PHASE I CULTURAL RESOURCES ASSESSMENT FOR THE EASTSIDE WATER BANKING AND BLENDING PROJECT LITTLEROCK, LOS ANGELES COUNTY, CALIFORNIA

USGS Littlerock 7.5' Quadrangle; Township 5N, Range 10W, Section 8

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MANAGEMENT SUMMARY

The Antelope Valley-East Kern Water Agency (AVEK) proposes the construction and operation of the Eastside Water Banking and Blending Project (Project) west of AVEK’s Eastside Water Treatment Plant (WTP) in an unincorporated portion of Los Angeles County between the communities of Pearblossom and Littlerock. The purpose of the Project is to spread any surplus California State Water Project (SWP) raw water from the East Branch of the State Water Project Aqueduct into recharge basins in order to bank a portion of the SWP water for later use during drought conditions when SWP deliveries may be limited. Applied EarthWorks, Inc. (Æ) was retained to conduct a cultural resources investigation of the Project area in accordance with the California Environmental Quality Act (CEQA).

An archaeological literature and records search indicated that seven cultural resources are present within a one-mile radius of the Project area. Æ also requested a search of the Sacred Lands File from the Native American Heritage Commission (NAHC), which indicated that no Native American cultural resources are known to exist within the immediate Project area. Native American individuals and organizations were contacted to elicit information and/or concerns regarding cultural resource issues related to the proposed Project. Of the eight groups and/or individuals contacted, two responded with comments. Robert Robinson commented on behalf of the Kern Valley Indian Community (KVIC) tribal members and noted that the Project area has been occupied continuously by their Native American ancestors. Therefore, they are recommending a culturally affiliated Native American monitor to be present during all ground-disturbing activities. Daniel McCarthy of the San Manuel Band of Mission Indians had no comments regarding the Project. As of the date of this report, no response was received from Beverly Salazar Folkes, the San Fernando Band of Mission Indians, Fernandeño Tataviam Band of Mission Indians, Randy Guzman Folkes, the LA City/County Native American Indian Commission, or the Kitanemuk & Yowlumne Tejon Indians. A Table of Responses summarizing consultation with Native American groups and/or individuals consulted is presented in Appendix B.

An intensive archaeological pedestrian survey of the main Project area (approximately 80 acres) was performed by Æ archaeologist Michael Kay, M.A., RPA, on November 14 and 15, 2013. The survey resulted in the discovery of one mixed modern and historical refuse scatter (CA-LAN-4370H). This resource is not eligible for the California Register of Historical Resources (CRHR), and therefore, is not considered a “historical resource” under CEQA. No further management is recommended at this time for CA-LAN-4370H or the main Project area. However, Æ did not survey the pipeline portion of the Project (approximately 2.8 miles) during the current Phase I cultural resources study. Prior to construction, the pipeline associated with the Project should be subjected to a complete Phase I cultural resources pedestrian survey.

Field notes documenting the current investigation are on file at Æ’s Hemet office. A copy of this report will be placed on file at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS), housed at the California State University, Fullerton.
The Antelope Valley-East Kern Water Agency (AVEK) proposes the construction and operation of the Eastside Water Banking and Blending Project (hereafter “Project”) on a property between the communities of Pearblossom and Littlerock in Los Angeles County, California. This report, prepared by Applied EarthWorks, Inc. (Æ), summarizes the methods and results of a Phase I archaeological investigation of the Project area.

1.1 SCOPE AND PURPOSE OF INVESTIGATION

The Project area consists of approximately 79.3 acres (ac) of land and 2.8 miles (mi) of pipeline west of AVEK’s Eastside Water Treatment Plant (WTP). The purpose of the Project is to spread any surplus California State Water Project (SWP) raw water from the East Branch of the SWP Aqueduct through an existing turn-out at 96th Street and new pipeline to the recharge basins in order to bank a portion of the SWP water for later use during drought conditions when SWP deliveries may be limited. Æ developed the scope of work in consultation with Melissa Whittemore of Helix Environmental Planning, Inc., which included defining a Project area, background research, coordination with interested local Native American groups, and an archaeological survey. Vanessa Mirro, M.A., RPA, served as Æ’s Principal Investigator, Joan George as Project Coordinator, and Michael Kay, M.A., RPA, as Field Archaeologist.

The Project area is located on the nearly level valley floor in the southwestern portion of the Antelope Valley approximately 2.0 mi east-northeast of Littlerock and 4.8 mi northwest of Pearblossom, in Los Angeles County, California (Figure 1). Specifically, the Project area encompasses a 79.3-ac rectangular property immediately northeast of the 98th Street and Avenue U intersection in Section 8 (T5N/R10W; San Bernardino Baseline and Meridian [S.B.B.M.]), as shown on the Littlerock, CA (1972) 7.5' USGS quadrangle (Figure 2); elevation is approximately 870 meters (m) (2,855 feet [ft]) above mean sea level (amsl).

Three 2-ac recharge basins, four extraction wells, and associated facilities would be constructed on the Project site. Construction staging areas also would be temporarily located within the Project site. The recharge basins would be constructed via excavation and creation of berms. Much of the excess material excavated during construction of the basins would be used to construct berms around the basins, although export of soil would be required. The three 2-ac recharge basins would be able to accept a total of approximately 30 acre-feet per day of SWP raw water. SWP water would be delivered to the basins, from the 96th Street East Turnout of the California Aqueduct, through approximately 1.0 mi of 24-inch-diameter cement mortar line and coated (CML&C) steel pipeline under 96th Street East and East Avenue U. Four extraction wells, approximately 1,000 to 1,800 ft apart from each other, would be constructed north and south of the recharge basins to bedrock, an estimated depth of 400 to 600 ft. These wells each would have an associated pump motor. The combined production from these wells would be delivered either to the Eastside WTP, back to the East Branch, or a combination of both. Deliveries to the Eastside WTP would be chlorinated on site and conveyed through approximately 2.0 mi of 24-inch-diameter CML&C steel pipeline under East Avenue U and 116th Street East. Deliveries back to the East Branch would first pass through an on-site 100,000-gallon steel tank and be pumped through the same 1.0 mi of pipeline used for the
Figure 1  Project vicinity map.
Figure 2  Project location map.
delivery of SWP water for recharge. Two off-site pipelines are proposed—one would be sited to the west of the Project site and deliver water from the California Project site and deliver water from the recharge basins to the Eastside WTP. A concrete block chlorination/pump station building would be constructed on site and contain three rooms: (1) chlorine room with two sodium hypochlorite storage tanks, chlorine metering pump skid, and chlorine analyzer; (2) pump room with three vertical turbine pumps; and, (3) electrical/control room. Class 2 aggregate base surfacing and access roads would be placed around each well. In addition, one monitoring well is proposed to monitor water levels and water quality, and would be located adjacent to the recharge basins. The entire area containing the recharge basins and wells would be secured by a chain-link perimeter fence.

1.2 REGULATORY CONTEXT

As currently proposed, this Project is subject to compliance with the California Environmental Quality Act (CEQA), as amended through 2013. Therefore, cultural resources management work conducted as part of the Project shall comply with the CEQA Statutes and Guidelines (California 2013), which directs lead agencies to first determine whether cultural resources are “historically significant” resources. A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment (CCR, § 15064.5[b]). Generally, a cultural resource shall be considered “historically significant” if the resource is 45 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, and association, and meets the requirements for listing on the California Register of Historical Resources (CRHR) under any one of the following criteria (Title 14 CCR, § 15064.5):

1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;

2) Is associated with the lives of persons important in our past;

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,

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

The cited statutes and guidelines specify how cultural resources are to be managed in the context of projects, such as the Eastside Water Banking and Blending Project. Briefly, archival and field surveys must be conducted, and identified cultural resources must be inventoried and evaluated in prescribed ways. Prehistoric and historical archaeological resources, as well as built-environment resources such as standing structures, buildings, and objects, deemed “historically significant” must be considered in project planning and development. As well, any proposed project that may affect “historically significant” cultural resources must be submitted to the State Historic Preservation Officer (SHPO) for review and comment prior to project approval by the responsible agency and prior to construction.
1.3 REPORT ORGANIZATION

This report documents the results of a Phase I archaeological investigation of the Project area for the proposed Project. Chapter 1 has introduced the scope of the work and stated regulatory context. Chapter 2 synthesizes the natural and cultural setting of the Project area and surrounding region. Chapter 3 presents the results of the archaeological literature and records search conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resource Information System (CHRIS), housed at the California State University, Fullerton. Chapter 4 summarizes the Sacred Lands File search with the Native American Heritage Commission (NAHC) and Native American communications. Chapter 5 presents the research design. The archaeological survey methods employed during this investigation, as well as findings are outlined in Chapter 6. Evaluations of discovered resources are provided in Chapter 7. Chapter 8 presents management recommendations, followed by bibliographic references and appendices.
This chapter describes the prehistoric and ethnographic cultural setting of the Project area to provide a context for understanding the nature and significance of cultural properties identified within the Antelope Valley region. Both prehistorically and ethnographically, the nature and distribution of human activities in the region have been affected by such factors as topography and the availability of water and biological resources. Therefore, prior to a discussion of the cultural setting, the environmental setting of the area is summarized below.

2.1 ENVIRONMENTAL SETTING

The Mojave Desert covers much of southeastern California and extends into portions of Arizona and Nevada. It is bounded on the west by the Sierra Nevada Mountains, on the south by the Transverse and Peninsular ranges, on the southeast and east by the Yuma and Colorado deserts, and on the north by the Great Basin. The dividing line between the Mojave Desert and Great Basin may be arbitrarily defined by climate and the distribution of vegetation (Sutton 1996:222–223). The western Mojave Desert includes Antelope Valley, Fremont Valley, Victor Valley, Lucerne Valley, the Mojave River, and the Barstow area.

Within the Mojave Desert, the oldest identified rock formations consist of various metamorphosed sedimentary rocks, including gneiss, marble, quartzite, mica schist, gabbro, and conglomerates of pre-Cambrian age. Rock types of the Paleozoic era (245–570 million years old) include scattered sedimentary and carbonate rock, chert, limestone, sandstone, gypsum, and dolomite. Such materials, which formed at the bottom of an ocean, also yield fossils. Paleozoic-era materials are not abundant within the Mojave block of the western Mojave Desert, although thick sections occur within the El Paso Mountains (Hewett 1954:9–13).

Sandstone and limestone deposits of the Mesozoic era (245 to 70 million years ago) also occur within the El Paso Mountains area and near Barstow. The limited distribution of thick masses of Paleozoic and Mesozoic and early Cenozoic (ca. 70 million years ago) rock older than the Miocene (23.8 to 5.3 million years ago), provide evidence that this area rose 15,000 to 20,000 ft during the late Mesozoic and early Cenozoic. This resulted in vigorous erosion of the pre-Miocene Tertiary rock formations with external drainage (Hewett 1954:14–15). A few areas of Eocene (54.8 to 33.7 million years ago) fossils have been noted in the El Paso Mountains and in the Palmdale area to the south. Pliocene-age (5.3 to 1.8 million years ago) vertebrate fossils have been identified in the El Paso Mountains and Red Rock Canyon area, found within sediments designated the “Ricardo” formation. During the Oligocene (33.7 to 23.8 million years ago) and Miocene epochs, volcanism dominated the landscape, with volcanic activity occurring near Ridgecrest and Red Rock Canyon. Volcanic material from this time may be found atop the Ricardo formation (Monastero 1996:164). Basalt and rhyolite flows also formed north of Indian Wells Valley and into the Coso Mountains about two to three million years ago.

Following the late middle Pliocene (about 3 million years ago), the Mojave Desert region witnessed significant erosion (Hewett 1954:18). This was followed by the extrusion of Red Mountain andesite in the Randsburg area of the western Mojave. During the subsequent Pleistocene or glacial period,
beginning about 1.64 million years ago, erosion helped form the long southward-trending valleys including Searles, Panamint, and Death valleys. Streams flowing from these valleys, including the Owens River, likely flowed south across the Mojave block successively filling Owens Lake, China Lake, Searles Lake, Panamint Lake, and Death Valley. Water then likely followed the Leach trough (Garlock Fault) and flowed southward to Sliver Lake, Soda Lake, and Bristol Lake. Beyond this point, the water joined the Colorado River estuary (Hewett 1954:18). Finally a number of basalt flows were created during the Pleistocene and early Holocene epochs. Such lava flows extend from the Little Lake area east to the Coso Mountains, and include the cinder cone known as Red Hill. Presently, erosion of the Sierra Nevada and other surrounding mountains is actively filling the valleys with sediments, with such material as deep as 7,000 ft in Indian Wells Valley (Monastero 1996:166).

The Mojave is a warm-temperature desert situated between the subtropical Sonoran Desert to the south and the cold-temperature Great Basin to the north. The arid Mojave Desert is characterized by sparse rainfall, generally ranging from 5 to 25 centimeters (cm) (2–10 inches [in.]) per year. Some areas receive as little as 2.5 cm (1 in.) of annual precipitation, while others receive more than 25 cm (10 in.) (Warren 1984:342). The Cantil area of the Mojave Desert receives just over 3 in. of precipitation annually. The present day climate and concomitant vegetation within the Mojave Desert was substantially different during the so-called Wisconsin Glacial Stage (60,000 to 10,500 B.P.), where the climate was influenced by the massive continental ice sheets that resulted in cooler summer and warmer winter temperatures than at present (Bupp et al. 1998, as cited in Basgall and Overly 2004).

The Joshua tree is often used as the common vegetative marker of the Mojave Desert (Sutton 1996:223), although the creosote bush is the dominant plant of both the Mojave and Colorado deserts (Grayson 1993; Warren 1984:342). Open, Desert Scrub habitats such as this typically contain scattered assemblages of broad-leaved evergreen or deciduous microphyll shrubs that are usually between 0.5 and 2 m (1.5 and 6.5 ft) in height. Bare ground is common between plants (Laudenslayer and Boggs 1988:114). Overall, Desert Scrub habitats are characterized by low species diversity. While the lower elevations are dominated by creosote bush, higher elevations give way to yuccas and agaves and then to piñon-juniper habitats. Other vegetation may include catclaw acacia, white brittlebush, white bursage, barrel and hedgehog cactus, littleleaf krameria, ocotillo, desert sand verbena, branched pencil and teddybear cholla, coastal bladderpod, desert agave, Douglas and rubber rabbit brush, Mojave yucca, beavertail, prickly pear, jojoba, desert senna, and Anderson’s wolfberry. Various forbs and grasses also vary but can be found throughout desert scrub habitats (Mayer and Laudenslayer 1988:88).

Large game animals are rare in the Mojave Desert, as evidenced by deer (*Odocoileus hemionus*) and black bear (*Ursus americanus*), which make infrequent treks from the nearby Sierra Nevada slopes. More common to the desert floor are various rodents and reptiles. Primary resident species may include Couch’s spadefoot toad (*Scaphiopus couchii*), desert tortoise (*Xerobates [Gopherus] agassizii*), desert iguana (*Diposaurus dorsalis*), chuckwalla (*Sauromalus obesus*), leopard lizard (*Crotaphytus wislizenii*), horned lizard (*Phrynosoma platyrhinos*), banded gecko (*Coleonyx variegatus*), western whiptail (*Cnemidophorus tigris*), common kingsnake (*Lampropeltis getulus*), Mojave rattlesnake (*Crotalus scutulatus*), sidewinder (*C. cerastes*), gopher snake (*Pituophis melanoleucus*), various pocket mice (*Perognathus* spp.), whitetail antelope squirrel (*Ammospermophilus leucurus*), and kangaroo rats (*Dipodomys* spp.). Other species found in the
Mojave include blacktail jackrabbit (Lepus californicus), desert cottontail (Sylvilagus audubonii), kit fox (Vulpes macrotis) coyote (Canis latrans), and bobcat (Lynx rufus) (Laudenslayer and Boggs 1988:114; Martyn and Moore 1996).

More than 300 species of birds inhabit the northern Mojave Desert. Common to the open desert of Indian Wells Valley are the prairie falcon (Falco mexicanus), burrowing owl (Athene cunicularia), lesser nighthawk (Chordeiles acutipennis), horned lark (Eremophila alpestris), roadrunner (Geococcyx californianus), cactus wren black-throated sparrow (Amphispiza bilenata) (Moore 1996:117). Within canyons are found chukar (Alectoris chukar) California quail (Lophortyx californicus), great horned owl (Bubo virginianus), mountain bluebird (Sialia currucoides), and others. Marshes and lakes in the Mojave Desert area may contain the long-billed marsh wren (Cistothorus palustris), snow goose (Chen caerulescens), Canada goose (Branta Canadensis), red-winged blackbird (Agelaius phoeniceus), eared grebe (Podiceps nigricollis), white pelican (Pelecanus erythrorhynchos), mallard (Anas platyrhynchos), ruddy duck (Oxyura jamaicensis), California gull (Larus californicus), and many other species (Moore 1996:117-118). Canada geese, pelicans, ruddy ducks, and pintails (A. acuta) are known to frequent Little Lake during the spring and fall migrations (Bateman et al. 1962).

2.2 PREHISTORIC SETTING

Prehistoric archaeological sites in California are places where Native Americans lived or carried out activities during the prehistoric period before 1769 AD. These sites contain artifacts and subsistence remains, and they may contain human burials. Artifacts are objects made by people and include tools (such as projectile points, scrapers, and grinding implements), waste products from making flaked stone tools (debitage), and nonutilitarian artifacts (beads, ornaments, ceremonial items, and rock art). Subsistence remains include the inedible portions of foods, such as animal bone and shell, and edible parts that were lost and not consumed, such as charred seeds.

Over the past century, archaeologists have generally divided the prehistory of the Western Mojave Desert into five distinct periods or sequences distinguished by specific material (i.e., technological) or cultural traits. Early cultural chronologies were proposed by Amsden (1937), Campbell et al. (1937), and Rogers (1939), that were later adapted by Warren and Crabtree in 1972 (later published in 1986 and further detailed by Warren in 1984), in what many consider to be the most influential cultural sequence proposed for the region. Alternative sequences have since emerged (e.g., Bettinger and Taylor 1974; Hall 1993; Yohe 1992) proposing new nomenclature (e.g., Newberry Period vs. Rose Spring Period vs. Saratoga Springs), slightly adjusted cultural chronologies, or attempting to link the Great Basin chronological framework to the Mojave Desert.

Recently, Sutton and others (2007:233) proposed a cultural-ecological chronological framework based on climatic periods (e.g., Early Holocene) “to specify spans of calendric time and cultural complexes (e.g., Lake Mojave Complex) to denote specific archaeological manifestations that existed during (and across) those periods.” The new sequence draws heavily from Warren and Crabtree (1972, 1986) and Warren (1984), as well as from the vast body of recent archaeological research conducted in the region.

2.2.1 Pleistocene (ca. 10,000 to 8000 cal B.P.)

The earliest cultural complex recognized in the Mojave Desert is Clovis, aptly named for the fluted
projectiles often associated with Pleistocene megafaunal remains. Arguments for pre-Clovis Paleoindian human occupation in the Desert rely on relatively sparse evidence and unpublished data, although in light of the growing body of evidence suggesting a pre-Clovis occupation of the Americas, the argument cannot simply be ruled out. Paleoindian culture is poorly understood in the region due a relative dearth of evidence stemming from handful of isolated fluted point discoveries and one presumed occupation site on the Shore of China Lake. Archaeologists tend to interpret the available data as evidence of a highly mobile, sparsely populated, hunting society that occupied temporary camps near permanent Pleistocene water sources.

2.2.2 Early Holocene (ca. 8000 to 6000 cal B.P.)
Two archaeological patterns are recognized during the Early Holocene: the Lake Mojave Complex (sometimes referred to as the Western Pluvial Lakes Tradition), and the Pinto Complex. The Lake Mojave Complex is characterized by stemmed projectile points of the Great Basin Series, abundant bifaces, steep-edged unifaces and crescents. Archaeologists have also identified, in less frequency, cobble-core tools and ground stone implements. The Pinto Complex, on the other hand, is distinguished primarily by the presence of Pinto-style projectile points. Although evidence suggests some temporal overlap, the inception of the Pinto Complex is assigned to the latter part of the Early Holocene and is generally considered a Middle Holocene cultural complex.

During this period, the Lake Mojave cultural complex utilized more extensive foraging ranges, as indicated by an increased frequency of extralocal materials. Spheres of influence also expanded, as potential long-distance trade networks were established between desert and coastal peoples. Groups were still highly-mobile, but they practiced a more forager-like settlement-subsistence strategy. Residential indicate more extensive periods of occupation and recurrent use. In addition, residential and temporary sites also indicated a diverse social economy, characterized by discrete workshops and special-use camps (e.g., hunting camps). Diet also appears to have diversified, with a shift away from dependence upon lacustrine environments such as lakeside marshes, to the exploitation of multiple environments containing rich resource patches.

2.2.3 Middle Holocene (ca. 7000 to 3000 cal B.P.)
The Pinto Complex is the primary cultural complex in the Mojave Desert during the Middle Holocene. Once thought to have neatly succeeded the Lake Mojave Complex, a growing corpus of radiocarbon dates associated with Pinto Complex artifacts suggest that its inception could date as far back into latter part of the Early Holocene. Extensive use of toolstone other than obsidian and high levels of tool blade reworking were characteristic of this complex and the earlier Lake Mojave Complex. A reduction in toolstone source material variability, however, suggests a contraction of foraging ranges that had expanded during the Early Holocene. Conversely, long-distance trade with coastal peoples continued uninterrupted, as indicated by the presence of *Olivella* shell beads.

The most distinguishing characteristic of the Pinto Complex is the prevalence of ground stone tools, which are abundant in nearly all identified Pinto Complex sites. The emphasis on milling tools indicates greater diversification of the subsistence economy during the Middle Holocene. Groups increased reliance on plant processing while continuing to supplement their diet with protein from small and large game animals.

Recent archaeological research in the Mojave Desert suggests there was a greater degree of regional cultural diversity during the Middle Holocene than once previously thought. Sutton et al. (2007) have...
proposed a new Middle Holocene cultural complex associated with sites exclusively located at Twentynine Palms in the southeastern Mojave Desert. Artifacts recovered from Deadman Lake Complex sites, such as *Olivella Dama* from the Sea of Cortez, and contracting-stem and lozenge-shaped projectiles similar to those recovered from Ventana Cave in Arizona, may suggest closer cultural contact with Southwest Archaic cultures than Pinto cultures to the north and west. However, it is also possible that the proposed complex simply reflects a technologically distinct segment of the Pinto, rather than a distinct culture.

2.2.4 Late Holocene (ca. 2000 cal B.P. to Contact)

The Late Holocene in the greater southern California region is characterized by increases in population, higher degrees of sedentism, expanding spheres of influence, and greater degrees of cultural complexity. In the Mojave Desert, the Late Holocene is divided into several cultural complexes; namely the Gypsum Complex (2000 cal B.C. to cal A.D. 200), the Rose Spring Complex (cal A.D. 200 to 1100), and Late Prehistoric Complexes (cal A.D. 1100 to contact).

The Gypsum Complex is defined by the presence of side-notched (Elko series), concave-based (Humboldt series), and well-shouldered contracting stem (Gypsum series) projectile points. Other indicative artifacts include quartz crystals, paint, rock art, and twig figures, which are generally associated with ritual activities. Warren (1984) considers the appearance of these artifact types at Gypsum Complex sites as evidence of the Southwest’s expanding influence in the region. Conversely, Sutton and others (2007) opt to associate Gypsum sites, which tend to cluster in the northern Mojave Desert, with temporal sequences modeled for the adjacent Great Basin. It is most likely, however, that the Gypsum Complex was exposed to various cultural influences stemming from long-distance exchange and social interaction networks that linked groups occupying the Mojave Desert to those on the Pacific Coast, in the American Southwest, and the Great Basin.

The Rose Spring Complex can also be defined by the presence distinct projectile points (i.e., Rose Spring and Eastgate series) and artifacts, including stone knives, drills, pipes, bone awls, milling implements, marine shell ornaments, and large quantities of obsidian. Of greater significance, however, are the characteristic advancements in technology, settlement strategies, and evidence for expanding and diverging trade networks.

The Rose Spring Complex marks the introduction of the bow and arrow weapon system to the Mojave Desert, likely from neighboring groups to the north and east. As populations increased, groups began to consolidate into larger, more sedentary residential settlements as indicated by the presence of well-developed midden and architecture. West and north of the Mojave River, increased trade activity along existing exchange networks ushered in a period of relative material wealth, exhibited by increased frequencies of marine shell ornaments and toolstone, procured almost exclusively from the Coso obsidian source. East and south of the Mojave River, archaeological evidence suggests there was a greater influence from Southwest and Colorado River cultures (i.e., Hakataya; Patayan).

Between approximately A.D. 1100 and contact, a number of cultural complexes emerged that archaeologists believe may represent prehistoric correlates of known ethnographic groups. During the Late Prehistoric Cultural Complex material distinctions between groups was more apparent, as displayed by the distribution of projectile point styles (e.g., Cottonwood vs. Desert Side-notched), ceramics, and lithic materials. Long-distance trade continued, benefiting those occupying
“middleman” village sites along the Mojave River where abundant shell beads and ornaments, and lithic tools were recovered from archaeological contexts (see Rector et al. 1983). Later on, however, trade in Coso obsidian was significantly reduced as groups shifted focus to the procurement of local silicate stone.

The Late Prehistoric Cultural Complex was also a time of increasing regional influence and territorial expansion. Warren (1984) noted “strong regional developments” in the Mojave Desert that included Anasazi interest in turquoise in the Mojave Trough, Hakatayan (Patayan) influence from the Colorado River, and the expansion of Numic Paiute and Shoshonean culture eastward. These developments led Sutton (1989) to propose that a number of interaction spheres were operating in the Mojave Desert during the Late Prehistoric. Sutton (1989) delineated interaction spheres based on the distribution of projectile point styles, ceramics, and obsidian and argued that the spheres broke along geographical lines that reflected the territorial boundaries of known ethnohistoric groups.

2.3 ETHNOGRAPHIC SETTING

2.3.1 Tataviam
The Tataviam, which means, “People who face the sun,” are a Native American group that resided in and around the area encompassing the Project area. They belong to the family of Serrano people who migrated down into the Antelope, Santa Clarita, and San Fernando valleys some time before 450 A.D. They settled into the upper Santa Clara River Drainage. Some Tataviam settlements in the Santa Clarita and upper valleys were Nuhubit (Newhall); Piru-U-Bit (Piru); Tochonanga, which is believed to have been located at the confluence of Wiley and Towsley Canyons; and the very large village of Chaguibit, the center of which is buried under the Rye Canyon exit of Interstate-5. The Tataviam also lived where Saugus, Agua Dulce, and Lake Elizabeth are located today. This places the Serrano among the larger “Shoshonean” migration into southern California that occurred 2,000 to 3,000 years ago (Higgins 1996).

The Tataviam people lived primarily on the upper reaches of the Santa Clara River drainage system, east of Piru Creek, but they also marginally inhabited the upper San Fernando Valley, including present day San Fernando and Sylmar (which they shared with their inland Tongva/Gabrieleño neighbors). The traditional Tataviam territory lies primarily between 1,500 and 3,000 ft above sea level. Their territory also may have extended over the Sawmill Mountains to include at least the southwestern fringes of the Antelope Valley, which they apparently shared with the Kitanemuk, who occupied the greater portion of the Antelope Valley. The Tataviam were hunters and gatherers who prepared their foodstuffs in much the same way as their neighbors. Their primary foods included yucca, acorns, juniper berries, sage seeds, deer, the occasional antelope, and smaller game such as rabbits and ground squirrels. There is no information regarding Tataviam social organization, though information from neighboring groups shows similarities among Tataviam, Chumash, and Gabrieleño ritual practices. Like their Chumash neighbors, the Tataviam practiced an annual mourning ceremony in late summer or early fall which would have been conducted in a circular structure made of reeds or branches. At first contact with the Spanish in the late eighteenth century, the population of this group was estimated at less than 1,000 persons. However, this ethnographic estimate of the entire population is unlikely to be accurate, since it is based only on one small village complex and cannot necessarily be indicative of the entire population of Tataviam. Given the archaeological evidence at various Tataviam sites, as well as the numbers incorporated into the Spanish Missions, pre-contact population and early contact population easily exceeded 1,000 persons (Blackburn 1962; Johnston 1962).
The Tataviam people lived in small villages and were semi-nomadic when food was scarce. The Tataviam were hunter-gathers who were organized into a series of clans throughout the region. Jimsonweed, native tobacco, and other plants found along the local rivers and streams provided raw materials for baskets, cordage, and netting. Larger game was generally hunted with the bow and arrow, while snares, traps, and pits were used for capturing smaller game. At certain times of the year, communal hunting and gathering expeditions were held. Faunal resources available to the desert dwelling Serrano included deer, mountain sheep, antelope, rabbit, small rodents, and several species of birds (quail being their favorite). Meat was generally prepared by cooking in earth ovens, boiling, or sun-drying. Cooking and food preparation utensils consisted primarily of lithic (stone) knives and scrapers, mortars and metates, pottery, and bone or horn utensils. Resources available to the desert dwelling Tataviam included honey mesquite, piñon nuts, yucca roots, mesquite and cacti fruits (Solis 2008).

These resources were supplemented with roots, bulbs, shoots, and seeds that, if not available locally, were traded for with other groups. Labor was divided between the sexes. Men carried out most of the heavy but short-term labor, such as hunting and fishing, conducted most trading ventures, and had as their central concerns the well-being of the village and the family. Women were involved in collecting and processing most of the plant materials and basket production. The elderly of both sexes taught children and cared for the young.

2.3.2 Kitanemuk

The Kitanemuk belonged to the northern section of the people known as the “Serrano.” The name, “Serrano,” however, is only a generic term meaning “mountaineers” or “those of the Sierras.” Ethnographers group the Kitanemuk with the Serrano based on linguistic similarities though the Kitanemuk did not identify themselves as Serrano. They lived on the upper Tejon and Paso creeks and also held the streams on the rear side of the Tehachapi Mountains, the small creeks draining the rear slope of the Liebre and Sawmill Range, with Antelope Valley and the westernmost part of the Mojave Desert. The extent of their territorial claims in the desert region is not certain.

The Kitanemuk lived in permanent winter villages of 50 to 80 people or more. During the late spring, summer, and fall months they dispersed into smaller, highly-mobile gathering groups. They followed a seasonal round, visiting different environmental regions as the important food producing plants became ready for harvest. Some staple foods important to the Kitanemuk include acorns and piñon pine nuts (Antelope Valley Indian Museum) and yucca, elderberries, and mesquite beans were available as well (Duff 2004).

While traveling in the Antelope Valley in 1776, Spanish explorer and Franciscan priest Francisco Garcés encountered the Kitanemuk living in a communal tule house. His written account describes that dwelling as consisting of a series of individual rooms surrounding a central courtyard. Each room housed a family and its own door and hearth.

The Kitanemuk appeared to share certain cultural fundamentals with the surrounding Serrano groups. While some customs differed, more specifically the ritualalistic practices honoring their dead; the Kitanemuk appear to have buried their dead, while the Serrano cremated them.

Garcés also relates that the Kitanemuk had extensive trade relations with sometimes distant groups. For example, he writes that the Kitanemuk traded with the “Canal” (Chumash of the Santa Barbara
Channel region) and describes wooden vessels with inlays of *Haliotis* that bore stylistic similarities to decorations found on the handles of Chumash knives and other objects (Kroeber 1953).

### 2.4 HISTORICAL SETTING

#### 2.4.1 County of Los Angeles

Los Angeles was first recorded in 1542 when Portuguese navigator Juan Rodríguez Cabrillo, sailing under the flag of Spain, noted in the ship’s log a bay he called Bahía de Los Fumos (Bay of the Smokes), referring to the smoke from Tongva campfires. In 1603, the Spanish explorer, Sebastian Vizcaino, named the inlet San Pedro, in honor of St. Peter, the second century bishop of Alexandria. In 1749, Gaspar de Portolá, Governor of the Californias, led a Spanish land party to scout for sites for Franciscan missions and civilian settlements. The Franciscan missions were established to secure the region for Spain through occupation, and to bring Christianity to the Native Americans. The Franciscans founded Mission San Gabriel Archangel in 1771 (Los Angeles Cultural Heritage Masterplan 2000:14–15).

Fertile soil, good climate, ample water and a large supply of Native American laborers brought prosperity and led to Spanish government sponsorship of a pueblo on the banks of the Porciúncula River. On September 4, 1781, El Pueblo de la Reina de Los Angeles (the Village of the Queen of the Angels) was founded by forty-four settlers. These Mexican Colonials were skilled miners, farmers, laborers, and artisans, all trades necessary for the settlement to flourish. By the end of the eighteenth century, the pueblo produced more grain harvests and herded more cattle, sheep and horses than any other place in California. In 1797, a second mission, the San Fernando Rey de España Mission, was established in present day city of Mission Hills, Los Angeles County (Los Angeles Cultural Heritage Masterplan 2000:15).

The Mexican War of Independence from Spain began in 1810. The Mexicans were victorious in 1821 and declared the Republic of Mexico in 1823. California was made a territory of the Republic in 1825. During Mexican rule, from 1825 to 1847, the rancheros became wealthy from trade in hides, tallow, wine, and brandy. The missions’ properties were redistributed between 1834 and 1836, making the rancheros even wealthier. American traders, drawn by low prices for cowhides and other raw materials, made contacts with the Californios. Some married the daughters of the rancheros, started business enterprises, and became increasingly influential in the finance and commerce of the region (Los Angeles Cultural Heritage Masterplan 2000:15).

During the Mexican-American War, on August 13, 1846, Captain John Fremont entered the pueblo of Los Angeles and declared it an American territory. The Treaty of Cahuenga ended the conflict in California in 1847. The Treaty of Guadalupe Hidalgo officially ended the war in 1848 (Los Angeles Cultural Heritage Masterplan 2000:15).

Los Angeles became one of California’s original 27 counties, created by the State’s first Legislature in February 18, 1850. Los Angeles County was named for the territory’s largest city, Los Angeles. Los Angeles County comprised lands that encompassed 4,340 square miles, and originally contained all of San Bernardino County, a large portion of Kern County, and all of Orange County. During the 1850s and 1860s, Los Angeles underwent several boundary changes: in 1853, California’s Legislature extracted the eastern portion of Los Angeles County to form San Bernardino County; in 1866, an act created Kern County from territory that previously was part of Tulare and Los Angeles.
counties; and in 1889, a similar act created Orange County from Los Angeles County lands lying southeast of Coyote Creek (Coy 1923:116, 140, 196, 216).

2.4.2 Antelope Valley
The Antelope Valley is a 3,000-square-mile high desert closed basin that straddles northern Los Angeles County and southern Kern County. The Antelope Valley was a trade route for Native Americans traveling from Arizona and New Mexico to California’s coast. Exploration began in the early 1770s, but it was not until the 1840s that the Valley was first settled permanently. The 1854 establishment of the Fort Tejon military post near Castaic Lake and Grapevine Canyon created a gateway for Valley traffic (Antelope Valley Community History 2010).

During the nineteenth century, gold mining at the town of Acton and cattle ranching contributed to the growth of Antelope Valley. When news broke that gold was discovered in the Soledad Canyon (located in between Palmdale and Santa Clarita), a number of miners arrived and set up various mining camps near the canyon’s rich mineral and silver discoveries. The area grew to the point that a post office was needed. The U.S. Postal Service rejected the area’s informal name of “Soledad City” to avoid confusion with Soledad in Monterey County. The city was named “Ravenna” in honor of a local merchant and saloon keeper, Manuel Ravenna. Ravenna became a shipping point from which the canyon’s gold, silver and copper ores were hauled off to port in San Pedro. Freight wagons drawn by oxen or mules were used at first, then gave way to the Southern Pacific Railroad linking San Francisco to Los Angeles through the Antelope Valley in 1876. Ravenna became a ghost town shortly thereafter, as the miners moved up the canyon to new rail sidings where Acton now stands (City of Acton 2010).

The Butterfield mail station, the Los Angeles to San Francisco telegraph line, and the Southern Pacific Railroad brought people and communication through the Valley during the 1860s and 1870s. Antelope Valley produced alfalfa and grain for some time until several dry years ensued. Mining near Acton helped residents sustain drought between 1874 and the Great Depression of the 1930s. By 1897 nearly everyone had left the Valley. Mining continues in and around the Antelope Valley today (County of Los Angeles 1986).

2.4.3 City of Palmdale
The Antelope Valley, through which the Project area is located, was settled once the Southern Pacific Railroad line between San Francisco and Los Angeles was completed in 1876. The region was dependent on stock raising, dry farming, and fruit orchards. The origins of the city of Palmdale are in two early communities: Harold and Palmenthal. Harold (also known as Alpine Station) was at the intersection of the Southern Pacific Railroad tracks and Fort Tejon Road (now Barrel Springs Road). Palmenthal was settled in 1886 by approximately 55 Swiss and German families, mostly from Nebraska and Illinois. The name is supposedly from the settlers’ misidentification of the Joshua trees (City of Palmdale 2009). A drought in the 1890s stifled growth. In 1899, residents from Harold and Palmenthal relocated to a new site, which became Palmdale, near the railroad station and the stagecoach line between San Francisco and New Orleans.

In 1895, the Harold Reservoir, now known as Palmdale Lake, was formed after the South Antelope Valley Irrigation Company constructed an earthen dam. A wooden ditch, flume, and wooden trestle were constructed at the same time to connect Littlerock Creek to the reservoir. The primary purpose of the reservoir was to supply water for agriculture in the area. Beginning in the 1950s, the
reservoir’s water was also used to supply residences. The Palmdale Irrigation District agreed to purchase water from the then-new California Aqueduct in 1963. Subsequently, the lake was expanded to contain the increased water supply, and a new treatment facility adjacent to the lake was built (Palmdale Water District 2009).

In 1917, electricity was introduced in the area, and deep wells were constructed to provide a steady water supply. In 1912 and 1913, the construction of the Los Angeles Aqueduct attracted workers to the area. In 1919, a bond issue passed to construct the Littlerock Dam, which is approximately 11 miles southeast of Palmdale within the Angeles National Forest (Los Angeles County Department of Regional Planning 2009:6).

Beginning in the 1930s, the aerospace industry contributed toward the development of Palmdale. The establishment of Muroc Air Base (now Edwards Air Force Base) in 1933 caused the population of the Antelope Valley to double. In addition, the Palmdale Airport was built in 1940. In 1950, the Federal government took over the airport for a jet testing facility and renamed it U.S. Air Force Plant 42 (Los Angeles County Department of Regional Planning 2009:6). The Skunk Works, an alias for Lockheed Martin’s group that develops extremely confidential and advanced products, primarily for the U.S. military, is located at Air Force Plant 42. The Skunk Works was formed in 1943 and led by Clarence L. “Kelly” Johnson to create the airframe for the XP-80, a powerful jet designed to answer the German jet threat during World War II. Over the years, the Skunk Works has designed many more famous aircraft designs for the U.S. military (Lockheed Martin 2009).

2.4.4 California Aqueduct
The California Aqueduct is part of the State Water Project, which brings water to southern California from the Sacramento River in northern California. The California Department of Water Resources operates the State Water Project. It is the largest state-built water and power project in the United States. Beginning at Lake Davis in northern California and traveling south to southern California, it includes 34 storage facilities, 20 pumping plants, four pumping-generating plants, five hydroelectric power plants, and about 700 mi of canals, tunnels and pipelines (Aquafornia 2008). The State Water Project provides drinking water for 23 million people and irrigation water for 750,000 ac of farmland. The aqueduct splits in southern Kern County, with the West branch leading to Castaic Lake, and the East Branch heading through Antelope Valley and south to Lake Perris in Riverside County. Construction of the California Aqueduct began in the early 1960s, but construction of the East Branch through the Antelope Valley did not occur until the early 1970s. The nearest State Water Project facility to the Project area is the Pearblossom pumping plant.
Prior to the archaeological survey of the Project area, an archaeological literature and records search was conducted at the SCCIC, housed at the California State University, Fullerton, in November 2013. The objective of this records search was to determine whether any prehistoric or historical cultural resources have been recorded previously within the Project area, or within a one-mile radius of it, during prior cultural resources investigations. Results of this search indicate that no less than five investigations have been conducted previously within a one-mile radius of the Project area; none of the previous investigations encompassed portions of the Project area (Table 1).

### Table 1

Previous Cultural Studies within One-Mile of Project Area

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Date</th>
<th>SCCIC Reference #</th>
<th>Title</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenwood, Roberta S. and Michael J. McIntyre</td>
<td>1981</td>
<td>LA-01909</td>
<td>Class III Cultural Resources Inventory: Adelanto-Rinaldi 500kV Transmission Line Corridors 1, 2, and 3, Los Angeles Department of Water</td>
<td>Five resources identified</td>
</tr>
<tr>
<td>Rockman, Marcy, and Kyle Garcia</td>
<td>2007</td>
<td>LA-08942</td>
<td>Results of the Cultural Resource Assessment for the Southern California Edison Replacement of Deteriorated Pole Nos. 1200476e and 698947e, Located on the Calli Valli 12 kv Circuit and the Titan 12 kv Circuit, Cities of Palmdale and Valyermo, Los Angeles County</td>
<td>No resources identified</td>
</tr>
<tr>
<td>Kirkish, Alex</td>
<td>2005</td>
<td>LA-09197</td>
<td>Archaeological Survey Report for the SR-138 Segment 7 Road Widening Project, KP90.4/92.0, Los Angeles County, California</td>
<td>No resources identified</td>
</tr>
<tr>
<td>Van Bueren, Thad M. and Jill Hupp</td>
<td>2000</td>
<td>LA-10518</td>
<td>Searching for Utopia: Results of Archaeological and Historical Investigations at the Llano del Rio Colony (CA-LAN-2577H) near Pearblossom, Los Angeles County, California</td>
<td>One resource identified</td>
</tr>
<tr>
<td>Bray, Madeleine</td>
<td>2010</td>
<td>LA-10634</td>
<td>Preliminary Archaeological Survey Report for 98 Linear Miles of the East Branch Extension of the California Aqueduct for the DWR East Branch Enlargement Project, Los Angeles and San Bernardino Counties</td>
<td>65 resources identified</td>
</tr>
</tbody>
</table>

The archaeological records search also indicated that seven cultural resources have been identified previously within a one-mile radius of the Project area. These cultural resources include: five historical refuse scatters (19-004132, 19-004133, 19-004134, 19-004137, 19-004138); a historical refuse scatter with a prehistoric isolated flake (19-004139); and the East Branch of the California Aqueduct (P-19-004154).

Additional sources consulted during the archaeological literature and records search include the National Register of Historic Places, the Office of Historic Preservation Archaeological Determinations of Eligibility, and the Office of Historic Preservation Directory of Properties in the Historic Property Data File. There are no listed historic properties, historical resources, or historic
landmarks recorded within the Project area. One resource within a one-mile radius of the Project area, the East Branch of the California Aqueduct (P-19-004154), is recommended eligible for the National Register of Historic Places (NRHP) (Anderson 2009). Historical maps consulted include the Alpine Butte, CA (1945) 15' USGS Quadrangle map; no structures or features of interest were noted within the Project area on this map.
NATIVE AMERICAN CONSULTATION

Æ contacted the Native American Heritage Commission (NAHC) on 11 November 2013, for a review of the Sacred Lands File to determine if any known Native American cultural properties (e.g., traditional use or gathering areas, places of religious or sacred activity, etc.) are present within or adjacent to the Project area. The NAHC responded on 14 November 2013, stating that no Native American cultural resources are known to exist within the immediate Project area; the NAHC requested that Native American individuals and organizations be contacted to elicit information and/or concerns regarding cultural resource issues related to the proposed Project. These individuals and organizations were contacted by email or letter on 19 November 2012. Individuals/organizations contacted include: Beverly Salazar Folkes, of Chumash, Tataviam, and Fernandeño descent; Larry Ortega, Chairperson of the Fernandeño Tataviam Band of Mission Indians; Ron Andrade, Director of the LA City/County Native American Indian Commission; Delia Dominguez, Chairperson of the Kitanemuk and Yowlumne Tejon Indians; John Valenzuela, Chairperson of the San Fernando Band of Mission Indians; Randy Guzman-Folkes, of Chumash, Fernandeño, Tataviam, Shoshone Paiute, and Yaqui descent; Daniel McCarthy, Director of the CRM Department of the San Manuel Band of Mission Indians, and Robert Robinson, Co-Chairperson of the Kern Valley Indian Council. An example of this letter, the list of contacts, and the responses received are included in Appendix B.

Of the eight groups and/or individuals contacted, two responded with comments. Robert Robinson commented on behalf of the Kern Valley Indian Community (KVIC) tribal members and noted that the Project area has been occupied continuously by their Native American ancestors. Therefore, they are recommending a culturally affiliated Native American monitor to be present during all ground disturbing activities. Daniel McCarthy of the San Manuel Band of Mission Indians had no comments regarding the Project. As of the date of this report, no response was received from Beverly Salazar Folkes, the San Fernando Band of Mission Indians, Fernandeño Tataviam Band of Mission Indians, Randy Guzman Folkes, the LA City/County Native American Indian Commission, or the Kitanemuk & Yowlumne Tejon Indians. A Table of Responses summarizing consultation with Native American groups and/or individuals consulted is presented in Appendix A.
The research design focuses on the identification, delineation, and characterization of any previously unidentified cultural resources visible on the modern ground surface within the Project area, should they exist. Given the environmental setting and historical use of the immediate area (see Chapter 2), and the results of the archaeological literature and records search (see Chapter 3) evidence of use and/or occupation by aboriginal populations during Late Prehistoric Cultural Complex was anticipated. Furthermore, evidence of historical Euro-American agricultural pursuits (e.g., farming, ranching, historical water conveyance features, etc.) was anticipated.

For the purposes of this study, cultural resources are any locations that contain material culture greater than 45 years old. In order for the material culture to be considered important and/or significant from an archaeological perspective, the material culture should retain some degree of integrity, as the contextual information is paramount in providing valuable insight and/or advancements in our understanding of prehistoric and historical human culture. The National Park Service (NPS) defines historic context as “information about historic trends and properties grouped by an important theme in the prehistory or history of a community, State, or the nation during a particular period of time. Because historic contexts are organized by theme, place, and time, they link historic properties to important historic trends” (NPS 1997:4). In addition, a cultural resource must meet at least one of the criteria for listing on the NRHP and/or the CRHR in order to be considered significant.
6

PHASE I ARCHAEOLOGICAL SURVEY METHODS AND RESULTS

6.1 SURVEY METHODS

A cultural resources pedestrian survey of the main Project area was completed on November 14 and 15, 2013 by AE archaeologist Michael Kay. The survey encompassed all of Assessor’s Parcel Number (APN) 3046-014-003, measuring approximately 80 ac of flat, undeveloped alluvial plain. The shoulders of Avenue T-8 and Avenue U, comprising the north and south perimeters of the Project area, respectively, were also examined for archaeological remains. Soils throughout the area consist of coarse, light-brown sand with high silt content, interspersed with small to medium subrounded cobbles. Vegetation consists of creosote bushes (Larrea tridentata), Joshua trees (Yucca brevifolia), and teddy bear cholla (Cylindropuntia bigelovii), which reduced visibility to 75 percent (Figure 3). Observed fauna included desert chipmunk (Ammospermophilus leucurus); black-tailed jackrabbit (Lepus californicus); crow (Corvus brachyrhynchos); red-tailed hawk (Buteo jamaicensis), and various insects. It should be noted that the pipeline portion of the Project was added subsequent to the cultural resources pedestrian survey. Therefore, this portion of the Project (approximately 2.8 miles) was not surveyed during the current cultural resources pedestrian survey effort.

Figure 3. Overview of the Project area from the northwest corner of the Project area, view to southeast.
6.2 SURVEY RESULTS

The archaeological survey of the main Project area identified one historical refuse site (Figure 4). Additional information for this resource is included in the site record in Appendix B; evaluations are presented in Chapter 7. In addition, the entire extent of the site was found to be disturbed extensively by frequent horse-riding, off-roading, dumping of household waste (i.e., clothes, furniture, televisions, dishes, bathroom fixtures, tires, motor oil containers, automotive parts, etc.), and improvised access ways.

6.2.1 CA-LAN-4370H (P-19-004370)

This site is a concentrated scatter of both modern and historical elements. The site measures 240 x 150 ft (N-S x E-W) and includes hundreds of glass bottle and jar fragments, ceramic plate and hollowware fragments, pull-tab and church-key cans, clothing, processed wood, automobile parts, electrical components, tires, and other items dating to 1951, and possibly earlier (Figure 5). The scatter is one of many across the landscape, but is distinctive in encompassing historical artifacts with modern elements.
Figure 4 – Cultural resources within the Project area. (Confidential map – removed from public document)
Figure 5. Portion of CA-LAN-4370H containing historical objects, view to east-southeast.
As mentioned, CA-LAN-4370H is a refuse deposit containing vast quantities of fragmented items, primarily household goods (i.e., bottles, jars, plates, and cans), that date to the 1950s. Historical aerial photographs consulted for this Project show that this area has been undeveloped since 1953. The adjacent agricultural properties to the west and southwest, owned by Scattaglia Farms, LLC, were developed sometime between 1980 and 1995. Development of the Pearblossom Highway and adjacent roadways has facilitated access to the area, which has been subject to regular refuse disposal since at least the 1950s. The refuse found at this site is common domestic household refuse that could have been deposited by any number of individuals residing in the vicinity. The refuse has no apparent association with any known historical persons or events, and the refuse deposit exhibits no interesting, unusual, or rare artifacts.

No evidence has been found to suggest that the refuse at this site is directly associated with a prominent historical event (CRHR Criterion 1). No evidence has been found to suggest that the refuse is directly associated with a prominent historical figure (CRHR Criterion 2). The refuse does not embody distinctive characteristics of a type, period, or method of construction, nor does it exhibit any architectural or engineering merits (CRHR Criterion 3). With no known historical associations and no important information value, refuse sites such as CA-LAN-4370H have no archaeological data potential beyond what has already been documented. Further analysis of the artifacts at this site is unlikely to yield any information that would be considered important to the study of local, regional, state, or national history (CRHR Criterion 4).
8

MANAGEMENT RECOMMENDATIONS

As noted, the Project is subject to CEQA, as amended. One refuse scatter, CA-LAN-4370H, containing both modern and historical elements was discovered within the Project area and documented during this study. The site record for this resource is included in Appendix A. This resource is not eligible for the CRHR, and therefore, is not considered a “historical resource” under CEQA. No further management is recommended at this time for CA-LAN-4370H.

Historical maps indicate that the main Project area has remained vacant and undeveloped since 1953. The results of this study indicate that the archaeological sensitivity of the area is considered to be low. In addition, background research has indicated that the sediments within the Project area have a low potential to contain primary archaeological deposits. Therefore, no further cultural resource management of the main Project area (80 acre parcel) is recommended.

As mentioned in Chapter 6, E did not survey the pipeline portion of the Project (approximately 2.8 mi) or the 96th Street East Turnout modification area for the current Phase I cultural resources study. Prior to construction, the pipeline and turnout area associated with the Project should be subjected to a complete Phase I cultural resources pedestrian survey.

With regard to Native American concerns with the Project, Robert Robinson commented on behalf of the Kern Valley Indian Community (KVIC) tribal members and noted that the Project area has been occupied continuously by their Native American ancestors. Therefore, they are recommending a culturally affiliated Native American monitor to be present during all ground-disturbing activities.

In the unlikely event that potentially significant archaeological materials are encountered during Project-related ground-disturbing activities, all work must be halted in the vicinity of the archaeological discovery until a qualified archaeologist can visit the site of discovery and assess the significance of the archaeological resource. In addition, Health and Safety Code 7050.5, CEQA 15064.5(e), and Public Resources Code 5097.98 mandate the process to be followed in the unlikely event of an accidental discovery of any human remains in a location other than a dedicated cemetery. Finally, should additional actions be proposed within the Project area that have the potential for additional subsurface disturbance, further cultural resource management may be required.
REFERENCES

Amsden, Charles A.

Anderson, Katherine
2009 Archaeological Site Record for P-19-004194, November 2009. On file, South Central Coastal Information Center, University of California, Riverside.

Antelope Valley Community History

Aquafornia

Basgall, M. E., and S. A. Overly

Bateman, P., D. Cragen, and G. Schumacher

Bettinger, R. L., and R. E. Taylor

Blackburn, Thomas C.

California Governor’s Office of Planning and Research

Campbell, E. W. C., W. H. Campbell, E. Antevs, C. A. Amsden, J. A. Barbieri, and F. D. Bode
1937 The Archaeology of Pleistocene Lake Mojave. Southwest Museum Papers 11. Los
Angeles.
City of Acton

City of Palmdale

County of Los Angeles

Coy, Owen C.

Duff, Gabrielle

Grayson, D. K.

Hall, M. C.
1993 Archaeology of Seven Prehistoric Sites in Tifort Basin, Fort Irwin, San Bernardino county, California. Prepared by Far Western Anthropological Research Group for the U.S. Army National Training Center, Fort Irwin, California.

Hewitt, D. F.

Higgins, Paul

Johnston, B.E.

Laudenslayer, W. F., Jr., and J. R. Boggs
Lockheed Martin

Los Angeles County Department of Regional Planning

Los Angeles Cultural Heritage Masterplan

Martyn, A., and D. Moore

Mayer, Kenneth E., and William F. Laudenslayer

Monastero, F.

Moore, D.

National Park Service (NPS)

Palmdale Water District

Rogers, M. J.
Solis, Laurie  
2008  *People Who Face the Sun*. Xlibris Publishing.

Sutton, Mark Q.  


Warren, C. N.  

Warren, Claude N., and Robert H. Crabtree  

Yohe, R. M. II  
APPENDIX A

NATIVE AMERICAN COORDINATION
Date: 11 November 2013

Project: HELIX: Eastside Water Banking and Blending Project

County: Los Angeles

USGS Quadrangle Name: Little Rock (1957, 1992)

Township 5N Range 10W Section(s) 15, 16


Contact Person: Vanessa Mirro

Street Address: 133 N. San Gabriel Blvd., Ste. 201

City: Pasadena Zip: 91107

Phone: (951) 766-2000

Fax: (951) 766-0020

Email: vmirro@appliedearthworks.com

Project Description: On behalf of HELIX Environmental Planning, Inc, Applied EarthWorks, Inc. is conducting a Phase I cultural resources survey of alternative locations (encompassing an area of approximately 80 acres) for the Eastside Water Banking and Blending Project. The study will be conducted in accordance with CEQA.
Ms. Vanessa Mirro, RPA

Applied EarthWorks, Inc.
133 North San Gabriel Boulevard, Suite 201
Pasadena, CA 91107

Sent by FAX to: 951-766-0020
No. of Pages: 3

File Search and Native American Contacts list for the "HELIX Eastside Water Banking and Blending Project;" located on approximately 80-acres in northeast Los Angeles County, California

Dear Ms. Mirro:

A record search of the NAHC Sacred Lands File failed to indicate the presence of Native American traditional cultural places in the project site(s) submitted as defined by the USGS coordinates configuring the 'Area of Potential Effect' or APE. Please note that the absence of archaeological discoveries does not preclude their existence. Other data sources for Native American sacred places/sites should also be contacted. A Native American tribe or individual may be the only sources of information about traditional cultural places or sites.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the Court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

Attached is a list of Native American tribes, Native American individuals or organizations that may have knowledge of cultural resources in or near the project area (APE). As part of the consultation process the NAHC recommends that local government and project developers contact the tribal governments and individuals in order to determine the proposed action on any cultural places/sacred sites. If a response from those listed is not received in two weeks of notification, the NAHC requests that a follow-up telephone call be made to ensure the project information has been received.
If you have any questions or need additional information, please contact me at (916) 373-3715.

Sincerely,

[Signature]

Dave Singleton
Program Analyst

Attachments
Native American Contacts
Los Angeles County, California
November 14, 2013

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(805) 558-1154 - cell
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Chumash

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(213) 386-3995 FAX

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Daniel McCarthy, M.S., Director-CRM Dept.
26569 Community Center Drive
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(909) 864-8933, Ext 3248
dmccarthy@sanmanuel-nsn.gov
(909) 862-5152 Fax

Kitsinum & Yowlumne Tejon Indians
Delfia Dominguez, Chairperson
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(626) 339-6785

Kern Valley Indian Council
Robert Robinson, Co-Chairperson
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Tubatulabal
Kawaiisu
Koso
Yokuts

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

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7650.5 of the Health and Safety Code, Section 5997.84 of the Public Resources Code and Section 5997.86 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed HELIX Environmental Planning: Eastside Water Banking and Blanding Project, located in northeast Los Angeles County, California for which a Sacred Lands File search and Native American Contacts list were requested.
November 19, 2013

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

Re: Cultural Resources Investigation for Eastside Water Banking and Blending Project in Los Angeles County, California

Dear Ms. Folkes:

On behalf of the Antelope Valley-East Kern Water Agency (AVEK), Applied EarthWorks, Inc. (Æ) has conducted a cultural resources records and literature search and pedestrian archaeological survey of the Eastside Water Banking and Blending Project (Project) in Littlerock, Los Angeles County, California. The proposed Project area is depicted on the Little Rock, CA 7.5' USGS quadrangle (See attached maps). The Native American Heritage Commission (NAHC) listed you as a contact with potential interests in the area. This letter serves to notify you of the results of our investigations in the case that you may have any concerns regarding known cultural resources within the project area.

The archaeological literature and records search conducted at the South Central Coastal Information Center housed at the California State University, Fullerton, indicates that ten cultural resources studies have been conducted and seven archaeological sites have been identified within a one-mile radius of the Project area. No resources have been recorded in the Project area.

Æ was contracted to perform an intensive archaeological survey of the Project area. The survey was completed on 14-15 November 2012, and transect spacing ranged from 10 to 15 meters. No prehistoric resources and one refuse scatter containing historical elements (i.e., cans, bottles, etc.) were discovered within the Project area.

A search of the Sacred Lands File by the Native American Heritage Commission did not indicate the presence of Native American cultural resources in the immediate Project area. However, should your records show that cultural properties exist within or near the Project area shown on the enclosed map, or if you have any concerns regarding Native American issues related to the overall Project, please contact me at (626) 578-0119 (ext. 104) or via letter expressing your concerns. You may also e-mail me at mkay@appliedearthworks.com. If I do not hear from you within the next two weeks, I will contact you by telephone.

Please be aware that your comments and concerns are very important to us, as well as to the successful completion of this Project. I look forward to hearing from you in the near future. Thank you, in advance, for taking the time to review this request.

Sincerely,

Michael Kay, M.A., RPA
Associate Archaeologist
Applied EarthWorks, Inc.
November 19, 2013

Michael Kay, M.A., RPA, Associate Archaeologist
Applied Earth Works, Inc.
133 N. San Gabriel Blvd. Suite 201
Pasadena, CA 91107-3414

RE:  KVIC Comments Regarding, ‘Cultural Resources Investigation for Eastside Water Banking and Blending Project in Los Angeles County, California’

Mr. Michael Kay,

I am commenting on this project on behalf of Kern Valley Indian Community (KVIC), Kawaiisu / Tubatulabal tribal members. KVIC hold that early identification of prehistoric cultural resources is critical to providing meaningful protection and preservation of these resources. When graves and funerary items are revealed at ground disturbing projects this is a failure of the process. We find that early involvement of culturally affiliated Native American monitors benefits the proponent providing the opportunity to plan the project so as to avoid sites and fewer sites are adversely impacted.

In your letter 10 cultural resource studies have been conducted within a mile of the project site. 7 sites were recorded. I assume these are primarily associated with highway, road and aqueduct projects which would mean a significant portion of the one mile radius has not been surveyed. Looking at the aerial map a large portion of the project area is located on ground that has been disturbed and given its proximity to the town, likely heavily looted of surface prehistoric artifacts. Also springs are located to the east within a mile of the project area.

CEQA Guidelines Section 15370 states that avoidance is the preference when archaeological items of significant are present at a site and these items might also be part of a cultural landscape that the Secretary of Interior’s standards for the treatment of Archeological Properties demands. An analysis of the archaeological and cultural resources must also be part of the EIR per CA Public Resources Code Section 21083.2 in consultation with local tribes.

Given the long and continued occupation of the area of the project by our Native American ancestors and the potential for encountering significant cultural resources and graves we recommend culturally affiliated Native American monitors are present during all ground disturbing activities. These culturally affiliated Native American monitors / consultants should be compensated for their time and travel for the duration of their involvement in the
project. KVIC has several trained and experienced cultural resource monitors who are very good at identifying prehistoric cultural resources.

It is also the recommendation of KVIC that all sites meeting the criterion for eligibility in the California Register of Historical Resources be avoided whether previously identified or found through inadvertent discovery be avoided and if avoidance is not possible the site can be capped using an identifying boundary not to be breached. In the event graves are discovered all work will cease and the County Coroner is to be called to make a determination of whether the grave is Native American and if it is the Coroner is to notify the Native American Heritage Commission whom will appoint a Most Likely Descendent to make a recommendation to the land owner for treatment of the discovery and any associated grave goods.

Thank you for the opportunity to submit comments regarding this project.

Sincerely,

Robert Robinson
Co-Chairman
Tribal Historic Preservation Officer
Kern Valley Indian Council
P.O. Box 1010
Lake Isabella, CA 93240
W: 760.549.2131
H: 760.378.2915
C: 916.803.3408
brabinson@iwwisp.com

Cc: Via E-mail
Honorable June Walker Price, Chairman KVIC
Dave Singleton, Calif. Native American Heritage Commission
From: Daniel McCarthy  
To: Joan George; mkay@appliedearthworks.com  
Subject: RE: Cultural Resources Investigation - AVEK Eastside Water Banking and Blending Project  
Date: Friday, December 13, 2013 11:16:08 AM

Joan/Michael,

Thank you for the opportunity to provide additional comments. We have none at this time, given that your investigations did not locate any cultural resources. //daniel

Daniel McCarthy, MS, RPA  
Director  
Cultural Resources Management Department  
San Manuel Band of Mission Indians  
26569 Community Center Drive  
Highland, CA  92346  
Office: 909 864-8933 x 3248  
Cell: 909 838-4175  
dmccarthy@sanmanuel-nsn.gov

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From: Joan George [mailto:jgeorge@appliedearthworks.com]  
Sent: Monday, December 09, 2013 9:46 AM  
To: Daniel McCarthy  
Subject: Cultural Resources Investigation - AVEK Eastside Water Banking and Blending Project

Good Morning Daniel,

Just a quick follow-up regarding the Antelope Valley-East Kern Water Agency (AVEK), Eastside Water Banking and Blending Project. To summarize, AVEK is proposing to construct recharge basins to collect any surplus water from the State Water Project Aqueduct. A literature and records search was conducted and no previously recorded resources were noted within the project area. We contacted the NAHC and their search failed to indicate the presence of Native American resources within the project area. Finally, we performed a pedestrian survey of the project area and no prehistoric resources were discovered during this survey.

Should you have any comments or concerns regarding this project, please call or email me.

Thank you,  
Joan

Joan George  |  Applied EarthWorks, Inc.  
Associate Archaeologist

3550 E. Florida Ave., Ste. H  
Hemet, CA  92544-4937  
951.766.2000 x-24  office

http://www.appliedearthworks.com

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY
## LIST OF NATIVE AMERICAN CONTACTS AND RECORD OF RESPONSES

<table>
<thead>
<tr>
<th>Name</th>
<th>Date &amp; Time of Calls</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beverly Salazar Folkes</td>
<td>November 19, 2013</td>
<td>Scoping letter sent via email.</td>
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<tr>
<td>Chumash</td>
<td></td>
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<tr>
<td>Tataviam</td>
<td>December 9, 2013</td>
<td>E-mailed follow-up effort for correspondence. No response received.</td>
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<tr>
<td>Fernandeño</td>
<td></td>
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<tr>
<td>Chairperson</td>
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</tr>
<tr>
<td>Fernandeño Tataviam Band of Mission Indians</td>
<td>December 10, 2013</td>
<td>Called multiple times using the number provided by the NAHC; however, unable to speak to an individual or leave voicemail message for Mr. Ortega. No response received.</td>
</tr>
<tr>
<td>Ron Andrade</td>
<td>November 19, 2013</td>
<td>Scoping letter sent via email.</td>
</tr>
<tr>
<td>Director</td>
<td></td>
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<tr>
<td>LA City/County Native American Indian Commission</td>
<td>December 9, 2013</td>
<td>E-mailed follow-up effort for correspondence. No response received.</td>
</tr>
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<td>Delia Dominguez</td>
<td>November 19, 2013</td>
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<td>Yaqui</td>
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<tr>
<td>Name</td>
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<td>Responses</td>
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</tbody>
</table>
| Daniel McCarthy  
Director - Cultural Resources Department  
San Manuel Band of Mission Indians | November 19, 2013  
December 9, 2013  
December 13, 2013 | Scoping letter sent via email.  
E-mailed follow-up effort for correspondence.  
Received email response from Mr. McCarthy stating that, because the investigation did not identify any cultural resources, the San Manuel Band has no comments. |
| Robert Robinson  
Co-Chairperson  
Kern Valley Indian Council | November 19, 2013  
Mr. Robinson commented on behalf of the Kern Valley Indian Community (KVIC) tribal members and notes that the project area has been occupied continuously by their Native American ancestors. Therefore, they are recommending a culturally affiliated Native American monitor to be present during all ground disturbing activities. |
APPENDIX B

CONFIDENTIAL ARCHAEOLOGICAL SITE RECORD