

3.4 Cultural Resources

A cultural resource is defined as any prehistoric archaeological, historic archaeological, historic architectural resource, or a significant paleontological resource. Federal, state, and local guidelines have been established by which an item, object, structure, building, or any other such entity, can be considered or defined as a cultural resource (See Section 3.4.2, below). All projects that can potentially impact identified cultural resources must be assessed in order to ascertain the extent of the impact. Mitigation measures, preferably avoidance, must be proposed so as to preserve those resources. The assessment of project impacts on cultural resources under CEQA (*CEQA Guidelines*, Section 15064.5) is a two-step process: (1) determine whether the project site contains cultural resources then, (2) if the site is found to contain a cultural resource, determine whether the project would cause a substantial adverse change to the resource.

This section discusses the overall setting for the proposed project, which includes a summarization of the prehistoric, ethnographic, historic, and paleontological contexts, as it defines and explains all applicable regulatory frameworks under which the current project must be evaluated. The methodology enacted as part of the assessment of cultural resources within the Area of Potential Effect (APE) is defined. Likewise, any existing or newly identified cultural resources found to be within the proposed project APE are introduced, and all anticipated impacts are identified. Mitigation measures for the preservation or protection of potentially impacted cultural resources also are included.

3.4.1 Setting

ArchaeoPaleo Resource Management, Inc. (APRMI) archaeologists Shannon L. Loftus and Robin D. Turner performed the Phase I Cultural Resource and Paleontologic Assessment (Phase I Assessment) of the proposed project APE. The results of the study are documented in a confidential archaeological technical report titled *Cultural Resource and Paleontologic Assessment: North Los Angeles/Kern County Regional Recycled Water Master Plan, Los Angeles/East Kern Counties, California*. This technical report serves as the primary reference source for the following summary discussion of the archaeological and paleontologic investigation of the proposed project.

Prehistoric Context

General scholarship notes the prehistoric occupation of southern California by various hunter-gatherer groups to at least 12,000 years before present (B.P.) (Moratto, 1984). Specifically, the Antelope Valley foothill region has been identified as an axis between coastal and desert populations, as well as northern populations of the Eastern Sierra and northern California (Loftus and Turner, 2008). Prehistoric human subsistence is believed to have involved the seasonal exploitation of natural resources by small groups, a strategy that was successfully employed until approximately 2,000 B.P. After that time changes in the cultural adaptations of these prehistoric communities occurred, changes believed to have been caused by an increase in population, among other potential catalysts. Other potential catalysts for this change include changes in the

environment, social organization, technology, or perhaps a combination of all. Specific changes that have been identified include a shift towards more sedentary settlement pattern with the appearance of semi-permanent villages and an increase in small campsites associated with these larger villages (Loftus and Turner, 2008).

Loftus and Turner (2008) identify a generally accepted chronology for dating the various cultural phases of the prehistoric populations that occupied the Mojave Desert and the Great Basin area, which can likewise be applied to the Antelope Valley. This chronology proposes seven specific cultural phases: Pre-projectile Point Period (20000 – 10000 B.P.), Paleo-Indian Period (ca. 10000 B.C. – 8000 B.C.), Lake Mojave Period (8000 B.C. - 5000 B.C.), Pinto Period (5000 B.C. – 2000 B.C.), Gypsum Period (2000 B.C. – A.D. 500), Rose Spring Period (A.D. 500 – 1000), and the Late Prehistoric Period (A.D. 1000 to contact).

The *Pre-projectile Point Period* is a contentious cultural phase that is proponed by some researchers to place early lithic traditions such as Calico, Lake China, and Lake Manix. Specific references can be found in the Loftus and Turner archaeological report (2008). The *Paleo-Indian Period* is the period associated with Big Game Hunting Traditions that utilized fluted points for hunting late Pleistocene megafauna. A few of these Paleo-Indian fluted points have been found in the Mojave Desert. Examples of Paleo-Indian fluted projectile points include the Clovis and Dalton point types. During the *Lake Mojave Period*, a diversification of artifact and ecofact assemblages occurs, suggesting the adoption of broader adaptation strategies by prehistoric populations. Artifacts associated with this period include the long-stemmed Lake Mojave and shorter-stemmed Silver Lake projectile points, finds which are often associated with terminal Pleistocene lake shore locations. Relatively few millingstone artifacts have been found in Lake Mojave Period contexts, suggesting a subsistence pattern that emphasized hunting.

The following *Pinto Period* is characterized by generalized hunter-gatherer populations that occupied seasonal camps in small numbers; it is most likely that the earliest occupants of the project area can be placed within this period. Artifacts of this period are exemplified by the Pinto projectile point type, probably evidence of atlatl use, and the appearance of settlement sites near to ephemeral lakes and now-dry springs or creeks. There is a noticeable lack of groundstone or millingstone artifacts at Pinto Period archaeological sites. Cultural adaptations occurred during the *Gypsum Period* to more arid desert conditions, adaptations that resulted in an increased emphasis on socioeconomic ties through trade, the development of new technologies and more complex ritual activities. Artifacts commonly associated with the Pinto Period include a wide variety of projectile point types including, but not limited to, the Humboldt Concave base, Gypsum cave, and Elko Eared or Elko Corner-notched, as well as the first appearance of trade artifacts made of shell. A continuation of these artifacts extends into the next period, the *Rose Spring Period*, as does an increased social complexity due to larger populations and extensive long distance trade contacts. Specific projectile point types associated with this period are the Rose Spring and Eastgate; research attests to the existence of several semi-permanent villages that made use of multiple ecological zones, as well as the establishment of extensive trade routes throughout Southern California.

The final prehistoric period here mentioned is the *Late Prehistoric Period*; key indicators associated with this period include a broad diffusion of pottery west from the Colorado River area, an abundance of coastal shell beads, and two particular projectile points (Desert Side-notched and the Cottonwood). With the presence of well-established trade, complex socioeconomic and sociopolitical organization developed and by approximately 1,000 to 500 years before the present, social complexity had likely reached the chiefdom level. An increase in population resulted in the gradual intensification of much broader environments and food resources. By the mid 17th Century, occupation levels decreased in the Antelope Valley, effectively marginalizing the area as one of limited socio-cultural complexity. Most researchers consider the Late Prehistoric Period an extension of the ethnographic present, a claim that is supported by both recorded oral traditions as well as the archaeological record.

Ethnographic Background

The project area is located in the western portion of the Antelope Valley, a region in which the prehistoric cultural history is poorly documented and/or understood (Kroeber, 1925; Moratto, 1984; Sutton, 1996). Two primary ethnographic populations are known to have inhabited regions that are transected by the current project APE, the Tataviam and the Kitanemuk. Various Native American culture groups such as the Chumash, the Serrano/Vanyume, and the Tongva, are also known from areas surrounding the Antelope Valley. It is also noted by Sutton (1988; 1996) that existing archaeological evidence attests to regional trade actively occurred between local population groups and other Western Mojave culture groups (e.g. Mojave or the Chemehuevi), indicating that these desert groups may also have utilized or otherwise traveled through the Antelope Valley region.

Geographically, the Tataviam occupied territory in the southern Antelope Valley, while the Kitanemuk occupied land to the north of the Tataviam, principally in the region around, and farther north of, the Tehachapi Mountains. During the period of European contact Tataviam territory may have ranged east of Piru, through the entire upper Santa Clara River region, northwards to Pastoria Creek and east to Mount Gleason (King and Blackburn, 1978). Likewise, the Kitanemuk territorial sphere covered the western Antelope Valley, which they may have contentiously shared with their southerly neighbors the Tataviam, north to include the Tehachapi Mountains and the eastern High Sierras.

Kroeber (1925) and others recognize the Tataviam as part of the Fernandeano group, a generalization referring to all Native populations that were eventually assimilated by the San Fernando Mission. The subsistence strategy of the Tataviam was that of a complex hunter-gatherer society living in small villages and satellite camps that were established near reliable water sources such as streams or rivers sourcing from the local mountains and foothills or shoreline settlements around established lakes within the flat desert valley. At a more recent period, it is believed that a chiefdom-type societal structure was adopted, with a single chief overseeing the people inhabiting villages. Plant and animal varieties of particular importance for Tataviam subsistence include, but are not limited to, acorns, seeds, berries, yucca, cactus, and game such as deer and rabbit. Specific knowledge of cultural traits of the Tataviam is scarce, as

little culturally significant information regarding traditions such as religious beliefs, oral histories, or folklore have been lost as a result of the forced subjugation of this population by European occupation and Missionization. Material culture types associated with the Tataviam are similar to those of their neighbors and include elaborate basketry, ornamental and functional items crafted from shell, steatite, stone and bone.

The Kitanemuk are associated with the Serrano division of the Shoshonean group and as is the case with their neighbors the Tataviam, little archaeological or ethnographic data exists that details this obscure population (Blackburn and Bean, 1978; Kroeber, 1925). Blackburn and Bean (1978) described the Kitanemuk as mountain people who occasionally ventured to the lower desert valleys during cooler seasons. Similarly to the Tataviam, the Kitanemuk most likely practiced a seasonal hunter-gatherer subsistence strategy dictated by the seasons. Primary camps and villages were mostly situated in the Tehachapi Mountains and foothills, as well as farther to the north. Important plant and animal varieties include the acorn, pinon pine nuts, native tobacco, yucca, as well as the hunting of small and large game. Material culture types associated with the Kitanemuk are similar to those of the Tataviam, including the manufacture of lithic projectile points and tools, wooden vessels with shell inlay, as well as advanced basketry. It is noted that the Kitanemuk, unlike their surrounding neighbors' preference for cremation, appeared to have buried their dead (Kroeber, 1925).

Historical Background

Antelope Valley Historical Overview

Historic cultural resources are generally more than 45 years of age and range from the earliest time of contact with Europeans to around the year 1960. Numerous types of historical cultural resources can include trails and highways, homesteads and other structures or buildings, remnants of single or time based use activities such as trash deposits, and historically documented landscape sites such as the camp sites of Spanish explorers. Any cultural resource that may be evaluated as significant, important, or unique under current cultural resource protection laws and that can date to more than 45 years of age is considered to be an historic cultural resource. The historical setting for the current APE can be divided into three parts: The Spanish Period (ca. 1533 to 1821), the Mexican Period (1821 to 1848), and the American Period (1848 to Present).

The Spanish were the first known Europeans to explore and colonize the land area of what is known today as California, territory known to them as Alta California (area known as the present-day State of California, U.S.A.) and Baja California (presently known as the Mexican states of Baja California Norte and Baja California Sur). This period of Spanish exploration of eventual colonization is now known as the *Spanish Period*. Early reconnaissance of California began in 1540 with Hernando de Alarcon's ocean expedition traveling northward up the Gulf of California and into the mouth of the Colorado River, thus making those travelers the first Europeans to enter California. From 1542 to 1543, Juan Rodríguez Cabrillo led an ocean expedition to explore the coastal perimeter of California (Laylander, 2000). Cabrillo and his crew first stepped ashore at the present day harbor of San Diego, claiming California for the King of Spain. In addition, the expedition visited most of the Channel Islands and the land near the City of Ventura, and sailed as

far north as Monterey Bay, maybe as far north as Point Reyes while failing to site San Francisco Bay.

By the 1560s established sea-trade routes controlled by the Spanish ferried goods from Asian commercial outposts to territories in present-day Mexico by way of the California Coast. The long and arduous trip resulted in many galleons stopping along the coast looking for food and water, thus bringing Europeans into contact with the local Native Californians. With this elevated traffic of goods across the Pacific, raids against Spanish galleons, particularly by Sir Francis Drake, motivated the Spanish to better map California with the intent of establishing ports along its coastline to protect and refurbish the Manila galleons. It took several years after these early explorations of California before official Spanish colonization occurred. In 1769 Franciscan administrator Junípero Serra and the Spanish military under the command of Gaspar de Portolá arrived in San Diego. Thus began the eventual establishment of twenty-one California Missions and Spanish Missionization efforts, the purpose of which was to “convert” the Native Californians to Catholicism within a ten year period and then return the Mission lands to the Indians.

The first documented Europeans in the Antelope Valley were the Spanish explorers Captain Pedro Fages in 1772 and Father Francisco Garcés in the late 1770’s. At this time, the Tataviam and Kitanemuk culture and life ways were being heavily disrupted as the process of Spanish Missionization had commenced. The founding of the San Fernando Mission in 1797 instituted a direct impact on the region’s native inhabitants. Within a few generations, most of the knowledge regarding the language and culture of these local groups had vanished. At the time of the Spanish arrival, population estimates of California Indians are placed at about 310,000 individuals. By the end of the Spanish reign, through unhygienic Spanish population centers (essential labor camps), European disease, incarceration of Indians, excessive manual labor demands and poor nutrition, the population declined as a result of over 100,000 fatalities, nearly 1/3 of the California Indians (Castillo, 1998). Between the first founding of the Spanish Mission, increased migration and settlement occurred in the territories of Alta California until unrest among these new residents impacted Spanish control of the area.

The *Mexican Period* is marked as beginning in 1821 and is synonymous with Mexico’s independence from Spain. Mexico becomes California’s new ruling government and at first, little changed for the California Indians. The Franciscan missions continued to enjoy the free unpaid labor the natives provided, despite the Mexican Republic’s 1924 Constitution that declared the Indians to be Mexican citizens. This monopoly of Indian labor by a system which accounted for nearly 1/6 of the land in the state angered the newly land-granted colonial citizens. This led to an uprising of the Indian population against the Mexican government and the eventual secularization and collapse of the mission system by 1834. After the fall of the missions, return of the land to the California Indians was mandated by the government, though little land was.

Other European countries increased their presence in California during the Mexican Period, among them the Russians and the Americans. American ships from Boston traded with the towns and Missions mostly for tallow and hides. In addition, trappers and hunters begin to operate in the

state entering by land from the east. William Manley and John Rogers, American explorers, were among the first non-Native Americans to traverse the antelope Valley in 1850. Prior to Manley and Roger's arrival in the Antelope Valley came Jedidiah Smith, Kit Carson, Ewing Young, among others, who entered the area in the late 1820s and 1830s. During the Mexican Period, occupation of the Antelope Valley was virtually non-existent. Occasionally, hunting parties concerned with the rounding up of runaway Indians ventured into the valley and the surrounding areas. At this time, it is estimated that very few California Indians peopled the Antelope Valley on a regular basis.

In 1846, armed conflict erupted between Mexico and American forces, resulting in the increased presence of American military forces within California. Rapidly, Mexican resistance deteriorated and the United States occupied Mexico City in 1848, marking the beginning of the *American Period*. California becomes a U.S. holding with the signing of the Treaty of Guadalupe Hidalgo in February 1848, thereby ending the Mexican-American War and ceding much of the southwest territories to the United States. Just prior to the signing of the Treaty, gold was discovered along the American River near Sacramento, sparking the major influx of American adventurers into California. In 1850, California was formally admitted into the Union as the 31st state.

At the beginning of the American Period, little notice was paid to colonizing the Antelope Valley. In fact, most of the late 19th Century can be described as a time when people were mostly passing through to other destinations. However, sparsely dispersed ranches were established in the Antelope Valley during the 1860s. The Homestead Act of 1862 and the Desert Land Act of 1877 greatly contributed to the settlement of the Antelope Valley. The Homestead Act opened up public lands to citizens for settlement, based on very minimal requirements. The Desert Land Act intended to "encourage and promote the economic development of arid and semi-arid public lands of the western United States. Through this Act, individuals may apply for a desert-land entry to reclaim, irrigate, and cultivate arid and semi-arid public lands."¹

Agriculture, gas and mining endeavors, and settlement stimulus endeavors such as the Homestead Act and the Desert Land Act contributed to the increased population of the Antelope Valley during the later stages of the 1800s. It was also during the late 1800s that established transportation routes were formed between Los Angeles and the Antelope Valley, including the Butterfield Stage Overland Mail route (1858), the Los Angeles & Independence Railroad, Southern Pacific Railroad (1876), Antelope Valley Line, Union Pacific Lone Pine Branch, the Santa Fe Railroad Branch, among many others. The early 1900s was a period of innovation, which included mechanical irrigation and electricity. Also during this period, an avid pursuit of alfalfa cultivation occurred, quickly elevating this as the Antelope Valley's major crop.

Lancaster

The city of Lancaster was settled by an influx of people associated with the railroad, mining, oil prospecting, and agriculture. Mr. B.F. Morris purchased 6,000 acres of land in and around what would become Lancaster from the Southern Pacific Railroad, including ground that had

¹ www.blm.gov/nhp/landfacts/desertland.html accessed 2/2/2008

previously been laid out as the townsite by M. L. Wicks. The construction of railroad related maintenance buildings and staff housing, as well as the increased interest in agriculture and mining activities contributed to the firm establishment of Lancaster as an Antelope Valley city, status that has been re-affirmed in modern times thanks to the establishment of the Muroc Army Airfield (later, Edwards Air force base) and other aerospace industry related endeavors.

Rosamond and the Tropic Gold Mine

The city of Rosamond was another depot on the Southern Pacific Rail Line in 1876 and a trading post for local mines. First known as Bayle Station or Baylesville after postmaster David Bayles (1885), the town was later renamed Rosamond (Rosamond County Library vertical file, n.d.). Rosamond town site lots were obtained from the Southern Pacific by an E.H. Seymour in 1904 and sold to a C.C. Calking three years later (Settle, 1967), who then “sold the mortgage to Charles M. Stinson, who in turn presented [deeded] it to the Union Rescue Mission of Los Angeles who foreclosed the mortgage in 1916. In 1935, the Rescue Mission began selling lots in the townsite, later presenting the remaining property to the community” (Darling, 2003).

Prior to the settling and eventual development of Rosamond, Tropic Hill was being mined for clay by Dr. L.A. Crandall who purchased the mine in 1882. Hamilton renamed the mine “Hamilton Hill” and during the course of the clay-mining activities, gold was discovered. Having changed names again, the then known “Lida Mine” was sold to the Antelope Mining Company in 1908 and again to the Tropic Mining and Milling Company in 1909. Eventually the mine was acquired by the Burton brothers in 1912, who were former employees of the Tropic Mining and Milling Company. For a brief period between 1942 and 1946, in support of World War II war-time mining efforts, the mine closed. Once the war was past, the mine reopened and remained in operation until 1956. The Tropic Gold Mine was “one of the most successful gold mines in California” (Cunkelman, 2001).

Palmdale & Pearland

Initially settled by German-Swiss immigrants from the Midwest in 1884, “Palmenthal” prospered as a fruit and grain agricultural operation until the drought of the 1890s. A second settlement known as Harold or Alpine Station followed, located at the intersection of the Southern Pacific Rail Line and modern day Barrel Springs Road.² Each of these settlements failed as a result of the Southern Pacific moving its booster engine station farther north. The name officially became Palmdale in 1890, during a time of immense growth and prosperity. The construction and completion of the “Palmdale Ditch” between 1918 and 1919 brought residents of Palmdale a reliable source of fresh water, stretching between the Little Rock Dam and the Palmdale Reservoir.

Located southwest of Palmdale, Pearland is a short-lived community that has since been incorporated as part of on-going development. As its namesake, Pearland was never officially recognized as an autonomous town, but rather “a crossroads in a community dominated by pear

² <http://www.colapublib.org/history/antelopevalley.faq.html>

orchards” consisting of but a few buildings at the intersection of Avenue S and 47th Street. The pears eventually died off and were replaced by peaches, though the name remained.

California Aqueduct

One of the most notable technological developments of early 20th Century California history was the construction of the California Aqueduct. Completed in 1913, the aqueduct connects the Owens Valley water source with the population of Los Angeles by means of surface and subsurface canals bisecting the Antelope Valley. Earmarked and funded in large part by Los Angeles residents in 1904, “the project revived the economy of Antelope Valley communities Lancaster, Mojave, Fairmont, and Elizabeth Lake whose farms and business had been decimated by a decade-long drought beginning in 1894.”³

Paleontological Resources

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources represent a limited, non-renewable, and impact-sensitive scientific and educational resource. As defined in this section, paleontological resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints from a previous geologic period. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

Methods

Archival – Archaeological and Paleontologic Research

ArchaeoPaleo Resource Management, Inc. conducted a records search for the Los Angeles portion of the project area at the South Central Coastal Information Center at California State University, Fullerton and at the San Joaquin Valley Information Center located at California State University in Bakersfield for the Kern County portion. These locations are divisions of the California Historic Resources Information System (CHRIS) and are the local legal repositories for the State’s archaeological archives. Included in this research effort was a search of historical publications for additional cultural resources near the project area, including the *California State Historic Resources Inventory*, the *National Registry of Historic Places*, *California Historical Landmarks* (1990), and *California Points of Historical Interest* (1992).

A Vertebrate Paleontology Records Check was conducted at the Natural History Museum of Los Angeles County by Samuel A. McLeod, Ph.D. APRMI provided Dr. McLeod with the appropriate 7.5 minute Topographic maps outlining the proposed backbone line and projected reservoir and pump station locations. The maps provided were the Soledad Mountain, Little Buttes, Rosamond, Lancaster West, Lancaster East, Ritter Ridge, Palmdale, and Little Rock

³ <http://www.colapublib.org/history/antelopevalley>

USGS topographic quadrangles. Archival research was also completed by Robin D. Turner at the Buena Vista Museum in Bakersfield.

Survey Methodology

Shannon Loftus, MA/RPA and Robin Turner, MA/RPA of APRMI conducted an intensive archaeological and paleontologic pedestrian survey of the project corridor, including the backbone line, four proposed reservoir locations, two distribution pump stations, and two booster pump stations between January 26, 2008 and February 5, 2008. Survey methodology consisted of pedestrian survey using 10-15 meter transects in a linear fashion when in portions where one archaeologist covered the ground and 15-30 meter transects walking in tandem. Strategic survey methods were employed in areas of steep terrain; all finger mesas and ridges were investigated, as were slopes deemed reasonable or likely to possess cultural materials. Methodology specific to each parcel is discussed below in the Survey Results section. The backbone portion of the project is planned within the roadbed, thus windshield surveys were primarily employed in residential, commercial and industrial areas. Pedestrian surveys were employed for all dirt roads and trails.

Artifacts and sites identified during the reconnaissance were geographically recorded with a Garmin® Etrex Legend Global Positioning System (GPS) Receiver. Notation was made of all artifacts and sites, and photographs of unique isolates and sites were taken. In addition, photographs of the backbone and the eight parcels were taken to illustrate the various environmental settings and built environment and are included in the survey results section of the original Loftus and Turner archaeological report (2008).

One proposed parcel was entirely inaccessible (Distribution Pump Station 2), and one was partially inaccessible (Reservoir 3). These instances of no-access are further discussed in the survey results section.

Proposed Distribution Pump Station 2 (40th Street East and Avenue P), adjacent to the Palmdale WRP, was not accessible due to fencing and signage indicating “No Trespassing” and “Airport Property”. Attempts to locate personnel at the Palmdale WRP for access were unsuccessful. The property was visually inspected from the public side of the fence and a portion of a historic period homesite was evident. The homesite proper is excluded from the parcel, but contributing elements such as ornamental trees and a small orchard are visible. Should this parcel be selected, access will be required for comprehensive inventory of the property.

The eastern portion of the proposed parcel for Reservoir 1 (south face of Quartz Hill) was also inaccessible as it was fenced. No signage was visible, and attempts to contact personnel for access were unsuccessful. This portion of the parcel was visually inspected from the public side of the fence and appears highly disturbed. Mechanical push-and-redeposit activities have leveled portions of the land within the fence, as well as created large earthen berms and boulder piles along the interior of the fence. Should this parcel be selected, access will be required for comprehensive inventory of the property.

Since the pedestrian survey was completed, the locations of the following project components have been refined: (1) the location of Booster Pump Station 1 has been changed to the proposed location indicated in Figure 2-1; (2) a pipeline has been added along Avenue M to connect Booster Pump Station 1 to the backbone pipeline along Sierra Highway; (3) the location of Reservoir 4 has been refined; (4) the overland pipeline leading to Reservoir 4 from Mojave Tropico Road has been realigned; (5) an alternative Distribution Pump Station 1A has been added at the LWRP; and (6) a pipeline connecting the LWRP to Distribution Pump Station 1 has been added. Additional reconnaissance surveys and record searches for cultural resources would be required prior to implementation of these project components.

3.4.2 Regulatory Framework

Cultural Resources

Numerous laws and regulations require federal, state, and local agencies to consider the effects a project may have on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies (e.g., State Historic Preservation Office and the Advisory Council on Historic Preservation). The National Historic Preservation Act (NHPA) of 1966, as amended; the California Environmental Quality Act (CEQA); and the California Register of Historical Resources, Public Resources Code (PRC) 5024, are the primary federal and state laws governing and affecting preservation of cultural resources of national, state, regional, and local significance.

Federal

First authorized by the Historic Sites Act of 1935, the National Register of Historic Places (National Register) was established by the NHPA of 1966, as “an authoritative guide to be used by federal, state, and local governments, private groups and citizens to identify the Nation’s historic resources and to indicate what properties should be considered for protection from destruction or impairment” (Code of Federal Regulations [CFR] 36 Section 60.2). The National Register recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels. In the context of this project, which does not involve any historical-period structures, the following National Register criteria are given as the basis for evaluating archaeological resources.

To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior, 1995):

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

- Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least fifty years old to be eligible for National Register listing (U.S. Department of the Interior, 1995).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as “the ability of a property to convey its significance” (U.S. Department of the Interior 1995). The National Register recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

State

The State implements the NHPA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historic Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the State’s jurisdictions.

California Register of Historical Resources

The California Register of Historical Resources (California Register) is “an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change.” (California Public Resources Code § 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (California Public Resources Code § 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places.

To be eligible for the California Register of Historical Resources, a prehistoric or historical-period property must be significant at the local, state, and/or federal level under one or more of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated with the lives of persons important in our past;

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

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register of Historic Places and those formally Determined Eligible for the National Register of Historic Places.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.
- Other resources that may be nominated to the California Register include:
 - Historical resources with a significance rating of Category 3 through 5 (Those properties identified as eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, and/or a local jurisdiction register).
 - Individual historical resources.
 - Historical resources contributing to historic districts.
 - Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Environmental Quality Act

The CEQA is the principal statute governing environmental review of projects occurring in the state. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources. CEQA is codified at Public Resources Code sec. 21000 et seq. As defined in Section 21083.2 of CEQA a “unique” archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.

- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition, the *CEQA Guidelines* recognize that certain historical resources may also have significance. The Guidelines recognize that a historical resource includes: (1) a resource in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site is to be treated in accordance with the provisions of CEQA Section 21083, which is a unique archaeological resource. The *CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

Paleontological Resources

Federal

A variety of federal statutes specifically address paleontological resources. They are generally applicable to a project if that project includes federally-owned or federally-managed lands or involves a federal agency license, permit, approval, or funding. Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 et. seq.; 34 Stat. 225), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands.

State

Paleontological resources are also afforded protection by CEQA. Appendix G (Part V) of the *CEQA Guidelines* provides guidance relative to significant impacts on paleontological resources, stating that a project will normally result in a significant impact on the environment if it will "...disrupt or adversely affect a paleontologic resource or site or unique geologic feature, except as part of a scientific study." Section 5097.5 of the Public Resources Code specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 sets the penalties for the damage or removal of paleontological resources.

Professional Standards

The Society for Vertebrate Paleontology (SVP) has established standard guidelines for acceptable professional practices in the conduct of paleontologic resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing professional paleontologists in the nation adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most California state regulatory agencies accept the SVP standard guidelines as a measure of professional practice.

3.4.3 Results

Archival – Archaeological and Paleontologic Research

Archaeological Archival Search

Archival records indicate that five (5) archaeological studies have been undertaken within the project corridor in Kern County, and twenty-eight (28) archaeological studies have been completed within the project corridor in Los Angeles County. Additionally, twenty-eight (28) archaeological studies have been undertaken within ¼ mile of the project in Kern County and one hundred twenty-nine (129) archaeological studies have been undertaken within ¼ mile of the project in Los Angeles County. These projects range in size from small lots to several miles wide, or hundreds of miles in length, and are comprised of positive and negative findings, as well as hundreds of prehistoric and historic archaeological sites, and assessed historic buildings. A detailed listing of previously performed archaeological investigations and previously identified cultural resources was included in the archaeological report authored by Loftus and Turner (2008).

Four (4) previously recorded prehistoric and four (4) historic archaeological sites are within or adjacent to the project APE in Kern County, while two (2) previously recorded prehistoric and nineteen (19) historic archaeological sites are within or adjacent to the project APE in Los Angeles County. One Point of Historic Interest was identified, “KER-001”, as a result of the archival search performed by APRMI. KER-001 is the Hamilton clay pits associated with the Tropico Mine in Rosamond, California. **Tables 3.4-1** and **3.4-2** summarize previously recorded cultural resources that are within or adjacent to the current project APE in both Kern and Los Angeles Counties.

Archival research indicates that the Pine Canyon area associated with Ritter Ridge and the Sierra Pelona Mountains is one of the densely concentrated prehistoric sites associated with the Tataviam culture. This includes a massive village complex, satellite camps, base camps, hunting features, and pit-and-groove or cupule sites, cemeteries, roasting pit/hearth features, and artifacts indicative of complex socio-cultural affiliation with neighboring coastal and northern groups. Depth of deposit is varied, from surface scatters to extensive deposits. A granitic stone bowl was recovered 8-feet below the surface south of the current project area (Parker et al., 2004). Many sites are commonly found tucked into canyons or atop ridges with commanding views of the desert valley and mountains beyond.

**TABLE 3.4-1
 PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN OR ADJACENT TO THE PROJECT APE
 (Kern County)**

Site Number (CA-KER or 15-)	Age	Description	Report Title	Author
7591	Historical	Clay pits at Tropic Mine, also known as KER-001, a California Point of Historical Interest (6/2/1968)	Survey and Evaluation Report for Proposed Acton Phase I Land Exchange Near Tropic Mine	Cunkelman, S.
12460	Historical	Historic building; corrugated steel	A Phase I Cultural Resource Survey for Property at Avenue A and 60 th St. West, Rosamond, Kern County, California	Hudlow, S.
5732H 5731	Historical/ Prehistoric	5732H is an historic homesite; 5731 is a prehistoric lithic deposit	Phase I Cultural Resource Investigation for Wastewater Treatment Plant Expansion, 20 Acres Adjacent to United Street (10 th Street West); Rosamond, Kern County, California	Norwood, R.
492	Prehistoric	Isolated chalcedony tool	Archaeological Assessment of 72.2 Acres of Land in Rosamond, Kern County, California. CRF#90-26	Parr, R.E.
4774H	Historical	HPRD small	(Site Record)	Samuelson, A.
4775	Prehistoric	Isolated chert flake	(Site Record)	Unknown
522	Prehistoric	Lithic scatter	(Site Record)	Unknown

Also of particular note with respect to the project APE and ¼ mile archival search around that APE are several archaeological studies within the historic portion of Lancaster, or Old Lancaster. In 1995, Richard Norwood undertook an archaeological study of the Cedar Street Parking lot; south of Lancaster Boulevard, west and adjacent to Cedar Ave. Norwood (1995) did not observe any prehistoric or historic archaeological sites or isolates but noted the project area was adjacent to a building complex listed in the National Registry of Historic Places, therefore indicating a greater possibility for the discovery of subsurface archaeological deposits. Another historic resource survey of downtown Lancaster, completed by CRM Tech (Tang & Hogan, 2003), indicates the recordation of 138 historic period buildings, resources not yet updated in the archival records library of the SCCIC. Other significant historical resources have been identified within the area of downtown Lancaster, as well as the Palmdale Ditch and the Tropic Gold Mine (Rosamond).

To summarize, results of the archival research indicate that the project corridor is located within a highly sensitive and archaeologically important prehistoric cultural region, as well as a regionally significant historic period.

**TABLE 3.4-2
 PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN OR ADJACENT TO THE PROJECT APE
 (Los Angeles County)**

Site Number (CA-LAn or 19-)	Age	Description	Report Title	Author
1553H	Historical	Homestead and three HPRDs	Archaeological Survey of Tract Map 45823, Palmdale, California (RECON Number R-1983)	Hector, S.
3679H	Historical	HPRD	Phase I Cultural Resource Survey for Property at 40 th St. West and Avenue H, City of Lancaster, California	Hudlow, S.
3663H	Historical	HPRD	An Archeological Walk Through for Stats Group's Property at 50 th Street East and Palmdale Boulevard, City of Palmdale, California	Hudlow, S.
150148	Historical	Pearland Store	A Phase I/II Cultural Resource Survey and Evaluation for the Proposed Chevron/McDonalds at the corner of 47 th Street East and Avenue S, City of Palmdale, California	Hudlow, S.
1534H	Historical	Palmdale Ditch	Archaeology Report for T.T. 47113 near Sierra Highway and the Los Angeles Aqueduct, Palmdale, Los Angeles County, California	Love, B.
2656H	Historical	HPRD	Phase I Cultural Resource Investigation for a 10 Acre Property at West Ave,L-8 and 40 th Street West, Lancaster, Los Angeles County, California	Norwood, R.
2911H 2912H 2913H	Historical	2911H and 2912H are standpipes; 2913H is a residential foundation/slab	Archaeological Survey and Historic Study Report for the Acquisition of Right-of-Way along the Avenue P-8 Corridor between State Route 14 and 15 th Street East, Los Angeles County, California	Sriro, A, Barber, S.
3190H	Historical	HPRD	Historical/Archaeological Resources Survey Report: Sierra Gateway Project, Tentative Tract No. 42991, City of Palmdale, Los Angeles County, California	Tang, B. et al.
2711H 2715H 2716H 2719H 2720H	Historical	2711H, 2715H, 2719H, and 2720H are HPRD; 2716H is an Air Force Gunnery Range/Berm	Cultural Resources Investigation for Air Force Plant #42	Unknown EARTHTECH
2808H	Historical	Palmdale Sheriff's Station	(Site Record)	Ferraro, D.
3514H	Historical	HPRD	(Site Record)	McIntosh, D. et al.
765	Prehistoric	Lithic scatter	(Site Record)	Unknown
950	Prehistoric	Temporary camp site	(Site Record)	Unknown
3688	Historical	HPRD large	(Site Record)	Unknown
3658	Historical	HPRD large	(Site Record)	Sanka, J.

Paleontological Archival Search

Results of the Vertebrate Paleontology Records Check requested by APRMI from Dr. Samuel A. McLeod of the Los Angeles Museum of Natural History noted that the outlying mountain ranges on the north, west, and east sides of the proposed project line are mostly comprised of bedrock devoid of vertebrate fossils. The Pelona Ranges, southwest of the proposed Reservoir 2 are metamorphic rocks from the Pelona Schist. This mountain range does not contain known vertebrate fossil localities. The southernmost segment of the proposed project route in the area that courses south along 40th Street just south of Avenue T, consists of exposures of granitic rock that will also be devoid of fossils. On Tropic Hill, at the northern most part of the proposed project route, the bedrock consists of igneous rock that will also be devoid of vertebrate fossils.

There is however, a significant locality consisting of fossil terrestrial leaves that is part of the Anaverde formation found directly south of the Proposed Reservoir 2 location and north of the Pelona Range. The San Andreas Rift Zone crosses through the older Quaternary and Plio-Pleistocene deposits of the Anaverde Formation and elsewhere throughout the proposed project line. The fossil leaves are observed in the 75 foot section in the middle formation that consists of alternating grey-brown sandstones, finely laminated brown shales, and an occasional thin lens of limestone (Axelrod 1950). The Anaverde Formation has produced extremely important and unique fossil specimens including elephants (*Elephantoidea*) and horse (*Equus*). The leaves are comprised of 21 species from 17 genera and 12 families that have been collected throughout the years.

Dr. McLeod states that two vertebrate fossil localities are located in the southernmost segment of the proposed project route, one of which is possibly within the Anaverde Formation. He notes that this area “may well uncover significant vertebrate fossils” and should be monitored. He likewise notes that,

“...vertebrate remains, however, may be quite small and would be missed in typical paleontologic excavation monitoring. It is recommended, therefore, that sediment samples from substantial subsurface excavations be collected and processed to determine their small fossil potential. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution...”

The second vertebrate fossil locality is located in the far eastern section of the proposed project line along Avenue S, north of 90th Street East and eastward almost to the San Bernardino County line, where Quaternary Alluvium and older Quaternary sediments have produced small vertebrates including gopher snake (*Pituophis*), kingsnake (*Lampropeltis*), leopard lizard (*Gambelia wislizenii*), cottontail rabbit (*Sylvilagus*), pocket mouse (*Chaetodipus*), kangaroo rat (*Dipodomys*), and pocket gopher (*Thomomys*). Vertebrate fossil localities have also been found within the easternmost part of the segment of the proposed project route along Avenue S between Little Rock Wash and 90th Street East.

The low-lying basin of the Antelope Valley is comprised of surficial deposits of younger Quaternary alluvium with older Quaternary deposits occurring at varying depths. Dr. McLeod states that the “younger Quaternary deposits usually do not contain significant vertebrate fossils,

at least in the uppermost layers. Significant vertebrate remains have been encountered at deeper levels.”

Results from the archival search completed at the Buena Vista Museum in Bakersfield found that a late Pleistocene site containing mammoth (*Mammuthus* sp.), camel (*Camelops* sp.), bison (*Bison* sp.), and other Rancholabrean age large terrestrial specimens were found in the town of Rosamond south of Rosamond Boulevard on the west side of Highway 14, located in the ancient Rosamond Lake bed deposit.

Several additional fossil localities are found nearby, but outside of the project APE, coming from sedimentary deposits that are similar to those that occur within the proposed project route. Known fossil localities can be found in the southern part of the valley around the historic Palmdale Ditch and Barrel Springs, westward crossing Elizabeth Lake Road in the Anaverde valley, throughout the valley floor within the towns of Rosamond and Lancaster, and northeast throughout the Mojave Desert.

Survey Results

Archaeological Survey Results

The survey results are presented in order of proposed construction Phases 1-5 (**Table 3.4-3**). Two historic period sites were identified at Distribution Pump Station 1 (Phase 1) and Booster Pump Station 2 (Phase 4). Site *DPS1-Hist1* (Temporary Designation) is located at Distribution Pump Station 1 and is comprised of foundation and footing features, as well as historic period refuse deposits. Six prehistoric and two historic period isolates were identified at Reservoir 3 and Booster Pump Station 2 (Phase 4). In addition, a segment of the concrete chute portion of the historic Palmdale Ditch (CA-LAn-1534H) is located in the southern portion of Reservoir 3. A portion of the transitional period of Old Lancaster and historic Palmdale is traversed by the project backbone corridor (Phase 2 and 4). The Tropico Mine is located adjacent to the Reservoir 4 proposed location (Phase 5).

Phase 1

The parcel proposed for Distribution Pump Station 1 was surveyed in single person transects, north to south, 15-meters apart. Visibility was less than 50 percent. The pan-and-dune complex was full of rainwater, frozen over, with all vegetation frosted over. Vegetation is Desert Saltbush Scrub with a mild integration of Desert Sink Scrub. No prehistoric or historic period artifacts were identified. Modern trash comprised of sofas, mattresses, clothes, toilet porcelain, modern plastics and glass that litters the area. Approximately ¼ mile away, to the south and west of these parcels, large lithic scatters of 200+ artifacts and isolates have been identified (Robinson 1993).

Two small historic period refuse deposits comprised of late historic sanitary seam cans and modern refuse are visible along the berm near Division Street. These deposits appear isolated and may be re-deposited from a nearby site, thus were not recorded as sites, but noted on the newly

**TABLE 3.4-3
SUMMARY OF CONSTRUCTION PHASES, APE SEGMENTS,
AND CULTURAL/PALEONTOLOGICAL RESOURCES**

Phase	Description	APE Area/Street Segments	Cultural Resources
1	Distribution Pump Station 1, Distribution Pump Station 1A, Backbone, and Reservoir 1	<ul style="list-style-type: none"> Distribution Pump Station 1 and 1A Avenue F to Avenue H, south on 30th Street West West along Avenue H to 60th Street West Lancaster Blvd. south along Division Street to Avenue K Avenue K west from Division Street to 40th Street West 40th Street West south from Avenue K to Avenue M Reservoir 3-Quartz Hill 	<ul style="list-style-type: none"> DPS1-Hist1 (Distribution Pump Station 1)
2	Distribution Pump Station 2 and Backbone	<ul style="list-style-type: none"> Distribution Pump Station 2 Palmdale WRP south along 40th Street East to Avenue R 40th Street East to Sierra Highway west along Avenue R Sierra Highway north to Avenue P Avenue P from Sierra Highway east to Palmdale WRP Avenue K east from Division Street to 20th Street East 	<ul style="list-style-type: none"> Numerous historical structures adjacent Portions of Old Lancaster & historic Palmdale
3	Backbone	<ul style="list-style-type: none"> Avenue M east from Sierra Highway to 50th Street East 40th Street East, north from Avenue M to Avenue L 50th Street East, south to Avenue P-8 50th Street East to 40th Street east, along Avenue P-8 Avenue R to Avenue T/Pearblossom Highway at Booster Pump Station 2 Avenue S, east from 40th Street East to 90th Street East 	<ul style="list-style-type: none"> USAF Plant #42 Previously Recorded 150148 (demolished)
4	Backbone, Booster Pump Stations 1 & 2, Reservoirs 2 & 3	<ul style="list-style-type: none"> Booster Pump Station 1 Booster Pump Station 1 to Sierra Highway along Avenue M Sierra Highway from Avenue K south to Avenue P Avenue P, west from Sierra Highway to 25th Street West 25th Street West south to Elizabeth Lake Road at Reservoir 2 Reservoir 2 Booster Pump Station 2 40th Street East from Avenue T south to Reservoir 3 Reservoir 3 Reservoir 3 – East Parcel Reservoir 3 – West Parcel 	<ul style="list-style-type: none"> USAF Plant #42 Numerous Tataviam sites/features (Reservoir 2) Portions of Old Lancaster & historic Palmdale BPS2-ISO-1 BPS2-Hist1 (Booster Pump Station 2) CA-LAN-1534H (Reservoir 3 – West) R3-ISO1 R3-ISO2 R3-ISO3 R3-ISO4 R3-ISO5 R3-ISO6 R3-ISO7
5	Reservoir 4, Backbone	<ul style="list-style-type: none"> Reservoir 4 Mojave Tropico Road south to Gaskell/Patterson Road Gaskell/Patterson Road, east from 90th Street West to 10th Street West at Rosamond WRP Sierra Highway south from Patterson Road to Avenue D at Lancaster WRP 	<ul style="list-style-type: none"> Tropico Hill Mine (Reservoir 4) CPHI KER-001 Tropico Hill Mine & Camp (tourist attraction) Multiple prehistoric sites (Mojave Tropico Road – Gaskell/Patterson Road)

recorded site record sketch map. One historic period refuse deposit appears to be associated with the newly recorded historic period site (Temporary designation: *DPSI-Hist1*), was recorded as a site locus.

DPSI-Hist1

DPSI-Hist1 is comprised of three features and four historic period refuse deposits designated as Loci 1-4. The site measures approximately 500 feet², and is located east of Division Street and south of Ave. E-8. The site appears to be a combination of residential and industrial use, and of later historic period age based upon initial field analysis of the artifacts present. Historic features associated with *DPSI-Hist1* are a tamarisk tree and pit or trench that measures 8-feet by 3 to 4-feet (Feature 1), cement foundation and evidence of milled wood, brick, and sidewalk that are possibly indicative of residential use (Feature 2), and a continuous footing of cement with bolts every 3-4 feet along the length and width (Feature 3). Feature 3 has no foundation, however a small pile of milled wood was observed on the east side of the feature; the feature is suggestive of a Quonset hut type of utility building footing, possibly post World War II (Loftus and Turner 2008). Historical artifacts observed at Loci 1-4 include metal sanitary seam cans (mechanically and church-key opened), bottle and jar glass fragments of several colors (blue, clear, aqua, etc.), milled wood, chicken wire, porcelain fragments, earthenware crockery, among other artifacts.

Several possible historical sites were observed outside the APE within the Phase 1 area, including remnants of an historical home site or homestead, a water tank, historical refuse deposits, and portions of the aforementioned Old Lancaster. These resources are noted as areas of archaeological concern, though should not be impacted by project activities due to their location outside of the proposed APE.

Phase 2

The Distribution Pump Station 2 parcel could not be accessed for survey due to fencing and signage indicating “Private Property” and “Airport Site Property”. Area was visually assessed from the public side of the fence line along 40th Street and along an open semi-paved lot accessed from the south at Avenue O, west of a culvert. Remnants of an historical homesite or possible homestead and associated historical tree line and orchard were visible. A review of historical maps of this location does not indicate the presence of historical structures (Pearland 6’ topographic quad 1934/reprint 1943 and Palmdale 7.5’ topographic quad 1958/reprint 1974). Should this parcel be selected, access will be required for comprehensive inventory and assessment of this historic period homesite/homestead.

Along Sierra Highway between Avenue R and Avenue P, there are numerous historical structures located adjacent to the project APE. These structures are depicted on the Palmdale 6’ topographic quadrangle and are indicative of old Palmdale, specifically post-Palmenthal colony relocation (1888-1889); few of these structures remain. Subsurface historic structures, features, and artifacts may be present. Previous archaeological surveys conducted within the APE did not identify historic buildings or structures of interest.

Phase 3

Beginning at Site 1 Road (15th Street West) and continuing east to 50th Street East, the south side of the APE is fenced and inaccessible. United States Air Force Plant #42, a World War II and Cold War era military property comprised of three NRHP eligible properties and nine properties that warrant further investigation for NRHP eligibility are present (Trnka, J. et al., 1997).

The remainder of the Phase 3 area consists of intermittent stretches of fallow and active agricultural land, desert landscapes, as well as modern residential and industrial facilities. At 47th Street East, the community of Pearland was once present and *The Pearland Store* was anticipated, as its location was suggested in Hudlow's 1996 Primary Record and Building structure, Object Record (150148). The building is no longer present, however, as it was demolished and replaced by a Chevron and McDonalds.

Phase 4

The majority of this portion of the APE is comprised of modern era and marginally late historic period industrial and commercial developments interspersed with empty fields of natural desert. Several later historic period hotels are noteworthy, near the intersection of Avenue M and the Sierra Highway, west of the APE (the *Sahara*, *Palmdale Pelican*, and *Rega Lodge*). These structures should not be impacted, as the backbone is proposed within the roadbed.

The proposed parcel for construction of Reservoir 2 is located west of the spillway in the Pine Canyon area within the creek bottom of the Amargosa Creek, as well as upslope and north of the creek. The parcel was surveyed in duo transects 15-20 meters apart, north to south. No prehistoric or historic period resources were observed within the creek bottom or adjacent to Elizabeth Lake Road.

As previously stated in the Archaeological Archival Search results, the Reservoir 2 proposed location is highly sensitive for archaeological resources. A large Tataviam village complex and associated temporary camps, satellite camps, base camps, hunting blinds, pit-and-groove or cupule sites, large roasting pit/heart features, and known Tataviam burials are present.

At the time of the pedestrian survey, the proposed parcels being considered for Booster Pump Station 1 included US Air Force Plant 42 and the Lockheed Plant 10 complex. These parcels were inaccessible due to fencing. To avoid federal property, the proposed location for Booster Pump Station 1 has since been changed to that shown on Figure 2-1.

A new prehistoric isolate and one historic period site were identified within the Phase 4: Booster Pump Station 2 area, *BPS2-ISO-1* and *BPS2-Hist1* (Temporary Designation).

BPS2-ISO-1

This prehistoric isolate is located in the Booster Pump Station 2 parcel southwest of the intersection of Pearblossom Highway/Avenue T and 40th Street East. The isolate is a shoulder fragment of a schist mano.

BPS2-Hist1

Historic site BPS2-Hist1 is a large, historic period refuse deposit comprised of four loci, located in the Booster Pump Station 2 parcel, northeast of the Pearblossom Highway/Avenue T and 40th Street East intersection. Chronological estimates for the site are approximately late 1930s to the mid 1950s. Artifacts observed in all loci include metal sanitary seam cans (machine, church-key, and knife opened), Standard Oil Cans, glazed sewer pipe fragments, peach and blue Asian patterned porcelain fragments, white milk-glass fragments, cut bone, glass bottle and jar fragments (amber, green, and clear colored), among other assorted metal, rubber, wire items.

CA-LAn-1534H

The previously recorded cultural resource CA-LAn-1534H, the Palmdale Ditch, bisects the southern portion of the Phase 4: Reservoir 3 – West Parcel; entering from beneath Barrel Springs Road just west of 40th Street East, trending southeast to northwest. This portion is a segment of the concrete chute, measuring approximately 3 feet deep in this location. A dirt trail is located south of the Palmdale Ditch and nearly parallels this historic feature; it is not clear if this trail is part of the Barrel Springs Trail system. The Palmdale Ditch dates back to the early 20th Century, part of an engineering effort to bring water from the Little Rock Creek to the residents of Palmdale (see the Historical Setting discussion above).

R3-ISO1, R3-ISO2, R3-ISO3, R3-ISO4, R3-ISO5

Five prehistoric isolates were identified and recorded in the northern portion of the “Phase 4: Reservoir 3 – West Parcel”, along the lower slope, near random drainages and along the access road cut/berm (*R3-ISO1, R3-ISO2, R3-ISO3, R3-ISO4, R3-ISO5*). Isolates include a tufa stone groundstone bowl fragment (shoulder and base), a granitic unifacial mano, and three schist metates (Appendix C in Loftus and Turner 2008). The artifacts are too scattered to comprise a site *per se*, however two large prehistoric campsites/quasi village sites are nearby; east of the parcel and north of the California Aqueduct. These sites are comprised of lithic and groundstone materials, faunal (shell and bone), and hearth features.

R3-ISO6

One beverage bottle glass fragment (green), with legible white decal “7UP” was identified in the southwestern corner of the “Phase 4: Reservoir 3 – West Parcel”. No base or maker’s mark was visible; however, the bottle appears of historic nature, thus was recorded as an isolate and is also included in Appendix C (Loftus and Turner 2008).

R3-ISO7

One square medicinal bottle of blue glass with metal screw cap was identified near Barrel Springs Road in the central portion of the “Phase 4: Reservoir 3 – West Parcel”. No maker’s mark was visible, however, the bottle was recorded as an isolate (Appendix C, Loftus and Turner 2008).

Phase 5

The proposed parcel for the Phase 5: Reservoir 4 area had not been specifically located at the time of the pedestrian survey and records search for the Phase I Assessment; only a general

location was provided. Locational information (Latitude 34° 52' 48", Longitude 118° 131 52") provided the week prior to the in-field assessment places the location of Reservoir 4 on the Soledad Mountain 7.5' (1973) topographic quadrangle, on the west side of the historic Tropic Hill Mine. However, driving instructions (1.2 miles north of Rosamond Blvd/.2 mile west of Mojave Tropic Road) places the proposed Reservoir 4 on the northwest side of the Tropic Mine in a saddle between the historic Tropic Hill Mine and a small hill to the northwest of the mine. A solo survey was undertaken on the west side of the Tropic Hill Mine, according to the latitude/longitude coordinates.

No prehistoric or historical resources were identified in either possible location for Reservoir 4, though the existence of known prehistoric sites to the west of the mine, outside of the project APE, suggests that this area is of high prehistoric archaeological sensitivity. It was also mentioned by one-time mine owner Glen Settle (see below) in the Tropic Gold Camp brochure, 1967, that an "Indian Pictograph Cave" is located at the foot of the Tropic Hills, within the Gold camp.

The combined visual observations of the mine and archival research results indicate that the recorded site is locally significant under CEQA and the NRHP, thus warranting further investigation should the Phase 5: Reservoir 4 area, as identified by the provided latitude/longitude coordinates, be selected.

California Point of Historical Interest KER-001(Hamilton Clay Pits) and the Tropic Hill Mine

Located in the northeast quadrant of the currently active Tropic Gold Mine property (private), KER-001 represents the original clay pits prospected by Ezra Hamilton in the early 1900s. Numerous mine shafts and adits are visible along the face of the mine hill, and several historic period refuse camps associated with the mine were identified on the west-southwest side of the mine proper (recorded by Cunkelman in 2001).

Several historic buildings of local interest, as well as others were relocated to the southeast quadrant of the site by former owner Glen Settle in the 1960s for the purpose of creating a historical-era mining ghost town (Leadabrand 1965). The original Rosamond post office/hotel/store was relocated to the Tropic Gold Mine. Although dilapidated, the buildings retain the recognizable features of post offices, school houses and stores that may contribute to the historical significance of the tourist attraction that maintains the feeling and association of the Tropic Gold Mine and Camp. The buildings are not eligible as independent entities under CEQA or NHPA as their relocation has compromised integrity of setting and location. The Tropic Gold Mine and camp was a successful tourist attraction for Rosamond until its closure in 1980; in addition, the mine itself houses the world's largest time capsule.

Review of archival records and archaeological maps for the Phase 5 pipeline APE indicates that this area of the project, as well as all of Gaskell/Patterson Road, is dotted with prehistoric archaeological sites; as such, these areas can be considered as highly sensitive areas for archaeological resources.

Paleontological Survey Results

Fossil localities are found throughout the Antelope Valley from Barrel Springs and the historic Palmdale Ditch area in southeast Palmdale, in the Anaverde Valley to the southwest, throughout the desert basin into the towns of Lancaster and Rosamond. Fossil specimens vary in type and species from Pliocene leaves, Miocene and Pleistocene microfauna and ancient pollen in the deeper basin sediments, to Rancholabrean age megafauna from the late Pleistocene Epoch associated in lake bed deposits and along the foothills. More than a dozen significant fossil localities are within, or close to, the proposed project line and proposed reservoirs and pump station properties. These sites range in size and type from the identification of a single microfaunal remain, to a stratigraphic bed or lens of specimens such as with the Anaverde Formation leaf deposits, to multiple species found together as recorded Rancholabrean megafauna localities. Many of these fossil sites are on, or close to, the San Andreas Rift Zone. Since this, and other local fault activities allow ground water to percolate to the surface, extinct and modern-day animals congregated to and are found in these areas.

A single fossil leaf was located near the proposed Phase 4: Reservoir 2 area, though directly south of the APE and outside of the project boundaries.

3.4.4 Project Impacts and Mitigation Measures

Significance Criteria

The criteria used to determine the significance of an impact are based on the *CEQA Guidelines*. For this analysis, implementation of the proposed project would result in significant impacts to cultural resources if proposed project activities would:

- Cause a substantial adverse change in the significance of a historical resource [inclusive of archaeological resources] which is either listed or eligible for listing on the National Register of Historic Places, the California Register of Historic Resources, or a local register of historic resources.
- Cause a substantial adverse change in the significance of a unique archaeological resource (i.e., an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it contains information needed to answer important scientific research questions, has a special and particular quality such as being the oldest or best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person).
- Result in physical demolition, destruction, relocation, or alteration of an important Native American Resource or its immediate surroundings such that its significance would be materially impaired. A resource is “materially impaired” if those physical characteristics that convey its religious, spiritual or traditional significance are demolished or materially altered. Native American resources include but are not necessarily limited to villages, burials, rock art, rock features, or spring locations.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Restrict existing religious or sacred uses within the potential impact area.

- Disturbance or destruction of a unique paleontological resources or site or unique geologic feature

Impacts Discussion

Project-level Impacts

Impact 3.4-1: Ground-disturbing activities during pipeline installation could unearth, expose, or disturb archaeological, historical, or Native American resources. Less than Significant with Mitigation.

The project APE is located within an area of high archaeological sensitivity for cultural resources. Some areas of the project APE are prone to prehistoric sites and others to historic period sites, or a combination of the two. This includes the historic communities of Old Palmdale, Old Lancaster, and the communities of Rosamond and Pearland. In addition, the Anaverde/Amargosa Creek corridor associated with Ritter Ridge is one of intensive prehistoric archaeological sensitivity, as it is a large village complex dating back thousands of years relative to the Tataviam. The pan-and-dune complex north of Lancaster is one of high sensitivity for prehistoric sites and isolates: an area exploited by the Tataviam and Kitanemuk cultures. Additionally, prehistoric sites and cemeteries are reported west of the Tropico Mine, an area likely utilized by the Kitanemuk. Many of the historic period refuse deposits observed throughout the APE are indicative of single episode dumping, likely associated with a nearby homestead and generally do not warrant formal recordation, as such single episode deposits are considered less-than-significant.

Four previously recorded historic period sites and four previously recorded prehistoric period sites are present within or adjacent to the APE in Kern County; 19 previously recorded historic period sites and two previously recorded prehistoric sites are present within or adjacent to the APE in Los Angeles County (see Table 3.4-1 and Table 3.4-2). Some of these sites are adjacent to the backbone corridor, but appear unaffected by the project given the use of the roadbed as the location for backbone pipeline construction. With respect to the placement of the backbone pipeline within existing roadbed, it is unknown what lies beneath in terms of prehistoric, historical, or Native American resources. Mitigation Measure 3.4-1a would minimize potential impacts to previously unknown cultural resources.

The pipeline segment connecting Booster Pump Station 1 with the proposed pipeline along Sierra Highway was not included in the APE evaluated in the Phase I Assessment by APRMI. Mitigation Measure 3.4-1b would ensure that this segment of pipeline is surveyed and evaluated appropriately for cultural resources prior to construction. Any potential impacts to known or unknown cultural resources along this pipeline corridor would be reduced to less than significant impacts by implementation of a Cultural Resources Monitoring, Mitigation and Treatment Plan as described in Mitigation Measure 3.4-1a.

The pipeline segment connecting the Lancaster WRP with Distribution Pump Station No. 1 was not included in the APE evaluated in the Phase I Assessment by APRMI. The pipeline crosses Amargosa Creek within the Sierra Highway and is therefore within a potentially sensitive area for

pre-historic sites. This segment follows the exact route of the Lancaster WRP Eastside Agricultural Pipeline installed within the last two years. Mitigation Measure 3.4-1b would ensure that the segment of pipeline is surveyed and evaluated appropriately prior to construction. Since the segment follows an existing pipeline route installed within the last two years that did not encounter significant cultural resources, impacts within this corridor would be less than significant.

Mitigation Measures

Mitigation Measure 3.4-1a: Prior to initial construction of pipelines, the implementing agency shall retain the services of a qualified archaeologist to prepare a Cultural Resources Monitoring and Mitigation Plan (CMMP) and a Treatment Plan (TP) in accordance with CEQA Guidelines Sections 15064.5 and 15126.4. The CMMP shall set forth criteria for evaluating the significance of resources discovered during construction and identify appropriate data recovery methods and procedures to mitigate project impacts on significant resources. At a minimum, the CMMP shall include a summary of available information on known sites and sensitive locations in the project area; a historical context for the evaluation of resources that may be encountered during construction; a research design outlining important historical themes and research questions relevant to the known sites in the study area; data requirements and the appropriate field and laboratory methods to be used to acquire data needed for significance evaluation and impact mitigation. The CMMP will also identify specific pipeline segments where cultural resources monitors would be required during construction. The TP will identify reporting and curating requirements for artifacts uncovered during construction.

All project activities within or adjacent to the *Historical area of Old Palmdale and Old Lancaster and Old Rosamond and Tropico Mine* area shall be monitored by a professional archaeologist as there is a high probability for subsurface feature discovery, which includes (though is not limited to) foundations, cisterns, wells, cesspools, basements, or associated elements of the *Old Palmdale roundhouse spur of the Southern Pacific Railroad*.

Mitigation Measure 3.4-1b: A Phase I cultural resources survey shall be conducted for the segments of pipeline not already assessed in the Phase I Assessment conducted for the proposed project. Following completion of the Phase I cultural resource survey, the CMMP and TP shall be updated to include these segments.

Significance after Mitigation: Less than Significant.

Impact 3.4-2: Ground-disturbing activities during pipeline installation could unearth, expose, or disturb human remains. Less than Significant with Mitigation.

No previously recorded human burial sites were identified within the APE as a result of the archival research or the archaeological reconnaissance survey. Results of both the archival research and archaeological reconnaissance indicate that the proposed project area is within an area of high sensitivity for cultural resources, both prehistoric and historic. Prehistoric sites and cemeteries are reported west of the Tropico Mine, an area likely utilized by the Kitanemuk. Since

the nature of the proposed project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. With implementation of Mitigation Measure 3.4-2, the proposed project would have less than significant impacts regarding the disturbance of human remains.

Mitigation Measures

Mitigation Measure 3.4-2: If human skeletal remains are uncovered during project construction, the implementing agency shall immediately halt work, contact the Kern County or the Los Angeles County coroner, depending upon the location of the find, to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the *CEQA Guidelines*. If the County coroner determines that the remains are Native American, the implementing agency shall contact the NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Significance after Mitigation: Less than Significant.

Impact 3.4-3: Installation of pipelines could potentially unearth, expose, or disturb paleontologic resources including fossil remains, localities, or known fossil-bearing geologic horizons. Less than Significant with Mitigation.

Fossil remains are considered unique and significant to the scientific community. If a paleontological resource is uncovered and inadvertently damaged, the impact to the resource could be substantial. Implementation of the proposed project could result in significant impacts to paleontological resources. More than a dozen significant fossil localities are within, or close to, the proposed project line and proposed reservoirs and pump station properties. These sites range in size and type from the identification of a single microfaunal remain, to a stratigraphic bed or lens of specimens such as with the Anaverde Formation leaf deposits, to multiple species found together as recorded Rancholabrean megafauna localities. Many of these fossil sites are on, or close to, the San Andreas Rift Zone. With implementation of Mitigation Measure 3.4-3, the proposed project would have less than significant impacts regarding the disturbance of paleontological resources.

Mitigation Measures

Mitigation Measure 3.4-3: The implementing agencies shall develop and implement a Paleontological Resource Monitoring and Mitigation Plan (PRMMP) prior to the onset of construction-related earth moving activities in order to either avoid or mitigate to a less-than-significant level the effects on paleontological resources. During earth-moving

construction-related activities, additional previously-unknown fossil sites may be uncovered. The PRMMP must include mitigation protocol for discoveries as well. The PRMMP shall include provisions for the following: special consideration shall be made to collect sediment samples for potential fossiliferous locations as per the Society of Vertebrate Paleontology standards; stratigraphic cross-sections shall be recorded, mapping of the geologic units graphed, and fossil remains, cleaned, analyzed, and catalogued to be accepted for curation at a legal repository; all work must be conducted by a qualified Paleontologist and a final Report of Findings must be submitted upon completion of laboratory analysis.

Significance after Mitigation: Less than Significant.

Program-level Impacts

Impact 3.4-4: Proposed ground-disturbing activities for storage reservoirs, pump stations and groundwater recharge facilities could unearth, expose, or disturb archaeological, historical, or Native American resources. Less than Significant with Mitigation.

Two historic period sites (*DPS1-Hist1* and *BPS2-Hist1*), and two historic period isolates (*R3-ISO6* and *R3-ISO7*) were identified and recorded as a result of the archaeological reconnaissance survey. *DPS1-Hist1*, a historic period site with three historical features and four historical refuse deposits, is within the proposed location of Distribution Pump Station 1. *BPS2-Hist1*, a large historic period refuse deposit comprised of four loci, is located in the Booster Pump Station 2 parcel. *R3-ISO6*, a single glass fragment of a beverage bottle and one square medicinal bottle of blue glass with metal screw cap (*R3-ISO 7*) were identified at the proposed location of Reservoir 3 in the vicinity of the historic Palmdale Ditch. Two additional historic period sites were identified yet remain unrecorded due to a lack of accessibility: the historical *Tropico Mine* near the proposed Reservoir 4 site in Rosamond and the historical homesite at proposed Distribution Pump Station 2 site, adjacent to the Palmdale WRP. Six prehistoric isolates were identified and recorded as a result of the archaeological reconnaissance survey (*BPS2-ISO1*, *R3-ISO1*, *R3-ISO2*, *R3-ISO3*, *R3-ISO4*, and *R3-ISO5*).

California Point of Historical Interest KER-001, the Hamilton Clay Pits, is present within the proposed location of Reservoir 4, and one previously recorded resource “the Palmdale Ditch”, *CA-LAn-1534H*, is within the southern portion of the proposed location of Reservoir 3. Numerous prehistoric sites are immediately adjacent to the project backbone corridor and within the proposed location of Reservoir 2, particularly in the Anaverde/Amargosa Creek area.

The latest locations of proposed Distribution Pump Station 1A, Booster Pump Station 1, and Reservoir 4, as depicted in Figure 2-1, were not included in the APE evaluated in the Phase I Assessment by APRMI. The location of both project components changed after the Phase I Assessment was completed. Mitigation Measures 3.4-4c and 3.4-4d would ensure that these project components are surveyed and evaluated appropriately for cultural resources prior to construction.

Mitigation Measures

Mitigation Measure 3.4-4a: Prior to initial construction of storage reservoirs, pump stations, and recharge facilities, the implementing agency shall retain the services of a qualified archaeologist to prepare a Cultural Resources Monitoring and Mitigation Plan (CMMP) and a Treatment Plan (TP) in accordance with CEQA Guidelines Sections 15064.5 and 15126.4. The CMMP shall set forth criteria for evaluating the significance of resources discovered during construction and identify appropriate data recovery methods and procedures to mitigate project impacts on significant resources. At a minimum, the CMMP shall include a summary of available information on known sites and sensitive locations in the project area; a historical context for the evaluation of resources that may be encountered during construction; a research design outlining important historical themes and research questions relevant to the known sites in the study area; data requirements and the appropriate field and laboratory methods to be used to acquire data needed for significance evaluation and impact mitigation. The CMMP will also identify specific locations where cultural resources monitors would be required during construction. The TP will identify reporting and curating requirements for artifacts uncovered during construction.

Mitigation Measure 3.4-4b: *DPSI-Hist1* and *BPSI-Hist1* would be adversely impacted by the proposed construction activities and, therefore, shall be subjected to Phase II testing and evaluation for significance under CEQA and NHPA (see Section 3.4.2).

Mitigation Measure 3.4-4c: A Phase I cultural resources survey shall be conducted within areas affected by storage reservoir, pump stations, and recharge facilities not already assessed in the Phase I Assessment conducted for the proposed project.

Mitigation Measure 3.4-4d: Following completion of additional Phase I cultural resource surveys for sites not already surveyed, the CMMP and TP shall be updated to include these additional sites.

Mitigation Measure 3.4-4e: All project activities within or adjacent to the *Historical area of Old Palmdale and Old Lancaster* and *Old Rosamond and Tropico Mine area* shall be monitored by a professional archaeologist as there is a high probability for subsurface feature discovery, which includes (though is not limited to) foundations, cisterns, wells, cesspools, basements, or associated elements of the *Old Palmdale roundhouse spur of the Southern Pacific Railroad*. If these elements are identified, mitigation measures shall be employed that include in-field evaluation by a professional archaeologist (per Secretary of the Interior Standards) and possible data recovery, as needed, per a mitigation treatment plan.

Mitigation Measure 3.4-4f: If a prehistoric site is encountered in the vicinity of the concentration of isolated prehistoric artifacts within the northern portion of the western parcel of Proposed Reservoir 3, mitigation measures shall be employed that include in-field evaluation by a professional archaeologist (per Secretary of the Interior Standards) and possible data recovery, as needed, per a mitigation treatment plan.

Mitigation Measure 3.4-4g: If human skeletal remains are uncovered during project construction, the implementing agency shall immediately halt work, contact the Kern County or the Los Angeles coroner, depending upon the location of the find, to evaluate the remains, and follow the procedures and protocols set forth in Section 15064.5 (e)(1) of the

CEQA Guidelines. If the County coroner determines that the remains are Native American, the implementing agency shall contact the NAHC, in accordance with Health and Safety Code Section 7050.5, subdivision (c), and Public Resources Code 5097.98 (as amended by AB 2641). Per Public Resources Code 5097.98, the landowner shall ensure that the immediate vicinity where the Native American human remains are located is not damaged or disturbed by further development activity until the landowner has discussed and conferred, as prescribed in this section (PRC 5097.98), with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Significance after Mitigation: Less than Significant.

Impact 3.4-5: Construction of storage reservoirs, pump stations, and recharge facilities could potentially unearth, expose, or disturb paleontologic resources including fossil remains, localities, or known fossil-bearing geologic horizons. Less than Significant with Mitigation.

Fossil remains are considered unique and significant to the scientific community. If a paleontological resource is uncovered and inadvertently damaged, the impact to the resource could be substantial. Implementation of the proposed project could result in significant impacts to paleontological resources. More than a dozen significant fossil localities are within, or close to, the proposed project line and proposed reservoirs and pump station properties. These sites range in size and type from the identification of a single microfaunal remain, to a stratigraphic bed or lens of specimens such as with the Anaverde Formation leaf deposits, to multiple species found together as recorded Rancho Labrean megafauna localities. Many of these fossil sites are on, or close to, the San Andreas Rift Zone. With implementation of Mitigation Measure 3.4-5, the proposed project would have less than significant impacts regarding the disturbance of paleontologic resources.

Mitigation Measures

Mitigation Measure 3.4-5: The implementing agencies shall develop and implement a Paleontological Resource Monitoring and Mitigation Plan (PRMMP) prior to the onset of construction-related earth moving activities in order to either avoid or mitigate to a less-than-significant level the effects on paleontological resources. During earth-moving construction-related activities, additional previously-unknown fossil sites may be uncovered. The PRMMP must include mitigation protocol for discoveries as well. The PRMMP shall include provisions for the following: special consideration shall be made to collect sediment samples for potential fossiliferous locations as per the Society of Vertebrate Paleontology standards; stratigraphic cross-sections shall be recorded, mapping of the geologic units graphed, and fossil remains, cleaned, analyzed, and catalogued to be accepted for curation at a legal repository; all work must be conducted by a qualified Paleontologist and a final Report of Findings must be submitted upon completion of laboratory analysis.

Significance after Mitigation: Less than Significant.
