APPENDIX G

Cultural Resources Technical Report

AMENDED SALTON SEA UNIT 6 PROJECT
CULTURAL RESOURCES SURVEY REPORT
IMPERIAL COUNTY, CALIFORNIA

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EXECUTIVE SUMMARY

CE Obsidian Energy, LLC is proposing to construct the Amended Salton Sea Unit 6 Project (Amended Project). The SSU6 project was originally licensed by the California Energy Commission (CEC) in 2003 as a 185 MW facility. In 2005 the certification was amended as 1 215 MW facility. The Amended Project involves construction of three geothermal electric power plants east of Calipatria and north of Westmorland, Imperial County, California. Each plant will produce 53 megawatts (MW) of geothermal power (159 MW total). The Amended Project will utilize the same plant site as the original project. In addition to the plant site, offsite facilities include three injection well pads, pipelines from the plant site to these injection well pads, and a borrow area. Because the transmission lines associated with the Amended Project have already been licensed by the CEC and no changes are proposed to them, this cultural resources study does not address the transmission lines

In accordance with applicable laws, ordinances, regulations, and standards (LORS) a cultural resources study was conducted for the project area and buffer areas as specified in CEC regulations.

Prior to the field investigations, archival research was conducted, including a records search to determine if there were any previously recorded cultural resources present within or near the project area. In addition, the Native American Heritage Commission (NAHC) and local tribal representatives were contacted regarding information and concerns about cultural resources in the area.

The plant site and offsite facilities were surveyed as part of the original SSU6 project (CE Obsidian, 2002)). The current archaeological and "built environment" surveys for the Amended Project were conducted in November and December 2008 and included a buffer zone around the plant site, three injection well pads and associated pipelines (in different locations than for SSU6 and thus not covered in the earlier surveys), and a borrow area (also not previously surveyed) . The field surveys identified three laterals connected to the Vail Canal that will be crossed by proposed pipelines. These laterals are considered historical resources but the pipelines will avoid (span) all three laterals. With proper mitigation (development of a Cultural Resources Mitigation Monitoring Plan that includes worker training and professional cultural resources monitoring where needed to address unexpected cultural materials potentially discovered during construction), the Amended Project will not have significant adverse impacts on cultural resources.

CHAPTER 1
INTRODUCTION

CE Obsidian Energy, LLC, (herein "CE Obsidian" or "Applicant"), is proposing to develop the Amended Salton Sea Unit 6 (SSU6) Project (Amended Project or Project) (Table 1). The SSU6 project was originally licensed by the California Energy Commission (CEC) in 2003 as a 185 MW facility. In 2005 the certification was amended as 1 215 MW facility. AECOM Environment is preparing an Amendment Petition for submittal to for the California Energy Commission (CEC) for the Project. AECOM Environment has retained EDAW, Inc. (EDAW) to conduct cultural resources studies, including archaeological and architectural surveys in support of the Amendment Petition.

PROJECT DESCRIPTION

The Amended Project consists of three geothermal electric power plants with a total output of 177 megawatt (MW) gross (159 MW net) to be developed on approximately 230 acres north of Westmorland and east of Calipatria in Imperial County, California. The three currently proposed 53-MW plants will be co-located on the plant site and will share various common auxiliary facilities. The three 53 MW units will be located on the same plant site as the original SSU6 project. The Amended Project is located adjacent to the Salton Sea just east of Obsidian Butte and to the immediate south of the Salton Sea Sonny Bono National Wildlife Refuge. The plant site and the surrounding area are used for agricultural activities. The plant site is located on 160acres southeast of Obsidian Butte. The three injection well pads (4.7 acres each) are located to the south, southeast, and east of the plant site. The plant site is relatively flat and is located approximately 225 feet below mean sea level (-225 feet above mean sea level [amsl]).

Table 1. Amended Project

	Acreages	
	Temporary	**Permanent**
Plant Site	160	160
Substation	0	0
Offsite Lay-down Area	0	0
Offsite Production Wells	0	0
Offsite Injection Wells	14.1	14.1
Offsite Production Pipelines	0	0
Offsite Injection Pipelines	39.3	39.3
Offsite Construction Parking	0	0
Borrow Site	34	0
Total	242.8	213.4

The Amended Project consists of three major components: the Resource Production Facility (RBF), consisting of brine production and injection wells, associated pipelines and ancillary facilities; the Power Generating Facility (PGF), consisting of the steam turbine generators (STG),

condensers, cooling towers, non-condensible gas handling equipment, and ancillary equipment; and the L-line transmission lines. The 160-acre plant site will contain the PGFs, electrical control building, cooling towers, electrical switchyard, and brine ponds for all three 53-MW units.

In addition, the plant site will include nine production wells on three well pads each, as well as two plant injection wells and two aerated brine injection wells. In contrast, the originally proposed SSU6 facility included eight production wells on four well pads outside the plant site. These production wells and associated were relocated to the plant site from their previous offsite locations in the original SSU6 project.. Nine injection wells on three well pads are currently proposed to be located approximately 8,000 to 10,000 feet south of the plant site; the previously proposed SSU6 facility included seven off-site injection wells on three well pads south of the plant site, but at different locations than the Amended Project.

The Amended Project site is located approximately 6 miles northwest of Calipatria, California. The site is currently used for agriculture, and land uses in the surrounding area include existing geothermal power facilities, agriculture, wildlife management, and the Sonny Bono National Wildlife Refuge. Figure 1 shows the regional setting and Figure 2 depicts the project area.

REGULATORY SETTING

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. For listing in the California Register of Historical Resources (CRHR), a historical resource must be significant at the local, state or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values;

4. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California or the nation.

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,

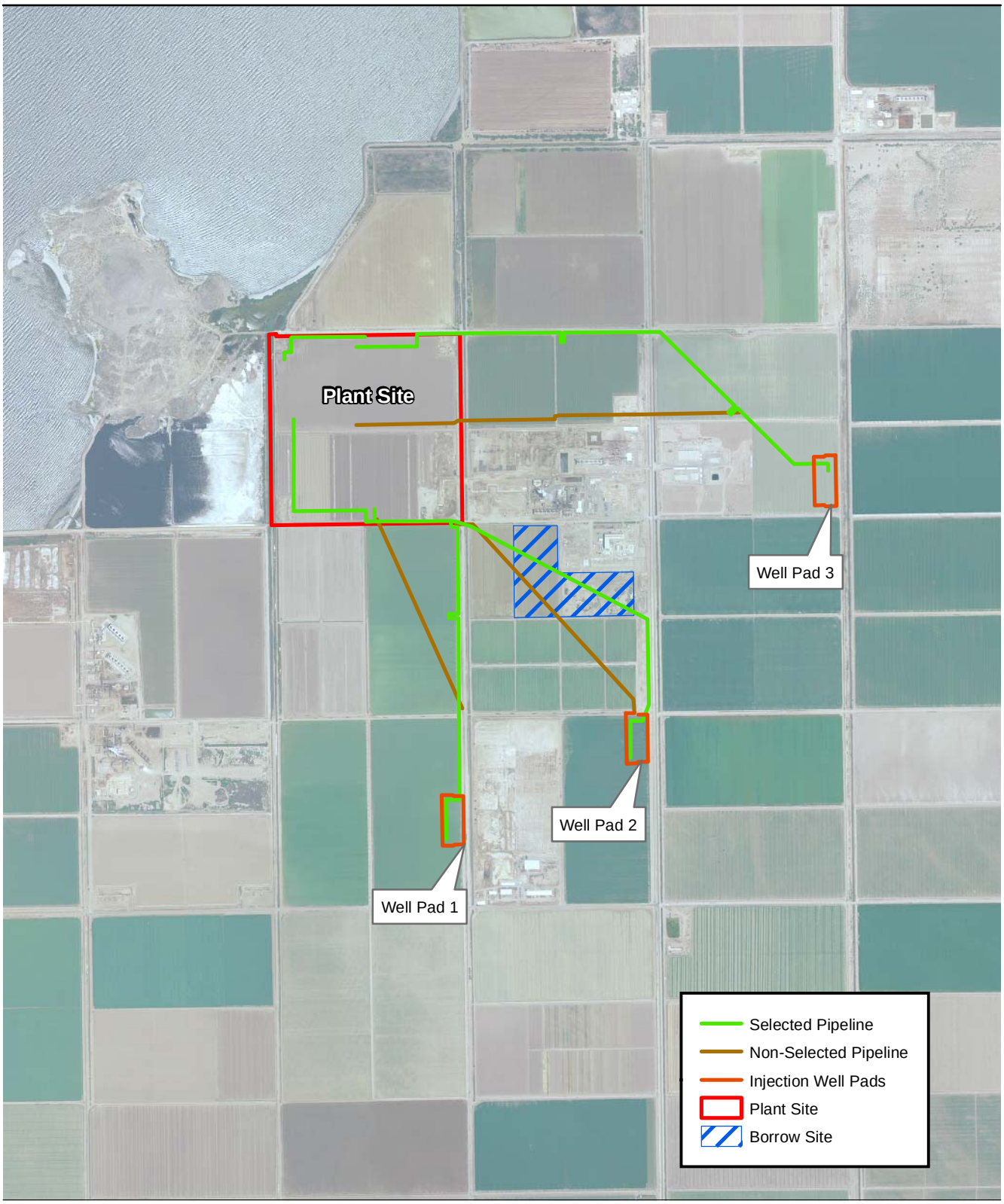
Source: ESRI 2008, EDAW 2008

20 10 0 20 Miles

Scale: 1:1,267,200; 1 inch = 105,600 feet

Figure 1
Regional Map

Path: P:\2008\08080156 Black Rock Energy\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Cultural\Figure1_BlackRock_RegionalMap_85x11.mxd, 01/13/09, AugelloP



Source: NAIP 2005, EDAW 2008

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 2
Amended Salton Sea Unit 6 Project
Project Facilities

Path: P:\2008\08080156 Black Rock Energy\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Cultural\Figure2_BlackRock_ProjectLocation_85x11.mxd, 01/13/09, AugelloP

materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is proposed for nomination.

Numerous laws, ordinances, regulations, and standards (LORS), on Federal, State and local levels, seek to protect and target the management of cultural resources. The Amended Project 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 Table 2 and briefly discussed below.

Table 2. LORS Applicable to Cultural Resources

LORS	Applicability
Federal	
Antiquities Act of 1906, Title 16, United States Code Sections 431, 432, and 433	Federal legislation for protection of cultural resources.
National Historic Preservation Act (NHPA), Title 16, United States Code Section 470x-6	Protects cultural resources on Federal lands; provides for inventory and assessment of resources.
Archaeological Resources Protection Act of 1979, Title 16, United States Code Section 470aa-470mm	Provides protection for archaeological resources on public lands and Indian lands.
Executive Order 11593 of May 13, 1971, 36 Federal Register, Section 8921	Provides for protection and enhancement of the cultural environment.
Native American Graves Protection and Repatriation Act, Title 25, United States Code Section 3001-3013	Establishes mechanism for Native Americans to claim ownership of human remains and certain cultural items.
American Indian Religious Freedom Act, Public Law 95-341; Title 42, United States Code Section 1996	Provides protection of Native American religious practices.
State	
California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2 ;	Requires public agencies to evaluate impacts to cultural resources; provides guidance for evaluating and mitigating impacts;
Public Resources Code Section 21084.1	Defines a “historic resource” and describes what constitutes a “significant” historic resource.
CEQA Guidelines, California Code of Regulations, Title 14, Section 4852;	Defines the term cultural resource.
Section 15064.5;	Addresses reburial options for Native American human remains and provides for treatment of archaeological discoveries.
Section 15126.4(b);	Describes mitigation of a project’s impact on a historic resource.

LORS	Applicability
Public Resources Code Sections 5020.1 (h), 5024.1 and 5097.98	Defines a "historic district." Establishes the California Register of Historical Resources. Discusses the procedures that need to be followed upon the discovery of Native American human remains.
California Health and Safety Code Sections 7050.5 and 8010-8011	Establishes procedures for notification in the event of the discovery of human remains. Requires construction to be halted and the County Coroner to be contacted if human remains are encountered. Makes it a misdemeanor to disturb or remove human remains found outside a cemetery. Establishes a State repatriation policy consistent with implementation of the Native American Graves and Repatriation Act.
Assembly Bill (AB) 2641	Modifies the process that private landowners follow after discovering Native American human remains (set forth in California Public Resources Code Section 5097.98).
Local	
Imperial County General Plan Conservation and Open Space Element	Objective 3.1 provides direction to protect and preserve sites of archaeological, ecological, historical, and scientific value, and/or cultural significance.
Imperial County General Plan Land Use Element	Includes guidance to "preserve the unique natural and cultural resources of the Imperial Valley as a region."
Imperial County General Plan Geothermal/ Alternative Energy and Transmission Element	Requires that the design, siting, and operation of geothermal facilities give adequate consideration to potential direct and indirect environmental impacts pursuant to CEQA

Federal LORS

Antiquities Act of 1906, Title 16, United States Code Sections 431, 432, and 433

This Act establishes the early framework for Federal protection of cultural resources.

National Historic Preservation Act, Title 16, United States Code Section 470x-6

The National Historic Preservation Act (NHPA) sets in place a program for the preservation of historic properties. Section 106 of the NHPA requires Federal agencies to take into account the effects of projects on historic properties (resources included in or eligible for the National Register of Historic Places). It also gives the Advisory Council on Historic Preservation and State Historic Preservation Offices (SHPO) an opportunity to consult. The implementing regulations for Section 106 are 36 Code of Federal Regulations (CFR) 800. Federal agencies issuing permits for the Amended Project would be required to comply with NHPA requirements.

Archaeological Resources Protection Act of 1979, Title 16, United States Code Section 470aa-470mm

This Act provides protection of archaeological resources from vandalism and unauthorized collecting on Federal land.

Executive Order 11593 of May 13, 1971, 36 Federal Register, Section 8921

This Executive Order focuses on the protection and enhancement of the cultural environment. It outlines responsibilities of the Federal agencies and Secretary of the Interior with regard to cultural resources.

Native American Graves Protection and Repatriation Act, Title 25, United States Code Section 3001-3013

This law provides for ownership of Native American graves and grave goods on Federal lands.

American Indian Religious Freedom Act, Public Law 95-341; Title 42, United States Code Section 1996

This measure establishes a national policy to protect the right of Native Americans and other indigenous groups to exercise their traditional religions. This law would apply since the Amended Project includes Federal land. Federal agencies issuing permits for the Project would be required to comply with this Act if Native Americans identified issues regarding their right to exercise traditional religious practices.

State LORS

California Environmental Quality Act (CEQA), Public Resources Code Section 21083.2

This section states that it is the responsibility of the lead agency to determine whether the project will have a significant effect on "unique" archaeological resources. A unique archaeological resource is an 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 one of the following criteria: 1) contains information needed to answer important 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 or best example of its type; or 3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be taken to preserve these resources in place or provide mitigation measures. CEC licensing is a CEQA-equivalent process.

CEQA, Public Resources Code Section 21084.1

Identifies that a project may have a significant effect on the environment if it causes substantial adverse change in the significance of a historic resources. This section of the code also defines a “historic resource” and describes what constitutes a significant historic resource.

CEQA Guidelines, California Code of Regulations, Title 14, Section 4852

This section defines the term cultural resource to include buildings, sites, structures, objects, and historic districts.

CEQA Guidelines, California Code of Regulations, Title 14, Section 15064.5

When initial study identifies the existence of, or the probable likelihood of, Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission (NAHC). The Applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains, and any items associated with Native American burials with the appropriate Native Americans as identified by the NAHC.

CEQA Guidelines, California Code of Regulations, Title 14, Section 15126.4(b)

This portion of the code describes mitigation for project impacts to a significant resource.

Public Resources Code Section 5020.1 (h)

This section defines a historic district. A “historic district" means a definable unified geographic entity that possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Public Resources Code Section 5024.1

This section establishes the California Register of Historical Resources (CRHR). A resource may be listed as a historical resource in the CRHR if it meets National Register of Historic Places criteria or the following state criteria: 1) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; 2) is associated with the lives of persons important in our past; 3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or 4) has yielded, or may be likely to yield, information important in prehistory or history. The CRHR is an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected from substantial adverse change.

Public Resources Code Section 5097.98

This section discusses the procedures that need to be followed upon the discovery of Native American human remains. The NAHC upon notification of the discovery of human remains is required to contact the County Coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code and shall immediately notify those persons it believes to be most likely descended from the deceased Native American.

California Health and Safety Code Section 7050.5

This code establishes that any person, who knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any location without authority of the law is guilty of a misdemeanor. It further defines procedures for the discovery and treatment of Native American remains.

California Health and Safety Code Section 8010-8011

This code establishes a State repatriation policy consistent with the implementation of the Native American Graves and Repatriation Act. The code extends policy coverage to non-federally recognized tribes as well as federally recognized groups.

Assembly Bill (AB) 2641

This Bill provides procedures for private landowners to follow upon discovering Native American human remains. Landowners are encouraged to consider culturally appropriate measures if they discover Native American human remains as set forth in California Public Resources Code Section 5097.98. AB 2641 further clarifies how the landowner should protect the site both immediately after discovery and into the future.

Local LORS

Imperial County General Plan Conservation and Open Space Element

Goal 3 of the Conservation and Open Space Element provides for the preservation of cultural resources, stating "Important prehistoric and historic resources shall be preserved to advance scientific knowledge and maintain the traditional historic element of the Imperial Valley landscape." In addition, Objective 3.1 of the goal specifies that sites of archaeological, ecological, historical, and scientific value, and/or cultural significance be preserved and protected.

Imperial County General Plan, Land Use Element

The intent of the County in preparing the Land Use Element was to maintain and promote agricultural enterprises, determine appropriate urban development centers and encourage their economic development, protect the existing character of rural and recreational communities and areas, and preserve the unique natural and cultural resources of the Imperial Valley as a region.

Imperial County General Plan, Geothermal/Alternative Energy and Transmission Element

This element of the General Plan requires that the design, siting, and operation of geothermal facilities consider potential direct and indirect environmental impacts pursuant to the CEQA. The element also addresses issue related to the construction and operation of electrical transmission lines.

AREA OF POTENTIAL EFFECTS (APE)

The CEC provides guidelines for the inventory and documentation of cultural resources within a proposed project area. For the purposes of this report, this includes the identification and inventory of archaeological and historic resources that are at least 45 years old.

According to the guidelines set forth by the CEC, archaeological survey is to be conducted on all proposed project sites and extend beyond project boundaries at least 200 feet. For linear facilities, the right-of-way and at least 50 feet either side of the right-of-way is to be surveyed. For built environment surveys, an APE of 0.5 miles was established around all project facilities.

PROJECT PERSONNEL

Rebecca Apple M.A., Register of Professional Archaeologists (R.P.A.) served as the Principal Investigator for the Project. Matthew Tennyson, M.A., R.P.A. directed the fieldwork and authored the report. Tiffany Contreras, and Collin Tuthill assisted during the field survey. M.K. Meiser, M.A. conducted the historic resources survey. Resumes of key personnel are provided in Attachment 1.

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. Archival research is documented in Chapter 3. Field methods and survey results are summarized in Chapter 4. Chapter 5 provides a summary of potential impacts to cultural resources within the survey area. Chapter 6 is references cited. Once the report has been finalized, a copy will be sent to the Southeast Information Center (SIC), housed at San Diego State University as a permanent record.

CHAPTER 2
PROJECT SETTING

INTRODUCTION

The Amended Project is situated in central Imperial County, California, approximately 7.5 miles southwest of Niland, 6 miles northwest of Calipatria, and approximately 0.5 mile southeast of Obsidian Butte.

NATURAL SETTING

Physical Environment

The Amended Project area is within the Colorado Desert (Salton Trough) environmental zone and is bordered on the west by the Peninsular Range. The Colorado Desert consists of a depressed area 80 miles (128 kilometers [km]) long and 30 miles (48 km) wide, situated between two forks of the San Andreas Fault. Elevations in the trough range between 19 feet (6 meters [m]) to 245 feet (75 m) below sea level. Prehistorically, much of this area was under the waters of Lake Cahuilla. The Colorado River filled the entire basin periodically with fresh water to form the expansive lake, which measured as much as 34 miles (55 km) wide and 321 feet (98 m) deep. These wet periods were followed by more arid times when the Colorado River did not flow into the area, and the waters of Lake Cahuilla evaporated. Today, the only remnants of Lake Cahuilla are the playa surfaces and beach terraces surrounding the Salton Sea (Moratto 1984:18).

Geology

Geologic deposits within the Salton Trough are primarily alluvium, dune sand, Pliocene marine, Pleistocene and Quaternary nonmarine terrace deposits, and Tertiary and Quaternary lake deposits, composed primarily of sand, gravels, silts and clays, or sandstones. The Pleistocene nonmarine sedimentary deposits that form the Superstition Hills and nearby areas south and west of the Salton Sea are composed of older alluvium and fanglomerate, and sandstones of the Brawley formation. These deposits are mostly capped with well-developed desert pavement and desert varnish (State of California 1962, 1967).

In areas with mostly alluvial deposits, like the Salton Trough, lithic resources are extremely limited. Materials suitable for prehistoric stone tool manufacture were quarried from the obsidian, rhyolite, and silicified sediment (Wonderstone) deposits at Obsidian Butte near the southern end of the Salton Sea or were found as float in the desert pavements and gravel deposits. These float materials may include quartz, silicified wood, cryptocrystalline silicates (cherts, chalcedony, and jasper), quartzite, basalt, and other volcanic rocks. Sandstone from the Brawley and other formations was used prehistorically to manufacture metates (grinding slabs), manos, and pestles. Granite from deposits at Superstition Mountain or found as float was also used in the manufacture of grinding stones.

Temperature

Conditions within the Colorado Desert are among the hottest found in the United States. Average daily temperatures typically range from the low 40s in winter to 105 degrees Fahrenheit (°F) in summer, although summer temperatures can reach into the 120s. This region also experiences rapid heat loss at night, resulting in a wide daily temperature variance of approximately 30°F.

The eastern slopes of the Peninsular Ranges are cooler, but still dry. Cumulative weather data indicate that these slopes have an average winter low of 27.9 °F and an average summer high of 82.8°F, although summer highs can reach over 100°F.

Precipitation

Most of the moisture from Pacific winter storms moving south and east falls on the steep, west-facing slopes of the Peninsular Ranges, creating a "rain shadow" effect for the east-facing slopes and deserts. These areas are among the driest in the United States. However, because they are open to the south, they receive some moisture from summer tropical storms. This results in a bimodal pattern of rainfall for the Sonoran Desert and its subdivision, the Colorado Desert, with a significant portion of the annual precipitation falling in August and September as thunderstorms. The climate is so dry that the moisture from tropical summer thunderstorms can contribute 30 to 40 percent of the yearly total. The summer thunderstorms can be severe, with up to 3 to 5 inches (8-14 centimeters [cm]) falling in a few hours. However, these storms are usually localized, with little or no precipitation falling a few miles away. While a significant portion of the yearly rainfall can occur in summer, most of the precipitation falls from December to March (Schoenherr 1992:413).

Annual rainfall totals within the Colorado Desert are among the lowest in the Sonoran Desert, averaging less than 2 inches (5 cm) per year in the Salton Trough and between 2 to 4 inches (5-10 cm) along the Colorado River (Crosswhite and Crosswhite 1982). Data collected at the Anza-Borrego Desert State Park indicate a yearly average of 6.9 inches (16.9 cm) (Western Regional Climate Center 2005). Droughts of up to 60 days occur frequently, with the longest recorded drought lasting more than 3 years with only 0.01 inches (0.02 cm) of rainfall (Jaeger 1957; Shreve and Wiggins 1964).

FLORA AND FAUNA

Flora

Although the vegetation communities are similar to those of the Mojave Desert to the north, the Colorado Desert's bimodal pattern of rainfall allows for greater diversity. Species commonly found throughout both deserts are varieties of agave (*Agave* spp.), including the desert agave or century plant (*Agave deserti*), creosote (*Larrea tridentate)*, white bursage (*Ambrosia dumosa*), and saltbushes (*Atriplex* spp.).

On sandy flats and slopes and desert-pavemented terraces, the usually sparse vegetation is dominated by creosote bush, white bursage, and brittlebush (*Encelia farinosa*) with saltbushes occurring where the soil becomes more alkaline. Along seasonal washes, the vegetation is much lusher, with a greater variety of species. In these washes are found small trees, including blue palo verde (*Cercidium floridum*), ironwood (*Olneya tesota*), catclaw acacia (*Acacia greggii*), and smoke trees (*Psorothamnus spinosa*). Shrubs such as mesquites (*Prosopis* sp.), burrobush (*Hymenoclea salsola* var. *pentalepis*), and desert broom (*Baccharis sarothroides*) occur along dry watercourses. Seeps and oasis are marked by the presence of the California fan palm (*Washingtonia filifera*) (MacMahon 1985; Minckley and Brown 1994; Schoenherr 1992).

The cactus scrub community is found on the upper rocky slopes of the eastern side of the Peninsular Ranges. This community consists of succulents and other drought-resistant plants. The eastern slopes are marked by distinctive banding of vegetation communities, with cactus scrub in the lower elevations, replaced by desert chaparral higher on the slopes. Cactus scrub can occur with creosote scrub and includes brittlebush, ocotillo (*Fouquieria splendens*), and a variety of cactus (*Opuntia* sp.). Desert chaparral consists of open stands of big berry manzanita (*Arctostaphylos glauca*), western mountain mahogany (*Cercocarpus montanus*), and California buckwheat (*Eriogonum fasciculatum*) (Raven 1966; Schoenherr 1992). In the desert slopes of the Transverse Ranges, chamise is often a dominant species in the desert chaparral community (Schoenherr 1992).

Fauna

Because of the high diurnal temperatures, most of the desert mammals have adapted by spending much of the day underground in burrows or aestivating. Small, burrowing rodents are particularly abundant in sandy plains. Animals commonly found in dry desert lands include black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audoboni*), kit fox (*Vulpes macrotis*), and a variety of rodents such as round-tailed ground squirrel (*Spermophilus tereticaudus*), white-tailed antelope squirrel (*Ammosphermophilus leucurus*), desert and Merriam kangaroo rats (*Dipodomys merriami*), and desert pocket mouse (*Perognathus penicillatus*). Larger mammals are usually limited to desert bighorn sheep (*Ovis Canadensis nelsoni*), Sonoran pronghorn antelope (*Antilocapra Americana sonorensis*), and coyote (*Canis latrans*). Several species of bat are found, including California leaf-nosed bat (*Macrotus californicus*).

In the sandy plains and dunes of the Colorado Desert regions, there are several species of reptiles with unique adaptations to sandy environments, including fringe-toed lizards (*Uma inornata*, *U. notata*), flat-tailed horned lizards (*Phrynosoma m'calli*), banded sandsnake (*Chilomeniscus cinctus*) and sidewinder (*Crotalus cerastes*). Other reptiles include the desert tortoise (*Gopherus agassizi*); chuckwalla (*Sauromalus obesus*); desert iguana (*Dipsosaurus dorsalis*); and snakes such as the rosy boa (*Lichanura trivirgata*) and western diamondback (*Crotalus atrox*), (Schoenherr 1992; Turner and Brown 1994).

This is the poorest subdivision of the Sonoran Desert for birds, as the open, sparsely vegetated areas provide little suitable habitat. More commonly occurring species are the burrowing owl (*Aihene cunicularia*), turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), and cactus wren (*Polioptila melanura*). The riparian vegetation

along the Colorado River and the Salton Sea attracts and supports a variety of birds, including migratory birds such as ducks and geese. Resident species include roadrunner (*Geococcyx californianus*), mourning dove (*Zenaida macroura*), Gambels's quail (*Callipepla gambelii*), and black-tailed gnatcatcher (*Polioptila melanura*). Also found are numerous bats, a variety of rodents, both large and small game, and along the river, the Colorado River toad (*Bufo alvarius*) (Minckley and Brown 1994). Migratory birds can also be commonly found at the Salton Sea.

Native fish species found in the main channel of the Colorado River are limited, consisting primarily of Colorado squawfish (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), and bonytail chub (*Gila elegans*). Woundfin (*Plagopterus argentissimus*) and flannelmouth sucker (*Castosomus latipinnis*), although rare, are also native to the stretch of river below Boulder Dam. Nonnative species now found in the river include largemouth and smallmouth bass, striped bass, lesser sunfishes, ciclids, mosquitofish, and flathead catfish (Minckley and Brown 1994). Within the Salton Sea are found razorback sucker and bonytail chub, and several species of sport fish, including tilapia (*Tilipia mossanbica*), croaker (*Bairdella icistia*), and sargo (*Anistramus davidsoni*). The desert pupfish (*Cyprenodon macularis*), now an endangered species, is also found in the Salton Sea.

CULTURAL SETTING

Prehistory

While the Colorado Desert is rich in prehistoric archaeological sites and has been intensively studied by archaeologists for 80 years, the culture-historical framework for the ordering and interpretation of archaeological materials is still heavily reliant on interregional comparisons. To a large degree, this results from the fact that sites with substantial subsurface components are quite rare and this paucity has hampered chronology building (Schaefer 1994a, 1994b). Alternatively, the site assemblage of the Colorado Desert is particularly diverse when it comes to sites associated with what might generally be termed ritual events. In addition to the remains of Native American habitations and resource procurement activities, there are abundant earth figures and shrines, petroglyphs and pictographs, and an exceptionally well-preserved trail system (Altschul and Ezzo 1994; Cachora 1994; Johnson 1985; McGuire and Schiffer 1982; Pendleton et al. 1986; Pigniolo et al. 1997; Rogers 1939; Schaefer 1994a, 1994b; von Werlhof 1987). This diversity has the potential to provide insight into a broad array of cultural behavior, including ceremonial and ritual practices, as well as the evolution of settlement and subsistence systems (Cleland and Apple 2003).

The poor chronological control is reflected in the existing culture-historical framework, which is characterized by a good bit of overlap in the material culture assemblages of seriated archaeological complexes. As a result, many types of artifacts and features are said to be typical of assemblages that range from the earliest times right up to the contact period (McGuire and Schiffer 1982). This framework then, which developed out of the pioneering archaeological work of Rogers (1939, 1945), remains somewhat problematical despite numerous updates. For the purposes of this study, regional prehistory will be discussed within the context of three broad periods: Early, Archaic, and Late Prehistoric/Protohistoric.

Early Period

Rogers (1939) first described the San Dieguito Complex of the southern California deserts based on surface surveys of the southern California coastal and desert areas. The typical San Dieguito assemblage consists of heavy percussion, core and flake-based tools; crescentics; and domed and keeled choppers, planes, and scrapers. One also finds light-percussion flaked spokeshaves, leaf-shaped projectile points, and (in the desert areas) large, stemmed Lake Mojave and Silver Lake projectile points. Fluted points are also occasionally found on Lake Mojave-San Dieguito surface sites. Milling equipment is apparently rare or absent (Warren and Crabtree 1986:184). Subsistence is generally thought to have been focused on highly ranked resources such as large mammals, although numerous small mammals were also taken at some sites. This subsistence strategy may have encouraged a pattern of relatively high residential mobility.

Archaic Period

Little information exists for the Colorado Desert during the Archaic period between the San Dieguito I and the Patayan complex. Rogers (1945) suggests that there are no sites away from the Colorado River between these two periods. This absence is a key regional research issue (Schaefer 1994b). For example, surveys of the 80-mile North Baja Pipeline east of the Chocolate Mountains failed to yield a single site with clear evidence of Archaic period occupation (Cleland and Apple 2003), other than rock art that appears to have Archaic cultural affiliations (Hedges 2003). Studies by Weide (1976) have reported a few isolated artifacts that date to this intermediate period and suggest that there were sparse inhabitants in the region during this period. Isolates include a quartz point radiocarbon dated to 3030 $\pm$ 100 B.C., the Truckhaven cairn burial with a date of 3840 $\pm$ 250 B.C., and a preceramic occupation along the old Lake Cahuilla shoreline dating to A.D. 370 (Moratto 1984:404). Pendleton and others (1986) remarked that only two Archaic period projectile points were known to have been found between the Imperial Sand Dunes and the Colorado River, a distance of some 24 miles (40 km). Schaefer's (1986) intensive investigations for the Mesquite Mine on the southern bajada of the Chocolate Mountains likewise did not recover any materials temporally diagnostic of the Archaic. Similarly, none of the radiocarbon-dated roasting pits in Inkopah Gorge on the eastern slope of the Peninsular Range were from the Archaic period (Shackley 1984). Potential Archaic period use of Lake Cahuilla remains problematical; surveys of the former Salton Sea Test Base did produce San Dieguito and possible Archaic period bifaces, but these surface finds were not clearly associated with archaeological assemblages. The Indian Hill rockshelter (McDonald 1992) in Anza Borrego Desert State Park is one of the few well-dated Archaic sites in the regional study area. Archaic period sites have also been found in subsurface contexts in the Coachella Valley.

The Patayan complex, dating from approximately 1,450 years before present (B.P.) (A.D. 500) to the historic period, spans the late prehistoric and protohistoric timeframes, the latter of which includes a 300-year period of sporadic exploration and colonization that left aboriginal lifeways relatively unaffected. The Patayan complex is characterized by marked changes in the artifact assemblage, economic system, and settlement patterns. Paddle and anvil pottery was introduced, possibly from Mexico (Rogers 1945; Schroeder 1975, 1979). During this time, floodplain horticulture, featuring maize, beans, squash, and other crops, was introduced along the lower Colorado River, and extended to the New and Alamo rivers in Imperial Valley. The bow and arrow was also introduced during this period as evidenced by the presence of Cottonwood

Triangular and Desert Side-notched series projectile points. Cottonwood series projectile points apparently predate the Desert Side-notched series and probably the advent of pottery. Also during the Late Prehistoric period, burial practices shifted from inhumations to cremations. Other culture traits generally associated with this period include increasingly elaborate kinship systems, rock art including ground figures, and expanded trading networks (McGuire and Schiffer 1982).

Late Prehistoric Period

The Late Prehistoric period is broken down into three ceramic phases – Patayan I, II, and III (Rogers 1945; Waters 1982a, 1982b). Patayan I ceramics are well developed, indicating that ceramic technology was introduced in a fully developed form. However, the relationship of Lower Colorado River buffwares with Hohokam and other southwestern ceramic traditions remain to be established with greater clarity. Tizon brownware, representative of a related interior ceramic tradition, may predate Lower Colorado buffware (Warren 1984:423). Patayan I (ca. A.D. 600 to A.D. 1000) wares are found most frequently along the river corridor, while Patayan II (ca. A.D. 1000 to A.D. 1500) types are typically found both on the river and along the former Lake Cahuilla shoreline. Patayan III ceramics represent the Protohistoric period and are rare on Lake Cahuilla shorelines. Recent evidence from the North Stallard site, a stratified Patayan site on the Colorado River (Cleland and Apple 2003), suggests that certain types of buffware may have longer use periods than is recognized by this serration (Hildebrand 2003).

During the Late period, at least four, probably more, sequential inundations of the Salton Trough occurred as the Colorado River was diverted to the west and filled much of Imperial Valley to an elevation of 40 feet (12.8 m) amsl. Four major stands of Lake Cahuilla occurred between A.D. 1200 and A.D. 1540 and at least one partial in filling seems to have occurred during the 17th century. The final desiccation of Lake Cahuilla at perhaps A.D. 1650 (Schaefer 1994b:84) is thought to have caused major population disruptions on both east and west sides of the Colorado Desert, large population shifts along the lower Colorado River, and perhaps contributed to the persistent warfare that continued until 1857 along the lower Colorado and Gila rivers (Aschmann 1966:245; Castetter and Bell 1951:30; O'Connell 1971:180; Schaefer 1994b:72-73; Stone 1981; Weide 1976:89; White 1974; Wilke 1974). However, the role of the desiccation cycles in these population perturbations is far from clear and it remains an important topic for further research. By the time of the final desiccation, horticulture was well established along the lower Colorado (Bee 1981:12; Castetter and Bell 1951:74-75).

Ethnographic Background

Ethnography

Ethnographic summaries of the Native American groups associated with the regional study area are presented below. It should be noted at the onset that native boundaries were fluid and indistinct, particularly in areas on the periphery of a group's territory or areas that contained few resources. Most of these groups speak languages of the Yuman family of the Hokan language stock. Included in this group are the Kamia, Quechan, Halchidhoma, and Mojave (Kroeber 1920; Shipley 1978:86).

The Kamia are one of three closely related Native American tribes living in southern California, who are differentiated based on dialect differences (Langdon 1970 Luomala 1978; Spier 1933)

and geography (Barker 1976; Gifford 1931). These are known today as the Northern Kumeyaay or Ipai, the Southern Kumeyaay or Tipai, and the Desert Kumeyaay or Kamia. The term Kamia has been used by some authors to refer to all three divisions (e.g., Forbes 1965) but now is most commonly used to refer only to the desert division. The word Kamia is a lower Colorado variant of the term Kumeyaay. The Quechan call the coastal Kumeyaay Kamya ahwe, while the Mojave call them Kamia ahwe or Kamia ahkwe, which means remote or foreign Kamia (Kroeber 1920:478).

The Kamia traditional territory included what is now known as the southern Imperial Valley from the latitude of the southern half of the Salton Sea, to perhaps 40 miles (64 km) below the international border. On the west, Kamia territory extends to the foothills of the Peninsular Mountains, and to the east, Kamia territory extends up to the Chocolate Mountains (Forbes 1965; Luomala 1978:593). They lived at times along the west bank of the Colorado River, but their main settlements were along the New and Alamo rivers in Imperial Valley.

Subsistence among the Kamia consisted of hunting and gathering and floodplain horticulture (Barker 1976; Gifford 1931). In normal years, the Colorado River would overflow its banks in the spring and early summer. This would also fill the New and Alamo rivers. These branch off the Colorado a few miles south of Pilot Knob and the international border, head west for a time, and then cross into the United States again and trend north. Today, they terminate in the Salton Sea. When the spring floodwater receded, the Kamia would plant in the mud. A dam was maintained at *Xatopet* on the east/west portion of the Alamo River to control water flow and allow farming in years when water flow was low. Gifford (1931:22) and Castetter and Bell (1951:43) suggested these were recent adaptations and not traditional. Bean and Lawton (1973), Lawton and Bean (1968), and Shipek (1988) argue that irrigation was indigenous.

A major food staple was mesquite and screwbean, called by the Kamia *anxi* and *iyix*, respectively (Gifford 1931:23). These were sometimes eaten fresh off the tree in early summer, but primarily, the pods were collected from the ground or shaken from the trees in July. These were pounded into flour in a mortar typically made of a cottonwood tree trunk (Gifford 1931). The seeds, which have the appearance and density of birdshot, were discarded (Castetter and Bell 1951). Seeds of the ironwood were gathered off the ground in October and dried, then parched, ground lightly on a metate to break the seeds apart, then leached to remove the bitter taste. Acorns were at times an important food. They were gathered in the mountains to the west of Kamia territory in October and acquired through trade from the southern Kumeyaay.

Hunting contributed to the diet in a minor way in terms of overall caloric intake but provided valuable protein, and skins and bone for clothing, blankets, and tools. Small game, primarily rabbits, was most frequently taken, using bow and arrow or rabbit stick (macana in Spanish). Fish were also taken in sloughs with bow and arrow, by hand, hooks, basketry scoops, and seine nets.

The primary settlements of the Kamia were scattered along the New River and the Alamo River (Barker 1976:25; Gifford 1931:5). These were not compact villages, but large diffuse rancherias and planting areas dispersed along the rivers. The flow in the Colorado River varied widely from year to year and the Kamia frequently adjusted their settlement locations to be in areas with good

water availability. The Kamia may also have utilized the southern shores of Lake Cahuilla when present, and this would have put seasonal settlements within proximity of the Amended Project.

Structures varied depending on the locality, purpose, and the availability of raw materials. Summer dwellings were often minimal, consisting of only a windbreak. Caves were also used at this time, where available. Structures found within mountain oak groves were more substantial and often had platform-supported granaries, while winter villages were located at lower elevations in sheltered areas. A typical shelter had a sunken floor and was dome- or gable-shaped with a pole framework with thatch, covered with grass and earth. The dome-shaped dwellings usually had two small arched entries at opposite ends that were placed to avoid the wind. The gables had a rectangular-shaped opening that faced east, which was a ritual direction. Attached to dwellings was a windbreak made for outdoor activities and cooking during the summer (Luomala 1978).

North of the Kamia were the Desert Cahuilla with whom the Kamia did not have a great deal of interaction. To the east was the Quechan, with whom the Kamia typically enjoyed excellent relations. The Kamia neighbors to the south in the late 19th century were the Cocopah, with who the Kamia were often at war. The Cocopah lived in Baja California in the Colorado Delta area. To the west of the Kamia, along the coast and in the mountains of San Diego County and northern Baja California Norte, were the close relatives of the Kamia, the Kumeyaay. They carried on a lively trade with one another and had strong social, kinship, and economic ties. Items such as salt, dried seafood, and abalone shells from the coast were often traded for inland items such as acorns, agave, mesquite, granite for pestles, steatite for arrow straighteners, minerals for paint, and gourds (Cuero 1968:33 in Luomala 1978:601-602).

Ethnohistory

Despite early explorations beginning in the 16th century by the Spanish into California, Euro-American settlement was delayed in the regional study area until the mid-18th century. Early explorers, such as Francisco de Ulloa (1539), Hernando de Alarcon (1540), and Francisco de Coronado (1540) led expeditions into the Gulf of Mexico, reaching the mouth of the Colorado River and continuing up the river past the Gila confluence. However, little exploration of the interior deserts was undertaken until much later. Spanish exploration for the next 200 years was intermittent in this area as it was considered remote and difficult to access.

History

The first recorded explorer of the interior Colorado Desert region was Father Eusebio Francisco Kino, a Jesuit missionary, cartographer, and explorer. Starting in 1691, Kino established a string of missions in northern Mexico and southern Arizona, finally reaching the Colorado River in 1702. Kino followed the Colorado River to the delta. His conception of an overland route through the desert to Monterey (Mexico) to access the Manila galleon trade was rejected by officials in Mexico City, who felt that the idea was too risky and that resources could be better spent elsewhere (Lavender 1972; Rice et al. 1996).

Almost 70 years later, Father Francisco Garcés followed Kino’s route, reaching the villages of the Quechan Indians at the junction of the Gila and Colorado rivers in 1771. Garcés’s party

crossed the Colorado River and traveled west through the desert until the San Jacinto Mountains were visible in the distance, before returning to Sonora. Three years later, Father Garcés and a Spanish border captain named Juan Bautista de Anza attempted an overland route to Monterey. When they reached the Colorado River, Anza found the local Yumans friendly. Anza and Garcés left some of their supplies behind with a small guard and crossed the desert to the west, eventually crossing the San Jacinto Mountains by way of a small canyon. In March 1774, Anza's party reached Mission San Gabriel. Because of a shortage of supplies, most of the party, including Garcés, turned back while Anza continued on to Monterey, California (Rice et al. 1996). The following year, Anza led 240 emigrants and soldiers, along with their livestock, into Northern California, where they became the first European settlers of San Francisco. This emigration established the beginnings of the Desert Trail across Imperial Valley. In 1781, Quechan Indians destroyed the Spanish settlements along the Yuman Crossing of the Colorado River, and the Spanish abandoned the route through the Colorado Desert (Bean and Rawls 1983:34-35). The trail was not used again until 1826, when engineer Lieutenant Alferez Romualdo Pacheco from Mexico established the Desert Trail as an official mail route. Lieutenant Pacheco and his soldiers established a fort, about 6 miles (9 km) west of Imperial, which was later abandoned and fell into ruin.

In the 1800s, most travel from Arizona to San Francisco by Mexican soldiers, and later, American settlers, followed Anza's route. Mexican soldiers and American settlers established several southern routes across the Colorado Desert during the 1820s. The trail across the Imperial Valley opened by Anza, and followed by later generations of explorers, trappers and eventually by settlers from the east coast, is known by many names, including the Sonora Road, the Colorado Road, the Emigrant Trail, and the Butterfield Stage Route. The Butterfield Stage Route, used from 1858-1861, was most likely the first distinct path across the Imperial Valley (Hoover et al. 1990:108). In the 1880s, the Old Kane Spring Road between Julian and Kane Springs became a popular route between Imperial Valley and the western mountains (Schaefer et al. 1987).

From the 1840s through the 1880s, the U.S. cavalry established a series of camps and forts through the Arizona, Nevada, and California deserts to protect settlers and immigrants from the hostile tribes. One of the earliest of these was Camp Calhoun, established in 1849 by the Americans on the banks of the Colorado River near present-day Yuma. In 1855, the name was changed to Fort Yuma. Following the establishment of forts through the area, the California desert region again opened up for exploration and settlement. As part of an effort to establish a railroad route from St. Louis to the Pacific Ocean, the U.S. government conducted a series of surveys between 1853 and 1855 to identify feasible routes. Lieutenant Amiel Weeks Whipple, a topographical engineer in the army, was assigned the task of determining the westernmost section from Arkansas to Los Angeles. Whipple passed through Mojave territory in 1854, crossing the Colorado River near present-day Needles (Rice et al. 1996). Another of the railroad survey parties, led by Lieutenant R.S. Williamson, included a young geologist, William Phipps Blake. Blake was the first to identify the Salton Trough as an ancient lakebed.

The discovery of gold in California brought a great influx of American and European settlers to the state. Between 1849 and 1860 an estimated 8,000 emigrants crossed the Colorado Desert on

their way to California (Laflin 1998:10). In the 1850s, there was limited gold mining in the eastern Colorado Desert.

Significant economic development of the Colorado Desert region began in the 1870s and continued into the 20th century. Development was dependent largely on two things: transportation and water. The first of these came in 1872, with the construction of the Southern Pacific Railroad from Los Angeles to present-day Indio and, eventually, Yuma. The early townsite of Indio, the mid-point between Los Angeles and Yuma, was created to provide living quarters for train crews and railroad workers. The first trains ran on May 29, 1876 (Pittman 1995:36). The Southern Pacific continued east, paralleling an 1857 road along the eastern side of the Salton Trough. Railroad stops were built at Walters (now called Mecca), Woodspur (Coachella), and Thermal, among others. The same large dunes that had hindered Anza's expedition hindered construction of the railroad. The Southern Pacific Railroad was finally forced to build along the eastern edge of what came to be known as the Imperial Sand Dunes. Railroad sidings in the area with names such as Glamis, Amos, and Ogilby developed into small company towns. The second transcontinental railroad was completed when the Southern Pacific and the Atchison, Topeka, and Santa Fe railroads were linked at Deming in New Mexico Territory on March 8, 1881, providing settlers relatively quick and easy access to the region. The citizens of Imperial Valley petitioned the Southern Pacific Company to build a branch line south, connecting the valley to the main Southern Pacific Railroad. In 1903, the line had been completed from Old Beach (Niland) to Imperial. By 1904, the line had been extended to Calexico.

In 1891, the California Irrigation Company, which later became the California Development Company, was formed to transport water from the Colorado River to the Salton Sink. The town of El Centro was laid out in 1900, by developer W.F. Holt. Holt bought up large blocks of stock in the Imperial water companies from the California Development Company. Construction of the first canals began in 1900, allowing much of Imperial Valley to develop as a farming community. The 70-mile-long Alamo Imperial Canal was completed on May 14, 1901. By April 3, 1902, 400 miles of irrigation ditches had been dug to irrigate 100,000 acres of potential cropland. During this time, the name of the lower basin was changed from the Salton Sink to the Imperial Valley. Before construction of Boulder Dam between 1930 and 1936 (renamed Hoover Dam in 1947), the water supply for the Imperial Valley was silt-laden. The canal system quickly became clogged, and dredging the system was difficult and expensive. The California Development Company did not have the financial resources to keep the system clear. In 1905, construction of a new control gate began, coinciding with unusually heavy floods and a change in the course of the Colorado River. The river overflowed its banks, flooding the Salton Basin and forming the Salton Sea. The California Development Company was bankrupted.

The Imperial Irrigation District (IID) was formed in 1911 under a state charter to acquire properties of the bankrupt California Development Company. By 1922, the IID had acquired 13 water companies. The All-American Canal was built to replace the Alamo Imperial Canal. The All-American Canal is part of the Hoover Dam complex, and its 82-mile length extends from Imperial Dam about 20 miles northeast of Yuma to the Imperial Valley. Approval to construct the canal came from the Boulder Canyon project Act in 1928. The All-American Canal was constructed through the 1930s, and the first water flowed into Imperial Valley in 1940. By 1942,

the All-American Canal was the sole source of imported water for the Imperial Valley. When World War II broke out, the desert area of Imperial Valley had gone from being infrequently visited by Anglo-Americans to being settled and farmed by them.

Early agriculture in Imperial Valley was devoted to the production of alfalfa, dairying, and raising hogs. During this period, towns were established in Imperial Valley, including Brawley (1908), Westmorland (1910), Niland (1913) and Calipatria (1914). By the 1930-1940s, varied crops were cultivated such as cantaloupes, citrus, grapes, wheat, beets, asparagus, and cotton. The design of the residences was vernacular in nature and built to endure the extreme heat in the summer. The large-screened front porches and sleeping rooms provided respite from the hot interior of the houses during the evening. Many of the farms were planted with trees, and specifically palm trees, to provide not only shade but also as identification of one's residence on the flat landscape.

A major canal in the area is the Vail Canal, constructed during the agricultural boom of the early 20th century and associated with the Vail Ranch. The Vail Ranch was constructed by the Vail family, which had constructed several large ranches throughout southern California. The most famous member of the family was Walter Lennox Vail, whom had owned land near the project area (CEC 2003 4.3-16).

Today, there are 3,000 miles of irrigation and drainage canals serving 500,000 acres of cultivated land in Imperial Valley and its cities and towns, yielding nearly $1 billion in crops. The advent of air conditioning, coupled with low utility rates, have drawn industry to the area. Geothermal power, aerospace, manufacturing, and agriculture now dominate the landscape in Imperial Valley.

CHAPTER 3
ARCHIVAL RESEARCH AND CONTACT PROGRAM

Archival research was conducted to encompass the areas required under CEC siting regulations; the archival research included a record search (Attachment 2) through the Southeastern Information Center (SIC) at the Imperial Valley College Desert Museum. All files kept on record at the SIC are now housed at the South Coastal Information Center at San Diego State University. Information regarding previously conducted studies and site records were obtained for a study area that was defined by a 1-mile area around the Project site and within 0.5-mile of the linear pipeline routes.

In addition to the SIC records search, the NAHC was contacted to determine if any sacred lands were located near the project area. In addition, a list of Native American contacts was provided and Native American contacts were initiated. To date one response was received from Bridget Nash-Chrabascz, Tribal Historic Preservation Officer of the Quechan Indian Nation.

Research for the historic resources survey involved a review of historic USGS Topographical Maps (Obsidian Butte, Niland 1957) and historic site inventories included in previous studies (CEC 2003). Additionally, the regional Pioneer Museum was contacted for information pertaining to specific site and regional history. Review of local histories and photographs yielded some information pertaining to the Vail Ranch and regional history.

PREVIOUS SURVEYS

The records search identified two previous cultural resources investigations that are within the record search limits (Table 3). These studies are mostly the result of various proposed development projects in the area. These projects include transmission line construction, geothermal energy plant construction, and studies near Obsidian Butte.

Table 3. Summary of Previous Surveys within Records Search Limits

Author and Date	Title	NADB Number
County of Imperial Department of Planning (1979)	Forty-Nine Megawatt Geothermal Power Plant & Facilities Niland Area.	1100183
Jay von Werlhof (1979)	Letter to Magma Power Company Salton Sea Geothermal Area.	1100636

PREVIOUSLY RECORDED SITES

The records search identified four cultural resources within the records search area (Table 4). One of these is Obsidian Butte, which was originally recorded by Malcolm Rogers (CA-IMP-452). Other sites within the search area include lithic scatters, pottery scatters, temporary campsites, and trails.

Table 4. Summary of Previously Recorded Cultural Resources within Records Search Limits

Primary Number (P-13-)	Trinomial CA-IMP-	Site Type	Site Constituents	Time Period
000452	452	Obsidian Butte	Obsidian quarry	Prehistoric
	3254H	Salt Source	Unknown (washed away by Salton Sea)	Historic
	3255/H	Pond of salt water	60 ft. wide salt pond	Prehistoric/Historic
	6638	Lithic scatter	Obsidian flakes and hammerstone	Prehistoric

CONTACT PROGRAM

The NAHC provided a list of Native American contacts that might have an interest or concern regarding the proposed project, all of whom were notified by letter regarding the project and their concerns and/or knowledge of resources in the area were solicited (CEC 2003). These include representatives of the Ewiiaapaayp Tribal Office, La Posta Band of Mission Indians, Manzanita Band of Mission Indians, Campo Band of Mission Indians, Kumeyaay Cultural Heritage Preservation Program, and Fort Yuma Indian Reservation-Quechan Tribe.

On September 8, 2008, EDAW submitted an updated request for a Sacred Lands File (SLF) search to the NAHC. The SLF file indicated cultural resources were located within the search area and provided a list of Native American contacts. Letters were sent to individuals listed on the NAHC contact list (Table 5). To date, only one response has been received. Copies of letters sent to Native American contacts are included in Attachment 3.

Table 5. Native American Contacts

Name/Title	Affiliation	Date/Type of Contact	Response
Leroy J. Elliott, Chairperson	Manzanita Band of the Kumeyaay Nation	09/23/2008 Letter	To date no response
		12/10/08 Telephone	No answer. Left a message.
Monique LaChappa, Chairperson	Campo Kumeyaay Nation	09/23/2008 Letter	
		10/22/08 Response Form	Ms. La Chappa returned a response form asking that the mailing list be updated. She also indicated that she had no comments.
Joseph Hamilton, Chairperson	Ramona Band of Cahuilla Mission Indians	09/23/2008 Letter	To date no response
		12/10/08 Telephone	No answer. Left a message.
Raymond Torres, Chairperson	Torres-Martinez Desert Cahuilla Indians	09/23/2008 Letter	To date no response
		12/10/08 Telephone	No answer. Left a message.
Paul Cuero	Kumeyaay Cultural Heritage Preservation	09/23/2008 Letter	To date no response
Carmen Lucas	Kwaaymii Laguna Band of Mission Indians	09/23/2008 Letter	To date no response
		12/10/08 Telephone	Ms. Lucas asked if anyone had been contacted and Mr. Tennyson said that the Quechan as well as Preston Arroweed had been contacted. Ms. Lucas stressed the importance of the area and requested a Native American monitor be present for all ground disturbing activities. A monitor from Quechan or the Kumeyaay would be appropriate. Obsidian Butte was identified as an area of concern. Ms. Lucas also asked that the cultural landscape be taken into account when considering traditional cultural resources related to this project. She noted that there has been much disturbance in the area, but that it is still important. Ms. Lucas also expressed a wish that Obsidian Butte be put on the National Register of Historic Places and that she would be glad to assist in any way if it were to be listed.

Name/Title	Affiliation	Date/Type of Contact	Response
Michael Garcia, Vice-Chairman/ EPA Director	Ewiiaapaayp Tribal Office	09/23/2008 Letter	To date no response
		12/10/08 Telephone	No answer. Left a message.
Nick Elliott, Cultural Resources Coordinator	Manzanita Band of the Kumeyaay Nation	09/23/2008 Letter	To date no response
		12/10/08 Telephone	Mr. Elliot was not available. Asked that we call back.
Bridget Nash-Chrabascz, Tribal Historic Preservation Officer	Quechan Indian Nation	09/23/2008 Letter	Ms. Nash-Chrabascz requested a phone call and Tribal monitor.
		10/29/2008 Telephone	No answer. Left a message.
		10/30/2008 Telephone	No answer. Left a message.
		11/3/2008 Telephone	Ms. Nash-Chrabascz indicated that the Tribe would like a monitor on the survey.
		11/4/2008 Telephone	Ms. Nash-Chrabascz said that the monitor would not be available. She asked that she be notified of the survey results.
		11/6/2008 Telephone	Ms. Nash-Chrabascz was notified that no prehistoric sites were identified by the survey
Preston Arroweed	Native American researcher the NAHC identified as the most likely descendant	11/24/08 Telephone	Mr. Arroweed indicated that the Quechan Tribe should be the contact for the project and that no further consultation with him was necessary.

At the request of Bridget Nash-Chrabascz, THPO for the Quechan Indian Nation, EDAW contacted the Quechan Indian Nation regarding a Tribal monitor for the survey on November 3, 2008. On November 4, 2008, Ms. Nash-Chrabascz informed EDAW that a Tribal monitor would not be able to accompany the survey crew during field investigations and requested that the tribe be informed of any results of field investigations. Ms. Nash-Chrabascz was contacted on November 6, 2008 and informed that no prehistoric cultural resources had been identified in the area.

Preston Arroweed, a Native American researcher the NAHC identified as the most likely descendant was also contacted regarding sacred lands near the project site, namely the Black Butte obsidian source. Mr. Arroweed was contacted on November 24, 2008 and indicated that

contact with the Quechan Indian Nation was sufficient and indicated that no further consultation was necessary.

Carmen Lucas was contacted by telephone on December 10, 2008 in order to see if she had any questions or comments about the Project. Ms. Lucas asked if any other Native American individuals or groups had been contacted and Mr. Tennyson said that the Quechan as well as Preston Arroweed had been contacted.

Ms. Lucas stressed the importance of the area and requested a Native American monitor be present for all ground disturbing activities, especially because the Obsidian Butte is an area of concern. According to Ms. Lucas, a monitor from Quechan or the Kumeyaay would be appropriate for this work.

Ms. Lucas also asked that the cultural landscape be taken into account when considering traditional cultural resources related to the Project. She noted that even though there has been much disturbance in the area, preserving the cultural landscape is still important.

Ms. Lucas also expressed a wish that Obsidian Butte be put on the National Register of Historic Places and that she would be glad to assist in any way if it were to be listed.

CHAPTER 4
METHODS AND RESULTS

SURVEYS

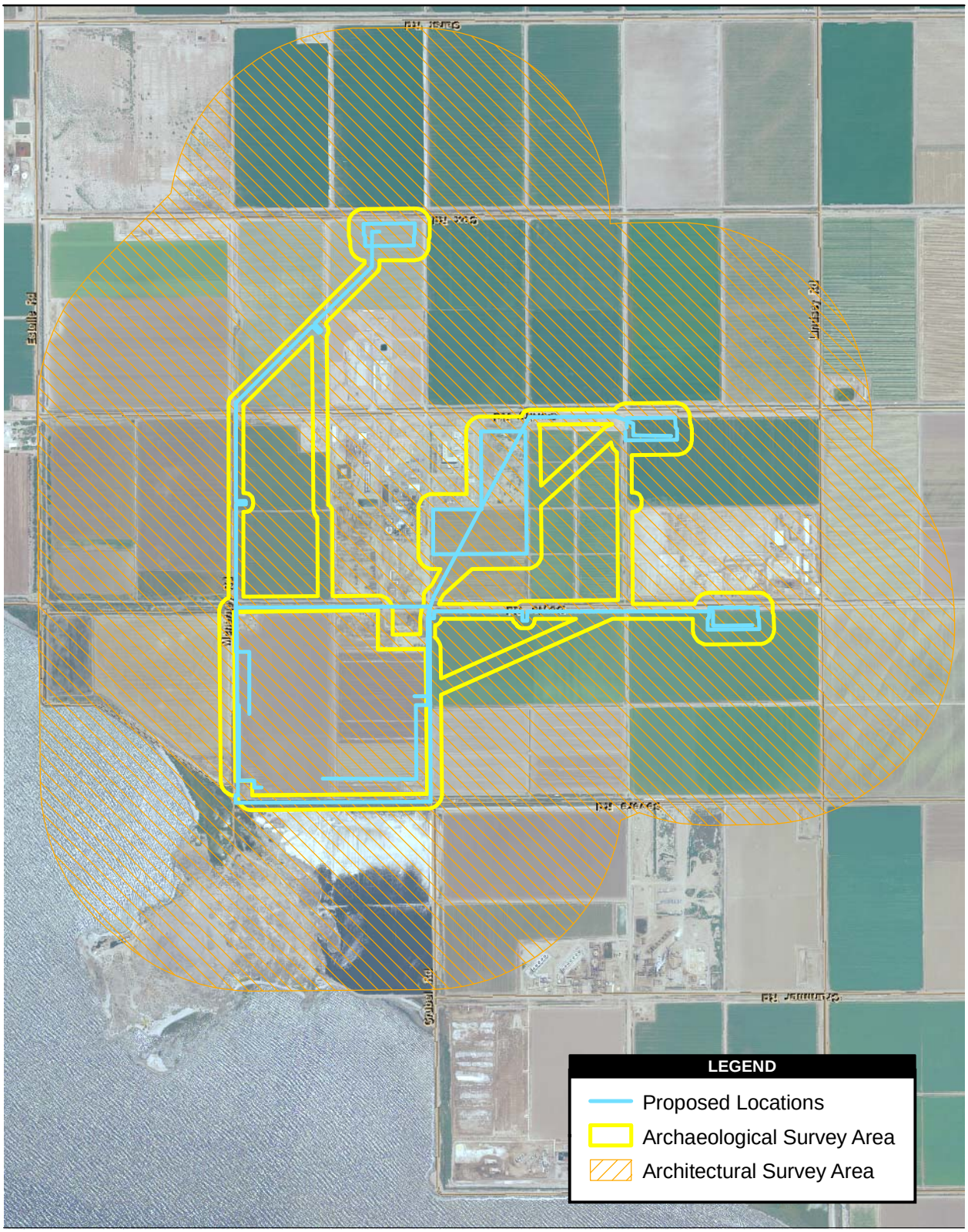
Cultural resource surveys for the SSU6 Project were conducted by URS (CEC 2003). At that time, the plant site footprint and transmission line corridors were surveyed. EDAW conducted surveys for the Amended Project between November 4 and 6, 2008. EDAW's investigations addressed the buffer for the plant site, injector well pads, pipelines and a borrow area. Figure 3 shows the archaeological and architectural survey areas.

A survey interval of 15 m between each crewmember was established to ensure maximum survey coverage of each area. The survey was conducted to identify possible cultural resources that may be affected by the Amended Project. The survey utilized both 7.5-minute U.S. Geological Survey (USGS) topographic maps and larger scale aerial photographs.

Cultural resources were recorded on California Department of Park and Recreation (DPR) Primary Record forms (Form 523A), locations were plotted on Location Map forms (Form 523J). Completed DPR forms are included in Attachment 4.

M.K. Meiser, M.A., conducted an intensive survey of the built environment within the architectural APE for the current Amended Project area on November 6, 2008. A reconnaissance of the previously recorded historic properties along the linear routes was completed, but no further evaluation was conducted. The survey for architectural resources included the Project footprint, staging areas, and a 0.5-mile radius buffer. Any built structures encountered were evaluated for inclusion to the CRHR. The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing historical resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change.

The cultural resources surveys of the Amended Project APE were conducted in November and December 2008. The archaeological survey transects averaged 50 feet (15 m) spacing. A 200-foot buffer around the plant site, the three well pads and a borrow area, and a 210-foot corridor along the pipelines (110-foot right-of way and a 50-foot buffer either side) comprise the archaeological resources APE. For built resources the APE area extended 0.5 miles around the Amended Project components. APEs for both archaeological and built resources were surveyed. The following describes 2008 cultural resource investigations conducted for the Amended Project and the results of those investigations.



Source: NAIP 2005, EDAW 2008

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 3
Amended Salton Sea Unit 6 Project Survey Area

Path: P:\2008\08080156 Black Rock Energy\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Cultural\Figure3_BlackRock_SurveyResults_85x11.mxd, 01/13/09, AugelloP

Plant Site Buffer

The Plant Site buffer is a 200-foot area located around a 160-acre[1] agricultural field (the Plant Site). The area is level and has been graded, cultivated, and heavily disturbed.

A 200-foot buffer around the plant site was surveyed using systematic pedestrian transects. Ground visibility was excellent. In the northwest corner of the buffer area unmodified fragments of obsidian were identified in a disturbed area (a dirt berm). The survey identified an approximately a 2,400-foot segment of Vail Lateral 4-A parallels the eastern side of the plant site (Figure 4).

Injection Well Pads and Pipelines

The Amended Project's injection well pads and pipelines are located south and east of the plant site adjacent to roads and within agricultural fields. These areas are level and have been graded, cultivated, and heavily disturbed. The records search indicated that no previous studies have been conducted within the proposed well pad areas and no previously recorded sites are on or adjacent to the subject lands.

Three proposed injection well pads and three pipeline corridors were surveyed using systematic pedestrian transects. Ground visibility was good to excellent. Three laterals, Vail Lateral 3-A, 4, and 4-A were recorded within the survey limits.

Borrow Area

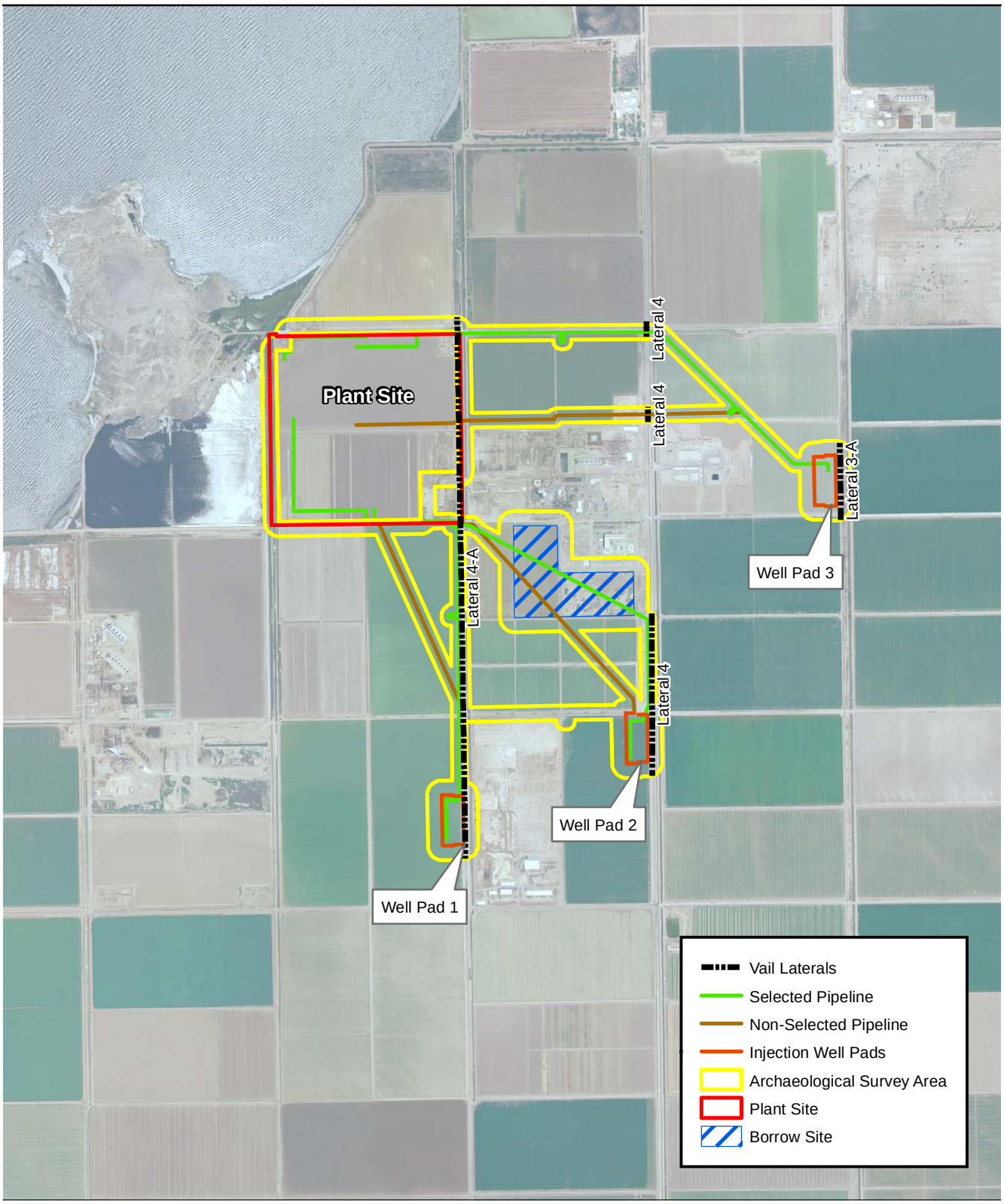
The borrow area is an approximately 35-acre area to the southeast of the Plant Site. The western portion of the borrow site is an agricultural field. The remainder disturbed and contains modern debris. Surveys did not identify any cultural resources in the proposed borrow area.

RESULTS

Vail Lateral 3-A

This 900-foot segment of the Vail Lateral 3-A is an open, concrete-lined, trapezoidal shaped channel with flowing water. The canal walls are poured slab concrete with a smooth finish. The lateral has a top width of 10 feet 3 inches, a bottom width of approximately 2 feet, and a depth of approximately 4 feet. This segment contains a date stamp that reads "1949" and two sluice gates. One of these gates is labeled "VAIL 3-A" and divides the lateral into sections that correspond with an intersecting road. The other sluice gate is labeled "367."

[1] Since the survey, the plant area has increased to encompass the northwest and southeast corners of the parcel. However, the northwest corner of the parcel was covered as part of the original survey for the SSU6 project and the southeast corner is highly disturbed.



Source: NAIP 2005, EDAW 2008

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 4
Amended Salton Sea Unit 6 Project
Survey Results

Path: P:\2008\08080156 Black Rock Energy\6.0 GIS\6.2 Project Directory\6.2.5 Layout\Cultural\Figure4_BlackRock_SurveyResults_85x11.mxd, 01/13/09, AugelloP

Vail Lateral 4

The Vail Lateral 4 is an open, concrete-lined, trapezoidal shaped channel with flowing water. The walls are poured slab concrete with a smooth finish. The slabs range between 93 inches and 114 ½ inches in length. Three segments of this lateral are in the Amended Project area.

Segment 1 is 2,254 feet long. Its northern point is southwest of the intersection of Gentry Road and Kuns Road. It contains a contractor's stamp that reads "MERRILL 1993" and two sluice gates. One of these gates is labeled "VAIL 4" and divides the canal into sections that correspond with intersecting roads. This segment of the canal is 14 feet 4 inches wide, and has a bottom width of approximately 2 feet, and a depth of approximately 4 feet. The other sluice gate is labeled "415" and leads to an east-west trending unnamed irrigation canal that is 18 feet to the west. This lateral is constructed similarly to the Vail Lateral 4-A canal, and has small wall sluice valves in its north wall for allowing water to drain into the adjacent agricultural fields.

Segment 2 is 200 feet long. This segment's southern most point is a quarter mile south of the intersection of Gentry Road and McNerney Road, at an unnamed dirt road that accesses the existing plant to the west. It has a contractor's stamp that reads "RYERSON 1992." This segment of the canal is 11 feet 4 inches wide, and has a bottom width of approximately two feet, and a depth of approximately four feet. The exact bottom width and depth measurements were difficult to obtain as the canal had flowing water in it.

Segment 3 is 150 feet long. This segment's southern most point is 60 feet north of McNerney Road (McNerney Road is incorrectly labeled with a sign that says "McKendry Road"). This segment has a contractor's stamp that reads "RYERSON 1992" and two sluice gates. One of these gates is labeled "VAIL 4" and divides the canal into sections that correspond with intersecting roads. The portion of this segment of the canal that is just north of McNerney Road is 13 feet 9 inches wide (this portion includes the sluice gate marked "419") and ends at the sluice gate and measures 49 feet in length. The remainder of this segment measures 9 feet 7 inches in width. It has a bottom width of approximately 2 feet and a depth of approximately 4 feet. The exact bottom width and depth measurements were difficult to obtain as the canal had flowing water in it. The other sluice gate is labeled "419" and leads to an east-west trending unnamed irrigation canal that is 18 feet to the west. This canal is constructed similarly to other lateral canals in the area and has small wall sluice valves in its north wall for allowing water to drain into the adjacent agricultural fields.

Vail Lateral 4-A

The Vail Lateral 4-A is an open, concrete-lined, trapezoidal shaped channel with flowing water. The walls are poured slab concrete with a smooth finish (Plate 1). The canal has a top width of 10 feet 3 inches, a bottom width of approximately 2 feet, and a depth of approximately 4 feet. A 1.4 mile segment of the lateral is located within the archaeological survey limits for the Amended Project. This segment of the canal contains a contractor's stamp that reads "GRANITE CONST CO 2003" and nine sluice gates. Four of these gates are labeled "VAIL 4-A", and divide the canal into sections that correspond with intersecting roads. The other five sluice gates are labeled "455", "457", "459", "460", and "461-A.

Plate 1. Vail Lateral 4-A. View to the south

Discussion

Cultural resources surveys identified three resources (Table 6). The ground visibility was fair to excellent. Much of the Amended Project area has been disturbed due to agricultural activities and the construction and operation of other geothermal plants in the immediate area. All historic resources identified were lateral canals connected to the Vail Canal to the south.

Table 6. Identified Cultural Resources

P-Number/Trinomial or Temporary Number	Site Type	Date
Vail Lateral 3A	Concrete canal	20th century
Vail Lateral 4	Concrete canal	20th century
Vail Lateral 4A	Concrete canal	20th century

The canal system throughout the Imperial Valley resulted from extensive efforts to divert water resources from the Colorado River into the Colorado Desert. First recognized in the 1850s, the Salton Sink basin was once a natural lake with a variety of alluvial soil types. During the latter half of the 19th century, speculators and engineers attempted to plan a gravity flow canal to

irrigate the barren valley for agricultural purposes. Prior to the canal system, there was no potable water for centuries.

The California Development Company succeeded in building the 70-mile Alamo Canal and diverting water into the canal in 1901. The company built the distribution systems for the majority of the region in the 1900s. By 1905, the company had built 80 miles of main canals in Imperial and Mexicali Valleys, and 700 miles of distribution canals (Dowd 1956). The original canals were earthen trenches with wood head gates. With the development of the canal system, agricultural development was rapid. From no population in 1900 to approximately 14,000 people and 100,000 irrigated acres in 1905, the canal system faced water shortages and was continually expanding (Dowd 1956).

Combined problems of silt and unexpected winter floods, resulted the failure of the canal gates and the entire flow of the Colorado River entering the canal system from 1905 to 1907. This break allowed floods to substantially enlarge the New River and Alamo River and flow through Imperial Valley to create the Salton Sea. The flooding destroyed significant flumes and channels in the canal system, railroad spurs, and approximately 13,000 acres of irrigable land (Dowd, 1956). The break was repaired in 1907, and over the course of the following decade, the canal system was fortified with concrete gates, flumes, enlarged main canals, and a new levee system. In addition to these major improvements, a number of minor canals were installed.

The Imperial Irrigation District (IID) was formed in 1911 to operate the bankrupt California Development Company and its subsidiaries with a base of nearly 500,000 irrigable acres. After 1929, the IID needed to expand the canals with a lateral drain system, providing outlets on individual farms per every 160 acres (Dowd 1956). The IID worked with individual landowners to develop drains, providing survey and engineering services. Many of these drains were lined with tile.

The Vail Canal was constructed just south of the Salton Sea, between the Alamo River and the New River on land owned by the Vail family from around the 1910s. The laterals in this study likely date to the period of drainage expansion in the late 1920s and 1930s. The modern concrete linings of the canals appear to be infrastructure improvements dating from 1949 to the present.

The Vail Canal laterals are part of a larger canal system that is maintained by the IID. While the canals have been upgraded and maintained during their span of use, they continue along the same routes and have helped shape development of other infrastructure in the area, including roads and energy producing plants. The Vail Canal laterals are also connected to an important ranching family in the Imperial Valley. However, the Vail Ranch is not directly connected to the most prominent member of the Vail family, Walter Lennox Vail. Vail's heirs, none of whom ever lived at the ranch (CEC 2003 4.3-16), actually established the ranch.

Today, the laterals continue to provide water to the region and help maintain agricultural activities, which is a vital industry to the Imperial Valley community.

CHAPTER 5
SUMMARY AND MANAGEMENT RECOMMENDATIONS

SUMMARY

Archival and field investigations of the plant site, buffer, injector well pads, pipelines, and borrow area identified three cultural resources, all outside the plant site boundaries. All three are laterals associated with the Vail Canal. The pipeline routes between the injection well pads and the plant site cross the laterals in several locations, but the pipelines will span and thereby avoid the resources.

RECOMMENDATIONS

Preservation of cultural resources is preferred. The laterals are potentially significant for their associations with agricultural development of the region. However, the proposed pipelines will span the laterals, avoiding the resources. If avoidance is not possible, then the laterals will require further investigation to determine eligibility to the CRHR. Recommendations for all of the identified cultural resources are provided in Table 7.

Table 7. Summary of the Amended Project Cultural Resources

P-Number/ Trinomial or Temporary Number	Site Type	Date	Recommendation
Vail Lateral 3A	Concrete canal	20th century	Avoid
Vail Lateral 4	Concrete canal	20th century	Avoid
Vail Lateral 4A	Concrete canal	20th century	Avoid

If significant or potentially significant cultural resources cannot be avoided, the project owner should retain a qualified Cultural Resources Specialist to prepare and implement a data recovery program for the affected resources. The Principal Investigator for the mitigation program will meet the minimum Principal Investigator qualifications under the Secretary of Interior's Standards for Archaeology.

A designated Cultural Resources Specialist should be available during the construction to inspect and evaluate any finds of potentially significant buried cultural material. The Cultural Resources Specialist will coordinate with the project owner's construction manager and environmental compliance manager to stop all work in the vicinity of the find until it can be assessed. If the discovery is determined to be not significant through consultation with CEC staff, work will be allowed to continue.

If in consultation with the CEC a discovery is determined to be significant, a mitigation plan should be prepared and carried out in accordance with State guidelines. If the resources cannot be avoided, a data recovery plan should be developed to ensure collection of sufficient information to address archaeological or historical research questions.

A technical report should be prepared documenting any assessment and data recovery investigations. The report should describe the methods and materials collected, and provide conclusions regarding the results of the investigations. The report should be submitted to the curatorial facility with the artifacts.

Cultural material collected as part of an assessment or data recovery mitigation should be curated at a qualified curation facility. Field notes and other pertinent materials should be curated along with the archaeological collection.

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ATTACHMENT 1
RESUMES

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).

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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

CONFIDENTIAL PROJECT
Task Manager
CLIENT: CONFIDENTIAL CLIENT
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

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

SEMPRA On-call Cultural Services, CA
Resource Manager
CLIENT: SEMPRA
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.

REBECCA MCCORKLE APPLE

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.

REBECCA MCCORKLE APPLE

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 fours 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).

TRINA MEISER
Architectural Historian

SUMMARY
Historic preservation specialist and architectural historian

EDUCATION
MA, Historic Preservation Planning, Cornell University, 2003

BA, History, Kenyon College, 1998

AFFILIATIONS
National Trust for Historic Preservation

Society of Architectural Historians

California Preservation Foundation

Trina Meiser is a historic preservation specialist and an architectural historian with 6 years of experience in surveying, documenting, evaluating, and planning for historic structures, districts, sites, and cultural resources. Her background is based on a solid knowledge of architectural history, architectural styles and terminology, building materials conservation, and historic preservation theory. She has led seminars on architectural styles and the history of historic preservation, charrettes for the design treatments of historic districts, as well as workshops in materials conservation. She has completed cultural resource technical reports, National Register of Historic Places nominations, historic structures reports, and Federal Rehabilitation Tax Credit applications. She has consulted on a variety of historic structure rehabilitation plans with clients, architects, engineers, and agency representatives for regulatory review. Her experience in historic preservation planning provides a strong understanding of federal, state, and local historic preservation laws. She has a thorough knowledge of the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and their functions in historic preservation planning.

Ms. Meiser's areas of interest include urban and landscape preservation planning and design, building restoration, archaeology, international heritage sites, and historic district and neighborhood revitalization projects. She is a member of the Society of Architectural Historians, the California Preservation Foundation, the National Trust for Historic Preservation, and several regional historical societies and preservation organizations.

HISTORIC PRESERVATION PROJECTS

National Register Eligibility Assessment for Naval Base Ventura County, Port Hueneme, California
Architectural Historian
CLIENT: U.S. Navy, Southwest Division
Recorded and evaluated 18 buildings at the Naval Construction Training Center at Port Hueneme for eligibility to the National Register. Conducted research on the Disaster Recovery Training School for incorporation into the historical context. Completed DPR forms and incorporated findings in a Historic Resources Evaluation Report.

Ramona Air Center Environmental Impact Report, Ramona, California
Architectural Historian
CLIENT: TCR Properties
Conducted a survey and historical research of structures more than 50 years old to evaluate and document historic resources. Results were recorded on DPR forms and summarized for inclusion in the project Environmental Impact Report.

Exposition Light Rail Transit Phase 2, Los Angeles County, California
Architectural Historian
CLIENT: Exposition Light Rail Authority/AECOM Transportation
Conducted fieldwork to record and evaluate historic resources along the Exposition Corridor ROW. Completed a Historical Resources Evaluation Report for the evaluation of historical resources for eligibility to the National Register of Historic Places and the California Register of Historical Resources. Provided cultural resources portion of Environmental Impact Statement, including mitigation measures for the treatment of evaluated historical resources.

TRINA MEISER

SR-76 Mission to I-15 Historical Resources Evaluation Report, San Diego, California
Architectural Historian
CLIENT: San Diego Association of Governments/Caltrans
Conducted fieldwork to record and evaluate ranching buildings and residences. Completed a Historical Resources Evaluation Report per Caltrans standards for the evaluation of historical resources for eligibility to the National Register of Historic Places and the California Register of Historical Resources.

Main Street Bridge Replacement Project, Temecula, California
Architectural Historian
CLIENT: City of Temecula
Conducted a survey and historical research of historic resources in Old Town Temecula adjacent to the Main Street Bridge. Results were recorded on DPR forms and in a Historical Resources Survey Report per Caltrans guidelines.

301 University Avenue Historical Evaluation and Technical Report, San Diego, California
Architectural Historian
CLIENT: Allen, Matkins, Leck, Gamble, Mallory & Matsis, LLP
Evaluated the condition and integrity of the former supermarket building dating from 1942. Prepared Historic Resources Evaluation Report and survey forms. Summarized findings for inclusion in the 301 University Uptown Environmental Impact Report.

SFVAMC Environmental Assessment of Seismic Upgrades, San Francisco, California
Architectural Historian
CLIENT: Department of Veterans Affairs
Consulted with architects and designers for the rehabilitation and seismic retrofit of the 1930s-era Art Deco San Francisco Veterans Affairs Medical Center buildings. Reviewed plans and rehabilitation standards to evaluate design of new additions and alterations. Engaged in consultation with the State Historic Preservation Office.

North Torrey Pines Bridge "Sorrento Overpass" Restoration, Del Mar, California
Historic Preservation Specialist
CLIENT: City of Del Mar
Consulted with engineers for the restoration of the 1933 North Torrey Pines Bridge to resolve significant impacts to the National Register-eligible resource. Assessed the deterioration of the bridge and established the historic character-defining features to be preserved. Evaluated restoration plans to suggest mitigation measures for its treatment in compliance with the Secretary of Interior Standards for Restoration.

Jefferson National Expansion Memorial, St. Louis, Missouri
Architectural Historian
CLIENT: National Park Service
Contributed to the cultural resources section of the GMP/EIS. Provided historical context for the Native American occupation, the French colonial establishment, and the 19th century development of the built environment in St. Louis, Missouri.

Fort Totten Conservation Work Weekend, New York, New York
Historic Preservation Specialist
CLIENT: New York City Department of Parks and Recreation
Organized a historic preservation event to perform restoration work on Officers' Quarters at retired military site along New York's East River. Oversaw the conservation of historic exterior woodwork elements. This conservation project was completed prior to joining EDAW.

TRINA MEISER

Hurricane Katrina Recovery, Disaster 1604-DR-MS, Biloxi, Mississippi
Architectural Historian
CLIENT: Federal Emergency Management Agency, Region VI
Recorded the condition and integrity of multiple properties affected by Hurricane Katrina and performed photo documentation. Determined if structures were eligible for National Register designation. Results were summarized in a report and through a series of maps generated in GIS. This conservation work was performed prior to joining EDAW.

Hurricane Katrina Recovery, Disaster 1604-DR-MS, Biloxi, Mississippi
Historic Preservation Specialist
CLIENT: Federal Emergency Management Agency, Region VI
Completed Section 106 review and coordinated with the State Historic Preservation Office to ensure that all projects funded by FEMA complied with federal regulations and the National Historic Preservation Act. Evaluated restoration projects for National Register eligibility in compliance with Secretary of Interior's Standards for Restoration and Rehabilitation under Programmatic Agreement. This historic preservation work was performed prior to joining EDAW.

Ithaca Downtown Commercial Historic District National Register Eligibility Nomination, Ithaca, New York
Historic Preservation Planner
CLIENT: City of Ithaca
Completed research and documentation of downtown commercial buildings dating from the 1830s to the 1930s. Document included architectural descriptions of each building. Successful nomination to the National Register. This historic preservation planning project was completed prior to joining EDAW.

University Avenue Historic District National Register Eligibility Assessment, Ithaca, New York
Historic Preservation Planner
CLIENT: City of Ithaca
Completed documentation included in the survey and nomination of this residential historic district with resources dating from the 1860s to the 1950s. This historic preservation planning project was completed prior to joining EDAW.

Historic Ithaca's State Theatre Restoration Project, Ithaca, New York
Historic Preservation Specialist
CLIENT: Historic Ithaca, Inc.
Evaluated restoration designs for compatibility with the historic character of the resource and for compatibility with the *Secretary of the Interior's Standards for Rehabilitation*. Performed conservation of textiles, decorative fixtures, plaster, and windows. Managed construction projects relating to aesthetic and ADA accessibility modifications. This restoration work was completed prior to joining EDAW.

The Clinton House, Ithaca, New York
Historic Preservation Planner/Specialist
CLIENT: Historic Ithaca, Inc.
Evaluated designs for compatibility with the historic character of the resource and for compatibility with the *Secretary of the Interior's Standards for Rehabilitation*. Compiled and prepared Part 1 of the Federal Rehabilitation Tax Credit Application. Oversaw construction management for aesthetic modifications to historic elements. This planning and conservation project was completed prior to joining EDAW.

TRINA MEISER

The Delaware, Lackawanna and Western Train Station National Register Eligibility Nomination, Ithaca, New York
Historic Preservation Specialist
CLIENT: City of Ithaca
Composed historic context statement and architectural description for historic train station. Photodocumented building and submitted the application to the State Office of Historic Preservation. This historic preservation planning project was completed prior to joining EDAW.

Athens Exchange Hotel Stagecoach Livery Historic Structures Report, Athens, Pennsylvania
Preservation Planner
CLIENT: Town of Athens, Pennsylvania
Conducted comprehensive assessment of exterior and interior spaces of 1860s livery structure. Identified character-defining features and compiled historic context statement. Photodocumented building and developed recommendations for treatment and maintenance of deteriorated historic features. This conservation project was completed prior to joining EDAW.

MATTHEW TENNYSON, RPA
Staff Archaeologist

Matthew Tennyson has 7 years of archaeological experience in historic and prehistoric archaeology and is currently a staff archaeologist for EDAW's San Diego office. He has spent the last 7 years working in California on archaeological and historical projects across California and Nevada. His experience includes archaeological testing, data recovery, survey, GIS mapping, monitoring, report production, and historic research for private, city, county, state, and federal clients.

Mr. Tennyson also has experience teaching archaeology and anthropology at the university level, teaching introductory-level classes as well as instructing students in archaeological field schools. He also has experience in laboratory analysis and artifact curation of archaeological collections.

Mr. Tennyson has made public presentations regarding his archaeological work. He has authored or co-authored several articles and reports based on his work in both the academic and public sectors. He currently specializes in historical resources, including the assessment and recordation of historic archaeological sites and historic structures.

EDUCATION
BA, Archaeology, History (Minor), Boston University

MA, Anthropology, San Diego State University
Thesis Title: "Straight Out of Dixie": An Analysis of the Architecture of the Nate Harrison Cabin

AFFILIATIONS
Society for American Archaeology

Society for Historical Archaeology

Society for California Archaeology

CERTIFICATIONS
Register of Professional Archaeologists (RPA)

HONORS AND AWARDS
Phi Kappa Phi Honors Society, San Diego State University Chapter

Norton Allen Scholarship, San Diego State University Department of Anthropology, Spring 2006

Ethics Bowl – Society for American Archaeology 71st Annual Meeting, San Juan, Puerto Rico

PAPERS AND PRESENTATIONS
Cultural Interaction in the Archaeological Record: A Landscape View of Old Town San Diego. Paper presented at the Society for California Archaeology 2008 Annual Meeting, Burbank, California.

"Straight Out of Dixie": The Architecture of the Nate Harrison Cabin. Presentation at the San Diego Museum of Man.

Old Town San Diego on the San Diego Landscape. Paper presented at the Society for Historical Archaeology 2009 Annual Meeting, Toronto, Canada

PROJECT EXPERIENCE

Niland Solar Cultural Resources Evaluation
Principal Investigator
CLIENT: LADWP/ County of Imperial
Principal investigator and field director for cultural resources surveys and evaluations of approximately 1,000 acres near Niland, California. The project included archaeological and architectural surveys, the identification and evaluation of newly and previously recorded archaeological sites, Native American consultation, and production of an evaluation report submitted to the LADWP and the County of Imperial.

Tulare Lakes Drainage District Cultural Resources Surey
Principal Investigator
CLIENT: Municipal Water District/ Tulare Lakes Drainage District
Principal investigator and field director responsible for archaeological survey of a proposed pipeline and water treatment plant in the San Joaquin Valley. The project included archaeological survey of a proposed water drainage pipeline and water treatment facility, research and recordation of historic irrigation canals, and preparation of a cultural resources report.

SR-76 Mission to I-15 CEQA and NEPA Studies
Principal Investigator
CLIENT: Caltrans
Principal investigator for a cultural resources study of two proposed alternatives for the expansion of State Route 76. The project included leading cultural resources surveys, identifying impacts to cultural resources within project area, coordinating with project engineers to avoid negative impacts to cultural resources, and conducting preliminary testing of archaeological sites within the project area. Additional duties included updating archaeological sites, authorship of an Archaeological Survey Report, and coordination with Native American tribes.

San Clemente Island SWAT 1/TAR 4 Area Archaeological Testing
Staff Archaeologist
CLIENT: US Department of the Navy, Southwest
Staff archaeologist assisting in the testing and evaluation of nine archaeological sites on San Clemente Island, California. The project included

auger probing of archaeological sites, test unit excavation, and GIS mapping of cultural layers using an electronic total station.

Southern Nevada Supplemental Airport EIS, Jean, NV
Staff Archaeologist
CLIENT: ENSR
Staff archaeologist for a cultural resources survey of a proposed airport in southern Nevada. The project included surveying and recording prehistoric and historic archaeological sites in the Ivanpah Valley region of southern Nevada. Additional duties included authorship of report sections and historic research related to early European and American exploration, early roads, the development of railroads, and the history of mining in the area.

CONFIDENTIAL PROJECT
Staff Archaeologist/Historian
CLIENT: CONFIDENTIAL CLIENT
Archaeologist and historian for proposed solar power plant near California City, CA. Project duties included survey of pipeline alignments in order to assess potential impacts to historic structures in the area, historic research related to early exploration and the development of various social and economic activities in the Mojave Desert region, and assistance in the production of historical architecture and archaeological resources reports.

Yuma Lateral Pipeline Project
Staff Archaeologist
CLIENT: North Baja Pipeline, LLC
Archaeologist and field director for additional survey areas and addendum report for North Baja Pipeline project in Yuma, Arizona

Collwood Pines Apartments
Principal Investigtor
CLIENT: The Dinnerstein Companies
Principal investigator responsible for cultural resources on a private development of apartments in San Diego, California. The project included research into the project area and surrounding area to assess the likelihood of discovering cultural resources during the construction phase of the project.

Valley Center Road Bridge Replacement Mitigation
Staff Archaeologist
CLIENT: County of San Diego
Staff archaeologist responsible for Native American contacts and assisting in report preparation for a bridge replacement near Pauma Reservation in San Diego County, California

Main Street Bridge Replacement HPSR
Staff Archaeologist
CLIENT: Caltrans
Staff archaeologist responsible for assisting in production of HPSR for a bridge replacement near Temecula, California

Lost Horse DMND
Staff Archaeologist
CLIENT: Indio Water Agency
Project archaeologist responsible for historical research, cultural resources survey, and report for proposed water tank and pipeline near the City of Indio.

SR-125 Johnson Canyon Project
Staff Archaeologist
CLIENT: Caltrans
Conducted archaeological surveys of sites impacted by brush clearing at Johnson Canyon. Duties included investigating sites to determine whether significant impacts had occurred and reporting findings to Caltrans District 11.

MATTHEW TENNYSON

Jolly Boy Tavern Data Recovery, Old Town, San Diego, CA
Staff Archaeologist
CLIENT: California Department of State Parks
Staff archaeologist for excavation of early 19th century adobes located at the Jolly Boy Tavern in Old Town San Diego. Project duties included the excavation of trenches to uncover the historic foundations of adobes, on site interpretations, and coordination with State Parks archaeologists.

Williams Communication Archaeological Services Project Williams, Elko, NV
Archaeologist
CLIENT: Williams Communications
Archaeological technician responsible for the testing of sites along a communications line outside Elko, Nevada. Project duties included survey, relocation, testing, and recordation of sites along Highway 80. Work was performed prior to joining EDAW.

Mojave River Pipeline Reaches 4A and 4B, Daggett, CA
Archaeologist
CLIENT: Mojave Water Agency
Archaeological technician for a water pipeline in Daggett, CA. Project duties included survey of the proposed alignment, recordation of historic resources, historical research, archaeological monitoring for prehistoric and historic resources, laboratory analysis, cataloging and curation, and report production. Work was performed prior to joining EDAW.

El Cajon Animal Shelter Survey and Testing, El Cajon, CA
Archaeologist
CLIENT: City of El Cajon
Staff archaeologist for the survey and testing of milling features located near the El Cajon Animal Shelter. Project duties included locating and recording bedrock milling features and test excavation units to determine the depths of cultural materials at the site. Work was performed prior to joining EDAW.

Testing of Lithic Quarry at CA-SDI-13655, Camp Pendleton, CA
Archaeologist
CLIENT: U.S. Navy, NAVFAC SW, San Diego
Staff archaeologist for the testing of a quarry site located on Camp Pendleton USMC Base. Additional duties included laboratory analysis of lithic materials, artifact cataloging and curation, and assistance in report production. Work was performed prior to joining EDAW.

Tijuana River Valley, San Diego, San Diego County, CA
Archaeologist
CLIENT: San Diego County Department of Parks and Recreation
Staff archaeologist for proposed trail alignments in the Tijuana River Valley Regional Park, San Diego, CA. Project duties included the identification and recordation of historic and prehistoric cultural resources. Work was performed prior to joining EDAW.

Market Street Village, San Diego, CA
Archaeologist
CLIENT: Market Street Village Developers
Laboratory technician and curation coordinator for late-19th and early-20th century artifacts recovered during archaeological monitoring for a condominium in downtown San Diego. Project duties included cataloging and curating recovered archaeological resources, artifact quantification and analysis, and assistance in report productions. Work was performed prior to joining EDAW.

MATTHEW TENNYSON

Talega Community Development Project, San Clemente, CA
Archaeologist
CLIENT: Talega Associates
Archaeological technician for various sites at the Talega master-planned community. Project duties included archaeological excavation of CA-ORA-907, archaeological and paleontological monitoring of construction activities, laboratory analysis of cultural materials, and the design and installation of cultural resources display at the Vista Del Mar Elementary School. Work was performed prior to joining EDAW.

Lassen National Park Field Treatment, Lassen County/ Plumas County, CA
Archaeologist
CLIENT: National Park Service
Archaeological technician for pre-burn survey to relocate and record new cultural resources as well as updates for previously recorded cultural resources. Project duties included survey of hiking trails and open areas in Lassen Volcanic National Park and coordination of field crews. Work was performed prior to joining EDAW.

Armstrong Ranch Development Project, Santa Ana, CA
Archaeologist
CLIENT: Shea Homes
Archaeological monitor for proposed townhome development at the Armstrong Ranch in Santa Ana, CA. Work was performed prior to joining EDAW.

Orange County Water District West End, Orange County, CA
Archaeologist
CLIENT: Orange County Water District
Archaeological monitor for the installation of new water pipeline running from Orange, CA to Huntington Beach, CA. Work was performed prior to joining EDAW.

Encino Water Quality Improvement Project, Los Angeles County, CA
Archaeologist
CLIENT: Los Angeles County Department of Public Works
Archaeological monitor at the Encino Reservoir during construction activities in association with improvements to the reservoir. Work was performed prior to joining EDAW.

Tustin Field 1 (Tustin PA 20) Development Project, Tustin, CA
Archaeologist
CLIENT: John Laing Homes
Archaeological monitor for historic and prehistoric cultural materials encountered during grading activities. Duties included construction monitoring and recordation of prehistoric artifacts encountered during grading. Work was performed prior to joining EDAW.

Tustin Field 2 (Tustin PA 21) Development Project, Tustin, CA
Archaeologist
CLIENT: John Laing Homes
Archaeological monitor and lead contact with the client. Duties included construction monitoring and recordation of historic artifacts encountered during grading. Work was performed prior to joining EDAW.

SELECTED REPORTS

Metropolitan Water District/Tulare Lakes Drainage District Kings County Agricultural Drainage Water Treatment Project Cultural Resources Report. EDAW, San Diego (2008)

MATTHEW TENNYSON

Archaeological Survey Report for the State Route 76 Highway Improvement Project South Mission Road to Interstate 15 San Diego County, California. EDAW, San Diego (2008)

Cultural and Archaeological Resources Survey Report for the Niland Solar Energy Project Initial Study, Niland, Imperial County, California. EDAW, San Diego (2008)

Addendum 2 to the Cultural Resources and Survey Report for the Yuma Lateral Pipeline Project. EDAW, San Diego (2008)

Phase I Cultural Resources Investigation for IWA Lost Horse Reservoir and Pipeline Project, City of Indio, Riverside County, California. EDAW, San Diego (2008)

Peak to Playa: Southern Nevada Supplemental Airport Environmental Impact Statement Cultural Resources Report, Clark County, Nevada. Contributing author with James Cleland and Christy Dolan. EDAW, San Diego (2008)

CONFIDENTIAL Solar Energy Project Historic Architectural Resources Report, Kern County, California. Contributing author with Jennifer Hirsch. EDAW, San Diego (2008)

CONFIDENTIAL Solar Energy Project Archaeological Resources Report, Kern County, California. Contributing author with Rebecca Apple and Wayne Glenny. EDAW, San Diego (2008)

Monitoring and Mitigation of Seventeen Historic Features at CA-SDI-17,581, San Diego, California. Co-authored with Alex Wesson and Kevin Hunt. SWCA Environmental Consultants (2006)

Identification and Documentation of Unassociated Funerary Objects, Sacred Objects, and Objects of Cultural Patrimony of a Late Period Kumeyaay Archaeological Collection. Co-authored with Dr. Lynn Gamble, San Diego State University (2005)

Cultural Resources Reconnaissance of the Vereecken Property, Winchester Hills, Riverside County, California. SWCA Environmental Consultants (2004)

Archaeological Monitoring and Historic Trash Recovery During Grading For The Tomlinson Park Development, Located In Brea, Orange County, California. Co-authored with Joan Brown. SWCA Environmental Consultants (2003)

ATTACHMENT 2
RECORDS SEARCH

This information is Confidential
and has been provided
to the CEC under separate cover

ATTACHMENT 3
CONTACT PROGRAM

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

Facsimile

Please deliver to		**From**	
Name		Name	Cheryl Bowden-Renna
Firm	Native American Heritage Commission	Direct line	619-233-1454 x 6815
Fax number	916-657-5390	Date transmitted	09/08/2008
Phone number		Total pages	
Subject	Black Rock Energy Project		
Project number	08080156.01		

Attached, please find project maps showing the area of interest. The maps show the project area. The project area is located in Imperial Valley of southern California, west of Nilnad and north of Brawley and follows several transmission lines. The project area incorporates a 1-mile radius around the main project site and a ¼-mile radius on either side of the transmission line corridors. The project area located on the following quadrangles and sections:

Quad NAME	YEAR	SECTION	TOWNSHIP	RANGE
IRIS	1992	20	11S	15E
IRIS	1992	29	11S	15E
IRIS	1992	32	11S	15E
IRIS	1992	31	11S	15E
IRIS	1992	36	11S	14E
IRIS	1992	35	11S	14E
IRIS	1992	34	11S	14E
NILAND	1976	27	11S	13E
NILAND	1976	28	11S	13E
NILAND	1976	34	11S	14E
NILAND	1976	33	11S	14E
NILAND	1976	32	11S	14E
NILAND	1976	31	11S	14E
NILAND	1976	36	11S	13E
NILAND	1976	35	11S	13E
NILAND	1976	34	11S	13E

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NILAND	1976	33	11S	13E
NILAND	1976	1	12S	13E
NILAND	1976	2	12S	13E
NILAND	1976	3	12S	13E
NILAND	1976	4	12S	13E
NILAND	1976	10	12S	13E
NILAND	1976	9	12S	13E
OBSIDIAN BUTTE	1976	28	11S	13E
OBSIDIAN BUTTE	1976	29	11S	13E
OBSIDIAN BUTTE	1976	33	11S	13E
OBSIDIAN BUTTE	1976	32	11S	13E
OBSIDIAN BUTTE	1976	31	11S	13E
OBSIDIAN BUTTE	1976	4	12S	13E
OBSIDIAN BUTTE	1976	5	12S	13E
OBSIDIAN BUTTE	1976	6	12S	13E
OBSIDIAN BUTTE	1976	9	12S	13E
OBSIDIAN BUTTE	1976	8	12S	13E
OBSIDIAN BUTTE	1976	7	12S	13E
OBSIDIAN BUTTE	1976	17	12S	13E
OBSIDIAN BUTTE	1976	18	12S	13E
WESTMORLAND WEST	1992	17	12S	13E
WESTMORLAND WEST	1992	18	12S	13E
WESTMORLAND WEST	1992	20	12S	13E
WESTMORLAND WEST	1992	19	12S	13E
WESTMORLAND WEST	1992	29	12S	13E
WESTMORLAND WEST	1992	30	12S	13E
WESTMORLAND WEST	1992	32	12S	13E
WESTMORLAND WEST	1992	31	12S	13E
WESTMORLAND WEST	1992	5	13S	13E
WESTMORLAND WEST	1992	6	13S	13E
WESTMORLAND WEST	1992	12	13S	12E
WESTMORLAND WEST	1992	11	13S	12E
WESTMORLAND WEST	1992	10	13S	12E
WESTMORLAND WEST	1992	9	13S	12E
WESTMORLAND WEST	1992	8	13S	12E
WESTMORLAND WEST	1992	15	13S	12E
WESTMORLAND WEST	1992	16	13S	12E
WESTMORLAND WEST	1992	17	13S	12E
WESTMORLAND WEST	1992	20	13S	12E
KANE SPRING	1992	8	13S	12E
KANE SPRING	1992	17	13S	12E
KANE SPRING	1992	20	13S	12E

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EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

If you have any questions, please do not hesitate to call me at (619) 233-1454.

Sincerely,

Cheryl Bowden-Renna
Staff Archaeologist

Document1

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-6251
Fax (916) 657-5390
Web Site www.nahc.ca.gov
ds_nahc@pacbell.net

September 15, 2008

Ms. Cheryl Bowden-Renna
EDAW, INC.
1420 Kettner Boulevard, Suite 500
San Diego, CA 92101

Sent by FAX to: 619-233-0952
Number of Pages: 3

Re: Request for a Sacred Lands File records search for the **Black Rock Energy Project (Transmission Liens)**; located in an area stretching from north of the Cities of Brawley and Westmoreland east to the Community of Nilan; mperial County, California

Dear Ms. Bowden-Renna:

The Native American Heritage Commission was able to perform a record search of its Sacred Lands File (SLF) for the affected project area (APE). The SLF search did indicate the presence of Native American cultural resources in the immediate project area.

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the names of the nearest tribes that may have knowledge of cultural resources in the project area. In particular, we recommend that you contact Carmen Lucas at 619-709-4297 and the other persons on the attached list of Native American contacts may have knowledge as to whether or not the known cultural resources identified may be at-risk by the proposed project. It is advisable to contact the person listed; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area (APE).

Lack of surface evidence of archeological resources does not preclude the existence of archeological resources. In fact, a Native American tribe may be the only source of information about a cultural resource. Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

Dave Singleton
Program Analyst

Attachment: Native American Contact List

Native American Contacts
Imperial County
September 15, 2008

Manzanita Band of Kumeyaay Nation
Leroy J. Elliott, Chairperson
PO Box 1302 Kumeyaay
Boulevard , CA 91905
(619) 766-4930
(619) 766-4957 Fax

Kumeyaay Cultural Heritage Preservation
Paul Cuero
36190 Church Road, Suite 5 Diegueno/ Kumeyaay
Campo , CA 91906
chairman@campo-nsn.gov
(619) 478-9046
(619) 478-9505
(619) 478-5818 Fax

Campo Kumeyaay Nation
Monique LaChappa, Chairperson
36190 Church Road, Suite 1 Kumeyaay
Campo , CA 91906
chairman@campo-nsn.gov
(619) 478-9046
(619) 478-5818 Fax

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas
P.O. Box 775 Diegueno
Pine Valley , CA 91962
(619) 709-4207

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza , CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Ewiiaapaayp Tribal Office
Michael Garcia, Vice-Chairman/EPA Director
PO Box 2250 Kumeyaay
Alpine , CA 91903-2250
michaelg@leaningrock.net
(619) 445-6315 - voice
(619) 445-9126 - fax

Torres-Martinez Desert Cahuilla Indians
Raymond Torres, Chairperson
PO Box 1160 Cahuilla
Thermal , CA 92274
(760) 397-0300
(760) 397-8146 Fax

Manzanita Band of the Kumeyaay Nation
Nick Elliott, Cultural Resources Coordinator
P.O. Box 1302 Kumeyaay
Boulevard , CA 91905
(619) 766-4930
(619) 925-0952 - cell
(919) 766-4957

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

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Black Rock Energy Project comprised of several transmission lines located in Imperial County from the Niland Area to north of the cities of brawley and Westmoreland for which a Sacred Lands File search and Native American Contacts list were requested.

Native American Contacts
Imperial County
September 15, 2008

Quenchan Indian Nation
Bridget Nash-Chrabascz, THPO
P.O. Box 1899 Quechan
Yuma , AZ 85366
b.nash@quechantribe.com
(928) 920-6068 - CELL
(760) 572-2423

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

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Black Rock Energy Project comprised of several transmission lines located in Imperial County from the Niland Area to north of the cities of Brawley and Westmoreland for which a Sacred Lands File search and Native American Contacts list were requested.

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Leroy J. Elliott, Chairperson
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, CA 91905

Dear Mr. Elliott:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

The purpose of this letter is to notify you of this project and to solicit your input. We would like to know if you have any questions, comments, or concerns. A project map, a reply form, and a self-addressed stamped envelope have been included for your convenience. Providing comments now does not limit your ability to comment at a later time. Please write or call by October 6, 2008 so that we may include your views in our report

Sincerely,

Cheryl Bowden-Renna
Staff Archaeologist

Enclosures: Map
Response form
Stamped reply envelope

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Monique LaChappa, Chairperson
Campo Kumeyaay Nation
36190 Church Road, Suite 1
Campo, CA 91906

Dear Ms. LaChappa:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

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Sincerely,

Cheryl Bowden-Renna
Staff Archaeologist

Enclosures: Map
Response form
Stamped reply envelope

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Joseph Hamilton, Chairman
Ramona Band of Cahuilla Mission Indians
P.O. Box 391670
Anza, CA 92539

Dear Mr. Hamilton:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

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Sincerely,

Cheryl Bowden-Renna
Staff Archaeologist

Enclosures: Map
Response form
Stamped reply envelope

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Raymond Torres, Chairperson
Torres-Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, CA 922274

Dear Mr. Torres:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

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Sincerely.

Cheryl Bowden-Renna
Staff Archaeologist

Enclosures: Map
Response form
Stamped reply envelope

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Paul Cuero
Kumeyaay Cultural Heritage Preservation
36190 Church Road, Suite 5
Campo, CA 91906

Dear Mr. Cuero:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

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Sincerely,

Cheryl Bowden-Renna
Staff Archaeologist

Enclosures: Map
Response form
Stamped reply envelope

REC D

OCT 2 2 2008

CONTACT PROGRAM RESPONSE FORM
Black Rock Energy (08080156)

~~Paul Cuero~~ Monique La Chappa, Chairwoman
~~Kumeyaay Cultural Heritage Preservation~~
36190 Church Road, ~~Suite 5~~
Campo, CA 91906

Please update your mailing list. Thank you

Please check all that apply:

- ☐ Please call me to discuss the project further; my day-time phone number is (_____)_____ or my evening phone number is (_____)_____
- ☐ I have further comments as provided below
- ☑ I do not have any comments

Comments:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Signature:

ML / js
~~Paul Cuero~~

10/17/08
Date

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Carmen Lucas
Kwaaymii Laguna Band of Mission Indians
P.O. Box 775
Pine Valley, CA 91962

Dear Carmen:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

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Sincerely,

Cheryl Bowden-Renna
Staff Archaeologist

Enclosures: Map
Response form
Stamped reply envelope

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Michael Garcia, Vice-Chairman/EPA Director
Ewiiaapaayp Tribal Office
P.O. Box 2250
Alpine, CA 91903-2250

Dear Mr. Garcia:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

The purpose of this letter is to notify you of this project and to solicit your input. We would like to know if you have any questions, comments, or concerns. A project map, a reply form, and a self-addressed stamped envelope have been included for your convenience. Providing comments now does not limit your ability to comment at a later time. Please write or call by October 6, 2008 so that we may include your views in our report

Sincerely,

Cheryl Bowden-Renna
Staff Archaeologist

Enclosures: Map
Response form
Stamped reply envelope

EDAW | AECOM

EDAW Inc
1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Nick Elliott, Cultural Resources Coordinator
Manzanita Band of the Kumeyaay Nation
P.O. Box 1302
Boulevard, CA 91905

Dear Mr. Elliott:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

The purpose of this letter is to notify you of this project and to solicit your input. We would like to know if you have any questions, comments, or concerns. A project map, a reply form, and a self-addressed stamped envelope have been included for your convenience. Providing comments now does not limit your ability to comment at a later time. Please write or call by October 6, 2008 so that we may include your views in our report

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1420 Kettner Boulevard, Suite 500, San Diego, California 92101
T 619.233.1454 F 619.233.0952 www.edaw.com

September 23, 2008

Bridget Nash-Chrabascz, Tribal Historic Preservation Officer
Quenchan Indian Nation
P.O. Box 1899
Yuma, AZ 85366

Dear Ms. Nash-Chrabascz:

EDAW, Inc. (EDAW) has been retained by Black Rock Energy to conduct cultural resource investigations for the proposed Black Rock Project. The project consists of the construction of a geothermal plant and associated wells which will connect to existing transmission lines. The project is located near the southern shoreline of Salton Sea, near Niland, California (see enclosed map).

The purpose of this letter is to notify you of this project and to solicit your input. We would like to know if you have any questions, comments, or concerns. A project map, a reply form, and a self-addressed stamped envelope have been included for your convenience. Providing comments now does not limit your ability to comment at a later time. Please write or call by October 6, 2008 so that we may include your views in our report

Sincerely,

Cheryl Bowden-Renna
Staff Archaeologist

Enclosures: Map
Response form
Stamped reply envelope

CONTACT PROGRAM RESPONSE FORM
Black Rock Energy (08080156)

RECEIVED

OCT 0 3 2008

Bridget Nash-Chrabascz, Tribal Historic Preservation Officer
Quenchan Indian Nation
P.O. Box 1899
Yuma, AZ 85366

Please check all that apply:

☒ Please call me to discuss the project further; my day-time phone number is (760) 572-2423
or my evening phone number is (_____)_____

☒ I have further comments as provided below

☐ I do not have any comments

Comments:

The project is within the Tribe's traditional land area. Please forward a copy of the cultural report if/when completed. If the survey has not taken place we request the use of a Tribal monitor. Once the survey is completed please call to schedule a meeting w/ the Cultural Committee to discuss the project and their concerns.

Signature:

Bridget Nash-Chrabascz, Tribal Historic Preservation Officer — Date 9/30/08

EDAW | AECOM

1420 Kettner Boulevard, Suite 500
San Diego, California 92101
Phone 619.233.1454
Fax 619.233.0952

DISTRIBUTION:

Contact Report Form

EDAW Contact: Matt Tennyson
Date: 10/29/2008 (9:40 am) **Project No.:** 08080156

CONTACT INFORMATION

Individual Contacted: Bridget Nash-Chrabascz, Tribal Historic Preservation Officer of Quenchan Indian Nation
Agency/Organization/ Address: Tribal Historic Preservation Officer of Quenchan Indian Nation **Phone No.:** 760.572.2423

ITEMS DISCUSSED

The purpose of the call was to discuss having a Native American monitor accompany EDAW on a cultural resources survey for the Black Rock Project.

Ms. Nash-Chrabascz had responded to a letter sent by EDAW regarding the project indicating that a tribal monitor be present for the survey.

There was no answer. M. Tennyson left a message briefly discussing the project and requesting a call back.

FOLLOW UP

Called back on 10/29/08 at 3:50 – no answer, left message

Called back on 10/30/08 at 12:45 – no answer, left message indicated a Notice To Proceed had been granted.

Called back on 11/03/08 at 2:00 – spoke with Bridget Nash-Chrabascz about the project. She indicated that a monitor should be present and arranged for a monitor to meet the crew in the field on 11/04/08. Mr. Tennyson gave Ms. Nash his cell phone number so coordination could be arranged with the monitor.

Bridget Nash called Matt Tennyson on 11/04/08 at 7:00 am on his cell phone (949.981.5862) to indicate the Native American monitor would not be able to meet the crew. She requested that she be contacted at the end of field work to discuss any results.

Matt Tennyson called Bridget Nash on 11/06/08 at 2:30 pm to discuss the field results. Mr. Tennyson indicated that no prehistoric sites were encountered during the survey and that some non-cultural obsidian from Obsidian Butte was noted in disturbed areas.

EDAW | AECOM
1420 Kettner Boulevard, Suite 500
San Diego, California 92101
Phone 619.233.1454
Fax 619.233.0952

DISTRIBUTION:

Contact Report Form

EDAW Contact: Matt Tennyson
Date: 12/15/2008 **Project No.:** 08080156.02

CONTACT INFORMATION

Individual Contacted:
Agency/Organization/ Address: Bridget Nash, THPO
Quenchan Indian Nation **Phone No.:** 776.572.2423

ITEMS DISCUSSED

Matt Tennyson called Ms. Nash to inform the tribe that additional portions of the Black Rock Energy (Salton Sea Unit 6 Project) were to be surveyed and to see if a tribal monitor would like to accompany the survey crew.

Once it was clarified that it was in the same general area of the last survey and that some of the area was disturbed, Ms. Nash indicated that informing her of the results would be sufficient.

FOLLOW UP

12/19/2008 Mr. Tennyson left a message for Ms. Nash indicating that no new prehistoric cultural resources were identified and that a historic canal was extended. No response was received.

EDAW | AECOM

1420 Kettner Boulevard, Suite 500
San Diego, California 92101
Phone 619.233.1454
Fax 619.233.0952

DISTRIBUTION:

Contact Report Form

EDAW Contact: Matt Tennyson
Date: 11/24/2008 1:00 pm **Project No.:** 08080156.02

CONTACT INFORMATION

Individual Contacted: Preston Arroweed
Agency/Organization/ Address: P.O. Box 160
Bart, CA 92222
760.353.7349
Phone No.: 928.388.9456

ITEMS DISCUSSED

Matt Tennyson contacted Mr. Arroweed at the number provided (760.353.7349) and was directed to try the second number listed.

Mr. Tennyson reached Mr. Arroweed about the Salton Sea Unit 6 Project near Obsidain Butte. Mr. Arroweed indicated that the Quechan Tribe, Bridget Nash in particular, should be contacted about the project.

Mr. Tennyson indicated that Ms. Nash and the Quenchan had been contacted. Mr. Arroweed then indicated that they should be the contact for the project and no further contact was necessary.

FOLLOW UP

ATTACHMENT 4
DPR SITE FORMS

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____
Other Listings _____
Review Code _____ Reviewer _____ Date _____

***Resource Name or #:** (Assigned by recorder) Vail Lateral 3-A

P1. Other Identifier: Vail Lateral 3-A

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted**

***a. County** and P2b, P2c, and P2d or P2e. (Attach Location Map as necessary.)

***b. USGS 7.5′ Quad** Niland, Calif. **Date** 1976 **T** 11S **; R** 13E **:** SE ¼ **of** SW ¼ **of Sec** 34 **;** San Bernardino **B.M.**

c. Address **City** Calipatria **Zip** 92233

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11**:** 3670138**mE/** 629999 **mN**

***e. Other Locational Data:** (E.g., parcel #, directions to resource, elevation, etc., as appropriate.)
From Westmorland, travel north on N Center St., that becomes Forrester Road for 2.5 miles. Turn right at the "T" intersection on Walker Road and drive 0.3 miles. Turn left on Gentry Road and drive 5 miles. Turn right on Lindsey Road. Drive 0.5 miles and turn left on Cox Road, and drive for one mile. The segment of the canal that is in the current project area begins here and continues north 900 feet paralleling Cox Road..

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
The Vail Lateral 3-A is an open, concrete lined, trapezoidal shaped canal with flowing water. The canal walls are poured slab concrete with a smooth finish. The canal has a top width of 10' 3'', a bottom width of ~2', and a depth of ~4' (the exact measurements were difficult to obtain as the canal had flowing water in it). This segment of the canal contains a date stamp that reads "1949" and two sluice gates. One of these gates is labeled "VAIL 3-A", and divides the canal into sections that correspond with an intersecting road. The other sluice gate is labeled "367" and leads to an east-west running unnamed irrigation canal to the west. This unnamed irrigation canal is constructed similarly to the Vail Lateral 3-A canal, and has small wall sluice valves in its north wall for the purpose of allowing water to drain into the adjacent agricultural field.

***P3b. Resource Attributes:** (See attributes and codes) HP 20 Canal/aqueduct

***P4. Resources Present:** ☐ Building ■ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo:
(View, date, accession #)
Overview of Vail Lateral 3-A canal, view to northwest, 0825

***P6. Date Constructed / Age and Sources:** ■ Historic 1949 ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
Private

***P8. Recorded by:** (Name, affiliation, and address)
C. Tuthill, T. Contreras, M. Tennyson
EDAW, Inc.
1420 Kettner Boulevard, Suite 500
San Diego, California 92101

***P9. Date Recorded:**
11.06.08

***P10. Survey Type:** (Describe)
Intensive Pedestrian

***P11. Report Citation:** (Cite Survey report and other sources, or enter "none.")
Amended Salton Sea Unit 6 Project Cultural Resources Survey Report Imperial County, California. Tennyson, Matt 2009

*Attachments: ☐ None ■ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Linear Resource Record ☐ Archaeological Record ☐ District Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List)

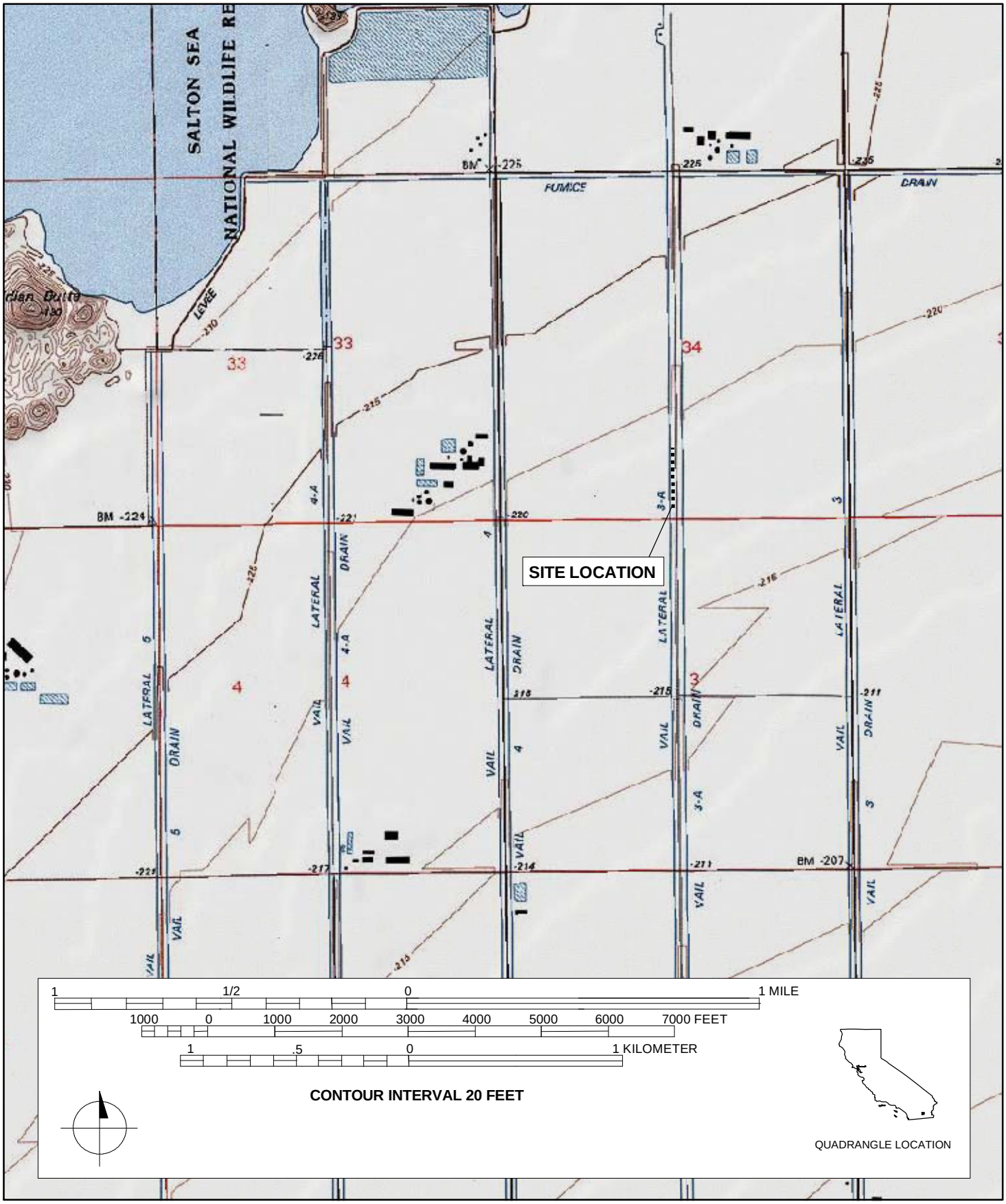
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI #
Trinomial

Page 2 of 2 * Resource Name or # (Assigned by recorder) Vail Lateral 3-A

* Map Name: Niland, and Obsidian Butte, Calif. 7.5' Quadrangles * Scale: 1:24,000 * Date of Map: 1976



DPR 523J (1/95) *Required Information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____
Other Listings _____
Review Code _____ Reviewer _____ Date _____

***Resource Name or #:** (Assigned by recorder) Vail Lateral 4

P1. Other Identifier: Vail Lateral 4

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted**

***a. County** and P2b, P2c, and P2d or P2e. (Attach Location Map as necessary.)

***b. USGS 7.5′ Quad** Niland, Calif. **Date** 1976 **T** 11S **;** **R** 13E **:** SE ¼ **of** NE ¼ **of** **Sec** 33 **;** San Bernardino **B.M.** (see Continuation Sheet)

c. Address **City** Calipatria **Zip** 92233

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11 **:** 3669307**mE/** 629198**mN**

***e. Other Locational Data:** (E.g., parcel #, directions to resource, elevation, etc., as appropriate.)
From Westmorland, travel north on N Center St., that becomes Forrester Road for 2.5 miles. Turn right at the "T" intersection on Walker Road and drive 0.3 miles. Turn left on Gentry Road and drive 5 miles to Lindsey Road. The Vail Lateral 4 canal runs north-south and parallels Gentry Road to the west. The current project area intersects with this canal in three locations (segments 1, 2 and 3) which are spatially bound by Lindsey Road to the south and Sinclair Road to the north.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
The Vail Lateral 4 is an open, concrete lined, trapezoidal shaped canal with flowing water. The canal walls are poured slab concrete with a smooth finish. The slabs range between 93 inches and 114.5 inches in length. The three segments of this canal that are in the current project area will be referred to as segments 1, 2, and 3. (See Continuation Sheet)

***P3b. Resource Attributes:** (See attributes and codes) HP 20 Canal/aqueduct

***P4. Resources Present:** ☐ Building ■ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo:
(View, date, accession #)
Overview of Vail Lateral 4 canal, view to south, 0750

***P6. Date Constructed / Age and Sources:** ■ Historic 1956 ☐ Prehistoric ☐ Both

***P7. Owner and Address:**
Private

***P8. Recorded by:** (Name, affiliation, and address)
C. Tuthill, T. Contreras, M. Tennyson
EDAW, Inc.
1420 Kettner Boulevard, Suite 500
San Diego, California 92101

***P9. Date Recorded:**
11.06.08

***P10. Survey Type:** (Describe)
Intensive Pedestrian

***P11. Report Citation:** (Cite Survey report and other sources, or enter "none.")
Amended Salton Sea Unit 6 Project Cultural Resources Survey Report Imperial County, California. Tennyson, Matt 2009

*Attachments: ☐ None ■ Location Map ☐ Sketch Map ■ Continuation Sheet ☐ Building, Structure, and Object Record ☐ Linear Resource Record ☐ Archaeological Record ☐ District Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record ☐ Photograph Record ☐ Other (List)

***Resource Name or #:** (Assigned by recorder) Vail Lateral 4

***Recorded by:** C. Tuthill, T. Contreras, M. Tennyson ***Date:** 11.06.08 ■ Continuation ☐ Update

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted**

***b. USGS 7.5′ Quad** Niland, Calif. **Date** 1976 **T** 11S **; R** 13E **:** SE ¼ **of** NE ¼ **of Sec** 33 **;** San Bernardino **B.M.**
T 11S **; R** 13E **:** NW ¼ **of** SE ¼ **of Sec** 33 **;** San Bernardino **B.M.**
T 12S **; R** 13E **:** NW ¼ **of** SE ¼ **of Sec** 4 **;** San Bernardino **B.M.**

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)

Segment 1: This is an 2,254 foot long portion of the Vail Lateral 4 canal. Its northern point is southwest of the intersection of Gentry Road and Kuns Road. It contains a contractor's stamp that reads "MERRILL 1993" and two sluice gates. One of these gates is labeled "VAIL 4", and divides the canal into sections that correspond with intersecting roads. This segment of the canal is 14' 4'' wide, and has a bottom width of ~2', and a depth of ~4' (the exact bottom width and depth measurements were difficult to obtain as the canal had flowing water in it). The other sluice gate is labeled "415" and leads to an east-west running unnamed irrigation canal that is 18 feet to the west. This canal is constructed similarly to the Vail Lateral 4A canal, and has small wall sluice valves in its north wall for the purpose of allowing water to drain into the adjacent agricultural fields.

Segment 2: This is a 200 foot long portion of the Vail Lateral 4 canal. This segment's southern most point is a quarter mile south of the intersection of Gentry Road and McNerney Road, at an unnamed dirt road that accesses the existing plant to the west. It has a contractor's stamp that reads "RYERSON 1992". This segment of the canal is 11' 4'' wide, and has a bottom width of ~2', and a depth of ~4' (the exact bottom width and depth measurements were difficult to obtain as the canal had flowing water in it).

Segment 3: This is a 150 foot long portion of the Vail Lateral 4 canal. This segment's southern most point is 60 feet north of McNerney Road (McNerney Road is incorrectly labeled with a sign that says "McKendry Road"). This segment has a contractor's stamp that reads "RYERSON 1992", and two sluice gates. One of these gates is labeled "VAIL 4", and divides the canal into sections that correspond with intersecting roads. The portion of this segment of the canal that is just north of McNerney Road is 13' 9'' wide (this portion includes the sluice gate marked "419") and ends at the sluice gate and measures 49 feet in length. The remainder of this segment measures 9'7'' in width, and has a bottom width of ~2', and a depth of ~4' (the exact bottom width and depth measurements were difficult to obtain as the canal had flowing water in it). The other sluice gate is labeled "419" and leads to an east-west running unnamed irrigation canal that is 18 feet to the west. This canal is constructed similarly to the Vail Lateral 4A canal, and has small wall sluice valves in its north wall for the purpose of allowing water to drain into the adjacent agricultural fields.

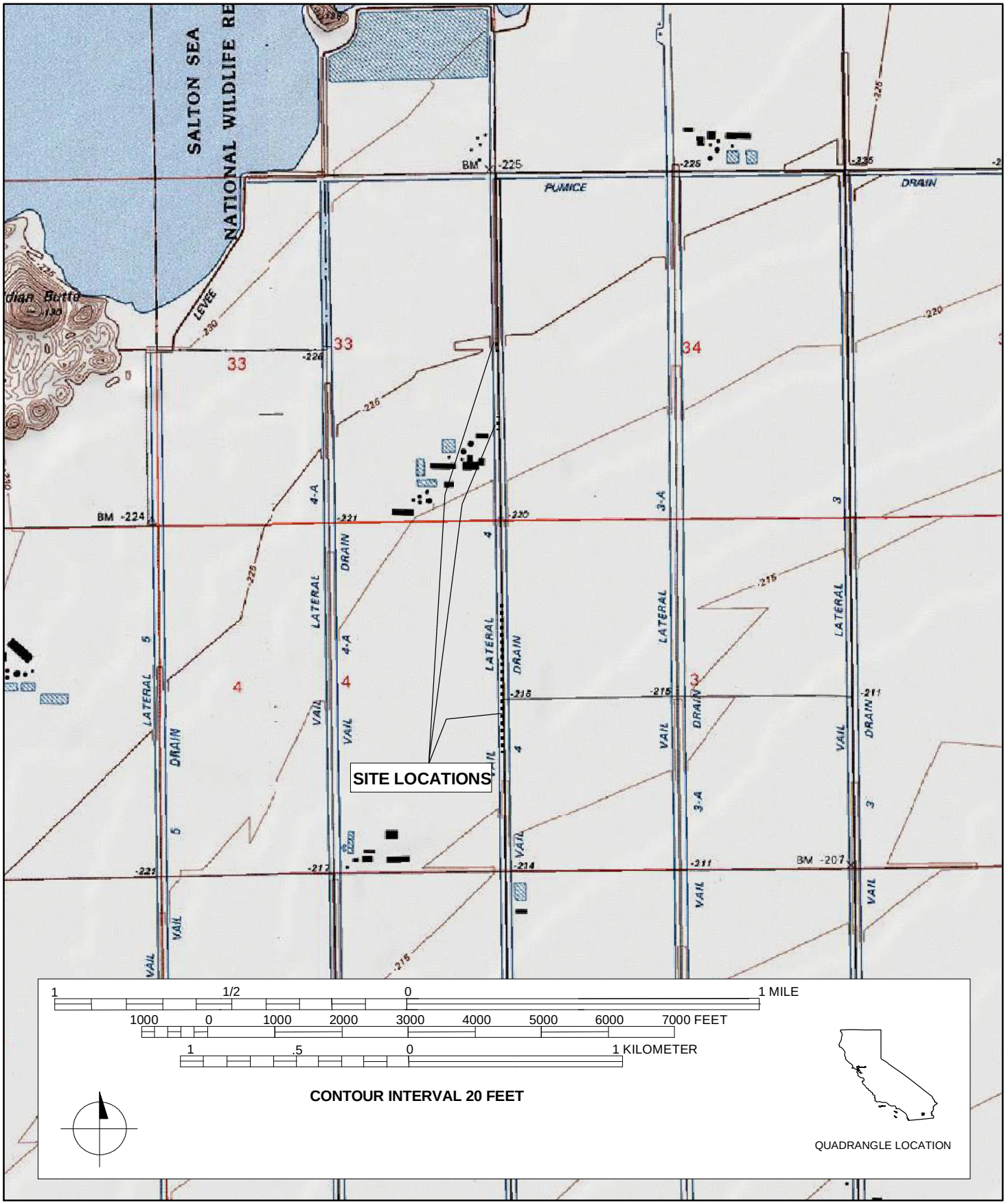
State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI #
Trinomial

Page 3 **of** 3 *** Resource Name or #** (Assigned by recorder) Vail Lateral 4

*** Map Name:** Niland, and Obsidian Butte, Calif. 7.5' Quadrangles *** Scale:** 1:24,000 *** Date of Map:** 1976



State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # _____
HRI # _____
Trinomial _____
NRHP Status Code _____
Other Listings _____
Review Code _____ Reviewer _____ Date _____

*Resource Name or #: (Assigned by recorder) Vail Lateral 4-A

P1. Other Identifier: Vail Lateral 4-A

***P2. Location:** ☐ Not for Publication ■ Unrestricted

***a. County** and P2b, P2c, and P2d or P2e. (Attach Location Map as necessary.)

***b. USGS 7.5′ Quad** Niland, Calif. **Date** 1976 **T** 11S **; R** 13E **:** NE ¼ **of** SW ¼ **of Sec** 33 **;** San Bernardino **B.M.** (see Continuation Sheet)

c. Address **City** Calipatria **Zip** 92233

d. UTM: (Give more than one for large and/or linear resources) **Zone** 11**:** 3670907**mE/**628388**mN**

***e. Other Locational Data:** (E.g., parcel #, directions to resource, elevation, etc., as appropriate.)
From Westmorland, travel north on N Center St., that becomes Forrester Road for 2.5 miles. Turn right at the "T" intersection on Walker Road and drive 0.3 miles. Turn left on Gentry Road and drive 5 miles. Turn left on Lindsey Road. Drive 0.5 miles and turn right on Boyle Road, and drive 0.15 miles. The segment of the canal in the current project area begins here and continues north 1.4 miles paralleling Boyle Road.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
The Vail Lateral 4-A is an open, concrete lined, trapezoidal shaped canal with flowing water. The canal walls are poured slab concrete with a smooth finish. The canal has a top width of 10' 3'', a bottom width of ~2', and a depth of ~4' (exact measurements were difficult to obtain as the canal had flowing water in it). This recorded segment of the canal measures 1.4 miles (7392 feet) in length, and contains a contractor's stamp that reads "GRANITE CONST CO 2003" and nine sluice gates. Four of these gates are labeled "VAIL 4-A", and divide the canal into sections that correspond with intersecting roads. The other five sluice gates are labeled "455", "457", "459", "460", and "461-A", and lead to east-west running unnamed irrigation canals to the west. These unnamed irrigation canals are constructed similarly to the Vail Lateral 4-A canal, and have small wall sluice valves in their north walls for the purpose of allowing water to drain into the adjacent agricultural fields.

***P3b. Resource Attributes:** (See attributes and codes) HP20 Canal/aqueduct

***P4. Resources Present:** ☐ Building ■ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo:
(View, date, accession #)
Overview of Vail Lateral 4-A canal, view to south, 0810

***P6. Date Constructed / Age and Sources:**
■ Historic 1956
☐ Prehistoric ☐ Both

***P7. Owner and Address:**
Private

***P8. Recorded by:** (Name, affiliation, and address)
C. Tuthill, T. Contreras, M. Tennyson
EDAW, Inc.
1420 Kettner Boulevard, Suite 500
San Diego, California 92101

***P9. Date Recorded:**
11.06.08

***P10. Survey Type:** (Describe)
Intensive Pedestrian

***P11. Report Citation:** (Cite Survey report and other sources, or enter "none.")
Amended Salton Sea Unit 6 Project Cultural Resources Survey Report Imperial County, California. Tennyson, Matt 2009

*Attachments: ☐ None ■ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure, and Object Record
☐ Linear Resource Record ☐ Archaeological Record ☐ District Record ☐ Milling Station Record ☐ Rock Art Record

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted**

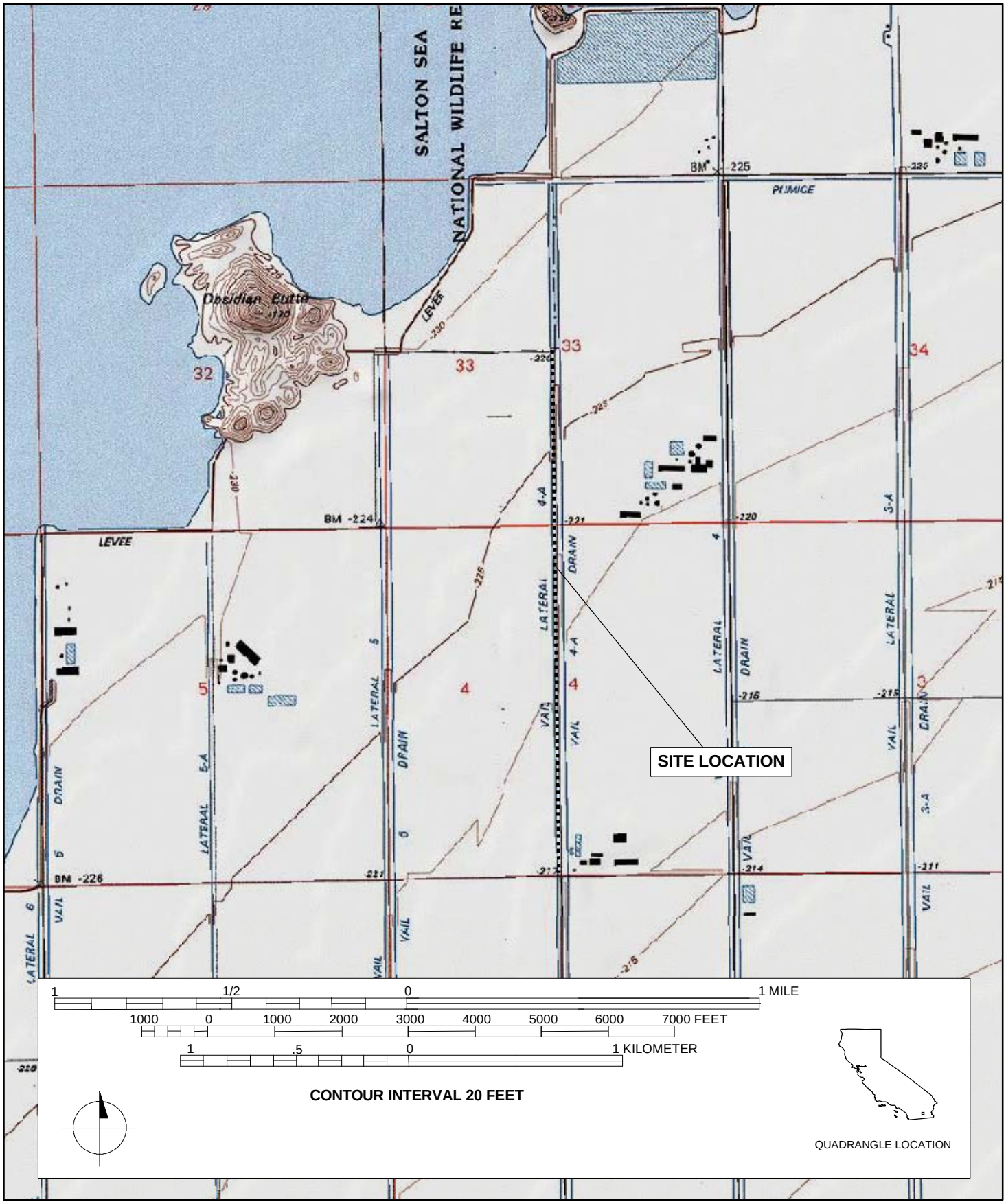
***b. USGS 7.5′ Quad** Niland, Calif. **Date** 1976

T 11S **; R** 13E **:** NE ¼ **of** SW ¼ **of Sec** 33 **;** San Bernardino **B.M.**
T 11S **; R** 13E **:** SE ¼ **of** SW ¼ **of Sec** 33 **;** San Bernardino **B.M.**
T 12S **; R** 13E **:** NE ¼ **of** NW ¼ **of Sec** 4 **;** San Bernardino **B.M.**
T 12S **; R** 13E **:** SE ¼ **of** NW ¼ **of Sec** 4 **;** San Bernardino **B.M.**
T 12S **; R** 13E **:** NE ¼ **of** SW ¼ **of Sec** 4 **;** San Bernardino **B.M.**
T 12S **; R** 13E **:** SE ¼ **of** SW ¼ **of Sec** 4 **;** San Bernardino **B.M.**

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI #
Trinomial

Page 2 **of** 2 *** Resource Name or #** (Assigned by recorder) Vail Lateral 4-A

*** Map Name:** Niland, and Obsidian Butte, Calif. 7.5' Quadrangles *** Scale:** 1:24,000 *** Date of Map:** 1976