahoff

Report Date: 9/12/2008

EDAW, Inc.

Material Received: 8/13/2008

Sample Data	Measured Radiocarbon Age	13C/12C Ratio	Conventional Radiocarbon Age(*)
Beta - 247914 SAMPLE : 8K001-11-1 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1270 to 1320 (Cal BP 680 to 630)	480 +/- 40 BP	-12.8 o/oo	680 +/- 40 BP
Beta - 247915 SAMPLE : 8K001-12-2 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1650 to 1700 (Cal BP 300 to 250) AND Cal AD 1720 to 1820 (Cal BP 230 to 130) Cal AD 1840 to 1880 (Cal BP 110 to 70) AND Cal AD 1920 to 1950 (Cal BP 40 to 0)	100.3 +/- 0.5 pMC	-11.8 o/oo	190 +/- 40 BP
Beta - 247916 SAMPLE : 8K001-13-3 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1040 to 1240 (Cal BP 920 to 700)	650 +/- 40 BP	-10.9 o/oo	880 +/- 40 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the 14C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby 14C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured 13C/12C ratios (delta 13C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta 13C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta 13C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-12.8:lab. mult=1)

Laboratory number: Beta-247914

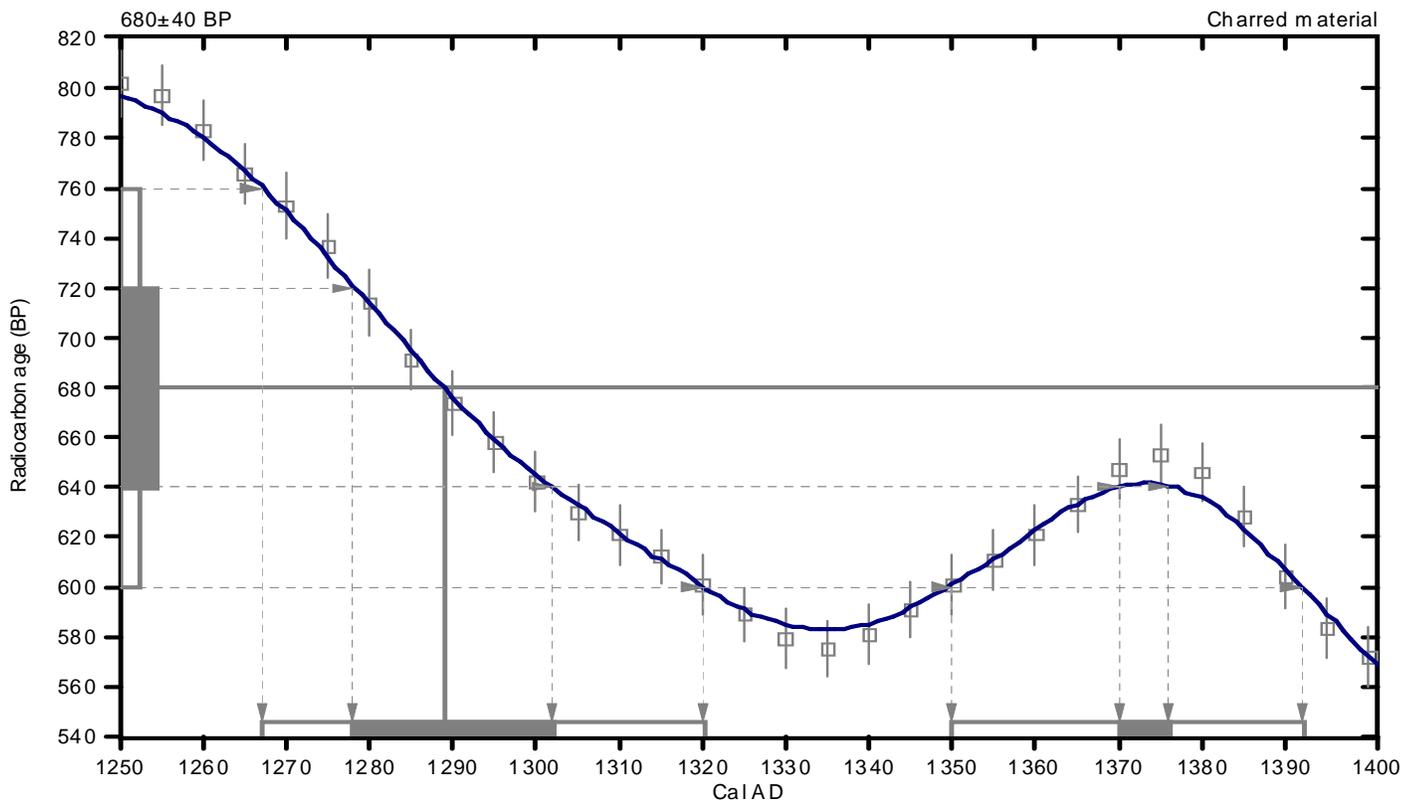
Conventional radiocarbon age: 680±40 BP

**2 Sigma calibrated results: Cal AD 1270 to 1320 (Cal BP 680 to 630) and
(95% probability) Cal AD 1350 to 1390 (Cal BP 600 to 560)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal AD 1290 (Cal BP 660)

1 Sigma calibrated results: Cal AD 1280 to 1300 (Cal BP 670 to 650) and
(68% probability) Cal AD 1370 to 1380 (Cal BP 580 to 570)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p 317-322

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-11.8:lab. mult=1)

Laboratory number: Beta-247915

Conventional radiocarbon age: 190±40 BP

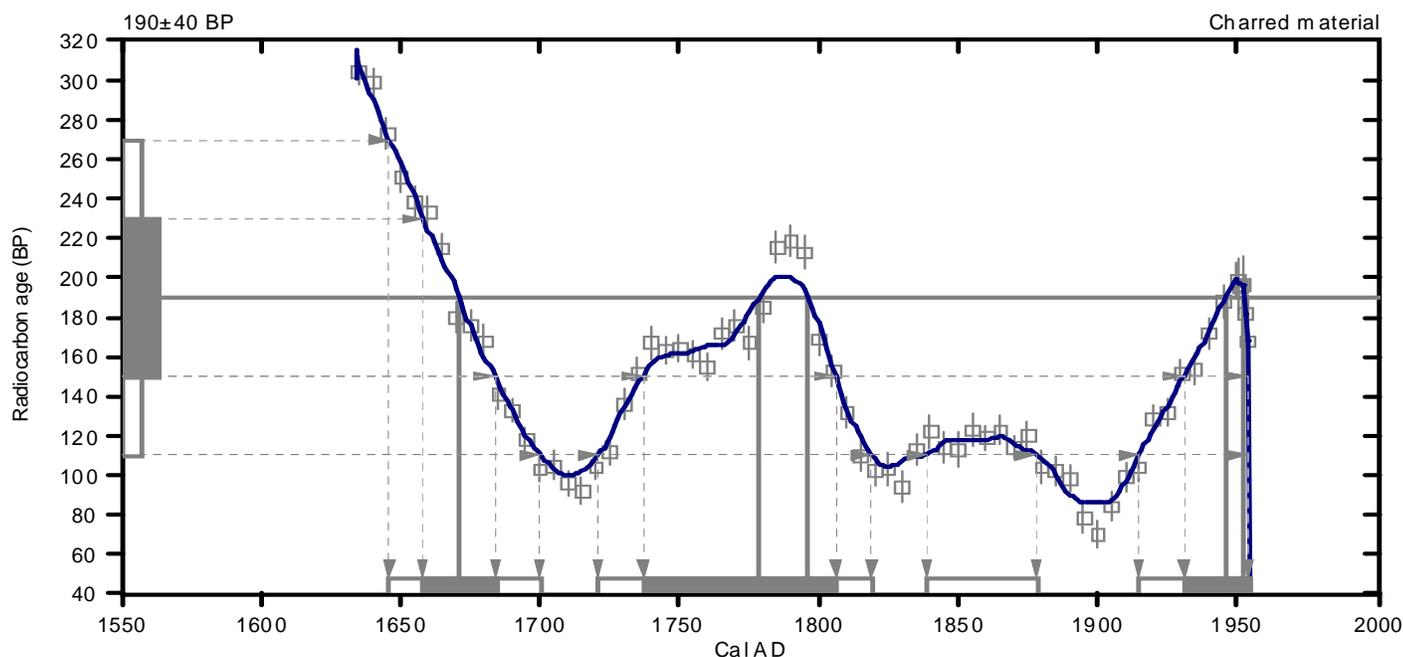
**2 Sigma calibrated results: Cal AD 1650 to 1700 (Cal BP 300 to 250) and
(95% probability) Cal AD 1720 to 1820 (Cal BP 230 to 130) and
Cal AD 1840 to 1880 (Cal BP 110 to 70) and
Cal AD 1920 to 1950 (Cal BP 40 to 0)**

Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal AD 1670 (Cal BP 280) and
Cal AD 1780 (Cal BP 170) and
Cal AD 1800 (Cal BP 150) and
Cal AD 1950 (Cal BP 0) and
Cal AD 1950 (Cal BP 0)

**1 Sigma calibrated results: Cal AD 1660 to 1680 (Cal BP 290 to 270) and
(68% probability) Cal AD 1740 to 1810 (Cal BP 210 to 140) and
Cal AD 1930 to 1950 (Cal BP 20 to 0)**



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

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CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-10.9:lab. mult=1)

Laboratory number: Beta-247916

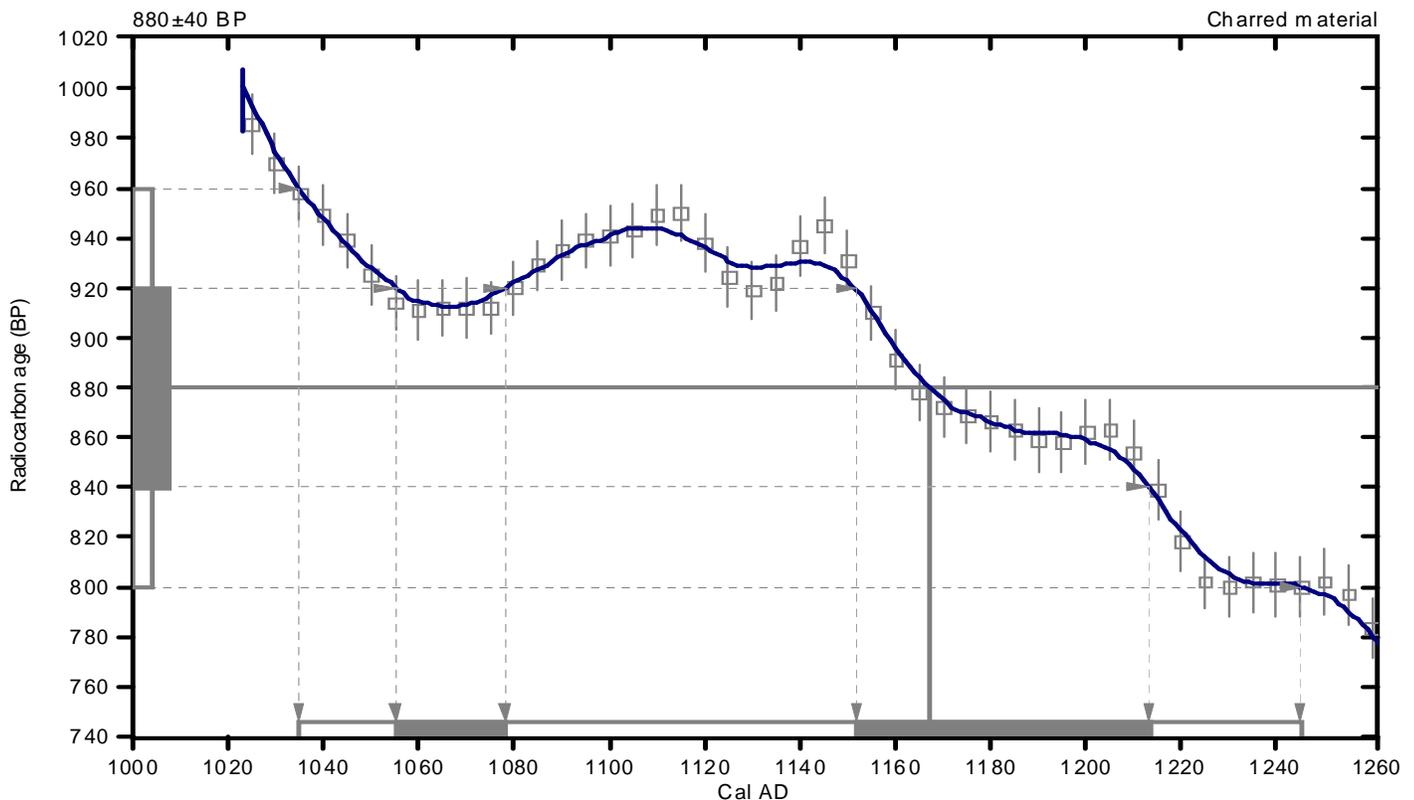
Conventional radiocarbon age: 880±40 BP

**2 Sigma calibrated result: Cal AD 1040 to 1240 (Cal BP 920 to 700)
(95% probability)**

Intercept data

Intercept of radiocarbon age
with calibration curve: Cal AD 1170 (Cal BP 780)

1 Sigma calibrated results: Cal AD 1060 to 1080 (Cal BP 900 to 870) and
(68% probability) Cal AD 1150 to 1210 (Cal BP 800 to 740)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p 317-322

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www.radiocarbon.com

Darden Hood
President

Ronald Hatfield
Christopher Patrick
Deputy Directors

September 15, 2008

Dr. James H. Cleland
EDAW, Incorporated
1420 Kettner Boulevard
Suite 620
San Diego, CA 92101
USA

RE: Radiocarbon Dating Result For Sample 8K001-08-1

Dear Jamie:

Enclosed is the radiocarbon dating result for one sample recently sent to us. It provided plenty of carbon for an accurate measurement and the analysis proceeded normally. As usual, the method of analysis is listed on the report sheet and calibration data is provided where applicable.

As always, no students or intern researchers who would necessarily be distracted with other obligations and priorities were used in the analysis. It was analyzed with the combined attention of our entire professional staff.

If you have specific questions about the analyses, please contact us. We are always available to answer your questions.

Our invoice has been sent separately. Our copy is enclosed. Thank you for your prior efforts in arranging payment. As always, if you have any questions or would like to discuss the results, don't hesitate to contact me.

Sincerely,



REPORT OF RADIOCARBON DATING ANALYSES

Dr. James H. Cleland

Report Date: 9/15/2008

EDAW, Incorporated

Material Received: 8/21/2008

Sample Data	Measured Radiocarbon Age	¹³ C/ ¹² C Ratio	Conventional Radiocarbon Age(*)
Beta - 248247 SAMPLE : 8K001-08-1 ANALYSIS : AMS-Standard delivery MATERIAL/PRETREATMENT : (charred material): acid/alkali/acid 2 SIGMA CALIBRATION : Cal AD 1290 to 1420 (Cal BP 660 to 530)	560 +/- 40 BP	-22.9 o/oo	590 +/- 40 BP

Dates are reported as RCYBP (radiocarbon years before present, "present" = AD 1950). By international convention, the modern reference standard was 95% the ¹⁴C activity of the National Institute of Standards and Technology (NIST) Oxalic Acid (SRM 4990C) and calculated using the Libby ¹⁴C half-life (5568 years). Quoted errors represent 1 relative standard deviation statistics (68% probability) counting errors based on the combined measurements of the sample, background, and modern reference standards. Measured ¹³C/¹²C ratios (delta ¹³C) were calculated relative to the PDB-1 standard.

The Conventional Radiocarbon Age represents the Measured Radiocarbon Age corrected for isotopic fractionation, calculated using the delta ¹³C. On rare occasion where the Conventional Radiocarbon Age was calculated using an assumed delta ¹³C, the ratio and the Conventional Radiocarbon Age will be followed by "**". The Conventional Radiocarbon Age is not calendar calibrated. When available, the Calendar Calibrated result is calculated from the Conventional Radiocarbon Age and is listed as the "Two Sigma Calibrated Result" for each sample.

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12=-22.9:lab. mult=1)

Laboratory number: Beta-248247

Conventional radiocarbon age: 590±40 BP

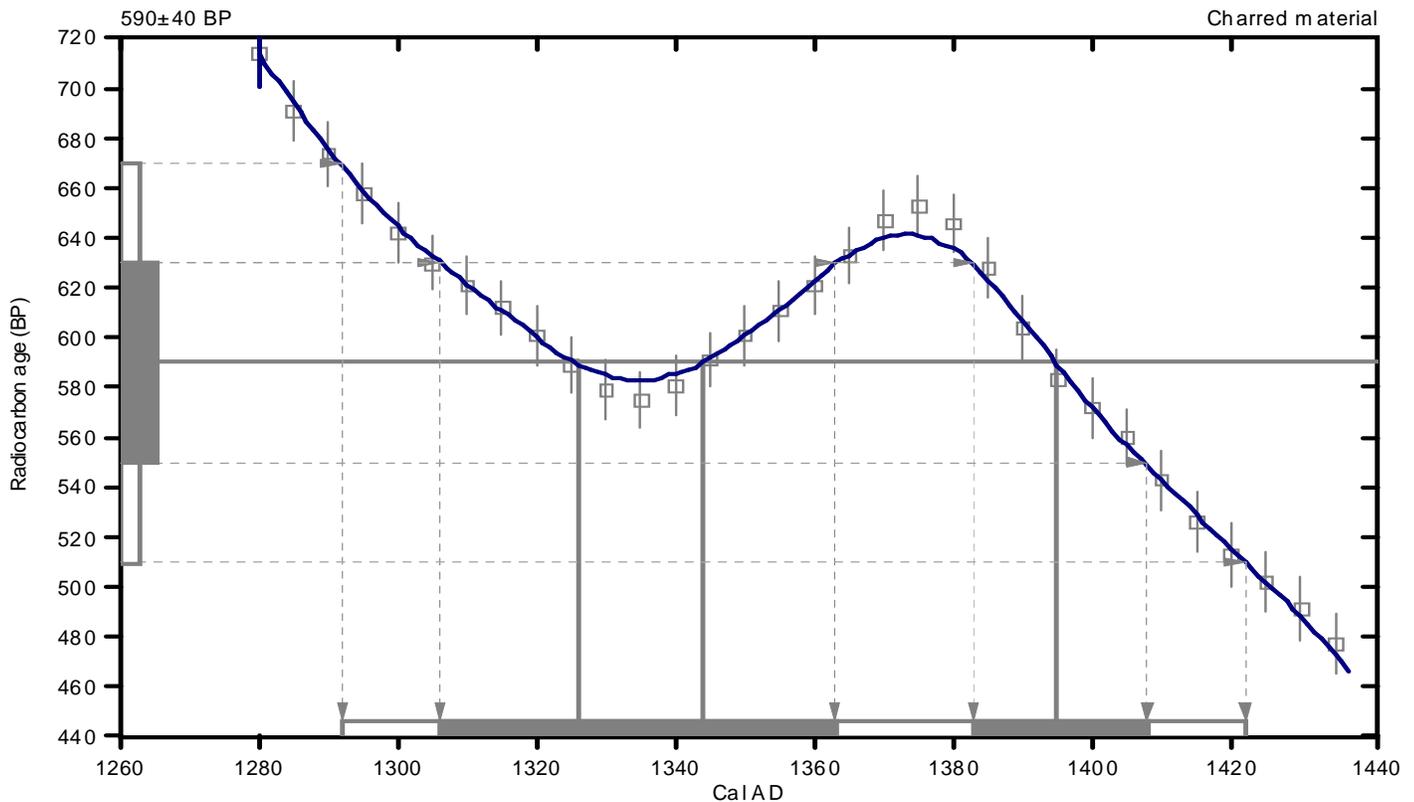
**2 Sigma calibrated result: Cal AD 1290 to 1420 (Cal BP 660 to 530)
(95% probability)**

Intercept data

Intercepts of radiocarbon age
with calibration curve:

Cal AD 1330 (Cal BP 620) and
Cal AD 1340 (Cal BP 610) and
Cal AD 1400 (Cal BP 560)

1 Sigma calibrated results: Cal AD 1310 to 1360 (Cal BP 640 to 590) and
(68% probability) Cal AD 1380 to 1410 (Cal BP 570 to 540)



References:

Database used

INTCAL04

Calibration Database

INTCAL04 Radiocarbon Age Calibration

IntCal04: Calibration Issue of Radiocarbon (Volume 46, nr 3, 2004).

Mathematics

A Simplified Approach to Calibrating C14 Dates

Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2), p317-322

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ATTACHMENT 7
OBSIDIAN HYDRATION

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August 14, 2008

Ms. Tanya Wahoff
 EDAW, Inc.
 1420 Kettner Boulevard, Suite 500
 San Diego, CA 92101

Dear Tanya:

This letter contains a table and a figure presenting energy dispersive x-ray fluorescence (edxf) data generated from the analysis of one obsidian biface fragment artifacts from Site 13 in the Beacon Project, Kern County, California. This research was conducted pursuant to your letter request of August 12, 2008.

Laboratory equipment and analysis conditions, artifact-to-source (geochemical type) attribution procedures, element-specific measurement resolution, and literature references applicable to this specimen, except as noted, are the same as I reported for obsidian from the SNSA Project (see Hughes 2007).

Table 1

Quantitative Composition Estimates for an Obsidian Artifact from Site 13, Kern County, CA

Cat. Number	Trace Element Concentrations									Ratio			Obsidian Source (Chemical Type)
	Zn	Ga	Rb	Sr	Y	Zr	Nb	Ba	Ti	Mn	Fe ₂ O ₃ ^T	Fe/Mn	
#1	nm	nm	234 ±4	4 ±3	48 ±3	103 ±4	43 ±3	nm	nm	nm	nm	41	Sugarloaf Mtn., Coso Vol. Field

U.S. Geological Survey Comparative Reference Standard

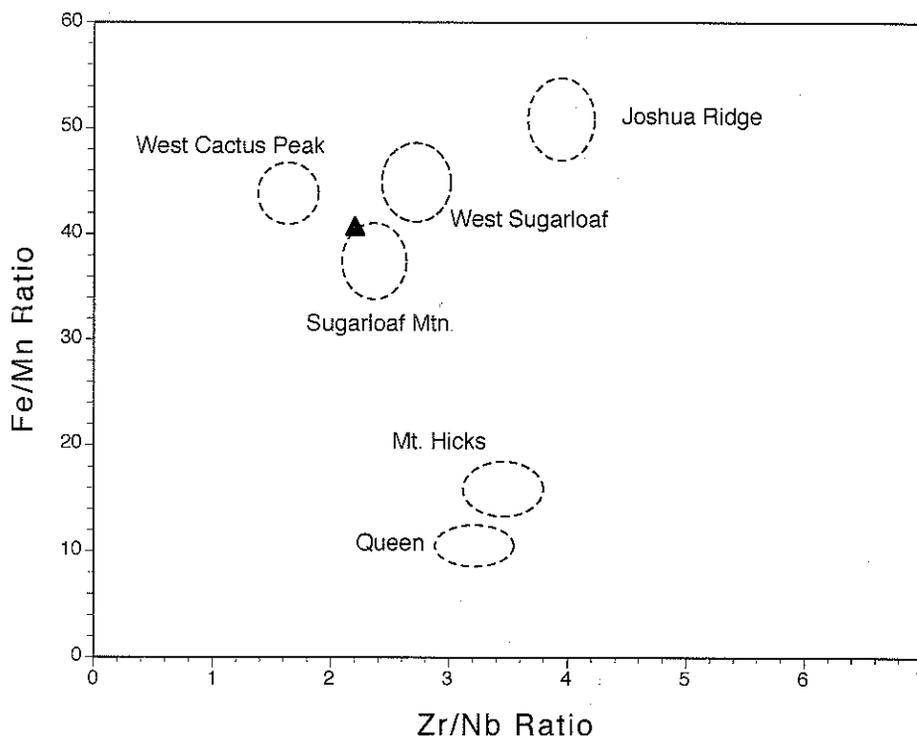
RGM-1 (measured)	nm	nm	153 ±4	108 ±3	25 ±3	221 ±4	9 ±3	nm	nm	nm	nm	66	Glass Mtn., CA
RGM-1 (recommended)	32	15	149	108	25	219	9	807	1600	279	1.86	nr	Glass Mtn., CA

Values in parts per million (ppm) except total iron [in weight %] and Fe/Mn intensity ratios; ± = x-ray counting uncertainty and regression fitting error at 120-360 seconds livetime. nm= not measured. nr= not reported.

Data in Figure 1 show that this biface fragment plots within the Fe/Mn vs. Zr/Nb range for Sugarloaf Mountain obsidian, Coso Volcanic Field. Fe/Mn ratios for Coso Volcanic Field obsidians range between 37-60, Mono Craters and Mono Glass Mountain range between 25-35, and Fish Springs ranges between 8-10.

Figure 1

Fe/Mn vs. Zr/Nb Ratios for a Specimen from Site 13, Kern County, CA



Dashed lines represent range of variation in archaeologically-significant obsidian source samples derived from analysis of in-house standards. Filled triangle represents the plot for sample # 1 from Table 1.

I hope this information will help in your analysis and interpretation of the assemblage from this site. Please contact me at my laboratory (phone: [650] 851-1410; e-mail: rehughes@silcon.com) if I can provide any further assistance or information. As you requested, I have forwarded the specimen to Tom Origer for obsidian hydration analysis.

Sincerely,

Richard Hughes

Richard E. Hughes, Ph.D., RPA
Director, Geochemical Research Laboratory

Reference

Hughes, Richard E.

- 2007 Energy Dispersive X-ray Fluorescence Analysis of Artifacts from Various Archaeological Sites in the Southern Nevada Supplemental Airport (SNSA) Project, Clark County, Nevada. Geochemical Research Laboratory Letter Report 2007-93 submitted to Tanya Wahoff, EDAW, Inc., December 21, 2007.

ORIGER'S OBSIDIAN LABORATORY

P.O. BOX 1531
ROHNERT PARK, CALIFORNIA 94927
(707) 584-8200, FAX 584-8300
ORIGER@ORIGER.COM

August 21, 2008

Tanya Wahoff
EDAW, Inc.
1420 Kettner Boulevard, Suite 500
San Diego, California 92101

RECEIVED
AUG 25 2008

Dear Tanya:

I write to report the results of obsidian hydration band analysis of one specimen from "Site 13" in Kern County, California. This work was completed following source determination by Richard Hughes, Geochemical Research Laboratory, who forwarded the specimen to us on your behalf.

Procedures typically used by our lab for preparation of thin sections and measurement of hydration bands are described here. Specimens are examined to find two or more surfaces that will yield edges that will be perpendicular to the microslides when preparation of each thin section is done. Generally, two parallel cuts are made at an appropriate location along the edge of each specimen with a four-inch diameter circular saw blade mounted on a lapidary trim saw. The cuts result in the isolation of small samples with a thickness of about one millimeter. The samples are removed from the specimens and mounted with Lakeside Cement onto etched glass micro-slides.

The thickness of each sample was reduced by manual grinding with a slurry of #600 silicon carbide abrasive on plate glass. Grinding was completed in two steps. The first grinding is stopped when each sample's thickness is reduced by approximately one-half. This eliminates micro-flake scars created by the saw blade during the cutting process. Each slide is then reheated, which liquefies the Lakeside Cement, and the samples are inverted. The newly exposed surfaces are then ground until proper thickness is attained.

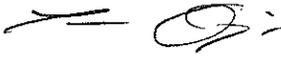
Correct thin section thickness is determined by the "touch" technique. A finger is rubbed across the slide, onto the sample, and the difference (sample thickness) is "felt." The second technique used to arrive at proper thin section thickness is the "transparency" test where the micro-slide is held up to a strong source of light and the translucency of each sample is observed. The samples are reduced enough when it readily allows the passage of light. A cover glass is affixed over each sample when grinding is completed. The slides and paperwork are on file under File No. OOL-400.

The hydration bands are measured with a strainfree 60-power objective and a Bausch and Lomb 12.5-power filar micrometer eyepiece mounted on a Nikon Labophot-Pol polarizing microscope. Hydration band measurements have a range of +/- 0.2 microns due to normal equipment limitations. Six measurements are taken at several locations along the edge of the thin section, and the mean of the measurements is calculated and listed on the enclosed data page.

Tanya Wahoff
August 21, 2008
Page 2

Please don't hesitate to contact me if you have questions regarding this hydration work.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Origer', with a stylized flourish at the end.

Thomas M. Origer
Director

Submitter: T. Wahoff - EDAW, Inc

August 2008

Lab#	Sample#	Description	Unit	Depth	Remarks	Measurements	Mean	Source
Site 13 Kern								
	1	Biface Fragment		Surface	none	5.8 5.9 5.9 5.9 6.0 6.1	5.9	
Lab Accession No: OOL-400							Technician: Thomas M. Origer	

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