

## **12 Appendix C – Technical Memoranda**

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### **12.13 Final Historic Properties Management Plan**

*FINAL*

**HISTORIC PROPERTIES MANAGEMENT PLAN  
CALIFORNIA EAGLE MOUNTAIN  
PUMPED STORAGE PROJECT  
FERC PROJECT NUMBER 13123-002**

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## 1.0 OVERVIEW AND EXECUTIVE SUMMARY

The Eagle Crest Energy Company proposes to develop the Eagle Mountain Pumped Storage Project, located near the towns of Eagle Mountain and Desert Center in Riverside County, California. This proposed new project will provide system peaking capacity and electrical system regulating benefits to Southwestern electric utilities. The project will use off-peak energy to pump water from the lower reservoir to the upper reservoir during periods of low electrical demand and generate on-peak energy by conveying water from the upper to the lower reservoir through the generating units during periods of high electrical demand. The upper and lower reservoirs will be formed from existing mining pits; however, two small dams will be required at the upper reservoir to create the proposed volume of energy storage. Eagle Crest Energy submitted an application for licensing to the Federal Energy Regulatory Commission (FERC) on June 23, 2009.

In its 2009 application, Mitigation Measure CLT-3 Eagle Crest Energy proposed to consult with the Commission, the California State Historic Preservation Officer (SHPO), the Bureau of Land Management (BLM) and Native American groups in the preparation of a Historic Properties Management Plan (HPMP) for managing historic properties that may be affected by the construction and operation of the Pumped Storage Project, consistent with Section 106 of the National Historic Preservation Act of 1966 (as amended), and its implementing regulations (36 CFR 800). The FERC has requested that Eagle Crest Energy submit for FERC approval an HPMP to avoid adverse effects that may result from the immediate construction and long-term operation and maintenance of the Eagle Mountain Pumped Storage Project for the term of the license.

Eagle Crest Energy has contracted with ASM Affiliates, Inc. (ASM) to develop this HPMP. The author is Jerry Schaefer, Ph.D., RPA, who meets the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 Federal Register 44738-39). The HPMP preparation was informed by the *Guidelines for the Development of Historic Properties Management Plans for FERC Hydroelectric Projects* (FERC May 20, 2002). The Project's Plan and Procedures for Addressing Unanticipated Discoveries of Cultural Resources and Human Remains (Appendix A) is consistent with the Advisory Council on Historic Preservation's Policy Statement Regarding Treatment of Human Remains and Grave Goods (September 27, 1988, Gallup, N.M.), California laws regarding the discovery of human remains (Health and Safety Code Section 7050.5: Disturbance of Human Remains; 8010-8011: California Native American Graves and Protection Act 8010-8011; Public Resources Code Sections 5097.94, 5097.98 and 5097.99), and the National Native American Graves and Protection Act of 1990 (25 U.S.C. 3001 et seq; 43 CFR 10). This HPMP is also consistent with Federal procedures for obtaining required permits for archaeological excavation (Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-470mm; Public Law 96-95).

This HPMP provides project background information, identifies previously recorded cultural resources in the Area of Potential Effects (APE), outlines project management and preservation goals and priorities, presents the very limited foreseeable project effects and



mitigation/management measures, and provides a schedule for implementing the stipulated activities.

The HPMP should be considered a dynamic and updatable document. The HPMP will be used by FERC and the SHPO to ensure that the management goals are achieved with regard to the preservation or appropriate treatment of historic resources. It gives explicit guidance to Eagle Crest staff on how to accomplish the goals. Eagle Crest's Project Environmental Coordinator is responsible for implementing the HPMP. The focus of this document is on the discovery plan and worker environmental awareness training because no historic properties are identified within the APE except for a buried portion of the Colorado River Aqueduct that will be easily avoided.

The HPMP also includes the plan for the future inventory and evaluation of the Eagle Mountain Mine, town site, and railroad that potentially may be a historic property or district now that they are more than 50 years old.

This revised HPMP replaces the previous draft of December 2009, incorporating FERC's "Additional Measures Recommended by FERC Staff" in the Draft Environmental Impact Statement that pertain to the HPMP (FERC 2010:257). Among the most significant revisions are the update to the APE and inclusion of results from the Class I and III investigations of alternative transmission line routes (Schaefer 2010), one of which has been selected by FERC Staff as the recommended route in the expanded APE (FERC 2010). Copies of this revised HPMP have been sent to the SHPO, the BLM, and all previously consulted Tribes for review and comment.

## **2.0 BACKGROUND INFORMATION**

### **2.1 PROJECT DESCRIPTION**

#### **2.1.1 Project Features**

The Eagle Crest Energy Company proposes to develop the Eagle Mountain Pumped Storage Project near the town of Eagle Mountain in Riverside County, California (Figure 1). The proposed project is a large scale energy storage project that will provide electrical generation peaking capacity and transmission system regulating benefits deemed essential for integration of a high level of renewable wind and solar generation sources, and to maintain transmission reliability for Southwestern electric utilities.

The Project will use off-peak energy to pump water from the lower reservoir to the upper reservoir during periods of low electrical demand and generate energy by passing the water from the upper to the lower reservoir through the generating units during periods of high electrical demand. In general, the low demand periods are expected to be during weekday nights and throughout the weekend, and the high demand periods are expected to be in the daytime during weekdays. The Project will provide an economical supply of peaking capacity, as well as load following, system regulation through spinning reserve, and immediately available standby generating capacity.

The mapped project boundary constitutes the APE (Figures 2,3,4). The Project will have 1,300 MW of generating capacity, using reversible pump-turbine units, with four units of 325 MW each. The project reservoirs will be formed by filling existing mining pits with water. The mining pits are empty and have not been actively mined for decades. There is an elevation difference between the reservoirs that will provide an average net head of 1,410 feet. The proposed energy storage volume will permit operation of the Project at full capacity for 10 hours each weekday, with 12 hours of pumping each weekday night to fully recharge the upper reservoir on a weekly basis, with additional pumping on weekends. The amount of active storage in the upper reservoir will be 17,700 acre-feet, providing 18.5 hours of energy storage at the maximum continuous generating discharge. Tunnels will connect the two reservoirs to convey the water, and the generating equipment will be located in an underground powerhouse. The APE has been revised to include a spillway from the upper Reservoir, which will flow into Eagle Creek. Eagle Creek is also included in the APE from the spillway to the lower reservoir. In addition, the APE has been modified to include the spillway from the lower reservoir. An access road to the West Saddle Dam and to the elevator shaft have also been included in the APE.

2.0 Background Information

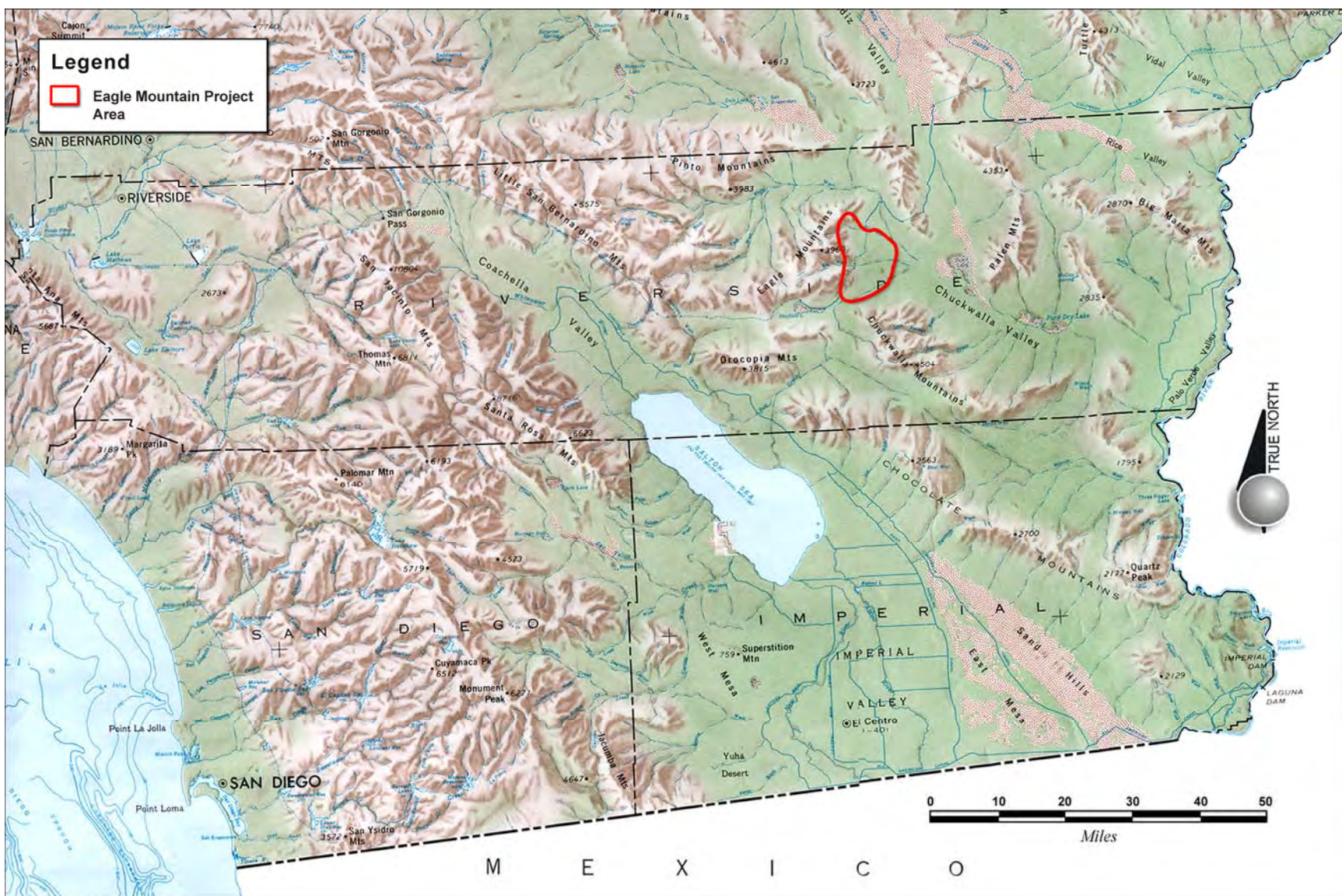


Figure 1. Project vicinity.



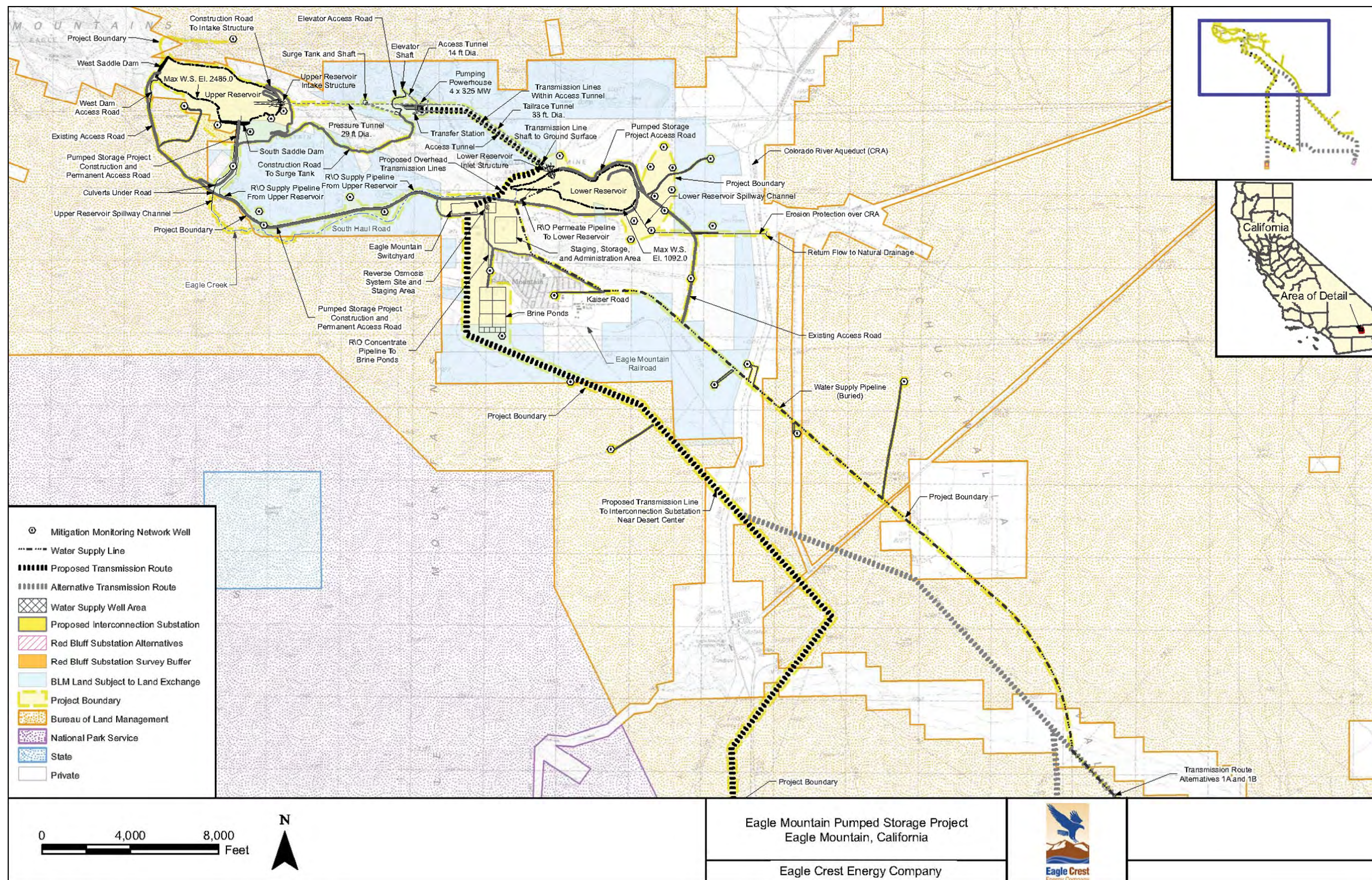


Figure 2. Project boundaries and APE, north half. The Expanded APE includes the transmission line route identified as Alternative #1A on this Figure.



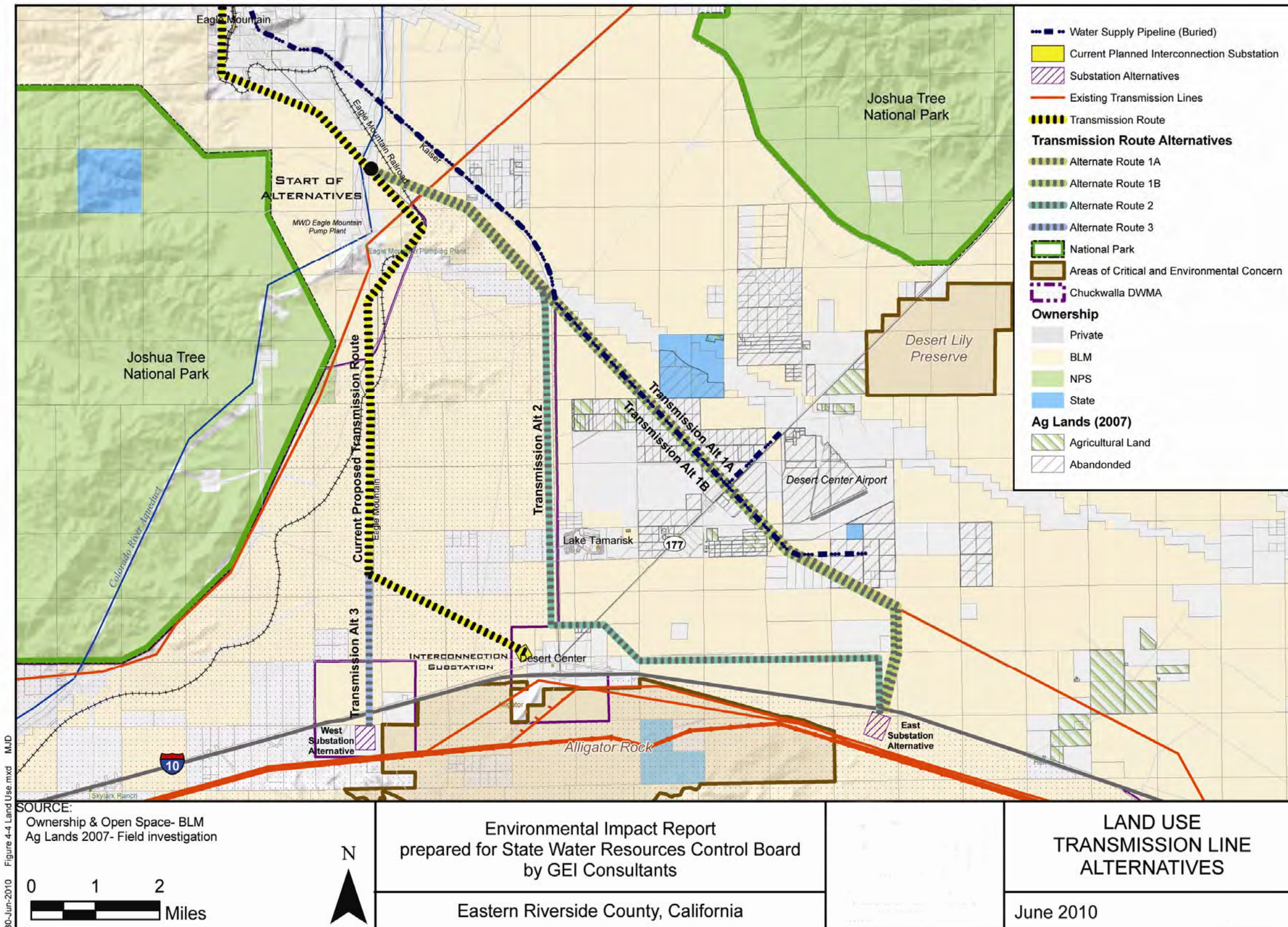


Figure 3. Project boundaries and APE, south half, with transmission line alternatives. The expanded APE includes transmission route Alternative #1A, and the substation site identified as the East Substation Alternative.



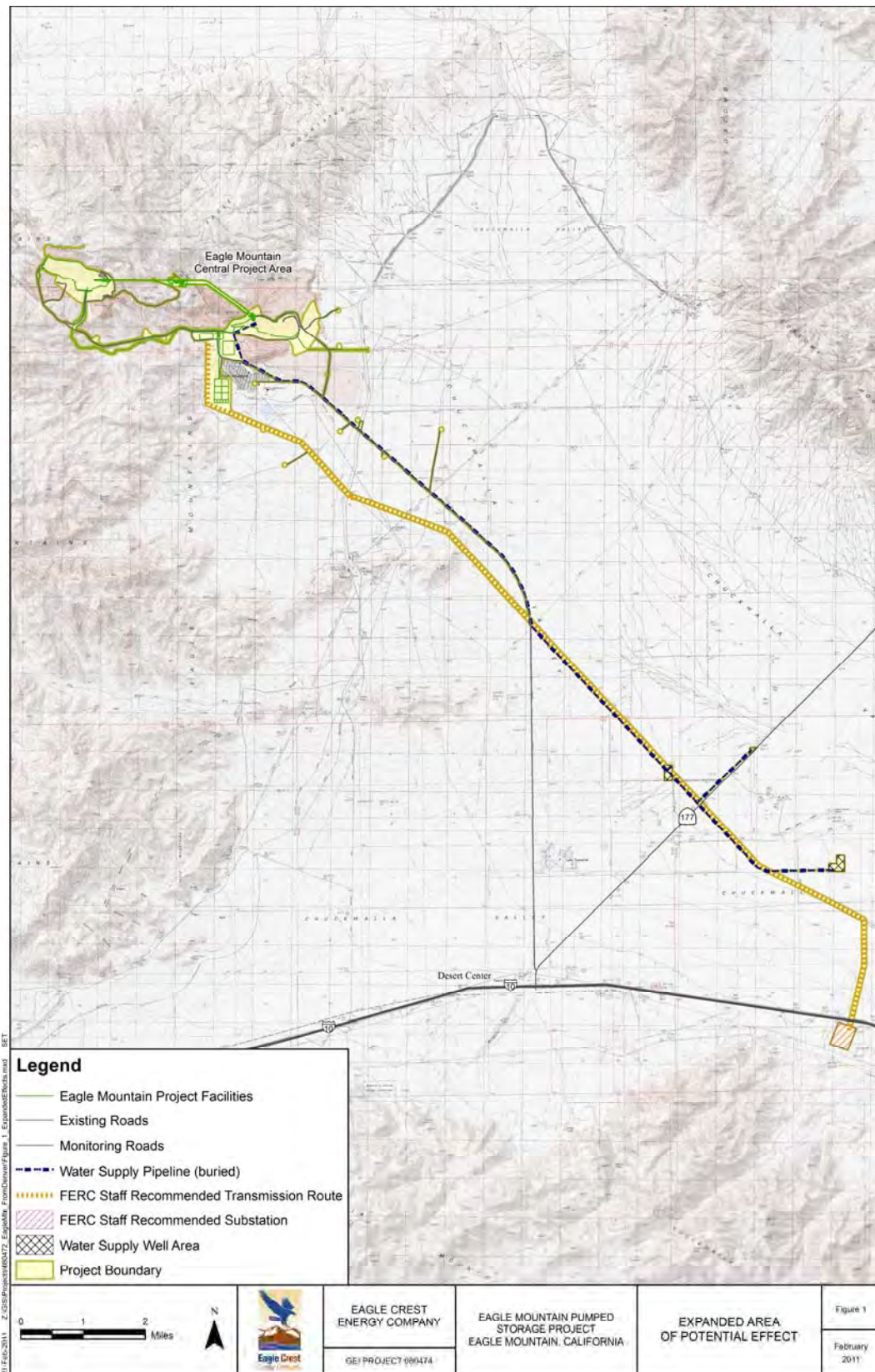


Figure 4. Revised Project boundaries FERC-Staff Recommended Alternative and Expanded APE, entire project area

A 500 kV double circuit transmission line will convey power to and from the Project through an interconnection collector substation located east of Desert Center, California (see Figures 3 and 4). System improvements and accessible power markets will be investigated during upcoming system analysis performed by the California ISO in coordination with Southern California Edison. The previously proposed transmission line extended south along Eagle Mountain Road and then diverged southeast to the Interconnection Substation site near Desert Center (Schaefer and Iverson 2009). Subsequently a number of other alternative transmission line routes underwent archaeological survey (Schaefer and Iverson 2010). FERC Staff chose Transmission Line Alternative Route 1A that runs in a southeast direction parallel to an existing line and then south to the eastern alternative substation A-1. It is this transmission line route that constitutes part of the “expanded APE” (FERC 2010).

The Project will be located entirely off-stream in that neither the upper nor lower reservoirs intercept a surface water course. Eagle Creek, however, is an ephemeral stream which will be used to convey flood flow from the Upper Reservoir to the Lower Reservoir. The reservoirs will receive only incidental runoff from surrounding slopes in a very limited watershed area within the historically mined lands. Water to initially fill the reservoirs and annual make-up water will be pumped from groundwater within the adjacent Chuckwalla Valley. The applicant has acquired land and attendant water rights to three properties in the Chuckwalla Valley where three new wells will be installed, and connected to a central collection pipeline corridor (four locations were surveyed).

Plans are currently being developed by Mine Reclamation Corporation (MRC), a division of Kaiser Ventures LLC, to use portions of the mine site for a major landfill serving the Southern California urban areas. The pumped storage project has been formulated with the assumption that the landfill will exist as proposed by the landfill developers. As detailed in the License Application, the landfill and pumped storage are compatible in that neither will materially interfere with the construction or operation of the other.

More details about the characteristics and description of the major features of the Project are available in Table 1 below. Portions of the project with the potential to effect cultural resources are discussed below.

Table 1. Significant Data for Eagle Mountain Pumped Storage Project

<b>Project Feature</b>	<b>Feature Data</b>
<b>Hydroelectric Plant</b>	
Total Rated Capacity	1,300 MW
Number of Units	4 (Reversible)
Unit Rated Capacity	325 MW
Maximum Plant Discharge	11,600 cfs
Pump/Turbine and Motor/Generator Unit Data	
Rated Head	1410 ft
Rated Turbine Output	319 MW
Maximum Turbine Flow	2,900 cfs
Operating Speed	333.3 rpm
Generator Rating	347 MVA
<b>Low Pressure Upper Tunnel</b>	
Diameter	29 ft
Length	4,000 ft
<b>Shaft</b>	
Diameter	29 ft
Length	1,390 ft
<b>High Pressure Lower Tunnel</b>	
Diameter	29 ft
Length	1560 ft
<b>Tailrace Tunnel</b>	
Diameter	33 ft
Length	6,835 ft
<b>Powerhouse Cavern</b>	
Height	130 ft
Length	360 ft
Width	72 ft
<b>Upper Reservoir</b>	
Dam Type	Roller-compacted concrete (RCC)
Volumes	
Total Reservoir Capacity	20,000 ac-ft
Inactive Storage	2,300 ac-ft
Active Storage	17,700 ac-ft
Operating Levels	
Minimum Operating Level	El. 2343
Maximum Operating Level	El. 2485
Water Surface Areas	
Water Surface Area at El. 2,343 feet	48 acres
Water Surface Area at El. 2,485 feet	191 acres
Dimensions of Dams (URD-2 and URD-1)	
Structural Heights	60 ft and 120 ft
Top Widths	20 ft (both dams)



<b>Project Feature</b>	<b>Feature Data</b>
Crest Lengths	1100 to 1300 ft
Crest Elevation	El. 2490 (both dams)
<b>Lower Reservoir</b>	
Dam Type	None
Volumes	
Total Reservoir Capacity	21,900 ac-ft
Inactive Storage	4,200 ac-ft
Active Storage	17,700 ac-ft
Operating Levels	
Minimum Operating Level	El. 925
Maximum Operating Level	El. 1092
Water Surface Areas	
Water Surface Area at El. 925 feet	63 acres
Water Surface Area at El. 1,092 feet	163 acres

### 2.1.1.1 Water Supply and Conveyance Pipelines

Water to initially fill the reservoirs and annual make-up water will be pumped from groundwater within the Chuckwalla Valley. Three wells will be utilized to provide initial reservoir fill. Water to replace losses due to seepage and evaporation will be obtained from the same source. The new wells will be connected to a central collection pipeline corridor.

The locations of the three groundwater wells are approximately 11 miles southeast of the project area. ECE has developed estimates of pipe material, pipe sizes, pumping head, pumping costs, and construction costs for potential alternative water supply systems. The preferred groundwater supply well system consists of the following main components:

- Three 2,000 gallons per minute (gpm), 1,000 horsepower vertical turbine pumps
- 1.3 miles of 12-inch diameter well field collection pipe
- 3.3 miles of 18-inch diameter well field collection pipe
- 10.7 miles of 24-inch diameter conveyance pipe

One well will have adequate capacity to replenish water lost to evaporation and seepage. A second well will be maintained as a backup water supply for the makeup water needs.

### 2.1.1.2 Transmission Lines

Power will be supplied to and delivered from the Project by a double circuit 500 kV transmission line. The line will extend approximately 3 miles south of the Eagle Mountain switching station along the applicant's proposed line, crossing the Colorado River Aqueduct, and then proceed in a southeast direction parallel to the existing Southern California Edison 160-kV transmission line for 10.5 miles, to a point north of the proposed substation and then proceeds south for an additional 2 miles (Alternative Transmission Line 1-A). It would then connect with the Eastern

Red Bluff Substation, located south of Interstate-10 and 5 miles east of Desert Center for interconnection to the planned Devers-Palo Verde No. 2 500-kV line owned by Southern California Edison. The FERC Staff recommended transmission line route and State Water Board recommended substation are referenced as part of the “expanded APE” in the EIS (FERC 2010:27). The new Substation will require an estimated total area of 75 acres located east of Desert Center, California.

The typical right-of-way for the transmission line will be about 200 feet. However the right-of-way width could be reduced in specific locations to mitigate potential impacts to resources (e.g., historic trails, adjacent land restrictions, existing roads and highways, and biological and cultural resources). The total right-of-way area required is 400 acres. A summary of additional proposed transmission line facilities and communication facilities is presented in Table 2.

#### **2.1.1.3 Access roads**

Site access is currently planned to be provided by Kaiser Road, a public County road, to the entrance to property owned by Kaiser Ventures Inc.

#### **2.1.1.4 Public lands within the project boundary**

All lands of the United States, portions of which may be within the project boundary, have been tabulated according to legal subdivisions of public lands survey. Table 3 presents the lands of the United States within the project boundary. There are 2,527 acres within the project boundary, of which 660 acres are on federal land under the management of the BLM. A portion of the Federal lands in the Central Project Area have been exchanged for private lands, owned by Kaiser. This land exchange is currently subject to litigation. Depending on the outcome of that litigation, the ownership of 441 acres of land may revert to Federal ownership.

Table 2. Summary of Proposed Transmission Line Project Components

<b>Proposed Route and Right-of-Way</b>			
<ul style="list-style-type: none"> <li>• Transmission Line Length: approximately 16.4 miles.</li> <li>• Project Connection Point: A new substation/switching station at Eagle Mountain.</li> <li>• Network Connection Point: Eastern Red Bluff Substation, east of Desert Center, which will interconnect to the planned Palo Verde-Devers 500-kV line owned by Southern California Edison.</li> <li>• Right-of-Way Width: 200 feet. The right-of-way width could be reduced in specific locations to mitigate potential impacts to resources (e.g., historic trails, adjacent land restrictions, existing roads and highways, and biological and cultural resources).</li> <li>• Total Right-of-Way Acreage: approximately 400 acres for the linear ROW.</li> </ul>			
<b>Transmission Line Facilities (500 kV, double circuit)</b>			
<ul style="list-style-type: none"> <li>• Conductors: Two, three-phase AC circuits consisting of three 1.5 to 2-inch ACSR conductors per circuit.</li> <li>• Minimum Conductor Distance from Ground: 35 feet at 60°F and 32 feet at the maximum operating temperature.</li> <li>• Shield Wires: Two 1/2 to 3/4-inch-diameter wire(s) for steel lattice.</li> <li>• Transmission Line Tower Types: <ul style="list-style-type: none"> <li>- Steel Lattice Tower along entire route.</li> <li>- Structure Heights (approximate): Steel Lattice – 175 to 235 feet.</li> </ul> </li> <li>• Average Distance between Towers: Steel Lattice – 1,056 feet.*</li> <li>• Total Number of Towers (approximate): 67*</li> </ul>			
<b>Substation Facilities</b>			
<ul style="list-style-type: none"> <li>• A new substation/switching station requiring a total area of approximately 75 acres will be constructed.</li> <li>• Eastern Red Bluff Substation east of Desert Center to accommodate interconnection of this Proposed Project and other proposed projects in the same area for delivery to the Devers-Palo Verde transmission line.</li> </ul>			
<b>Communications Facilities</b>			
<ul style="list-style-type: none"> <li>• Systems: Digital Radio System, microwave, VHF/UHF radio, fiber optics.</li> <li>• Functions: Communications for fault detection, line protection, SCADA, two-way voice communication.</li> </ul>			

\*The exact quantity and placement of the structures depends on the final detailed design of the transmission line, which is influenced by the terrain, land use, and economics. Alignment options may also slightly increase or decrease quantity of structures.

Table 3. Lands of the United States Affected by the Eagle Mountain Pumped Storage Project Federal Lands (All BLM)

<b>Area (acres)</b>	<b>Location</b>		
	<b>Section To</b>	<b>wnship</b>	<b>Range</b>
659.86	28, 29, 32, 33	03S	14E
	4, 12	04S	14E
	7, 8, 9, 16, 17, 18, 21, 22, 27, 28, 34, 35	04S	15E
	1	05S	15E
	5, 6, 8, 17, 21, 22, 27, 28, 33	05S	16E

## 2.2 HISTORIC CONTEXT

Five successive periods, each with distinctive cultural patterns, may be suggested for the Colorado Desert, extending back over a period of at least 12,000 years. They include (1) Early

Man (Malpais); (2) Paleoindian (San Dieguito); (3) Archaic (Pinto and Amargosa); (4) Late Prehistoric (Patayan); (5) Historic (Ethnohistoric and Euro-American).

### **2.2.1 Early Man Period (Malpais Pattern) (50,000-10,000 years B.C.)**

A complex of archaeological remains that has been hypothesized by some scholars to date between 50,000 to 10,000 B.C. represents the Malpais Pattern. Rogers originally used the term for cleared circles, tools, and rock alignments that appeared to be ancient and that he later classified as San Dieguito I. Malpais has continued to be applied to heavily varnished choppers and scrapers found on desert pavements of the Colorado, Mojave, and Sonoran deserts that are believed to predate the Paleoindian period of projectile point use. Although few would reject most of the items as being culturally produced artifacts and features, the methods used to date them are highly subjective and have been assailed on many grounds. Arguments in favor of early occupations in the Colorado Desert have been further eroded by the redating of the Yuha Man burial. Originally dated as over 20,000 years old on the basis of radiocarbon analysis of caliche deposits, more reliable dates of actual human bone fragments based on the accelerator mass spectrometer radiocarbon method now place the burial at only about 5000 years B.C.

### **2.2.2 Paleoindian Period (San Dieguito Pattern) (10,000-6000 years B.C.)**

Most of the non-ceramic stone tool assemblages, rock features, and cleared circles in the Colorado Desert have been assigned to the San Dieguito pattern. Three chronological phases of the San Dieguito pattern are recognized by some archaeologists in its Central Aspect (which included the Colorado and Mojave deserts and the western Great Basin). Each successive phase is characterized by the addition of new, more sophisticated tool types to the pre-existing tool kit.

Current understanding of the stone tool technology of the San Dieguito pattern focuses on percussion-flaked cores and the resulting waste, with little or no pressure flaking evident during the first two phases. Tools from San Dieguito I and II phases include bifacially and unifacially reduced choppers and chopping tools, concave-edge scrapers (spokeshaves), bilaterally notched pebbles, and scraper planes. Appearing in the San Dieguito II phase are finely made blades, smaller bifacial points, and a greater variety of scraper and chopper types. It appears that the San Dieguito III phase tool kit became appreciably more diverse with the introduction of fine pressure flaking. Tools include pressure-flaked blades, leaf-shaped projectile points, scraper planes, plano-convex scrapers, crescentics (which may have been amulets), and elongated bifacial knives. Various attempts have also been made to associate cleared circle features with the San Dieguito phases, but no convincing chronological scheme has yet emerged and many cleared circles are now recognized to be natural features and not cultural.

Because of the largely surface character typical of desert sites and the scarcity of chronological indicators, it has been difficult to substantiate the validity these phase designations as temporal indicators, that is, chronologically successive changes in the tool kit of a long-lived culture. Some of the variations may have developed contemporaneously, in response to ecological or aesthetic requirements. Indeed, without a stratified context to demonstrate succession, the distinctions may as likely be due to economic specialization at a specific site or to sampling error, rather than to technological change through time.

The San Dieguito pattern, as reconstructed from artifact assemblage characteristics and site associations, represented a hunter-gatherer adaptation by which small, mobile bands exploited small and large game and collected seasonally available wild plants. The absence or scarcity of milling tools in San Dieguito assemblages has been seen as reflecting a lack of hard nuts and seeds in the diet, as well as being a cultural marker separating the San Dieguito culture from the later Desert Archaic culture. However, manos and portable metates are now increasingly recognized at coastal sites that have been radiocarbon-dated to earlier than 6000 B.C.

Site distributions indicate some of the basic elements of the San Dieguito settlement system. The sites may be located on any flat area, but the largest groupings occur on mesas and terraces overlooking large washes or the margins of lakes. These are areas where a variety of plant and animal resources were located and where water was at least seasonally available so that San Dieguito occupation in the eastern Colorado Desert would have been focused on the river floodplain.

### **2.2.3 Archaic Period (Pinto and Amargosa Patterns) (6000 B.C.-A.D. 500)**

The Pinto and Amargosa patterns are considered regional specializations within the widespread hunting-gathering adaptations that characterized the Archaic period. Pinto and Amargosa sites occur more frequently in the Great Basin, Mojave Desert, and Sonoran Desert east of the Colorado River than in the Colorado Desert, where few Pinto or Amargosa projectile points have been identified on the desert pavements. It has been suggested that the California deserts were inhospitable during the Archaic period, particularly during the so-called Altithermal phase between 5000 and 2000 B.C., a period of natural global warming, and that the mobile hunter-gatherers were forced to concentrate around limited locations or move to more habitable regions.

Some late Archaic sites have been identified along the boundary between the low desert and the Peninsular Ranges and at favored habitats at springs and tanks. The small quantity of artifacts at some sites suggests strategically stored food and seed processing equipment that was used by small mobile groups. More recently, a late Archaic period campsite was also identified in 8-meter deep dune deposits adjacent to the north shoreline of Ancient Lake Cahuilla near Indio. Other Archaic sites have been recently discovered in deposits on the bed of Lake Cahuilla when it had dried up in the northern Coachella Valley and also the first substantial habitation site from this period has been found near Desert Hot Springs). Radiocarbon dates of almost 3,000 years B.P. and associated bird and fish bone confirm a late-Archaic-period Lake Cahuilla occupational horizon. Additional Archaic sites fairly certainly are still to be discovered, buried under alluvial fans and wash deposits, sand dunes, Lake Cahuilla sediments, or Colorado River valley alluvium.

### **2.2.4 Late Prehistoric Period (Patayan Pattern) (A.D. 500-1900)**

Major innovations during this period included the introduction of pottery making by the paddle-and-anvil technique and bow-and-arrow technology, perhaps around A.D. 800, and the introduction of floodplain agriculture at about the same time. Exact dating of early domesticated plants is lacking. Agriculture and ceramics were probably introduced either from northwestern Mexico or from the Hohokam culture on the Gila River.

Between A.D. 1000 and 1700, desert peoples of this region appear to have extended their focus somewhat away from the Colorado River floodplains to a more mobile, diversified resource procurement pattern, with increased travel between the river and Lake Cahuilla to the west). Long-range travel to special resource collecting zones and ceremonial locales, trading expeditions, and possibly warfare are reflected by the numerous trail systems seen throughout the Colorado Desert. Pot drops, trailside shrines, and other evidence of transitory activities are often associated with these trails, including within the Chuckwalla Valley and at springs and other water sources in the surrounding mountains and washes.

Several local varieties of pottery appeared during the Late Prehistoric period. Many of the pictographs, petroglyphs, and bedrock grinding features in the Colorado Desert have also been associated with the Patayan pattern, although it is difficult to date such features directly or to determine their cultural affiliations. With the completion of the final recession of Lake Cahuilla around A.D. 1700, the Patayan III phase emerged, apparently including a return to reliance on the Colorado River floodplain and increasing population growth in the Coachella Valley and San Jacinto and Santa Rosa Mountains.

## **2.2.5 Native American Ethnohistoric Patterns (Post-A.D. 1540)**

The ensuing sections describe the ethnohistoric and historic occupation of the project vicinity. The discussion includes brief accounts of the Colorado River People, the Desert Cahuilla, and the Chemehuevi, and concludes with a description of Euro-American land use patterns pertaining to the project area.

### **2.2.5.1 Colorado River People**

The Halchidhoma were a Yuman-speaking group who lived along the Palo Verde Valley of the lower Colorado River Valley, in the vicinity of modern Parker and Blythe. Although somewhat distant from the project area, they are likely to have traveled between their homeland and the Coachella Valley via the Chuckwalla Valley. In the early seventeenth century, they were living on the lower Colorado River below its junction with the Gila River, but in the eighteenth century they were reported in the area around Blythe. During the early nineteenth century, conflicts with their River Yuman neighbors, the Quechan and the Mohave, forced the Halchidhoma to move east to the middle Gila River, where they merged socially and culturally with the Maricopa. Because of these historical circumstances, traditional Halchidhoma culture is less well known than that of other River Yuman groups. However, studies of the other groups shed light on Halchidhoma lifeways.

It appears from historical accounts and Yuman oral histories that the Halchidhoma were in an almost constant state of war with the Quechan and Mohave. The Halchidhoma, in turn, established alliances with the Cocopa and Maricopa, among others, in their efforts to maintain their territory. Eventually the Halchidhoma could no longer withstand the two-front attacks from the north and south. They gradually moved off the river to join kindred River Yuman groups in Maricopa territory on the middle Gila River after a temporary stay in northern Sonora. By around 1825-1830, most Halchidhoma had left the Colorado River, and the last families left by 1840.

There is no complete description of the lifeways of the Halchidhoma as they were lived on the Colorado River, because the Halchidhoma had begun to be assimilated into the Maricopa more than a half century before scientific ethnographies began to be written. Today the Halchidhoma are most closely associated with the Laveen community on the Salt River Reservation in Arizona, although descendants are distributed over several reservations. Leslie Spier was fortunate to have a Halchidhoma elder as the principal informant for his landmark study of Gila River Yumans. By this time, many elements of Piman and Maricopa culture had been adopted, but some valuable information could still be derived concerning oral traditions. It is reasonable to assume Halchidhoma lifeways were very similar to those of the Quechan and Mohave when they occupied the Colorado River. In principle, the following description of Yuman society would apply to all of the River Yumans.

The focus on riverine subsistence resources encouraged a mixed foraging way of life for the River Yumans. Foods procured by seasonal rounds of hunting, fishing, and gathering supplemented small-scale agricultural practices. The Mohave relied more heavily on agriculture than did the Cocopa in the Colorado River's delta or the Quechan. It is estimated that about half of the Mohave diet derived from farming. They estimated that the Cocopa, by contrast, derived only about 30 percent of their diet from agriculture because of greater access to a diversity of habitats; the Quechan (and presumably also the Halchidhoma) diet was intermediate between the Mohave and the Cocopa.

Agricultural strategies were designed to optimize use of floodwaters bringing the necessary moisture to the fields, which tended to be quite small in size (2-3 acres). Aboriginal cultivated crops included maize, beans, squash, melon, and various semi-wild grasses. Seeds were planted in newly deposited sediments after the floodwaters had receded. The River Yumans also used more than 75 wild plant foods as food sources, the most important being mesquite and screwbean. The primary source of dietary animal protein came from fish caught in the Colorado River. Among the more important species were the humpbacked sucker and Colorado pike minnow. Regularly hunted game included small mammals such as rabbits, squirrels, and pack rats. Larger game that figured in the diet included deer and bighorn sheep, but these were probably hunted with less frequency and were less abundant than small game. However, their meat was highly regarded by the River Yumans, particularly in winter, when reliable sources of dietary fat were in especially short supply.

Residential bases that looked like dispersed village communities were centered on the Colorado River but conformed to a seasonal pattern. Spring and summer houses were located near each agricultural field, but up on the mesas, where they would be safe from floods, while open-air ramadas were constructed on the floodplains adjacent to the fields. During this time, small parties sought out wild vegetal resources along the floodplain and adjacent washes. Mesquite and screwbean were important staples that were relied upon as stored staples during the winter months, especially if domestic crop harvests were inadequate. The winter season was a time to relocate to residential bases on upper Colorado River terraces, lower bajadas, and lower mountain slopes. Winter homes were more substantial earth-covered lodges. The population subsisted on stored domestic and wild foods, in addition to what wild game could be had. Additional temporary camps would be established in outlying areas for extracting specific animal, vegetal, or lithic resources. As soon as the spring floods subsided, the population would

then resume their lower terrace residences. Unlike other southern California groups where the primary political allegiance and identity lay with the localized band, members of the River Yuman groups thought of themselves as belonging to a true nation.

### **2.2.5.2 The Desert Cahuilla: An Interior Southern California People**

While the principal residential loci of the Cahuilla were in the Coachella Valley and the Santa Rosa and San Jacinto Mountains, they were known to have traveled and maintained cultural contact with lower Colorado River peoples. The Chuckwalla Valley would have been one of their principal travel corridors for this purpose.

Cahuilla and other Takic (“Shoshonean”) speakers of the Uto-Aztecan linguistic stock, such as the Luiseño, Serrano, and Gabrielino, may have migrated south from the southern Great Basin into coastal southern California and the Colorado Desert. However, the specific period or periods, directions, and circumstances of this migration remain unclear. Some estimates would put the movement somewhere between A.D. 1 and 1000, most likely around A.D. 500 but possibly as early as 500 B.C. What role these Takic speakers had in the development of the Patayan pattern in the Colorado Desert remains unclear. The ancestors of the River Yumans are most often identified as the source of ceramics, cremation practices, agriculture, some architectural forms, and some stylistic and symbolic representations. The Takic migrations may have coincided with the introduction of bow-and-arrow technology, but no direct association has been established. They may have contributed specific hunting and gathering techniques as well as cosmological and symbolic elements to the Patayan cultural system.

A dozen or more politically independent landholding clans owned territories within the region. Ideally, each of these territories extended from the desert or valley floor to mountain areas, encompassing several biotic zones. Clans were composed of one or more lineages, each of which owned an independent community area within the larger clan area. Cahuilla oral histories indicate that some clans replaced others, often by force, and also that new lineages would bud off from clans to establish new territories. Cahuilla mythology and oral tradition indicate that when Lake Cahuilla dried up, it was the mountain people who resettled the desert floor. By 1850, at least 17 rancherias are known in the Coachella Valley, most of them associated with hand-dug wells, springs, or palm oases. Reservoirs, irrigation ditches, and agricultural fields are documented at least as far back as the early nineteenth century.

In addition to each lineage’s residential area and other locations within a clan territory that it owned in common with other lineages, ownership rights to various food-collecting, hunting, and other areas were claimed by the various lineages. Individuals owned specific areas or resources, such as plant foods, hunting areas, mineral collecting places, and sacred spots used only by shamans, healers, and ritual practitioners.

While villages were occupied year-round, a large number of their inhabitants would leave at specific times to exploit seasonally ripening foods in different environmental zones. Temporary camps would be established in these food-collecting areas, and surpluses would be transported back to the main village. Mountain Cahuilla would move to the upper desert areas and establish temporary camps to process agave in late winter and early spring, and then move to lower desert areas to harvest mesquite beans in the late spring. Conversely, the Desert Cahuilla ascended the



mountains in the fall for the pinyon and acorn harvests. Other springtime resources included yucca, wild onion, barrel cactus and other cactus fruits, goosefoot, and grass seeds. Other major upper-desert resources collected in summer included berries, manzanita, and wild plum. Fall was the season to gather grass seeds, chia, saltbush seeds, palm tree fruit, thimbleberry, wild raspberry, juniper berry, and choke berry. Many animal resources were hunted; bighorn sheep and deer hunts often coincided with the pinyon harvest. Rabbits were the most common game throughout the year.

It is estimated that no village was located more than 26 km from all of the food-gathering areas within its territory and that 80 percent of all food resources could be found within an 8-km foraging radius around the village. Such ideal proximity to diverse habitats was made possible by the steep topographic gradient on the eastern side of the San Jacinto and Santa Rosa mountains.

Cahuilla clans varied in population size from 100 to several thousand people. They were arranged so that each community was placed in an area near significant water and food resources. Communities were generally situated several kilometers from their neighbors, and within a community, houses and structures were placed at some distance from each other. Often a community would spread across 2-3 km. Each nuclear and extended family had houses and associated structures for food storage and shaded work places for processing foods and manufacturing tools. Each community contained the house of the lineage or clan leader: the *net*. This position was often hereditary within families of high social status. The *paxa* was another hereditary leader with responsibilities for managing ritual events. Other important ceremonial positions included the shaman (*púul*), singer (*háwaynik*), and diviner (*tet áyawiš*). There were a number of non-official ritual practitioners.

Within each community was a ceremonial house (*kiš ámnawet*) where most major religious ceremonies of the clan were held. These took place with considerable frequency. The most significant ceremonies focused upon the proper care of the deceased members of the lineage or clan. In addition to house and ceremonial structures, there were storage granaries, sweathouses, and song houses (for recreational music). Close to each community were many food resources, building materials, minerals, and medicines. Usually an area within 1-5 km contained the bulk of materials needed for daily subsistence, although the territory of a given clan might be larger, and longer distances were traveled to get precious or necessary resources that were located at higher elevations. While most daily secular and religious activities took place within the community, there were places at some distance from the community, such as acorn and pinyon groves, where people stayed for extended periods. Throughout the area there were sacred places used primarily for rituals, inter-clan meetings, caching sacred materials, and shamans' activities. Cave sites or walled cave sites were used for temporary camping, storing of foods, fasting by shamans, and use as hunting blinds.

European diseases were probably beginning to take their toll on the Cahuilla in the early 1800s, but they became particularly severe in the 1860s. The most dramatic episode was the great smallpox epidemic of 1863 that killed Juan Antonio as well as many bearers of traditional tribal culture. Survivors of previously autonomous clans clustered into the remaining villages or founded new settlements in an accelerated process of population aggregation and reorganization. This process continued through the following decades.

The Cahuilla land base was substantially reduced in the 1860s and 1870s as the United States government ceded alternate sections within 10 miles of the new transcontinental railroad route to the railroad companies. Sections 16 and 36 of every township were also removed from federal control as a school tax base. Any de facto Native American control of larger territorial bases was undermined in 1876 when President Ulysses S. Grant issued an Executive Order setting aside small reservations for all groups classified as “Mission Indians.” These reservations included the sections or parcels in which the Cahuilla had aggregated during the previous decades and in which they had made improvements for farming. The following year, another Executive Order by President Rutherford B. Hayes set aside even-numbered sections and certain other unsurveyed portions of townships for Indian reservations. The result was a checkerboard pattern of Indian-controlled land, encompassing 48 sections, spread across the eastern edge of the Santa Rosa and San Jacinto mountains and the Coachella Valley. With various additions and withdrawals over time, this has remained the permanent land base of the Cahuilla to the present.

As traditional lifeways became more difficult to maintain, the Cahuilla adapted to their new geographical and political environment by taking jobs at American ranches, towns, and cities. The 1860s through 1880s was a period of increased acculturation, as new technologies, material goods, and practices were incorporated into the traditional lifeways of the reservation. Ceremonial practices remained particularly strong despite Catholic and Protestant influences on the reservations. Ceremonial houses still existed through the 1950s, 1960s, and early 1970s, and many cultural traditions still remain part of westernized lifestyles. Many Cahuilla retain an acute interest in the cultural heritage and cultural resources of their traditional territories.

### **2.2.5.3 The Chemehuevi: A Great Basin People**

In late prehistoric times, the Chemehuevi occupied desert areas west of the Mohave and north of the Cahuilla. Subsequently, during the early historic period, they took over the portion of the lower Colorado River Valley that had previously been held by the Bahacecha and the Halchidhoma. Chemehuevi speech is a dialect of the Southern Paiute or Ute language, belonging to the Numic branch of Uto-Aztecan family. Although the time of Chemehuevi entry into eastern California remains unclear, it was probably in the period between A.D. 1200 and 1500, when brown ware pottery and twined basketry became conspicuous in archaeological sites.

The Chemehuevi lived in smaller and more mobile groups than the Cahuilla or the Yumans, in order to adapt to the sparser and more widely distributed resources of their desert. Their more wide ranging patterns and subsistence strategies that often focused on areas with scarcer resources may have brought them into the general project area more often than other groups. They subsisted primarily on small game and a wide variety of seasonally available wild plants. Seed plants were especially important.

The Chemehuevi were allied militarily with the Mohave and Quechan, and they were allowed plots of land to cultivate crops in Mohave territory. Most Chemehuevi did not begin to move down to the Colorado River until after 1833 and before the founding of Fort Mojave in 1859. This would also have been the period when the Halchidhoma left the river. As a result of their close association, the Chemehuevi share some elements of material culture with the Mohave, such as ceramic styles, square metates, some earth-covered house forms, storage platforms, song

series, dream emphasis, warfare patterns, and personal adornment. Other aspects of Chemehuevi culture are distinctively Great Basin, such as their extremely fine basketry. The Chemehuevi have distinguished themselves from their Yuman neighbors by their very different mythology, worldview, religious practices, kinship system, and political organization.

Like the Yumans, the Chemehuevi were great travelers and regularly visited many of their neighbors. They may even have visited the western California coast to trade. They occasionally joined the Quechan and Mohave in battles against the Halchidhoma. When the Halchidhoma finally left the river by 1840, the Chemehuevi made use of some of the vacated river valley, particular the Parker and Chemehuevi valleys. However, hostilities broke out between the Chemehuevi and Mohave between 1865 and 1871 when the Mohave began moving south to inhabit the newly created Colorado River Reservation. The Chemehuevi retreated westward into the desert, where they took refuge with the Cahuilla near Banning and in the Coachella Valley, and with the Serrano at Twenty-Nine Palms. Additional land was added to the Colorado River Reservation in 1874 in order to encourage the Chemehuevi to move there from areas near Blythe, Needles, Beaver Lake, and Chemehuevi Valley. Both peaceful and forceful efforts by the United States government to move the Chemehuevi onto the reservation were met with mixed results, and it was not until the early 1900s that the Chemehuevi agreed to move.

### **2.2.6 The Euro-Americans and Other Newcomers (Post-A.D. 1800)**

The following brief discussion focuses on several historic-period themes for which cultural resources are most likely to be represented in the project area: features relating to mining and transportation, water conveyance, and World War II military training.

#### **2.2.6.1 Mining**

The first mining efforts in the general region may have taken place in the Cargo Muchacho Mountains (hard rock mining) and Potholes (placer mining) areas in 1780-1781 near Yuma, contemporary with the short-lived Franciscan missionary efforts at the confluence of the Gila and Colorado rivers. Extensive mineral exploration began in the early 1860s, when the Mother Lode gold mines in the Sierra Nevada were becoming played out and miners looked for new discoveries in other parts of the American West.

One of the first and largest mining booms occurred in the La Paz and Castle Dome districts on the Arizona side of the Colorado River opposite Blythe. Miners from California and Sonora poured into the area in the early 1860s and 1870s. The Bradshaw Road (Trail) was established as a stagecoach and supply haul route from 1862 to 1877 providing a major transportation link between Los Angeles and the ferry to Ehrenberg, Arizona (Johnston 1987). It ran from San Bernardino through the San Gorgonio Pass, down the Coachella Valley to Dos Palmas, through Salt Creek Pass between the Orocopia and Chocolate Mountains, then along the Chuckwalla Mountains and through the Little Mule Mountains to the Colorado River. It is generally accepted that this route follows the Native American Cocomaricopa Trail, although McCarthy (1982) identifies the major east-west trail through Chuckwalla Valley, CA-RIV-79, as the Cocomaricopa Trail. The greatest period of activity was between the 1870s through 1890s and was facilitated by the Southern Pacific Railroad, which reached Yuma in 1877, and by links on the river provided by commercial riverboat traffic. This improved means of access to the

Colorado River and the initiation of a tri-weekly stage between Yuma and Ehrenberg in 1880 finally put the Bradshaw Road out of business.

Eagle Mountain, at the northern end of the present project area, was the focus of prospecting by Joe Torres as early as late 1870s and early 1880s. He identified a magnetite deposit but made no claim as he was after precious metals. That distinction came to Jack Moore who in 1881-1882 staked a claim and with his father and two other partners founded the Eagle Mountain Mining District for the exploitation of iron, gold, and silver. The Iron Chief, Black Eagle, and other claims were among those with gold but also rich iron content. They failed to maintain the necessary assessment work to validate the claim, however, and the area was abandoned for mineral development until 1895. That year L. S. Barnes of Mecca, a former student of the Colorado School of Mines, began to consolidate the claims after examining Joe Torres' original iron ore samples. Barnes completed his consolidation by 1912 and sold the package to Henry E. Harriman, CEO of the Southern Pacific Railroad (SPRR). Harriman's goal was to challenge J. P. Morgan's U.S. Steel Trust by threatening a viable West Coast industry, thereby lowering the price of steel he had to pay for his own railroad. Harriman bought a steel mill in San Pedro, California and surveyed a rail spur. Possibly a bluff, he succeeded in lowering the price of steel for the SPRR but died before it could be determined if he meant to carry through with his scheme.

World War II saw an enormous demand for steel, but during this time the Joshua Tree National Monument was formed, including the Eagle Mountain claims, thus protecting the ore bodies from mining. Henry J. Kaiser then took interest in the Eagle Mountain claims. From road contracting, Kaiser distinguished himself as a member of the team who built Boulder and Bonneville dams. He owned a steel mill at Fontana and the Vulcan iron mine near Kelso in the Mojave Desert that supplied materials for his west coast shipyards. Requiring more steel, he managed to purchase the Eagle Mountain claims from the Harriman heirs with the proviso that the SPRR be used to ship the ore. Having won a legal challenge to the claims, Kaiser succeeded in having the Joshua Tree National Monument boundaries shifted to exclude the Eagle Mountain properties. He then commenced work in 1944 to survey a new railroad route with a necessary limited grade of only 2 degrees between Eagle Mountain and the SPRR. Three routes were surveyed; the one chosen went south through Salt Creek to emerge between the Orocopia and Chocolate mountains at Durmid in the Coachella Valley where the line connected with the SPRR at Ferrum Junction, then continued west to the Fontana steel mill. Construction on the railroad began in 1947 and was completed on June 23, 1948, as the Kaiser Industrial Railroad (Eagle Mountain Industrial Railroad).

Ore shipment from the mine began immediately, and by 1971 the Eagle Mountain Iron Mine was producing 90 percent of California's total iron output. Over 4,000 people were employed in the operation, making the Eagle Mountain Mine Riverside County's largest employer. The company town of Eagle Mountain included schools, fire and police departments, civic facilities, 416 rental houses, 185 trailers, 383 dormitory rooms, and 32 apartments. Kaiser Steel's need to provide medical care for their employees evolved into what is now known as Kaiser Permanente. Competition from abroad and other economic factors caused the mine to close in 1983 after 35 years in operation. Much of the housing stock was either removed, left vacant, or vandalized. By

1994, a school, a new low security prison (1988-2001), and some rental properties remained at Eagle Mountain but it is largely relegated to a ghost town today.

Interstate 10, a major transportation artery connecting the Los Angeles area with Arizona and points east, runs near the southern edge of the project area. The route was probably also used prehistorically as it represented a relatively low (but dry) corridor for travel between the lower Colorado River in Palo Verde Valley and the Coachella Valley. During the early twentieth century, as the region's highway system was gradually developed, the route was known under a succession of different designations, including Legislative Route 64 and U.S. Route 60. As late as 1926, the portion of the route through Chuckwalla Valley was unimproved. Interstate 10 was finally completed by 1968.

### **2.2.6.2 Desert Center**

The town of Desert Center was founded in 1925 by Stephen ("Desert Steve") Ragsdale and his wife. They originally arrived with their four children to the area in 1921 when they bought the homestead of Wilbur C. and Peter S. Gruendike, who in 1913 and 1916, respectively, each received a patent to 160 acres along the Chuckwalla Road between Mecca and Blythe. Peter Gruendike dug a well and installed a windmill on his parcel, some 200 ft. north of the road and their ranch house. The ruins are today listed as site CA-RIV-187. The Ragsdales operated a service station there from 1921-1925 when the State of California moved the Mecca-Blythe Road 1.25 miles south and named it U.S. Route 60. In response, the Ragsdales moved all their buildings about five miles to the southwest along the new highway and founded Desert Center, being 50 miles either way between Blythe and Indio. Ragsdale patented 40 acres at this location in 1927, which eventually grew to 700 acres on either side of the highway. He is said to have accomplished this by having his employees at the restaurant and store file for Desert Entry Lands while they lived and worked at Desert Center and then sell their parcels to Ragsdale. An ordained Methodist Minister, "Desert Steve" ran a dry privately-owned town, representing the law as a Deputy Sheriff. He even managed to organize a school district specifically for the education of his four boys. In addition to the Ragsdale home and those of his employees, the original town included a poured concrete café in the Southwestern adobe style, an attached gas station and mechanics shop, a market, post office, and school. The Ragsdale operation grew to include facilities at Shaver's Summit (later Chiriaco Summit), Box Canyon, Skyway, Hell, and Cactus City.

"Desert Steve" left Desert Center for Santa Rosa Mountain in 1950, leaving the business to his sons, Stanley, Thurman, and Herbert. (Stephen died in 1971.) Stanley eventually purchased the entire town and ran the café and gas station for decades. He died in 1999. The town remains as a waypoint on Interstate 10.

### **2.2.6.3 Water Conveyance**

The Colorado River Aqueduct runs through the study area, with the Eagle Mountain Pumping Station located at the far eastern tip of the Eagle Mountains. The proposed 500 kV transmission line and water line cross underground portions of the aqueduct along Phonline Road, 3.1 and 6.2 miles, respectively, north of the pumping station.

The aqueduct was constructed between 1931 and 1941 by the Metropolitan Water District (MWD) as one of the major Colorado River water delivery public works projects that included the construction of Boulder Dam and the All-American Canal. The first water deliveries began on January 7, 1939. The original engineering was conducted under a \$2 million bond issued from the Department of Water and Power, with construction undertaken by MWD for \$220 million. Originally conceived by William Mulholland and designed by MWD Chief Engineer Frank E. Weymouth, it was intended to provide Los Angeles with more drinking water, but since the end of World War II, the distribution system has been extended to serve much of southern California's domestic, agricultural, and industrial needs from Ventura to San Diego.

The intake pumps are located at Lake Havasu above Parker Dam on the Colorado River. From here, the aqueduct travels 242 miles across the Colorado Desert through 63 miles of open canals, 92 miles of tunnels, and 84 miles of buried conduit and siphons. The aqueduct terminates at Lake Mathews near Corona. Five pumping stations take the water over mountainous terrain. With a capacity of 1,600 ft<sup>3</sup> per second, the average annual throughput is estimated at 1.2 million acre-ft. per year.

As the largest public works project during the Great Depression, the project employed 10,000 people at any one time and when completed, was recognized as a pivotal component of Los Angeles' enormous growth during World War II and in the following decades. It remains a linchpin in southern California's vital infrastructure. In 1955 and 1994, the American Society of Civil Engineers (ASCE) recognized the Colorado River Aqueduct as one of the "Seven Engineering Wonders of American Engineering" (ASCE Website).

#### **2.2.6.4 Desert Training Center/California-Arizona Maneuver Area (DTC/C-AMA)**

The deserts of southern California and western Arizona became the focus of important training exercises during World War II. This activity left abundant physical traces on the landscape.

The Desert Training Center (DTC) was opened on April 30, 1942. The normally serene desert gave way to the rumble of tanks and staccato of machine guns for almost two years, until 1944. The largest military training installation ever to be created (approximately 10,130 miles<sup>2</sup>), the facility had General George S. Patton, Jr., as its first commanding officer. Patton proclaimed the DTC as "probably the largest and best training ground in the United States. It served the vital purpose of conditioning troops to desert warfare conditions and tactics in preparation for the North African Campaign. The center was also used to field-test equipment and supplies. The original facility extended from the Colorado River on the east to a point slightly west of Desert Center on the west, and from Searchlight, Nevada, on the north, to Yuma, Arizona, on the south. This region was ideally suited for the purpose, in that it contained a variety of terrain types and no large population centers.

Patton left with his troops for North Africa later in 1942, but the facility continued to operate throughout the war, processing several million troops. However, following the success in North Africa, an emphasis on desert warfare was no longer necessary. The name of the Desert Training Center was changed to the California-Arizona Maneuver Area (C-AMA or CAMA) on October 20, 1943, and its purpose was expanded to serve as a simulated theater of operations emphasizing large-scale logistics and not exclusively desert warfare tactics. This included

solving complex communications and supply problems and Army Air Forces support of ground troops. The facility provided training for combat troops, service units, and staff under conditions similar to a combat theater of operations. Under Major General Charles H. White, the training area was enlarged by another 6,251 miles<sup>2</sup> and extended from Gila Bend on the east to Pomona on the west, and from Yuma on the south to Boulder City on the north. Command would change three more times before C-AMA closed.

Headquarters and the first camp for the DTC/C-AMA was at Camp Young, located at a place called Shaver's Summit, now known as Chiriaco Summit after Joseph Chiriaco, from whom Patton bought 28 acres for a token sum of five dollars. Camp Young is listed as a California State Historic Landmark (No. 985). This location and others along the Chuckwalla Valley corridor were chosen because of the easy access to supplies via the road to the Coachella Valley and the SPRR, and ample water to be derived from the Colorado River Aqueduct. Although most closely associated with Patton's short residence during the formative months of the DTC, Camp Young is located some 29 km west of Desert Center and the southern end of the study area.

In all, there were 11 major DTC/C-AMA camps, seven of them in California and four in Arizona. Camp Rice, home to the 5th Armored Division and Rice Army Airfield, was one of the smaller bases strategically located on the Atchison, Topeka and Santa Fe Railroad line west of Parker (Lynch et al. 1982). Larger divisional camps that may have deployed troops into the project area include Camp Desert Center, Camp Iron Mountain, Camp Granite, and Camp Coxcomb, located north of Desert Center. A network of railroad lines and major roads connected all the divisional camps and depots. Farther out across the desert landscape were the smaller camps and bivouacs for specific field exercises. For example, a platoon might build rock blinds from which they could practice the defense of a mountain pass.

During the DTC period, exercises emphasized operating with a restricted water supply, sustaining operations remote from railheads, navigating and resupplying under the cover of darkness, and combined training with the Army Air Forces. A four-phase training program was developed that would not exceed six weeks in duration. First phase training emphasized the individual, crew, squad, section, and platoon. The second phase concentrated on the company and battery. The third phase consisted of battalion training, and the fourth emphasized the combat team whereby armored units, air, and ground forces were all coordinated. The training program ended with an exercise lasting several days and covering about 300 miles. Advanced supply bases were established along projected routes, tactical maneuvers were conducted in darkness, and tactical bivouacs were established in the presence of hostile air and mechanized threats.

Training during the C-AMA period consisted of a 13-week program. Firing ranges of all types were constructed, and troops were trained with pistols, machine guns, rifles, and artillery. They also took courses in infantry tactics using live ammunition. Emphasis was placed on development of platoon efficiency. Platoons of 40 to 45 men were sent out on six-day field problems involving directional skills and coordination with supply units. The three final weeks consisted of maneuvers. The first exercise involved a defensive force establishing a position for the purpose of protecting a vital area or installation. The second exercise consisted of field maneuvers that simulated a campaign of approximately 11 days and 10 nights designed to test

the endurance of units and their ability to fight and resupply over great distances while providing daily maintenance of equipment and recovery and evacuation of disabled vehicles.

Spartan camp conditions were deliberately maintained to provide soldiers with a realistic, battle-ready experience. Through the history of C-AMA, orders were periodically given to prevent any center from lapsing into more comfortable conditions, although Camp Young appears to have been an exception. No units were allowed to stay too long at any center. The most mobile were supplied with B-rations and C-rations, and no screened eating areas would be provided. The Ground Surgeon was well aware that during the warmer seasons, flies would cause near-epidemics of dysentery. Screened eating areas were therefore advised for service units that had to remain in certain areas, such as base camps, for longer periods. However, orders were subsequently given that no new screened areas were to be built and old ones would not be maintained. Iced fresh food was also prohibited. Lowered morale from the monotony of B-rations, disease outbreaks and even some reported deaths, and public protest eventually led to some relaxation of these severe conditions. Shortly before C-AMA was closed, all units were allowed to enjoy A-rations.

The divisional camp closest to the project area was Camp Desert Center, located between Camp Young and Desert Center and extending immediately east of Eagle Mountain Road and north of the old highway that preceded Interstate 10. Very little documentary information is currently known for Camp Desert Center, nor is its specific history and range of functions clearly understood. The BLM did not include Camp Desert Center in its interpretive plan for the major camps of the DTC/C-AMA, although it includes preservation and interpretive goals for the other major sites. The 34,000-acre area included a cantonment with tent housing, an observer's camp, an ordinance camp, an evacuation hospital, a quartermaster truck site, and an extensive maneuver area.

## 2.3 PREVIOUS CULTURAL RESOURCES SURVEYS

A search of cultural resource records at the Eastern Information Center (EIC) was performed on April 25, 2008, supplemented by reports available at ASM Affiliates. The search identified 26 previous reports within a 1-mile radius of the project alignment, of which nine are mapped as including portions of the project area proper. A total of 31 cultural resources are recorded within a 1-mile radius of the project area. Of these, only two falls at least in part within the project: an underground portion of site P-33-006726, the Colorado River Aqueduct, which is crossed by the Preferred Transmission and Water Lines and the Eagle Mountain Mine and Townsite, P-33-006913. The townsite record includes the railyard. Additionally, the project alignment intersects the Eagle Mountain Industrial Railroad, which can be considered part of the mine complex, in at least two locations. The results of the records search are addressed in a separate report prepared by ASM for the proposed Eagle Mountain Pumped Storage Project (Appendix B) and are summarized below.

Several of the previous reports represent linear studies that extended within or ran closely parallel to the project area proper along about 60 percent of its length. References for these reports can be found in Appendix B. Previous studies that are likely to be found to have



addressed significant portions of the project's ultimate APE include Cowan and Wallof (1977; RI-00220), Wallof and Cowan (1977; RI-00222), Carrico et al. (1982; RI-00221), Bull et al. (1991; RI-03321), Love (1994; RI-03949), and Schaefer (2003):

- Cowan and Wallof (1977) and Wallof and Cowan (1977) reported a 1976 archaeological survey of 200 linear miles. This study area overlapped or closely paralleled a substantial portion of the present project area proper from west of Ford Dry Lake nearly to the project area's eastern terminus. The 1976 survey corridor was 400 ft. wide and was surveyed intensively, in 12-meter interval transects. However, standards for recording sites were relatively restrictive: resources classified as isolates included lithic scatters with less than 15 items per 10 m<sup>2</sup>; ceramic scatters with less than 5 items per 10 m<sup>2</sup>; prehistoric trails, rock rings, and other isolated features; and historic remains except for pre-1950 scatters with more than 10 items per 10 m<sup>2</sup>, structures, military encampments, and mine buildings. Most of these would be classified as sites under today's standards. These "isolates" were not recorded by Cowan and Wallof at the Eastern Information Center and only appear as tabular listings in their report. Some may have been recorded during subsequent surveys along the same corridor.
- Carrico et al. (1982) reported a 1980 survey of the same alignment as the 1976 survey. The 1980 survey also included a corridor that was 400 ft. wide and was surveyed in 12-meter intervals. Criteria for distinguishing sites from isolates were less restrictive than in the 1976 study: isolates were defined as five or fewer prehistoric or historic artifacts within a 25-meter distance.
- Schaefer (2003) reported a Class I and II study for 527 linear miles of alternative routes for a power transmission line, including 16.5 miles of new surveys. The alignments addressed were generally the same as those previously addressed in the reports by Cowan and Wallof (1977), Wallof and Cowan (1977), and Carrico et al. (1982). Additional fieldwork in 2002 consisted of surveying 16.5 miles of generally 1-mile long, 150-meters (500 ft.) wide sample units with transects at 20 meters (65 ft.) intervals. Three of these transects (ASM Survey Transects C, E, and F) in Chuckwalla Valley coincide with the present project area proper.
- Bull et al. (1991) reported a 1990 survey of several thousand acres, overlapping most of the initial 2 miles at the extreme western end of the present project area proper at Eagle Mountain. This area is generally characterized by relatively rugged terrain, and the 1990 survey coverage in this area was not systematic, but was focused on ridge lines, saddles, and drainages. Scatters of more than three items within a 25-meter radius were classed as sites.
- Love (1994) reported a negative 1994 reconnaissance of a 14-miles corridor, approximately 2 miles of which coincided with the present project area proper, southeast of Eagle Mountain at the western end of Chuckwalla Valley. The study area "was visually inspected by driving on existing roads and doing on-foot spot checks" (Love 1994:2).

## 2.4 KNOWN AND POTENTIAL HISTORIC PROPERTIES

The list of cultural resources within the expanded APE differs from the list of resources in the previous draft HPMP now that the applicant proposed transmission line and substation has been replaced by the FERC recommended Transmission Route Alternative 1A and alternative substation A-1. This new draft HPMP reflects that change. Based on the records search and two recent intensive pedestrian surveys of the project alternative transmission and water lines and the expanded Area of Potential Effects (see Appendix C) (Schaefer and Iverson 2009, 2010; Schaefer and Laylander 2008) five cultural resources are identified in the expanded APE (Table 4). One resource is likely eligible for listing in the National Register of Historic Places (NRHP). That is the Colorado River Aqueduct (P-33-006726). It occurs as a deeply buried massive underground pipeline where the transmission line and waterlines cross the aqueduct route. It is virtually invisible on the surface except for a road and earthen berm.

Table 4. Recorded Cultural Resources within the Eagle Mountain Pumped Storage Project Expanded APE

Primary Number	Resource	Date	NRHP Eligibility Recommendation
P-33-006726	Colorado River Aqueduct	1931-present	Recommended eligible
P-33-006913	Eagle Mountain Mine and Townsite	1947-1983	Previously determined not eligible but requires re-evaluation as potential district
DS-326	Two historic cairns	1940s	Requires evaluation
DS-327	Historic mining claim marker	1950s-1960s	Not eligible
DS-495	Historic DTC/C-AMA refuse deposit	1940s	Requires evaluation

The other archaeological sites were previously recorded by ECORP (Chandler et al. 2010) and revisited during the 2010 ASM survey addendum. Site DS-495 is a moderately dense historic refuse scatter that dates to the World War II era DTC/C-AMA, located on private land in the Transmission Route Alternative 1A right-of-way. Measuring 85 x 62 ft., the scatter contains over 200 metal lids and lid fragments embossed with “CONTAINER M8.7”, some with olive drab enameling. Six metal lids were embossed with “CONTAINER 76MM M21.” One suggestion is that these items derive from practice land mines. Other artifacts included wire cut nails, screws, and one metal belt buckle. More recent plastic irrigation drip lines were also discarded in the vicinity. Surface observations suggested the presence of buried deposits.

The other two sites are located on BLM land within the margins of Alternative Substation A-1. DS-326 consists of two historic rock cairns, one with associated glass, of unknown date but which may also be contemporary with the DTC/C-AMA. They are located in a 15 x 4 ft. space, each cairn being of no more than 48 and 26 inches diameter, respectively. These features may be claim markers related to a nearby placer mine. Site DS-327 is a historic standing wood post with steel beverage can affixed by two nails. It appears to be associated with a nearby placer mining prospect but has no documented mine patent or record. It may date to the 1950s-1960s. A

previously recorded site listed in the addendum survey report and also in the substation footprint, DS-330, has subsequently been removed from the inventory because it was determined to be less than 50 years old (ECORP Archaeologist, Elizabeth Denniston, 2010, personal communication).

Kaiser's developments of Eagle Mountain Mine are located within the water reservoirs and pumping station. A small portion of the western margin of the Eagle Mountain Townsite appears to be located within the project APE, principally in the vicinity of the desalination area and pipeline. This portion of the townsite contains foundations and footings of demolished residences of mining employees. Other portions of the townsite contain still-standing private residences, administration buildings, and community buildings. Some of the residences continue to be inhabited and a school is located on the premises. One building was used as a privately run prison for a short time. The remaining buildings have undergone varying amounts of alternation since the mine closed. Both the Mine and Townsite are recorded as P-33-006913. In a previous consultation, the BLM and SHPO concurred that they are not eligible for listing in the NRHP (Letter from Cherilyn Widell to Henri R. Bisson, District Manager, BLM California Desert District, Dec. 12, 1996). The bed of the Eagle Mountain Railroad through the project area has not been officially recorded or evaluated but is part of the mine and townsite complex. Only the bed and ballast remain as the steel rails and ties have been removed. There are plans to reuse the rail bed and restore the rail line for the proposed Eagle Mountain Landfill Project.

Based upon consultation on the status of the Eagle Mountain Mine and Townsite, SHPO requested that it be re-evaluated because at the time of the original 1996 determination and SHPO consultation, the site was less than 50 years old. SHPO explains "Today they are now 50 years old and would not have to meet this higher level of eligibility. The HPMP should provide for consideration of such an evaluation if these properties could be adversely affected by the undertaking" (Donaldson 2009). Given that a portion of the Townsite, Mine, and Railroad are located within the project APE but that the private property in question is not currently open to investigation, provisions are therefore provided below for a new inventory and evaluation after the project has been approved, and prior to any construction, concurrent with final engineering design.

Previously five historic can and trash scatters were recorded in the applicant proposed transmission line alignment (P-33-17643-17647) that is no longer part of the "expanded APE." The historic-period sites within the western substation location all appear to represent the disposal of household refuse along a dirt road during the late 1940s or 1950s, most likely from the community of Desert Center via Ragsdale Road. Because of their spatial dislocation from specific Desert Center households or enterprises proper, these sites are not associated with known persons or specific activities or time periods with historic significance. Additionally, the artifacts associated with the site, while retaining integrity of location and in some cases condition, they do not signify resources that will lead to a greater understanding of the time period in the Desert Center area. They are therefore determined as not eligible for listing in the NRHP by ASM Affiliates, acting on behalf of FERC. SHPO concurred with this determination on October 26, 2009 (Donaldson 2009).

An isolate, P-33-17648, consists of a concrete post embedded in the ground with a "C" inscribed on its eastern end, representing a California highway right-of-way monument. It was recorded as

an “isolate” on a DPR Primary Record but could also be interpreted as an “object” An abandoned dirt road trending east west off of Ragsdale Road runs north of the marker. The marker is embedded in a compact desert pavement, with at least four aqua bottle glass fragments from the same vessel scattered on the ground surface east of the isolate. Such monuments were used between 1914 and 1934. This one may date to a survey for the Mecca-Blythe road (not in the project area) and predates the 1925 relocation of the route 1.25 miles to the south as U.S. Highway 60.

#### **2.4.1 Native American Consultation to identify Traditional Cultural Properties**

FERC authorized ASM to conduct government-to-government consultation in order to gather information on any traditional use areas and places of traditional or cultural significance that may be affected by the proposed project. GEI Consultants, Inc. also participated in initial consultation. This consultation was conducted under 18 CFR 380.12 and 18 CFR 380.14 of the National Environmental Policy Act as well as Executive Orders 13007 and 13175, and FERC policy on consultation with Indian Tribes (Order No. 635). A following is a summary of the consultation results.

Contact with Native Americans that have traditional ties with the region in which the proposed Eagle Mountain Pumped Storage Project is located began in September 2007 and will continue as needed throughout the duration of the proposed project permitting and construction. On September 26, 2007, GEI mailed a project notification letter to eight tribes requesting input on the proposed project Pre-Application Document (PAD). These included:

- 1) Agua Caliente Band of Cahuilla Indians
- 2) Barona Band of Mission Indians
- 3) Cabazon Tribal Business Committee
- 4) Cahuilla Band of Mission Indians
- 5) Chemehuevi Tribal Council
- 6) Morongo Band of Mission Indians
- 7) Torres-Martinez Desert Cahuilla Indians
- 8) Twenty-Nine Palms Band of Mission Indians

Of these tribes, one tribe (Agua Caliente Band of Cahuilla Indians) requested a meeting to discuss the proposed project, and one tribe (Morongo Band of Mission Indians) confirmed an interest in the proposed project area. On October 23, 2007, representatives from GEI and Ruettinger, Tonelli, and Associates met with Tribal Historic Preservation Officer (THPO) staff, Sean Milanovich, and tribal representative, Thomas Davis at the Agua Caliente Band tribal headquarters in Palm Springs, California to discuss the proposed project and cultural resource concerns. At this meeting, Chairman Richard Milanovich requested that GEI hold a joint meeting and field visit with all tribes contacted for the proposed project. On March 7, 2008, GEI mailed a meeting and field visit invitation to the eight above-listed tribes; however none of the tribes responded to the invitation.

On April 16, 2008, ASM Affiliates mailed a Sacred Lands File records search request to the California Native American Heritage Commission (NAHC) and received a records search from the NAHC on April 30, 2009 stating search results were negative for sacred lands within the proposed project area.

On June 16, 2008, GEI mailed a Notice of Draft License Application and request for comments to the eight above-listed tribes. Of these tribes, one tribe (Agua Caliente Band of Cahuilla Indians) requested additional project information. Mr. Sean Milanovitch requested and received the Draft License Application Initial Statement Exhibits, A-G (Public Information); Draft License Application Exhibit E, Volume 2 (Privileged Information); and the Eagle Mountain Pumped Storage Project Class I Inventory Report and site records.

On August 29, 2008, Kurt Russo (Native American Land Conservancy) contacted GEI and requested to be placed on the consultation list for the proposed project. On September 15, 2008, GEI mailed Mr. Russo the Draft License Application Initial Statement Exhibits, A-G (Public Information) and the Eagle Mountain Pumped Storage Project Class I Inventory Report without the site records.

On July 1, 2009, Ann Miles (FERC) mailed a request for consultation on Licensing to two tribes that initially indicated an interest in the proposed project (Agua Caliente Band of Cahuilla Indians, Morongo Band of Mission Indians). ASM Affiliates, on behalf of FERC, initiated Government-to-Government Consultation with the following ten tribes:

- 1) Agua Caliente Band of Cahuilla Indians (Ms. Patricia Tuck, THPO)
- 2) Barona Band of Mission Indians
- 3) Cabazon Tribal Business Committee
- 4) Cahuilla Band of Mission Indians
- 5) Chemehuevi Tribal Council Morongo
- 6) Colorado River Indian Reservation
- 7) Fort Mojave Indian Tribe
- 8) Morongo Band of Mission Indians
- 9) Torres-Martinez Desert Cahuilla Indians
- 10) Twenty-Nine Palms Band of Mission Indians

All tribes were mailed an initial consultation letter on September 10, 2009, and a copy of the proposed project's Historic Properties Management Plan (HPMP) on September 17, 2009. This revised HPMP has also been distributed to all consulting tribes. ASM contacted tribal representatives from all ten tribes by electronic mail and telephone calls to determine the need for further work. As of the date of this report, additional consultation concerning the proposed Eagle Mountain Pumped Storage Project has not been requested by any of the above listed tribes; however the following requests have been documented:

Based on a request for clarification from FERC another consultation letter was mailed on December 4, 2009 to the above listed tribes with an updated map of the project APE, including all elements within the project boundaries. The letter also included a confidential map and

discussion of recorded trail segments and projected trail routes in the project vicinity, which was a response to one tribal member about the location of trails in the project area. The letter demonstrated that the previously recorded trail is located to the south of, and outside of, the APE. The most significant preserved segment, documented as CA-RIV-72, is located five miles west of the project APE. The letter was followed by a telephone call on December 13, 2009 to find out if there were any tribal concerns involving sites or Traditional Cultural Properties in the project APE.

At present, no Traditional Cultural Properties have been identified in the project APE by any Native American tribes. The Augustine Band of Cahuilla Mission Indians has recommended Native American monitors during construction activities. The Cabazon Band of Mission Indians and Agua Caliente Band of Cahuilla Indians have recommended archaeological monitors during construction activities.

#### **2.4.2 Site Relocation and Evaluation of Conditions**

The Eagle Mountain Pumped Storage Project is an unconstructed project for which there are no extant facilities related to its construction, operation, or maintenance other than several existing graded roads that were established as a part of the former mining operation. The existing Kaiser Road is the access road to the facility and portions of the water line route. Central portions of the existing Eagle Mountain Road will be used to access the Transmission Line corridor. Current conditions were evaluated as part of the License Application and applicant prepared Environmental Impact Statement (2009).



## 3.0 PROJECT MANAGEMENT, PRESERVATION GOALS AND PRIORITIES

The purpose of the Eagle Mountain Pumped Storage Project is to provide system peaking capacity and transmission system regulating benefits to regional electric utilities. Eagle Crest Energy must retain the ability to construct, operate, and maintain the facility in a cost-effective manner. While doing so, however, the Project must also take reasonable steps to preserve the integrity of cultural resources that are eligible for listing in the NRHP (i.e. historic properties) that are under Eagle Crest Energy's management or within the APE.

In this case the only known historic property in the APE is the Colorado River Aqueduct. Additional sites that may be discovered and/or determined eligible for NRHP listing during the term of the license, particularly during construction, must be identified and also protected. The primary goals of the HPMP are to” protect historic properties, provide training to Eagle Crest Energy personnel responsible for implementing the HPMP, assure ongoing consultation with the California SHPO, BLM, FERC, Riverside County, interested Tribes, and other consulting parties about the management of cultural resources by Eagle Crest Energy and to periodically evaluate the effectiveness of the HPMP for the project. Each of these goals is discussed below in this section as follows. The purpose of the preservation goal will be discussed, then the management activity associated with addressing this goal is described, and then the appropriate management decisions that respond to the goal and management activity are enumerated.

While using this HPMP, please refer to the following appendices:

- Appendix A. Plan and Procedures Addressing Unanticipated Discoveries of Cultural Resources and Human Remains developed for this project.
- Appendix B. Class I and Class III Cultural Resources Studies.

### 3.1 PROTECT KNOWN HISTORIC PROPERTIES

**Purpose:** Protect Historic Properties

- Historic properties are those cultural resources such as prehistoric or historic archaeological sites, architecture, structures, objects, and Traditional Cultural Properties that meet the criteria (36 CFR 60.4) for listing in the NRHP.

Of the cultural resources recorded within the project boundaries (see Table 4), only the Colorado River Aqueduct (P-33-6726) is evaluated as potentially eligible for listing under Criterion “A”: broad patterns of history, and Criterion “C”: embodies distinctive characteristics of a type, period, region, or method of construction. No formal determination of eligibility has been made, but the Aqueduct will be treated as potentially eligible.



**Management Activity:** Design transmission line and water pipes to avoid direct or indirect impacts to the buried portion of the Colorado River Aqueduct. Inspect once every year to observe whether conditions are stable or if any disturbance or deterioration has occurred.

Eagle Crest Energy will obviously need to design transmission tower locations, plan conductor installation procedures, and design water line placements to avoid impacts to this crucial element of southern California's water delivery infrastructure. Consultation with the City of Los Angeles, Metropolitan Water Department (MWD) will occur for that purpose. The Aqueduct is buried in the areas of the Project APE and no impacts to its integrity are anticipated.

- The inspections will be made by a ground surface level as appropriate.
- Digital photographs will be taken and compared with photographs from the previous inspections.
- The Project Environmental Coordinator or designee will summarize observations made during inspections every year during construction. This summary will be included in the Historic Properties Management Plan Implementation Summary Report (HPMP Implementation Report). Eagle Crest Energy will provide a HPMP Implementation Report on a 1-year review cycle after construction, in coordination with California SHPO. The frequency of reporting could be decreased in the future if the FERC and other consulting parties agree that annual reporting is no longer warranted.
- Although none are presently identified, in the event that interested Indian tribes identify Traditional Cultural Properties in the future during the planning, construction, and/or operation of the project within the APE, the Project Environmental Coordinator shall direct qualified individuals to conduct additional consultation with the Indian tribes, BLM, and SHPO to evaluate and document the properties in accordance with National Register Bulletin 38 (Parker and King 1998). If the properties are determined to be eligible for listing in the NRHP, appropriate measures will be taken to mitigate adverse effects through consultation with the Indian Tribes, BLM, and SHPO. Priority will be given to preservation in place when possible.

**Management Decision:**

- Inspect the Colorado River Aqueduct in the area of the APE every 1 year.
- Provide a summary of observations on a 1-year cycle during the construction phase that includes an annual HPMP implementation report and a 1 year reporting cycle thereafter the HPMP has been fully implemented. The frequency of reporting could be decreased in the future if the FERC and other consulting parties agree that annual reporting is no longer warranted.
- If notable changes are observed in site conditions consult with SHPO to determine if further remedial actions are appropriate.
- Conduct appropriate consultation and treatment if Traditional Cultural Properties are identified in the future.

## 3.2 INVENTORY AND EVALUATE CULTURAL RESOURCES WITHIN THE KAISER MINE PROPERTY

**Purpose:** Identify and Protect Historic Properties in the APE within the private Kaiser Eagle Mountain Mine and Townsite.

The Kaiser Property where the Townsite, Mine, Railroad, and other facilities are located is private property that cannot be accessed at present. Although the Townsite, Mine, and Railroad terminous were previously determined to be not eligible for listing in the NRHP, with SHPO concurrence in 1996, the primary determinant at the time was that all of the elements were less than 50 years old. Now that the oldest elements are more than 63 years old, a new inventory has been recommended by SHPO as a result of current consultation, and by FERC in their Request for Clarification. FERC has also noted that the 1982 site record for the Mine and Townsite (CA-RIV-6913) and 1991 cultural resources survey are out of date and no longer meet current standards. Therefore, a new inventory of this portion of the APE will be undertaken in compliance with Section 106 of the National Historic Preservation Act and according to regulatory procedures provide in 36 CFR 800. The inventory will also include other accessible portions of the APE within the Kaiser property. Although the project APE intrudes on only a small portion of the Townsite where most of the buildings have been removed and only foundation slabs remain, FERC has directed that the HPMP provide provisions to re-record the entire Townsite and associated portions of the Railroad, and to consider the various elements as contributors to a National Register district. FERC also directed that SHPO consultation should occur to determine if a new survey of the Kaiser lands would be necessary because the previous survey is now 18 years old. The revised Working Draft HPMP should also include measures to address potential adverse effects of the project on all historic properties within the revised APE.

**Management Activity:** A Work Plan will be developed and executed following issuance of the FERC license and upon gaining legal access to the subject lands. A phased approach will be taken in order to make prudent and well-informed decisions on Section 106 compliance within the Kaiser property. The first phase will be a scoping reconnaissance of the APE within the Kaiser property and the entirety of the Eagle Mountain Townsite. Portions of the site have been re-used from 1988 until 2003 for a prison. A high school and residential community has occupied portions of the site until recent years. Today it exists as a mix of abandoned and re-occupied post-war minimal traditional style dwellings, Kaiser operations buildings, modern buildings, ruins, and foundations. Questions concerning what remains of the original Townsite plan and integrity of the Eagle Mountain Townsite will be assessed to determine whether a district is feasible or warranted and what the scope of a survey should include. This information will be applied to the development of a Work Plan for the recording and evaluation of the site.

- The Work Plan will include a draft historic context and historical information about the footprint and content of the original Townsite and its development over time. The context will include a consideration of the Eagle Mountain as a late example of a company town in the American West. This information will be used to develop an approach to the documentation of the site and consideration of whether a potential district may exist. The draft Work Plan will be submitted to SHPO, BLM, and FERC for review, comment, and approval of the survey approach.

- Updates to DPR 523 forms will be developed for the Townsite, Mine, and Railroad and will be used as the basis for formal evaluations of the Townsite, Mine, and Railroad for listing in the NRHP will be made according to 36 CFR 800 and 36 CFR 60.4. Individual buildings or structures will be documented on DPRb forms. A District Record (DPR 523d) will be completed, if appropriate. Any other resources discovered during survey also will be documented and evaluated. The results will be provided in California Archaeological Resource Management Report (ARMR) format and to the Secretary of the Interior's standards for archaeological reporting.

**Management Decision:**

- SHPO, BLM, and FERC concurrence will be obtained for the determination of NRHP-eligibility of the Eagle Mountain Townsite, Mine, Railroad, and any other documented cultural resources within the project APE, including consideration for the potential of any resources as contributing elements to a historic district, if evidence exists for one to be present.
- If any resources are determined to be historic properties, recommendations will be developed to avoid or mitigate impacts through appropriate treatments in accordance with the Secretary of the Interior's standards. These include in order of preference: project design to avoid direct impacts; moving of standing buildings or structures in the APE to other areas of the Townsite or Mine so that integrity of setting, feeling, and materials can be retained; or data recovery and documentation.
- Findings of Effect will be obtained from SHPO.

### **3.3 PLAN AND SCHEDULE TO EVALUATE CULTURAL RESOURCES WITHIN THE EXPANDED APE**

**Purpose:** To provide a plan and schedule for NRHP evaluations, assessment of effects, and identification of measures to resolve adverse effects within the FERC Staff recommended transmission line corridor and substation.

The following plan and schedule details the approach for the treatment of cultural resources that have been identified within the FERC-Staff Recommended Transmission Line (Alternative 1A) and substation location (Eastern Red Bluff Substation). This treatment plan is designed to provide the necessary steps for compliance with Section 106 of the National Historic Preservation Act, and in conformity with the Secretary of the Interior's Guidelines for the Treatment of Cultural Resources.

Three sites are located in the transmission line and substation APE. They include DS-495, a historic World War II DTC/C-AMA era refuse deposit; DS-326, two historic era rock cairns probably associated with a placer mining claim; and DS-327, a historic claim marker consisting of a wooden post with attached steel can. All of the cultural resources under consideration are

located on the edge of the respective APEs. DS-495 is located at the boundary between Transmission Line Alternative 1A and Transmission Line Alternative 1 B. DS 326 is located within the western margin of the Substation A1 and DS-327 is located directly on the southern boundary line of Substation A1.

**Management Activity:**

- Taking the approach that preservation in place is the preferred treatment alternative, all three sites are to be treated as if they are eligible to be listed in the NRHP and that avoidance through project design and monitoring is the preferred method to avoid adverse effects. Field evaluation through sampling excavation only would be appropriate at the World War II refuse deposit, DS-495, but excavation itself constitutes an impact to the site if preservation in place is a viable treatment approach. Therefore preservation through project design is recommended as the first priority through the strategic placement of transmission line tower footprints, access roads, and construction equipment. Temporary fencing prior to construction and implementation of the monitoring program as specific in the HPMP will ensure site protection.
- All field testing will occur under a Fieldwork Authorization from the BLM, as the amount of soil to be excavated falls is less than the maximum allowed under FLPA permits. An ARPA permit is unlikely to be required although BLM will be consulted as to the appropriate permitting vehicle. The Fieldwork Authorization Request will include a detailed work plan and schedule and will meet the Secretary of the Interior's Standards for the treatment and reporting of archaeological finds..
- If site DS-495 cannot be preserved through project design then a formal program of evaluation is prescribed. The historic context and eligibility for listing in the NRHP will be established through a combined program of historical research and field excavation. The research protocol will be based on one being prepared for the BLM and California Energy Commission (CEC) by Matt Bischoff (on-going draft development). Individual sites are being considered within a broader landscape context and this site will be evaluated as a possible contributor to a historic landscape, as well as an individually for its potential to contribute to previously undocumented aspects of the World War II training program. The Bischoff research protocol prescribes field and laboratory recording standards and a context for investigations of DTC/C-AMA sites within a regional covering the Chuckwalla Valley and environs from the Colorado River to Desert Center.
- Applying the DTC/C-AMA context, archival research will be conducted at the Patton Museum at Desert Center and appropriate World War II era sources to identify the date and function of artifacts recovered from the testing program. The relationship of the site to other DTC/C-AMA sites will also be established to determine the source of desert training activities that produced this assemblage and what significance they had in understanding the training program. Possible sources of the embossed metal covers include practice mines or ration cans.

- Field investigations will involve application of standard testing methods, including excavation of a cross-section of the feature to determine subsurface components and feature characteristics. Only half the feature will be excavated unless it is found that a 50 percent sample does not adequately characterize the variability of artifacts. A stratigraphic profile will be drawn and photographed and removed soils will be appropriately screened to recover all artifacts.
- One question to answer is whether the surface scatter represents a trash pit with more substantial subsurface artifacts or is it merely a surface scatter of material. A more substantial and diverse artifact assemblage would indicate a significant site under criterion “D” while a surface scatter of limited information likely would not be significant. Embossed marking on metal lids will be identified as to meaning, date, and function. Other artifact categories will also be identified and catalogued.
- Field investigations at the historic cairns, DS-326, will involve recovery of historic artifacts to more specifically determine a date and section of both cairns to determine if additional artifacts are present. Additional historical review of mining claims and plats will be undertaken to determine a date. No additional field recovery is necessary at the mining claim, DS-327, although can morphology may more specifically indicate the age. Both sites will be ineligible for listing in the NRHP if found to be less than 50 years old. Lack of additional dating information or historic contextual information will also likely result in an evaluation of ineligibility.
- An evaluation report to ARMR and BLM standards will include an introduction, historic context, field methods discussion, results of fieldwork, artifact descriptions and analysis, interpretation of finds, formal evaluation of NRHP eligibility, and artifact catalogue. Appropriate field photographs and top plans and profile drawings will be included, along with photographs of representative artifacts. The evaluation recommendations in the report will be used by BLM and FERC for a determination of NRHP-eligibility and of effect from the undertaking.
- No Native American Monitoring or consultation is expected as all the transmission line and substation sites are historic Euro-American. If prehistoric artifacts are encountered, work will cease until a Native American consultation is initiated and a monitor is secured.
- Results of field investigations will be summarized in updates to DPR forms. These will be submitted to BLM for review prior to filing at the Eastern Information Center.
- A schedule for evaluation activities is based on weeks following a notice to proceed :
 

Submit Work Plan and Field Authorization Request	Week 1
Receive Fieldwork Authorization from BLM	Week 2
Complete Field Investigations	Week 4
Submit Draft Report to BLM and FERC	Week 8
Receive comments from BLM and FERC	Week 12
Submit final report and DPR forms	Week 14

Consult with SHPO according to PA

Week 20

**Management Decision:**

- With finalization of transmission line right-of-way and substation boundaries and project design, determine if sites can be preserved through avoidance. Assume NRHP eligibility and obtain FERC and BLM Finding of No Effect with SHPO concurrence.
- If avoidance is not feasible, conduct historic and archaeological investigations for a formal evaluation of eligibility for listing in the NRHP. If any resources are determined to be historic properties, recommendations will be developed to mitigate impacts through appropriate treatments in accordance with the Secretary of the Interior's standards.
- Findings of Effect will be obtained from SHPO.

### **3.4 PROVIDE HPMP IMPLEMENTATION WORKER ENVIRONMENTAL AWARENESS PROGRAM**

**Purpose:** Familiarize Eagle Crest Energy personnel with cultural resources issues, the HPMP, and Eagle Crest Energy's responsibilities in implementing the HPMP.

**Management Activity:** Develop project-specific education program.

- A qualified archaeologist will, in consultation with participating Indian Tribes, develop a cultural resources element for the Worker Environmental Awareness Program (WEAP) that is tailored to the Eagle Mountain Pumped Storage Project and workforce. This Program will focus on possible discovery and mitigation procedures during the construction phase of the Project as well as preservation obligations of Project staff.
- The Program will include a printed handout for all project personnel and a Power Point presentation or video that all project personnel will be required to view.
- The Program will present concepts of cultural resources management in a simple, understandable format, including a review of preservation laws and sanctions, examples of possible discoveries, and notification procedures in the event of discoveries. These are key elements of the HPMP including the Unanticipated Discoveries Plan and the steps to follow in evaluating potential cultural resources needs that are triggered by proposed construction activities.
- The Program will include a Monitoring Protocol and Provisions for Enforcement that may be presented to refresh personnel and introduce new staff to cultural resource concepts and project-specific issues (see Section 3.7 below).
- Project equipment and vehicle operators will be educated on the importance of staying within project boundaries and also the prohibitions of going off designated routes of travel such as Eagle Mountain Road or Kaiser Road or entering signed site boundaries marked as "environmentally sensitive."

**Management Decision:** The Monitoring Protocol and Provisions for Enforcement will be incorporated into the facilities Worker Environmental Awareness Training Program.

### **3.5 OFFER OPPORTUNITIES FOR PUBLIC INTERPRETATION**

**Purpose:** Provide opportunities for the public to learn of the prehistory and history of the project area and the Project itself. Unlike other hydroelectric projects where public access and recreational opportunities may be afforded, safety concerns and proximity to a proposed landfill project preclude offering public access within the core of the pumped storage project boundaries. Opportunities for public interpretation are therefore extremely limited. Some appropriate signage that interprets the history of the area already exists, including the 2009 E Clampus Vitus monument on Eagle Mountain Road for the 36<sup>th</sup> Evacuation Hospital associated with the World War II Desert Training Center and a Riverside County historical marker that acknowledges the Iron Chief, Eagle Mountain, and other mines of the area. The Desert Training Center/California-Arizona Maneuver Area is also thoroughly and professionally interpreted at the General Patton Memorial Museum in Chiriaco Summit, located off of Interstate 10 between Indio and Desert Center. The prehistory and Native American cultural traditions of the region are interpreted at the Agua Caliente Cultural Museum in Palm Springs, the Malki Museum on the Morongo Indian Reservation, the Palm Spring Desert Museum, the Coachella Valley Museum and Cultural Center, and at Joshua Tree National Monument.

**Management Activity:** Develop informative signage that will be available to the public.

Eagle Crest Energy will develop and install one weather-tolerant sign that will be placed outside the main gate of the facility. The sign will provide information about the prehistory and history of the general area, Native American groups who inhabited the area, and background on the functioning of the Eagle Mountain Pumped Storage Project. Local museums and historical monuments will also be identified.

**Management Decision:** A public interpretive sign will be developed in coordination with the development of the HPMP and will be installed within 1 year of completion of the boundary fence.

### **3.6 REVIEW EFFECTIVENESS OF THE HPMP**

**Purpose:** Evaluate the effectiveness of the HPMP.

**Management Activity:** Every six years, Eagle Crest Energy will determine if modifications will improve the effectiveness of the HPMP.

**Management Decision:** Develop recommendations for changes to the HPMP that may be discussed with California SHPO, the BLM, Riverside County, interested Indian Tribes, FERC, and other consulting parties.

### 3.7 CONSULT WITH CALIFORNIA SHPO, THE BLM, RIVERSIDE COUNTY, INTERESTED INDIAN TRIBES, AND FERC

**Purpose:** To provide California SHPO, BLM, Riverside County, interested Indian Tribes, and FERC an opportunity to evaluate the effectiveness of the HPMP and Eagle Crest Energy's success at implementing the HPMP.

**Management Activity:** Develop a Historic Properties Management Plan Implementation Summary Report (HPMP Implementation Report). The HPMP Implementation Report will be distributed for review according to a 1-year cycle during the construction phase of the project because cultural resource discoveries and treatments are most likely during that period. The report will be due within 30 days of every anniversary of the issuance date of the license and will contain a detailed summary of any cultural resource work conducted during the preceding year. If no work was completed, a letter from the Licensee will be prepared to that effect and will satisfy the intent of the stipulation in the PA for reporting. The report will summarize, in table and summary format, all Eagle Crest Energy cultural resources consultations and/or surveys performed for project modifications, any other activities related to the Erosion Control Plan, or other activities that have been reviewed due to their potential to result in soil disturbance in areas not previously disturbed. The HPMP Implementation Report will:

- Describe the proposed modifications, the type of cultural survey or other activity performed, the results of the survey or other activity, and actions taken (e.g. SHPO consultation and/or other consultation, mitigation, no action determined appropriate, etc.).
- Summarize in detail any activities related to the implementation of the HPMP.
- Summarize observations made of historic properties listed in Table 4.
- Include summaries of cultural resource treatments as an update to a HPMP implementation summary table.
- Report the status of Eagle Crest Energy's public interpretation projects.
- Recommend modifications to the Project HPMP that will improve its implementation if appropriate.

**Management Decision:** Develop a format for the HPMP Implementation Report and its associated Summary Table that will present the cultural resources activities and considerations in which Eagle Crest Energy participated over the reporting cycle. The HPMP Implementation Report will be provided to California SHPO, BLM, Riverside County, and interested Indian Tribes for a 30-day review and comment period every year. Following a consideration of review comments, Eagle Crest Energy will file the HPMP Implementation Report with FERC within 30 days of the anniversary of the issuance of the license. If no work was completed, a letter from the Licensee to that effect will suffice.



### **3.8 ARCHAEOLOGICAL AND NATIVE AMERICAN MONITORING PROTOCOL**

**Purpose:** To establish when an archaeological and/or Native American monitor is needed and determine protocols for their participation.

**Management Activity:** Although no prehistoric or ethnohistoric cultural resources are currently known within the expanded APE, future cultural resources may be discovered during the construction phase or if TCPs are identified by Tribes in the future. Arrangements will be made for a qualified archaeological monitor and Native American monitor when project construction occurs near prehistoric or ethnohistoric sites within or adjacent to the expanded APE. One site may be in this category. DS-315 is an obsidian chipping station located north of Alternative Substation A1 within the Transmission Line Alternative A2 right-of-way. Although mapped as outside the APE, the location will be re-assessed when the staked FERC Staff Recommended right-of-way is confirmed. Protection and monitoring measures will ensue if necessary to ensure avoidance during construction. An archaeological monitor and Native American monitor also will be employed if during the course of construction, discoveries are made that lead to the identification of potentially areas for buried archaeological sites by the consulting archaeologist or through continuing Native American consultation. A Native American monitor also will be present during the evaluation or data recovery of any prehistoric or ethnohistoric archaeological sites or when fencing or other protective measures are installed around sites. The closest source of trained monitors come from the Agua Caliente Band of Cahuilla Indians, the Torres-Martinez Band of Cahuilla Indians, or the Cabazon Band of Mission Indians.

An archaeological monitor will also be required of construction occurs near previously identified historic period sites. The following monitoring protocol will be followed:

- All archaeological monitors will meet minimum Secretary of the Interior’s Standards for archaeology and will be directed by an archaeologist who is listed on the BLM Cultural Resources Use Permit. Monitoring, as with all field activities, will require a BLM Fieldwork Authorization.
- During construction in identified areas for required monitoring, at least one archaeological monitor and Native American monitor will be on-site while all subsurface disturbance occurs. Following completion of ground disturbing activities, the monitors will conduct a final site check for any uncovered resources. More than one archaeological and Native American monitor may be needed if construct occurs at the same time in multiple areas of potential sensitivity.
- Monitors have the authority to halt construction with the finding of a discovery as specified in the Discovery Plan (Appendix A).
- No construction or related activities will occur within the boundaries of sites determined eligible for listing in the NRHP which have been designated for avoidance through review of the project footprint, project design, and implementation of this HPMP. These sites will be flagged (with a 30 meter (98 feet) buffer) and signed as “environmentally

sensitive area” and monitors will inspect the sites when construction occurs in this vicinity to ensure avoidance. Violations of signed boundaries will be immediately reported to

- All monitors will attend pre-construction worker safety meetings and review monitoring protocols with equipment operators and field foremen.
- Monitors will maintain daily logs and submit monthly summary monitoring reports. These reports will include discussion of any monitoring issues, difficulties, or infractions. A final monitoring report will be prepared at the completion of the monitoring program. The monitoring report will include a management summary, introduction, setting, monitoring methods, discussion of any monitoring issues, report of findings, and discussion of resolution or treatment of any of discoveries.

### 3.9 CURATION OF ARTIFACTS

**Purpose:** To provide for the lawful, appropriate and respectful curation of artifacts that may be recovered in the course of evaluation or data recovery.

**Management Activity:** Prehistoric and historic artifact collections may be recovered on either public or private lands during the course of Section 106 treatment of known cultural resources or newly discovered resources prior to or during construction monitoring. Following analysis and documentation, these collections will be curated with required catalogues and related documentation at a facility that meets federal standards for artifact curation and in accordance with 36 CFR 79: Curation of Federally-Owned and Administered Archaeological Collections. The San Bernardino County Museum (SBCM) has been chosen to curate these collections. The BLM, Palm Springs Field Office, has previously approved this facility to house other collections from BLM lands. The BLM, SHPO, and Tribes will be consulted prior to making curation arrangements in the event that alternative curation arrangements are recommended and require consideration. List of prehistoric artifacts will be provided to tribes. It will be the responsibility of the Licensee to pay for curation costs. For collection from federal lands, appropriate Deeds of Gift and/or Memoranda of Understanding will be drafted, as specified in 36 CFR 79. Standard deeds of gift from the SBCM will be drafted for collections from private land.

**Management Decision:** Provide for the curation of collections at the SBCM that may result from evaluation and/or data recovery, in consultation with BLM, SHPO, and Tribes.

### 3.10 PALEONTOLOGICAL RESOURCES

**Purpose:** To provide for the identification of potential areas of paleontological discoveries in the project area and prepare for the treatment of any discoveries, including evaluation or data recovery.

**Management Activity:** Paleontologists at the San Bernardino County Museum (SBCM) will be consulted as to the potential for paleontological resources to be located within the project

boundaries, based on their reference maps of previous discoveries. The results of the SBCM review will be provided to the BLM, Palm Springs Resource Area, geologist for review and comment. If recommended by the BLM geologist, a field reconnaissance of any areas of high potential will be undertaken. If marine or non-marine fossil deposits are exposed during construction, an SBCM paleontologist will be dispatched to evaluate the finds and in consultation with BLM, will make recommendations for mitigation of impacts, including recovery and documentation.

**Management Decision:** Any recovered fossils will be curated at the SBCM.

## **4.0 PROJECT EFFECTS AND MITIGATION/MANAGEMENT MEASURES**

The purpose of this HPMP is to consider and manage the effects on historic properties of actions taken to implement the license over the entire term. The HPMP takes into account the erosion control and terrestrial management plans developed for the Project. Eagle Crest Energy's Project Environmental Coordinator is responsible for the implementation of the HPMP. No project effects on known historic properties that require permits are anticipated. No rehabilitation of standing buildings, structures, or objects is involved. If effects to previously undiscovered historic properties are identified, they are mostly likely to occur in the construction phase of the Project, and not the operation and maintenance phases.

### **4.1 ACTIVITIES EXEMPT FROM FURTHER REVIEW UNDER HPMP**

Actions that do not involve ground-disturbing activities and that do not require a permit are exempt from further review under this HPMP. Types of projects covered by this exemption include: routine maintenance projects; safety-related activities; proposed activities located within previously disturbed areas such as areas that have previously been graded, mined, excavated, or landscaped. This includes both Project reservoirs.

Areas that will not be exempt from further review will include proposed project areas (actions or activities) that are located within 100 feet of previously recorded potentially significant archeological sites or located within areas defined by Eagle Crest Energy as Habitat Conservation Areas or Special Management Areas.

### **4.2 PROCEDURES TO EVALUATE EFFECTS OF PROPOSED ACTIONS**

#### **4.2.1 Class I Investigation - Review Proposed Action and Eagle Crest Energy Cultural Resources Files**

Class I Investigation: relies on background literature review to identify the location, character, and significance of known cultural resources in the area of a proposed action and the potential of the proposed action to affect historic properties. The Class I investigation will rely on information contained within Eagle Crest Energy's Project archives. Should these data not prove sufficient, the Project Environmental Coordinator may determine that additional documentation is necessary to address a particular action under consideration that extends beyond the 1-mile buffer of the already completed Class I investigation. The most important source of Class I literature review is the Eastern Information Center at the University of California, Riverside.

**Purpose:** to determine if a proposed project may affect:

- A known archaeological site that may be potentially significant.
- An area previously surveyed and known not to contain potentially significant archeological resources.
- An archeologically sensitive area not previously surveyed.

**Management Activity:** compare proposed project location with Cultural Resources Management Maps.

- Determine if the project area is located within 100 feet of a potentially significant previously recorded archeological site (see Appendix B).
- Determine if project area has been characterized as actively eroding or previously disturbed by other ground-disturbing activity (e.g. by machine excavation or underground utility line)
- Determine if the area has been previously surveyed for cultural resources

**Management Decision:** based on the results of the above-noted Management Activity.

- Project area is located within 100 feet of a previously recorded potentially significant archeological site. Delay project pending SHPO consultation and possible follow-up studies by a Secretary of the Interior-qualified professional archaeologist.
- Previous ground-disturbing activity may be documented or observed therefore no project effect on cultural resources expected. Project may proceed. Eagle Crest Energy includes project description and permit considerations in the HPMP Implementation Report that will be distributed to the California SHPO, the BLM, Riverside County, interested Indian Tribes and FERC on a two-year cycle during the construction phase and on a six -year review cycle thereafter in coordination with Form 80.

#### **4.2.2 Class III Cultural Resources Field Investigation**

Class III Investigation: an on-the-ground inventory of the APE for a proposed action that confirms the presence of known cultural resources and that may result in identification of previously unrecorded cultural resources. A Class III investigation may involve the excavation of shovel tests placed at 50-foot intervals within the APE or implementation of an alternative investigative strategy approved by Eagle Crest Energy's Project Environmental Coordinator and the California SHPO. Any investigations on easements through BLM land require a Fieldwork Authorization to a BLM permit-holding archaeologist in compliance with the Federal Land Policy and Management Act of 1976, as amended (PL 94-579).

**Purpose:** To identify if a proposed project area that has been deemed potentially archeologically sensitive (i.e. located within 100 feet of a previously recorded potentially significant archeological site or categorized as such by previous cultural resources studies) contains cultural resources that may be affected by a proposed project not associated with routine maintenance. Any modifications or additions to the APE in previously unsurveyed and undisturbed areas will require a Class III survey in compliance with Section 106 of the National Historic Preservation Act and according to 36 CFR 800.

**Management Activity:** Consult with BLM or other land holding agencies as to what Section 106 or Section 110 compliance needs may still be required and implement as specified. Engage services of a qualified archaeologist to brief the Project Environmental Coordinator on correct scoping and protocols and conduct Class III survey such as a walkover survey and/or systematic subsurface shovel testing (e.g. perform an identification level archeological field survey.) The actual scope of work will depend upon the proposed project location and size of the proposed activity as well as BLM requirements on BLM land. The archaeologist will perform the Class III survey and prepare a report that describes the investigation and results. Eagle Crest Energy will forward this report to the California SHPO, interested Indian Tribes and FERC. All new reports and site forms will be submitted to the Eastern Information Center, University of California, Riverside.

**Management Decision:** Review results of the Class III Survey and the associated recommendations.

- If the Class III survey did not locate cultural resources, then the proposed action may proceed following consultation with BLM and SHPO.
- If the Class III survey locates cultural resources that the archaeologist recommends as not potentially significant, then the Eagle Crest Energy Project Environmental Coordinator consults with SHPO. If consensus is reached on the recommendation, then the action may proceed.
- If the Class III survey locates cultural resources that the archaeologist recommends as potentially significant (i.e. demonstrates good integrity, identifiable limits, structure, function, research potential, and cultural/historical context – see definition under 4.2.3 below), then Eagle Crest Energy’s Project Environmental Coordinator consults with SHPO. If SHPO concurs with evaluation, then a Testing Phase investigation is recommended unless action may be designed to avoid the resource. Alternative project locations will be reviewed.

### **4.2.3 Testing Phase Cultural Resources Field Investigation**

Testing Phase Investigation: Conduct limited archeological excavations and analyses, or other investigations such as documentation of structures, to assess the National Register eligibility of individual resources and an assessment of the project effects on historic properties.

**Purpose:** To determine if a cultural resource recommended as potentially significant and that cannot be avoided by a proposed action, qualifies as significant.

The criteria for sites eligible to the NRHP may be found at 36 CFR 60.4. A site is eligible to the NRHP if it contains qualities that are significant in American history, architecture, archaeology, engineering, and culture and possesses integrity of location, design, setting, materials, workmanship, feeling, and association and:

- is associated with events that have made a significant contribution to the broad patterns of history;
- is associated with the lives of persons significant in the past;

- embodies the distinctive characteristics of a type, period or method of construction; or represents a significant and distinguishable entity whose components may lack individual distinction; or,
- has yielded, or may be likely to yield, information important in prehistory or history.

**Management Activity:** Engage services of a qualified archaeologist to collect data sufficient to determine if a cultural resource qualifies as significant. If the site is located on BLM land, an excavation permit is required for testing programs that remove more than 1 cubic meter of soil from an individual site, in compliance with the Archaeological Resources Protection Act (ARPA) of 1979, as Amended (PL 96-95). ARPA permits require submittal of a Treatment Plan/Research Design for which BLM is required to consult with SHPO and interested Indian Tribes prior to approving field investigation. The archaeologist will perform a Testing Phase investigation and prepare a report that describes the Testing Phase investigation and results. Eagle Crest Energy will forward this report to BLM for consultation with SHPO, interested Indian Tribes and FERC.

**Management Decision:** Review results of the Testing Phase Report and the associated recommendations, and consult with BLM and SHPO.

- If the Testing Phase investigation indicates that the cultural resource does not qualify as significant, project may proceed following consultation with the California SHPO.
- If the Testing Phase investigation indicates that the cultural resource qualifies as significant, Eagle Crest Energy Manager consults with BLM and SHPO. If SHPO concurs with the recommendation that the cultural resource is potentially eligible for listing in the NRHP and if the project is not amended to avoid the resource, consultation with SHPO will continue. A qualified archaeologist will develop the scope of work that will serve as mitigation of project effects. Eagle Crest Energy Manager will consult with the SHPO and gain consensus on the appropriate mitigation (may involve further Data Recovery field investigation, monitoring, or another alternative treatment measure).

#### **4.2.4 Data Recovery or Alternative Mitigation**

Data Recovery or Mitigation Investigation: investigation activities designed to mitigate effects upon a historic property that an action will affect. This may include data recovery, documentation, restoration or other measures. Such investigations will be preceded by development of an action-specific Memorandum of Agreement that has been approved by Eagle Crest Energy, SHPO, the BLM, the Advisory Council on Historic Preservation, FERC, and, as appropriate, interested Indian Tribes

**Purpose:** To mitigate adverse impacts to significant archeological resources.

**Management Activity:** Eagle Crest Energy Project Environmental Coordinator works with project proponent and qualified archaeologist and consults with the SHPO to avoid project adverse impacts, minimize project adverse effects through possible design modifications and or through data recovery or an alternative mutually agreed-upon method. If NRHP-eligible resource may not be avoided, Eagle Crest Energy's archaeologist develops a Memorandum of Agreement

(MOA) and Eagle Crest Energy consults with the California SHPO, the BLM, the Advisory Council on Historic Preservation, and interested Indian Tribes, as appropriate and files the MOA with FERC for approval. When an appropriate MOA is agreed upon, the archaeologist will perform the Data Recovery mitigation and prepare a report that describes the mitigation and the results. Eagle Crest Energy will forward this report to the consulting parties.

**Management Decision:** Review results of the Data Recovery or other Mitigation and consult with SHPO, the BLM, the Advisory Council on Historic Preservation, interested Indian Tribes and FERC. When consulting parties concur that mitigation has been successfully achieved, the action may proceed.

### **4.3 TREATMENT OF UNANTICIPATED DISCOVERIES OF CULTURAL RESOURCES AND HUMAN REMAINS**

**Purpose:** Eagle Crest Energy is responsible for addressing action impacts to cultural sites and human remains should they be exposed as a result of ground disturbing activities by Eagle Crest Energy or one of its Licensees; erosion control measures, or erosion of any inventoried historic properties, or in the case that resources are exposed in the event of a Project operation emergency.

**Management Activities:** Steps that Eagle Crest Energy shall follow in the event that unanticipated finds of cultural materials or human remains are made within the project are contained within the project-specific Plan and Procedures Addressing Unanticipated Discoveries of Cultural Resources and Human Remains, found in Appendix A.

**Management Decision:** Eagle Crest Energy shall consult with the California SHPO, BLM, interested Indian Tribes, Riverside County Coroner, as appropriate and depending on the land jurisdiction on which any discoveries are made, and FERC, should human remains be discovered in a non-contemporary context. If Eagle Crest Energy discovers contemporary contexts with human remains, local law enforcement agencies and the Riverside County Coroner shall be consulted.





## **5.0 IMPLEMENTATION OF HPMP**

### **5.1 ACTIVITIES STIPULATED IN THE HPMP**

Eagle Crest Energy's commitment for managing the cultural resources within its property will be ongoing. Eagle Crest Energy will consult with the California SHPO, the BLM, interested Indian Tribes, Riverside County, and FERC as specified above. A Summary Table that summarizes all cultural resources considerations that are performed throughout a year will be developed. Eagle Crest Energy will provide a HPMP Implementation Report to the California SHPO, BLM, interested Indian Tribes and FERC annually. Eagle Crest Energy may choose to consult with these entities at additional times should issues arise that require direction from these entities.

#### **5.1.1 Field Investigations to Identify and Protect Cultural Resources Potentially Affected through the Construction of Recreation Facilities**

No recreational facilities are associated with this project due to its remote location, safety issues related to the operation of the pumped storage facility, proximity to a proposed landfill project, and security concerns. The project facility will be fenced and secured from public access. There are no cultural resources or discovery issues with regard to recreation facilities.

#### **5.1.2 Develop and Present Worker Environmental Awareness Program for Eagle Crest Energy Personnel Responsible for Managing Cultural Resources**

Within 1 year of the acceptance of the HPMP, Eagle Crest Energy, in consultation with participating Indian Tribes, will develop a Worker Environmental Awareness Program (WEAP) that will familiarize Project personnel with the basic cultural resources management concepts and issues that they as managers may need to address. The training will familiarize personnel with the HPMP. The program will include a review of the Project's *Plan and Procedures Addressing Unanticipated Discoveries of Cultural Resources and Human Remains* that will be followed in the event that such discoveries are made within the project area. A training module will be developed that will be incorporated into and presented as part of Eagle Crest Energy's annual Worker Environmental and Safety Awareness Training.

## **5.2 DISPUTE RESOLUTION**

If at any time during the implementation of this HPMP, the California SHPO, BLM, Eagle Crest Energy, or the Advisory Council on Historic Preservation objects to any action or any failure to act pursuant to the HPMP, they may file written objection with FERC.



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# APPENDICES



## **APPENDIX A**

### **Plan and Procedures for Addressing Unanticipated Discovery of Cultural Resources and Human Remains**





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# **PLAN AND PROCEDURES ADDRESSING UNANTICIPATED DISCOVERIES OF CULTURAL RESOURCES AND HUMAN REMAINS**

## **1.0 Introduction**

This document outlines the procedures that Eagle Crest Energy will follow to prepare for and address unanticipated discoveries of cultural resources or human remains during the course of construction, operation, and maintenance of the Eagle Mountain Pumped Storage Project. The program will be directed by the Project Environmental Coordinator, in close consultation with the Project Archaeologist, BLM, and SHPO. At the end of the appendix is a contact list, a copy of Federal NAGPRA involved discoveries, and summaries of relevant California statutes.

## **2.0 Monitoring**

Archaeological monitoring by a qualified cultural resource specialist is a mitigation measure that will serve to ensure there are no adverse impacts to significant subsurface cultural resources during project construction. At present, however, no areas of sensitivity that require monitoring by an on-site archaeologist have been identified but they may be identified if discoveries are made during construction.

As part of the monitoring program, a pre-construction Worker Environmental Awareness Program (WEAP) will be presented to project managers, construction supervisors, and workers rotating into the construction operations during periods of ground disturbance.

If monitoring is prescribed, it will be performed by a designated Archaeological Monitor with appropriate regional experience to ensure that both aboriginal and historic-period cultural materials are identified, and by a designated Native American Monitor. The Archaeological Monitor will be equipped with all basic archaeological field equipment necessary to map any discovered sites, to photograph the finds, and to begin the recovery of cultural materials. Monitoring results, including descriptions of discoveries and noncompliance incidents, will be reported daily to the Project Engineer and to BLM. As part of the monitoring effort, monitors may photograph or video-document newly discovered cultural resources and site conditions related to any noncompliance incidents.

The Archaeological Monitor's daily logs will report any resource finds (including their types and locations), the progress or status of the monitoring program, and any mitigation measures adopted. The daily logs will also include the locations where monitoring is occurring and where monitoring was deemed unnecessary. The daily logs will form the basis for the weekly summary reports that will be submitted by the Archaeological Monitor to the Project Archaeologist and Project Environmental Coordinator. The Project Archaeologist will submit monthly summaries of these. A final monitoring report will be prepared by the Project Archaeologist and submitted to the Project Environmental Coordinator, BLM, SHPO, interested Tribes, and FERC.

### **3.0 Treatment of New Discoveries**

The following specific procedures detail the approach for agency notification and for treatment of cultural resources in compliance with 36 CFR 800, regulations for compliance with Section 106 of the National Historic Preservation Act (36 CFR 800), and relevant state and federal statutes regarding the discovery of human remains. Those sections of the Federal Native American Graves Protection and Repatriation Act (NAGPRA) are provided at the end of this appendix. Also included are summaries of comparable state statutes.

#### **3.1 Notification and Consultations with BLM, SHPO, County Coroner, and Native Americans**

All ground-disturbing activities will immediately be redirected at least 100 feet away from any discovered resource to allow for its evaluation and treatment. This evaluation will be undertaken in consultation with the Project Environmental Coordinator, BLM, interested Tribes, and SHPO, and in accordance with the Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716) as amended and annotated. The specific management and treatment measures that are recommended will vary, depending on the type of resource that is discovered, its complexity, size, age, apparent condition, location within the APE, and anticipated effects to it from the project. After completion of data recovery or mitigation, construction will resume in the area of the discovered resource.

Consultations will follow the procedures defined sections 4.2.3 and sections 4.2.4 of the HPMP. Upon notification of the discovery of a cultural resource during monitoring, BLM will immediately initiate consultations with SHPO and interested Native Americans regarding eligibility and treatment, if the resource cannot be avoided. BLM will make a determination on eligibility of the resource and submit that determination for concurrence by SHPO. SHPO will respond within five business days of receipt of BLM's determination. Correspondence may be by telephone, fax, or email, followed by a hard copy. If the resource is determined to be eligible and cannot be avoided by the project, a treatment plan will be written following the HPMP. The Project Archaeologist will submit a draft treatment plan within five business days of notification by BLM that the resource is eligible. BLM, SHPO, and the Project Environmental Coordinator, and interested Native Americans will review the draft treatment plan within five business days and BLM will provide combined comments to the Project Archaeologist for any necessary revisions. Upon approval by SHPO, BLM, FERC, and interested Native Americans, the final HPMP will be implemented by the Project Archaeologist as soon as possible. A draft report will be submitted for review within six months of the completion of the treatment measures.

In the event of a human remains discovery on BLM lands, BLM will notify SHPO and all Native American groups identified in the previous paragraph, requesting responses within 14 days of receipt. BLM and the Project Archaeologist will coordinate Native American contacts and responses. The Project Archaeologist will develop a plan for treatment of the burial based on comments received during consultations. Upon approval of the plan by BLM, SHPO, and responding Native Americans, the Project Archaeologist will implement the plan as soon as possible.

The Project Archaeologist will consult with Project Environmental Coordinator, BLM, and SHPO each time that a potentially significant cultural resource is discovered, in order to discuss with them the evaluation procedure and the formal determination of significance and effect. If data recovery is recommended, the scope of recovery and the proposed field approach will be drafted by the Project Archaeologist in consultation with the Project Environmental Coordinator, BLM, and SHPO so that data recovery can proceed no longer than seven days after the discovery.

If human remains, associated funerary objects, sacred objects, or objects of cultural patrimony are encountered, the Project Archaeologist will immediately notify BLM orally and will provide a written report of the findings to BLM within 48 hours by certified mail. BLM will take the lead in ensuring compliance with the Native American Graves Protection and Repatriation Act (NAGPRA), with regard to tribal notification, field visits by elders, and disposition. Sections 10.4-10.6 of NAGPRA pertaining to procedures for both intentional excavations and inadvertent discovery are reprinted at the end of this appendix for reference by agency personnel as well as the Project Environmental Coordinator and project archaeological staff. All activity in the immediate vicinity of such a discovery will cease, except as necessary to stabilize and protect the remains, until authorization to proceed is received from BLM.

NAGPRA procedures will be followed on BLM or other federal lands. State regulations concerning the discovery of human remain and associated grave goods will be followed on State or private lands (see end of this appendix). California State law (Health and Safety Code Section 7050.5; Public Resources Code Sections 5097.94, 5097.98 and 5097.99), however, will also be followed. It specifies that work will stop immediately in any areas where human remains or suspected human remains are encountered the Project Environmental Coordinator will be notified of the discovery. Regardless of land ownership, the Riverside County Coroner will be contacted immediately by BLM or by the Project Archaeologist or Environmental Coordinator, if so designated. The Coroner has two working days to examine the remains after being notified by the person responsible for the excavation. If the remains are Native American, the Coroner has 24 hours to notify the Native American Heritage Commission. The Native American Heritage Commission will immediately notify the persons it believes to be the most likely descendants (nearest lineal descendants in NAGPRA terminology). The most likely descendent has 24 hours to make recommendations to the owner, or representative for the respectful treatment or disposition of the remains and grave goods. If the descendants do not make recommendations within 24 hours, the area of the property must be secured from further disturbance. If there are disputes between the landowner and the nearest likely descendants, the Native American Heritage Commission will mediate the dispute to find a resolution. If mediation fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative will re-enter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

### **3.2 Field Methods**

Before any work begins on a NAGPRA find and with the Native American Monitor present, the Project Archaeologist will instruct everyone in the proper decorum to be maintained and in recovery methods. He will remind everyone that these are sacred ancestral remains to be treated with utmost respect and dignity. No personal photographs, inappropriate language or jokes are

allowed. Strict confidentiality is also to be maintained and if any reporters or others inquire about the work, they are to be directed to the Project Environmental Coordinator. The field personnel may be asked to sign a confidentiality agreement as well. Prior to and during the excavations, the Native American Monitor and lineal descendants may wish to perform cleansing ceremonies or other traditional rites. These will be accommodated at any time with allowance for privacy as requested.

Excavation methods are designed to ensure that the human remains are disturbed to the least extent possible, that everything is recovered, and documentation is complete and in conformity with research and reporting requirements. The Native American monitor will also be consulted at regular intervals as additional methods or treatments are applied to the recovery. The burial is exposed as a single feature with small hand tools, beginning with trowels and finishing with dental tools and fine brushes. Most burials are expected to be cremations with very fragmentary material. In some cases all bone and material culture can be recovered by screening with 1/16 in. mesh screens. If preservation is poor and there are small bone fragments that can not be separated from the soil without causing further damage to the bone, all removed soil with bone fragments is recovered for reburial. If a pit feature is evident from soil differentiation the pit contours will be maintained and then recorded. Soil from within the pit is screened separately from any soil outside the pit. Pre-approved feature forms are used for recording the remains and to ensure that all the required observations and measurements are made. This is supplemented by a detailed narrative of the excavation and discoveries. The Native American Monitor also will keep a diary.

Detailed drawings of the burial, associated grave goods, and pit outline are prepared once everything is exposed and dry-brushed. Photographs are taken only if pre-approved by the lineal descendants. If not, field drawings are made. The level of documentation must be respectful of Native American sensibilities and general ethical issues concerning documentation of human remains.

Once all of the drawings and documentation are prepared the human remains will be removed. This method will be determined in consultation with the lineal descendants. It is very important that they clearly understand all aspects of the process and expected results of different excavation and removal methods, since they must decide which methods best meet their needs for appropriate treatment of ancestral remains.

### **3.3 Evaluation and Treatment of Discoveries**

Procedures for the evaluation and treatment of unanticipated cultural resources will be in conformity with the HPMP and with Section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq.), with regulations for its implementation as published in 36 CFR §800-800.16, with the Native American Graves Protection and Repatriation Act (NAGPRA), and with relevant California statutes.

In consultation with BLM, the Project Archaeologist will prepare a formal treatment plan for cases of major discoveries in which it is anticipated that data recovery fieldwork will take longer than five days to complete.

All newly discovered finds will be recorded on standard California Department of Parks and Recreation forms, mapped, and photographed. All significant or diagnostic resources will be collected for analysis and eventual curation at a curation facility meeting federal standards for curation of archaeological materials, and in accordance with the State Historical Resource Commission's "Guidelines for the Curation of Archaeological Collections." The temporal threshold for cultural resources is here defined as material culture or features that are at least 45 years of age, the minimum age for possible inclusion on the California Register of Historic Resources.

Isolated finds are usually, de facto, not NRHP-eligible and can be documented in the field with appropriate GPS or mapped location information, and then recovered. These include isolated sherds, lithics, milling equipment, or historic artifacts.

Measures may be implemented to prohibit or otherwise restrict access to sensitive resource areas that need to be avoided during construction. The strongest measure to restrict access will be to erect cyclone fencing and post a 24-hour security guard (e.g., for a burial site). The cultural resources monitors will erect the fencing and a local security firm will be retained to provide a security guard, if necessary. A less stringent measure will be to erect fencing but not post a security guard. Where suitable, flagging or flexible colored plastic fencing may be used to direct construction workers and machinery away from sensitive areas. The length of time such measures are needed will vary. It is likely that flagging or flexible fencing can be removed from a sensitive area once construction has been completed in that area. Removal of cyclone fencing or dismissal of a security guard might take place after data recovery has been completed in the sensitive area. Long-term access restrictions, if needed, might consist of permanent fencing or concealment of the resource under landscaping.

The newly discovered resource's areal extent and the depth of the archaeological deposit will be determined. Site constituents will be examined, the property type will be determined, and data potentials will be defined. To meet these objectives, limited testing with shovel test pits (STPs) or standard excavation units may be used to assess the age and cultural context of the site and to determine whether the site meets the criteria for eligibility to the National Register of Historic Places (36 CFR 60). Eligibility is most likely to be evaluated under criterion "D", for the resource's ability to contribute information important to prehistory or history. Native American heritage values and sensitivities with respect to human burials, associated funerary objects, sacred objects, and items of cultural patrimony are to be considered under criteria "A" and "D."

Criteria of adverse effect, 36 CFR 800.5, will be applied to determine whether the proposed construction activity will alter the characteristics of the resource that may make it eligible for the National Register. Potential effects to cultural resources vary with respect to the anticipated disturbance to the resource that will occur as a result of construction activities and the nature of the significant values that will be affected. As a result, the proposed treatment will vary accordingly, reflecting the anticipated differences in degree of disturbance.

Treatment for any National Register-eligible site discovered during project activities must be responsive to a number of variables, including the location, setting, integrity, structure, contents, age, and data potential of the site. In some instances, avoidance of any further impacts to the site

may be feasible, and this is generally the most desirable approach. When avoidance is not feasible, various measures are available to recover jeopardized specimens and data from the site. These measures include mapping and other forms of field documentation, surface collection, auguring, excavation of shovel test pits, surface scrapes, standard manual unit excavation, manual rapid recovery units, mechanical excavation of stratigraphic trenches, and recovery of bulk or column samples for laboratory sorting. Mechanical stripping and controlled destruction can be employed to discover and document features and deposits, as well as to salvage important specimens that otherwise might be lost to construction. The field and laboratory methods that were developed in the HPMP form a basis for methods that may be used in treating new discoveries as well.

#### **4.0 Notification List**

##### **EAGLE CREST ENERGY PROJECT ENVIRONMENTAL COORDINATOR**

Jeffrey G. Harvey, Ph.D.  
Project Director & Environmental Coordinator  
Eagle Crest Energy Company  
3000 Ocean Park Blvd, Suite 1020  
Santa Monica, California 90405  
Office Phone: (310) 450-9090  
Mobile Phone: (916) 799-6065  
Fax: (310) 450-9494  
e-mail: [jharvey@eaglecrestenergy.com](mailto:jharvey@eaglecrestenergy.com)

##### **CALIFORNIA SHPO**

Wayne Donaldson  
California Department of Parks and Recreation  
Office of Historic Preservation  
1416 9th Street, Room 1442  
Sacramento, CA 95814  
Phone: 916-653-6624  
Fax: 916-653-9824  
e-mail: [calshpo@parks.ca.gov](mailto:calshpo@parks.ca.gov)

##### **RIVERSIDE COUNTY CORONER**

Stanley Sniff, Sheriff-Coroner  
Riverside County Sheriff's Department  
800 S. Redlands  
Perris, CA 92570  
Phone: 951-955-2400

47-225 Oasis St.  
Indio, CA 92201  
Phone: 760-863-8311

Bureau of Land Management  
Palm Springs/South Coast Field Office  
1201 Bird Center Drive  
Palm Springs, CA 92262  
Phone: 760-833-7105

## 5.0 Relevant Statues and Summaries

### TITLE 43--PUBLIC LANDS: INTERIOR

#### PART 10--NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION REGULATIONS

Subpart B--Human Remains, Funerary Objects, Sacred Objects, or Objects of Cultural Patrimony From Federal or Tribal Lands

Sec. 10.3 Intentional archaeological excavations.

**(a) General.**

This section carries out section 3 (c) of the Act regarding the custody of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are excavated intentionally from Federal or tribal lands after November 16, 1990.

**(b) Specific Requirements.**

These regulations permit the intentional excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal or tribal lands only if:

(1) The objects are excavated or removed following the requirements of the Archaeological Resources Protection Act (ARPA) (16 U.S.C. 470aa et seq.) and its implementing regulations. Regarding private lands within the exterior boundaries of any Indian reservation, the Bureau of Indian Affairs (BIA) will serve as the issuing agency for any permits required under the Act. For BIA procedures for obtaining such permits, see 25 CFR part 262 or contact the Deputy Commissioner of Indian Affairs, Department of the Interior, Washington, DC 20240. Regarding lands administered for the benefit of Native Hawaiians pursuant to the Hawaiian Homes Commission Act, 1920, and section 4 of Pub. L. 86-3, the Department of Hawaiian Home Lands will serve as the issuing agency for any permits required under the Act, with the Hawaii State Historic Preservation Division of the Department of Land and Natural Resources acting in an advisory capacity for such issuance. Procedures and requirements for issuing permits will be consistent with those required by the ARPA and its implementing regulations;

(2) The objects are excavated after consultation with or, in the case of tribal lands, consent of, the appropriate Indian tribe or Native Hawaiian organization pursuant to Sec. 10.5;

(3) The disposition of the objects is consistent with their custody as described in Sec. 10.6; and

(4) Proof of the consultation or consent is shown to the Federal agency official or other agency official responsible for the issuance of the required permit.



**(c) Procedures.**

(1) The Federal agency official must take reasonable steps to determine whether a planned activity may result in the excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal lands. Prior to issuing any approvals or permits for activities, the Federal agency official must notify in writing the Indian tribes or Native Hawaiian organizations that are likely to be culturally affiliated with any human remains, funerary objects, sacred objects, or objects of cultural patrimony that may be excavated. The Federal agency official must also notify any present-day Indian tribe which aboriginally occupied the area of the planned activity and any other Indian tribes or Native Hawaiian organizations that the Federal agency official reasonably believes are likely to have a cultural relationship to the human remains, funerary objects, sacred objects, or objects of cultural patrimony that are expected to be found. The notice must be in writing and describe the planned activity, its general location, the basis upon which it was determined that human remains, funerary objects, sacred objects, or objects of cultural patrimony may be excavated, and, the basis for determining likely custody pursuant to Sec. 10.6. The notice must also propose a time and place for meetings or consultations to further consider the activity, the Federal agency's proposed treatment of any human remains, funerary objects, sacred objects, or objects of cultural patrimony that may be excavated, and the proposed disposition of any excavated human remains, funerary objects, sacred objects, or objects of cultural patrimony. Written notification shall be followed up by telephone contact if there is no response in 15 days. Consultation must be conducted pursuant to Sec. 10.5.

(2) Following consultation, the Federal agency official must complete a written plan of action (described in Sec. 10.5(e)) and execute the actions called for in it.

(3) If the planned activity is also subject to review under section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq.), the Federal agency official should coordinate consultation and any subsequent agreement for compliance conducted under that Act with the requirements of Sec. 10.3 (c) (2) and Sec. 10.5. Compliance with these regulations does not relieve Federal agency officials of requirements to comply with section 106 of the National Historic Preservation Act (16 U.S.C. 470 et seq.).

(4) If an Indian tribe or Native Hawaiian organization receives notice of a planned activity or otherwise becomes aware of a planned activity that may result in the excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony on tribal lands, the Indian tribe or Native Hawaiian organization may take appropriate steps to: (i) Ensure that the human remains, funerary objects, sacred objects, or objects of cultural patrimony are excavated or removed following Sec. 10.3 (b), and (ii) Make certain that the disposition of any human remains, funerary objects, sacred objects, or objects of cultural patrimony excavated intentionally or discovered inadvertently as a result of the planned activity are carried out following Sec. 10.6.

Sec. 10.4 Inadvertent discoveries.

**(a) General.**

This section carries out section 3 (d) of the Act regarding the custody of human remains, funerary objects, sacred objects, or objects of cultural patrimony that are discovered inadvertently on Federal or tribal lands after November 16, 1990.

**(b) Discovery.**

Any person who knows or has reason to know that he or she has discovered inadvertently human remains, funerary objects, sacred objects, or objects of cultural patrimony on Federal or tribal lands after November 16, 1990, must provide immediate telephone notification of the inadvertent discovery, with written confirmation, to the responsible Federal agency official with respect to Federal lands, and, with respect to tribal lands, to the responsible Indian tribe official. The requirements of these regulations regarding inadvertent discoveries apply whether or not an inadvertent discovery is duly reported. If written confirmation is provided by certified mail, the return receipt constitutes evidence of the receipt of the written notification by the Federal agency official or Indian tribe official.

**(c) Ceasing activity.**

If the inadvertent discovery occurred in connection with an on-going activity on Federal or tribal lands, the person, in addition to providing the notice described above, must stop the activity in the area of the inadvertent discovery and make a reasonable effort to protect the human remains, funerary objects, sacred objects, or objects of cultural patrimony discovered inadvertently.

**(d) Federal lands.**

(1) As soon as possible, but no later than three(3) working days after receipt of the written confirmation of notification with respect to Federal lands described in Sec. 10.4 (b), the responsible Federal agency official must: (i) Certify receipt of the notification; (ii) Take immediate steps, if necessary, to further secure and protect inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony, including, as appropriate, stabilization or covering; (iii) Notify by telephone, with written confirmation, the Indian tribes or Native Hawaiian organizations likely to be culturally affiliated with the inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony, the Indian tribe or Native Hawaiian organization which aboriginally occupied the area, and any other Indian tribe or Native Hawaiian organization that is reasonably known to have a cultural relationship to the human remains, funerary objects, sacred objects, or objects of cultural patrimony. This notification must include pertinent information as to kinds of human remains, funerary objects, sacred objects, or objects of cultural patrimony discovered inadvertently, their condition, and the circumstances of their inadvertent discovery; (iv) Initiate consultation on the inadvertent discovery pursuant to Sec. 10.5; (v) If the human remains, funerary objects, sacred objects, or objects of cultural patrimony must be excavated or removed, follow the requirements and procedures in Sec. 10.3 (b) of these regulations; and (vi) Ensure that disposition of all inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony is carried out following Sec. 10.6.

(2) Resumption of activity.

The activity that resulted in the inadvertent discovery may resume thirty (30) days after certification by the notified Federal agency of receipt of the written confirmation of notification

of inadvertent discovery if the resumption of the activity is otherwise lawful. The activity may also resume, if otherwise lawful, at any time that a written, binding agreement is executed between the Federal agency and the affiliated Indian tribes or Native Hawaiian organizations that adopt a recovery plan for the excavation or removal of the human remains, funerary objects, sacred objects, or objects of cultural patrimony following Sec. 10.3 (b)(1) of these regulations. The disposition of all human remains, funerary objects, sacred objects, or objects of cultural patrimony must be carried out following Sec. 10.6.

**(e) Tribal lands.**

(1) As soon as possible, but no later than three(3) working days after receipt of the written confirmation of notification with respect to Tribal lands described in Sec. 10.4 (b), the responsible Indian tribe official may:(i) Certify receipt of the notification;(ii) Take immediate steps, if necessary, to further secure and protect inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony, including, as appropriate, stabilization or covering;(iii) If the human remains, funerary objects, sacred objects, or objects of cultural patrimony must be excavated or removed, follow the requirements and procedures in Sec. 10.3 (b) of these regulations; and(iv) Ensure that disposition of all inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony is carried out following Sec. 10.6.

(2) Resumption of Activity.

The activity that resulted in the inadvertent discovery may resume if otherwise lawful after thirty (30)days of the certification of the receipt of notification by the Indian tribe or Native Hawaiian organization.

**(f) Federal agency officials.**

Federal agency officials should coordinate their responsibilities under this section with their emergency discovery responsibilities under section 106 of the National Historical Preservation Act (16 U.S.C. 470 (f) et seq.), 36 CFR 800.11or section 3 (a) of the Archeological and Historic Preservation Act (16 U.S.C. 469 (a-c)). Compliance with these regulations does not relieve Federal agency officials of the requirement to comply with section 106of the National Historical Preservation Act (16 U.S.C. 470 (f) et seq.), 36 CFR 800.11 or section 3 (a) of the Archeological and Historic Preservation Act (16 U.S.C. 469 (a-c)).

**(g) Notification requirement in authorizations.**

All Federal authorizations to carry out land use activities on Federal lands or tribal lands, including all leases and permits, must include a requirement for the holder of the authorization to notify the appropriate Federal or tribal official immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony pursuant to Sec. 10.4(b) of these regulations.

[60 FR 62158, Dec. 4, 1995, as amended at 62 FR 41293, Aug. 1, 1997]

Sec. 10.5 Consultation.

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Consultation as part of the intentional excavation or inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony on Federal lands must be conducted in accordance with the following requirements.

**(a) Consulting parties.**

Federal agency officials must consult with known lineal descendants and Indian tribe officials:(1) From Indian tribes on whose aboriginal lands the planned activity will occur or where the inadvertent discovery has been made; and (2) From Indian tribes and Native Hawaiian organizations that are, or are likely to be, culturally affiliated with the human remains, funerary objects, sacred objects, or objects of cultural patrimony; and (3) From Indian tribes and Native Hawaiian organizations that have a demonstrated cultural relationship with the human remains, funerary objects, sacred objects, or objects of cultural patrimony.

**(b) Initiation of consultation.**

(1) Upon receiving notice of, or otherwise becoming aware of, an inadvertent discovery or planned activity that has resulted or may result in the intentional excavation or inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony on Federal lands, the responsible Federal agency official must, as part of the procedures described in Sec. Sec. 10.3 and 10.4, take appropriate steps to identify the lineal descendant, Indian tribe, or Native Hawaiian organization entitled to custody of the human remains, funerary objects, sacred objects, or objects of cultural patrimony pursuant to Sec. 10.6 and Sec. 10.14. The Federal agency official should notify in writing:(i) Any known lineal descendants of the individual whose remains, funerary objects, sacred objects, or objects of cultural patrimony have been or are likely to be excavated intentionally or discovered inadvertently; and (ii) The Indian tribes or Native Hawaiian organizations that are likely to be culturally affiliated with the human remains, funerary objects, sacred objects, or objects of cultural patrimony that have been or are likely to be excavated intentionally or discovered inadvertently; and (iii) The Indian tribes which aboriginally occupied the area in which the human remains, funerary objects, sacred objects, or objects of cultural patrimony have been or are likely to be excavated intentionally or discovered inadvertently; and (iv) The Indian tribes or Native Hawaiian organizations that have a demonstrated cultural relationship with the human remains, funerary objects, sacred objects, or objects of cultural patrimony that have been or are likely to be excavated intentionally or discovered inadvertently.

(2) The notice must propose a time and place for meetings or consultation to further consider the intentional excavation or inadvertent discovery, the Federal agency's proposed treatment of the human remains, funerary objects, sacred objects, or objects of cultural patrimony that may be excavated, and the proposed disposition of any intentionally excavated or inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony.

(3) The consultation must seek to identify traditional religious leaders who should also be consulted and seek to identify, where applicable, lineal descendants and Indian tribes or Native Hawaiian organizations affiliated with the human remains, funerary objects, sacred objects, or objects of cultural patrimony.

**(c) Provision of information.**

During the consultation process, as appropriate, the Federal agency official must provide the following information in writing to the lineal descendants and the officials of Indian tribes or Native Hawaiian organizations that are or are likely to be affiliated with the human remains, funerary objects, sacred objects, or objects of cultural patrimony excavated intentionally or discovered inadvertently on Federal lands:

(1) A list of all lineal descendants and Indian tribes or Native Hawaiian organizations that are being, or have been, consulted regarding the particular human remains, funerary objects, sacred objects, or objects of cultural patrimony;

(2) An indication that additional documentation used to identify affiliation will be supplied upon request.

**(d) Requests for information.**

During the consultation process, Federal agency officials must request, as appropriate, the following information from Indian tribes or Native Hawaiian organizations that are, or are likely to be, affiliated pursuant to Sec. 10.6 (a) with intentionally excavated or inadvertently discovered human remains, funerary objects, sacred objects, or objects of cultural patrimony: (1) Name and address of the Indian tribe official to act as representative in consultations related to particular human remains, funerary objects, sacred objects, or objects of cultural patrimony;(2) Names and appropriate methods to contact lineal descendants who should be contacted to participate in the consultation process;(3) Recommendations on how the consultation process should be conducted; and (4) Kinds of cultural items that the Indian tribe or Native Hawaiian organization considers likely to be unassociated funerary objects, sacred objects, or objects of cultural patrimony.(e) Written plan of action. Following consultation, the Federal agency official must prepare, approve, and sign a written plan of action. A copy of this plan of action must be provided to the lineal descendants, Indian tribes and Native Hawaiian organizations involved. Lineal descendants and Indian tribe official(s) may sign the written plan of action as appropriate. At a minimum, the plan of action must comply with Sec. 10.3 (b)(1) and document the following: (1) The kinds of objects to be considered as cultural items as defined in Sec. 10.2 (b); (2) The specific information used to determine custody pursuant to Sec. 10.6; (3) The planned treatment, care, and handling of human remains, funerary objects, sacred objects, or objects of cultural patrimony recovered; (4) The planned archeological recording of the human remains, funerary objects, sacred objects, or objects of cultural patrimony recovered;(5) The kinds of analysis planned for each kind of object; (6) Any steps to be followed to contact Indian tribe officials at the time of intentional excavation or inadvertent discovery of specific human remains, funerary objects, sacred objects, or objects of cultural patrimony; (7) The kind of traditional treatment, if any, to be afforded the human remains, funerary objects, sacred objects, or objects of cultural patrimony by members of the Indian tribe or Native Hawaiian organization; (8) The nature of reports to be prepared; and (9) The planned disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony following Sec. 10.6.(f) Comprehensive agreements. Whenever possible, Federal Agencies should enter into comprehensive agreements with Indian tribes or Native Hawaiian organizations that are affiliated with human remains, funerary objects, sacred objects, or objects of cultural patrimony and have claimed, or are likely to claim, those human remains, funerary objects, sacred objects, or objects of cultural patrimony excavated intentionally or discovered inadvertently on Federal lands. These agreements should

address all Federal agency land management activities that could result in the intentional excavation or inadvertent discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony. Consultation should lead to the establishment of a process for effectively carrying out the requirements of these regulations regarding standard consultation procedures, the determination of custody consistent with procedures in this section and Sec. 10.6, and the treatment and disposition of human remains, funerary objects, sacred objects, or objects of cultural patrimony. The signed agreements, or the correspondence related to the effort to reach agreements, must constitute proof of consultation as required by these regulations.

**(g) Traditional religious leaders.**

The Federal agency official must be cognizant that Indian tribe officials may need to confer with traditional religious leaders prior to making recommendations. Indian tribe officials are under no obligation to reveal the identity of traditional religious leaders.

[60 FR 62158, Dec. 4, 1995, as amended at 62 FR 41293, Aug. 1, 1997]  
Sec. 10.6 Custody.

**(a) Priority of custody.**

This section carries out section 3 (a) of the Act, subject to the limitations of Sec. 10.15, regarding the custody of human remains, funerary objects, sacred objects, or objects of cultural patrimony excavated intentionally or discovered inadvertently in Federal or tribal lands after November 16, 1990. For the purposes of this section, custody means ownership or control of human remains, funerary objects, sacred objects, or objects of cultural patrimony excavated intentionally or discovered inadvertently in Federal or tribal lands after November 16, 1990. Custody of these human remains, funerary objects, sacred objects, or objects of cultural patrimony is, with priority given in the order listed:(1) In the case of human remains and associated funerary objects, in the lineal descendant of the deceased individual as determined pursuant to Sec. 10.14 (b);(2) In cases where a lineal descendant cannot be ascertained or no claim is made, and with respect to unassociated funerary objects, sacred objects, and objects of cultural patrimony:(i) In the Indian tribe on whose tribal land the human remains, funerary objects, sacred objects, or objects of cultural patrimony were excavated intentionally or discovered inadvertently;(ii) In the Indian tribe or Native Hawaiian organization that has the closest cultural affiliation with the human remains, funerary objects, sacred objects, or objects of cultural patrimony as determined pursuant to Sec. 10.14 (c); or(iii) In circumstances in which the cultural affiliation of the human remains, funerary objects, sacred objects, or objects of cultural patrimony cannot be ascertained and the objects were excavated intentionally or discovered inadvertently on Federal land that is recognized by a final judgment of the Indian Claims Commission or the United States Court of Claims as the aboriginal land of an Indian tribe: (A) In the Indian tribe aboriginally occupying the Federal land on which the human remains, funerary objects, sacred objects, or objects of cultural patrimony were excavated intentionally or discovered inadvertently, or (B) If it can be shown by a preponderance of the evidence that a different Indian tribe or Native Hawaiian organization has a stronger cultural relationship with the human remains, funerary objects, sacred objects, or objects of cultural patrimony, in the Indian tribe or Native Hawaiian organization that has the strongest demonstrated relationship with the objects.

(b) Custody of human remains, funerary objects, sacred objects, or objects of cultural patrimony and other provisions of the Act apply to all intentional excavations and inadvertent discoveries made after November 16, 1990, including those made before the effective date of these regulations.

(c) Final notice, claims and disposition with respect to Federal lands. Upon determination of the lineal descendant, Indian tribe, or Native Hawaiian organization that under these regulations appears to be entitled to custody of particular human remains, funerary objects, sacred objects, or objects of cultural patrimony excavated intentionally or discovered inadvertently on Federal lands, the responsible Federal agency official must, subject to the notice required herein and the limitations of Sec. 10.15, transfer custody of the objects to the lineal descendant, Indian tribe, or Native Hawaiian organization following appropriate procedures, which must respect traditional customs and practices of the affiliated Indian tribes or Native Hawaiian organizations in each instance. Prior to any such disposition by a Federal agency official, the Federal agency official must publish general notices of the proposed disposition in a newspaper of general circulation in the area in which the human remains, funerary objects, sacred objects, or objects of cultural patrimony were excavated intentionally or discovered inadvertently and, if applicable, in a newspaper of general circulation in the area(s) in which affiliated Indian tribes or Native Hawaiian organizations members now reside. The notice must provide information as to the nature and affiliation of the human remains, funerary objects, sacred objects, or objects of cultural patrimony and solicit further claims to custody. The notice must be published at least two (2) times at least a week apart, and the transfer must not take place until at least thirty (30) days after the publication of the second notice to allow time for any additional claimants to come forward. If additional claimants do come forward and the Federal agency official cannot clearly determine which claimant is entitled to custody, the Federal agency must not transfer custody of the objects until such time as the proper recipient is determined pursuant to these regulations. The Federal agency official must send a copy of the notice and information on when and in what newspaper(s) the notice was published to the Departmental Consulting Archeologist.

*Code of Federal Regulations*

Title 43, Volume 1, Parts 1 to 999 Revised as of October 1, 1999

CITE: 43CFR10

Pages 198-204

**California Health and Safety Code Section 7050.5: Disturbance of Human Remains**

Establishes intentional disturbance, mutilation or removal of interred human remains as a misdemeanor. Requires that further excavation or disturbance of land, upon discovery of human remains outside of a dedicated cemetery, cease until a county coroner makes a report. Requires a county coroner to contact the Native American Heritage Commission within 24 hours if the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the remains to be those of a Native American.

**California Health and Safety Code Section 8010-8011: California Native American Graves Protection and Repatriation Act**

Establishes a state repatriation policy intent that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. Strives to ensure that all

California Indian human remains and cultural items are treated with dignity and respect. Encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. States an intent for the state to provide mechanisms for aiding California Indian tribes, including non-federally recognized tribes, in filing repatriation claims and getting responses to those claims.