CULTURAL RESOURCES IDENTIFICATION SURVEY

NORTHERN UNDEVELOPED LAND AT THE SANTA SUSANA FIELD LABORATORY SITE

Simi Hills Area
Ventura County, California

For Submittal to:

United States Department of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585

Prepared for:

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June 10, 2010
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NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION

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Title: Cultural Resources Identification Survey: Northern Undeveloped Land at the Santa Susana Field Laboratory Site, Simi Hills Area, Ventura County, California

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USGS Quadrangle: Calabasas, Calif., 7.5' quadrangle; T2N R17-18W, San Bernardino Base Meridian; within a portion of the Rancho Simi land grant

Project Size: Approximately 182 acres

Keywords: Coastal southern California; Phase I historical/archaeological resources survey; Sites 56-001803 through 56-001805 and Isolates 56-100471 through 56-100475; chipped stone and groundstone artifacts; natural water cistern with rock shelter; Phase II archaeological testing and evaluation program recommended if necessary

MANAGEMENT SUMMARY

Between March and August 2010, at the request of CDM Federal Services, CRM TECH performed a cultural resources identification survey on approximately 182 acres of undeveloped land in the Simi Hills area of Ventura County, California. The Area of Potential Effects (APE), as delineated for this study, is the United States Environmental Protection Agency (EPA) gamma walkover study area comprising the Northern Undeveloped Land, located on the hillside overlooking the Santa Susana Field Laboratory (SSFL) to the south, approximately 1.5 miles southeast of the City of Simi Valley. It encompasses a portion of the Rancho Simi land grant lying within T2N R17-18W, San Bernardino Base Meridian, as depicted in the USGS Calabasas, Calif., 7.5' quadrangle. The study is a part of the Section 106 of the National Historic Preservation Act environmental review process being implemented by the United States Department of Energy (DOE) in support of the closure of Area IV of the SSFL.

The purpose of the study is to provide the DOE and the United States Environmental Protection Agency (EPA) with the necessary information to determine, in advance of the EPA's proposed gamma walkover survey of the Northern Undeveloped Land, if that survey could have an effect on any "historic properties," as defined by Section 106, that may exist in or near the APE. The EPA's proposed survey encompasses all of Area IV and the Northern Undeveloped Land. However, Area IV has been previously investigated for cultural resources. Therefore, only the Northern Undeveloped Land will be addressed during the current study.

In order to identify potential historic properties, CRM TECH conducted a historical/ archaeological resources records search, pursued historical background research, and carried out a systematic field survey. During the field survey, three previously unknown prehistoric—i.e., Native American—archaeological sites and five isolated prehistoric artifacts were identified within the APE. The isolates, subsequently designated 56-100471 through 56-100475, consist of a total of four chipped-stone artifacts and one granite biface mano, found at different locations within the APE. Such isolates, or localities with fewer than three artifacts, by definition do not qualify as archaeological sites due to the lack of contextual integrity. As such, they do not constitute potential historical properties, and require no further consideration.

The sites, designated 56-001803 through 56-001805, include three scatters of lithic debitage, one of which also features a natural water cistern. Due to the possible presence of additional cultural materials in buried deposits, the significance of Sites 56-001803 through 56-001805—and their qualifications as historical properties under Section 106—cannot be determined without further archaeological investigations, including subsurface testing. As the best way to protect these potential historic properties, CRM TECH recommends that the proposed gamma walkover survey plans within the APE take into account the presence of Sites 56-001803 through 56-001805 and facilitate the preservation of the sites *in situ*, if possible. Depending on the feasibility of *in-situ* preservation, the additional archaeological investigations may or may not be necessary at these sites. All proposed undertakings or projects that may arise any time in the future must also consider potential impacts to these sites.

In order to ensure the proper protection of Sites 56-001803 through 56-001805 during the proposed gamma walkover survey, CRM TECH recommends that an Environmentally Sensitive Area (ESA) be designated at each site to avoid accidental disturbance of any subsurface cultural deposits during surface and subsurface soil sampling operations. The ESA should encompass the location of each site in its entirety, along with a 50-foot buffer zone, and should be clearly demarcated with the assistance of a qualified archaeologist prior to the commencement of such operations.

If the preservation of any of the three sites proves to be infeasible, CRM TECH recommends that an appropriate archaeological testing and evaluation program be completed at the site(s) to be impacted to ascertain its significance under Section 106 provisions. Further recommendations regarding the final disposition of the site(s) will be formulated on the basis of the results of the testing and evaluation program.

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INTRODUCTION

Between March and June 2010, at the request of CDM Federal Services, CRM TECH performed a cultural resources identification survey on approximately 182 acres of undeveloped land in the Simi Hills area of Ventura County, California (Fig. 1). The Area of Potential Effects (APE) delineated for the survey is located on the hillside overlooking the Santa Susana Field Laboratory (SSFL) to the south, approximately 1.5 miles southeast of the City of Simi Valley. It encompasses a portion of the Rancho Simi land grant lying within T2N R17-18W, San Bernardino Base Meridian, as depicted in the USGS Calabasas, Calif., 7.5' quadrangle (Fig. 2). The study is a part of the Section 106 of the National Historic Preservation Act environmental review process being implemented by the United States Department of Energy (DOE) in support of the closure of Area IV of the SSFL.

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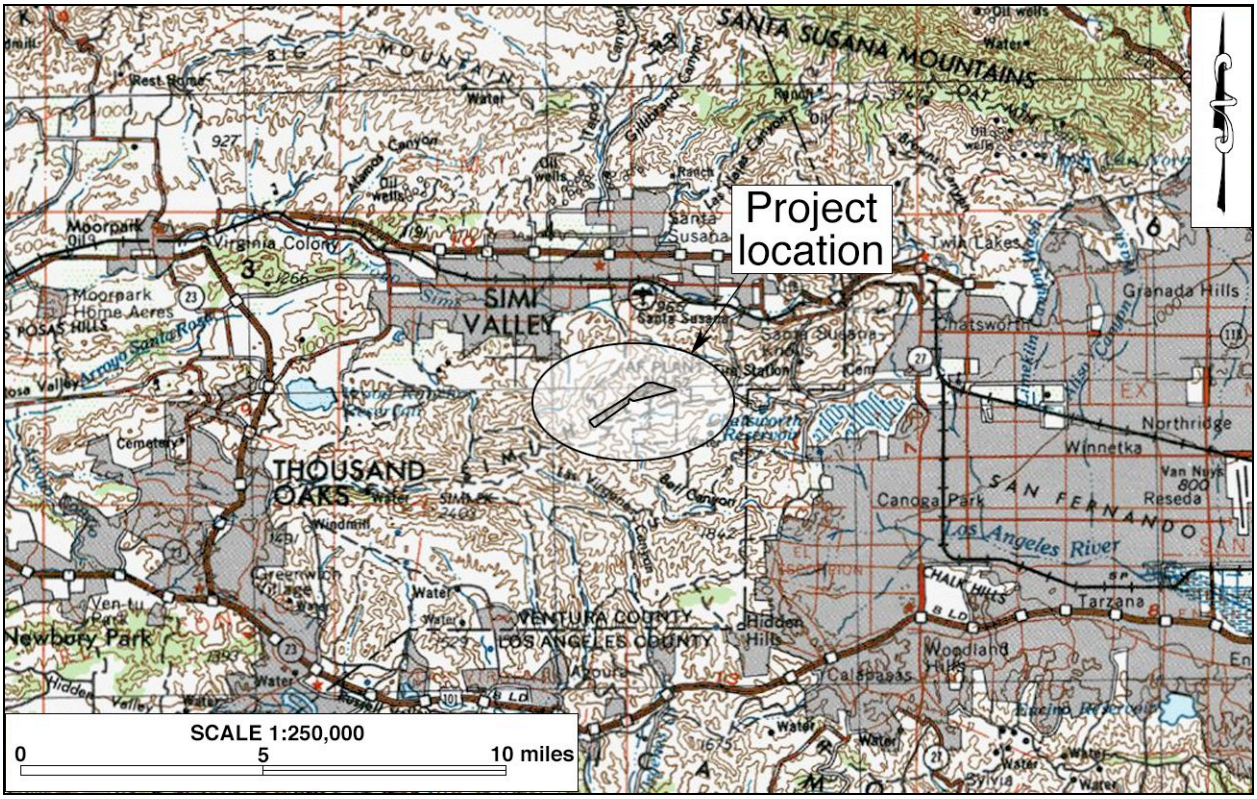

Figure 1. Project vicinity. (Based on USGS Los Angeles, Calif., 1:250,000 quadrangle [USGS 1975])

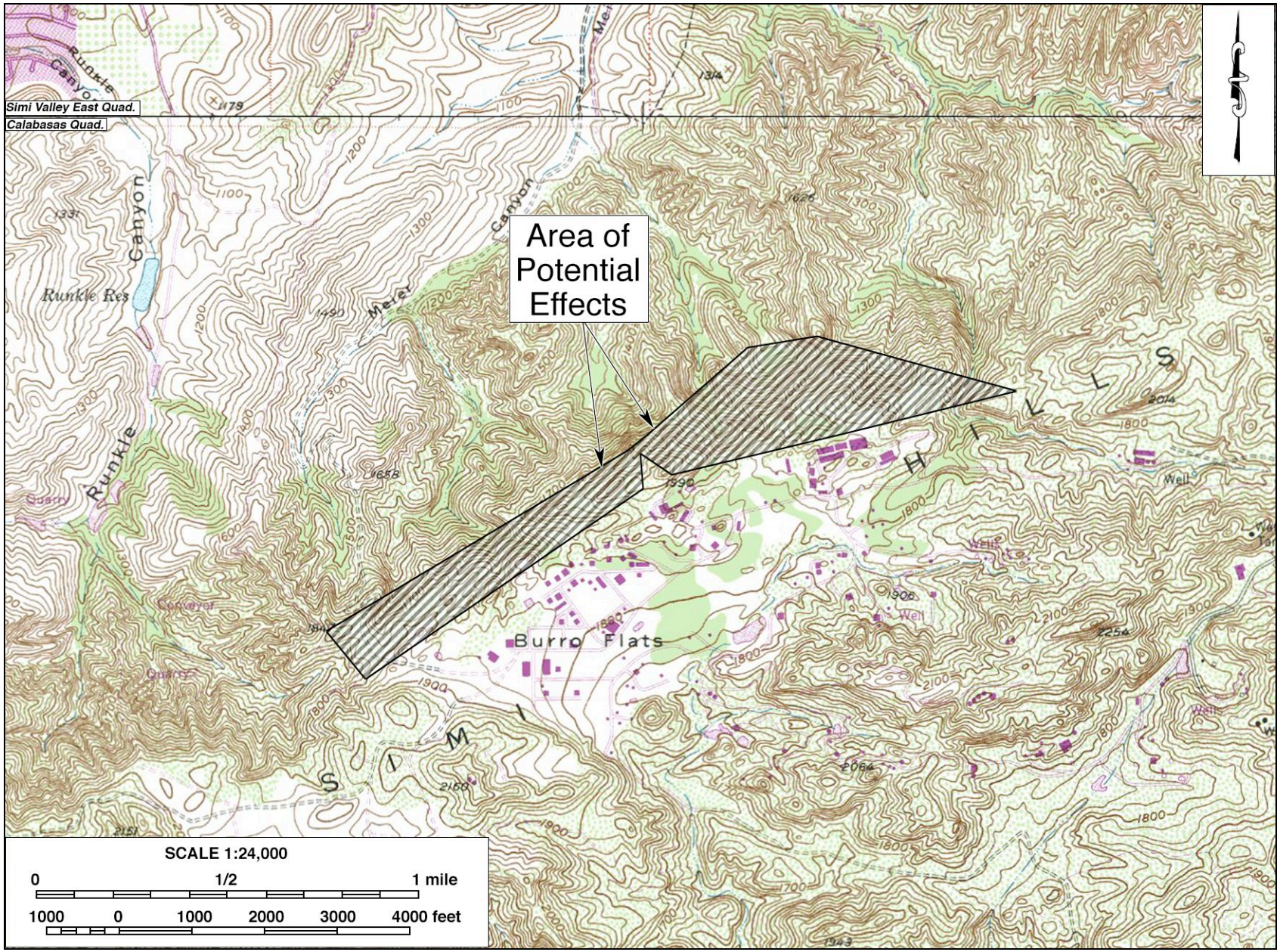

Figure 2. Area of Potential Effects. (Based on USGS Calabasas and Simi Valley East, Calif., 1:24,000 quadrangles [USGS 1967; 1969])

SETTING

CURRENT NATURAL SETTING

The APE is located on the rugged hillside near the crest of the Simi Hills between the Simi and San Fernando Valleys, bounded by the Brandeis-Bardin Institute on the north-northwest, Runkle Canyon on the southwest, and the SSFL facilities on the south-southeast. Conceptually, the APE can be divided into eastern and western portions with a small junction connecting the two (Fig. 2).

Monitoring wells and dirt access roads are found in both portions of the property and several large drainages traverse the steep and rocky terrain. Large sandstone outcrops, heavily eroded by wind and water, were observed throughout the APE. The entire APE was burned by wildfire in 2005, but the vegetation has recovered substantially. Chaparral/oak woodland is the dominant vegetation community, featuring such plants as oak, poison oak, wild cucumber, sages, elderberry, chia, sunflowers, flat-top buckwheat, and various other shrubs and grasses (Fig. 3).

Figure 3. Typical landscapes within the APE, showing dense vegetation, steep slopes, and bedrock outcrops. *Top left*: facing east in the northwest portion of the APE; *top right*: southwest across a large drainage; *bottom left*: west across the APE; *bottom right*: in the northeast portion, view to the southeast. (Photos taken on April 19-21, 2010)

CULTURAL SETTING

Prehistoric Context

It is widely acknowledged that human occupation in what is now the State of California began 8,000-12,000 years ago, or even earlier. In order to understand Native American cultures before European contact, archaeologists have devised chronological frameworks that endeavor to correlate the observable technological and cultural changes in the archaeological record to distinct periods of time. Several schemes have been developed for southern California, oftentimes based on a particular site or area that is being investigated. However, at the general level, most archaeologists tend to follow a chronology adapted from a scheme developed by William J. Wallace in 1955 and subsequently modified by others. Although the beginning and ending dates of the different horizons or periods may vary, the general framework of prehistory in this region under this chronology consists of the following periods:

- The Late Pleistocene Period (pre-10000 B.C.), is considered the earliest period of time that people would have inhabited southern California and is also characterized as the "Early Man" and "Big Game Hunting" period with its end roughly coinciding with the end of the Pleistocene Epoch;
- Early Hunting Stage (ca. 10000-6000 B.C.), which was characterized by human reliance on big game animals, as evidenced by large, archaic-style projectile points and the relative lack of plant-processing artifacts;
- Millingstone/"Intermediate" Horizon (ca. 6000 B.C.-A.D. 1000), when plant foods and small game animals came to the forefront of subsistence strategies, and from which a large number of millingstones, especially heavily used, deep-basin metates, were left;
- Late Prehistoric Period (ca. A.D. 1000-1500), during which a more complex social organization, a more diversified subsistence base—as evidenced by smaller projectile points, expedient milling stones and, later, pottery—and regional cultures and tribal territories began to develop;
- Protohistoric Period (ca. A.D. 1500-1700s), which ushered in long-distance contact with Europeans and led to the historic period.

Evidence of lifeways during these prehistoric periods is mostly gleaned and hypothesized through interpretations of the archaeological record. In general, the prehistory of southern California, especially coastal southern California, is thought to have been one of increasing populations and increasing social complexity. People adapted to changing environmental conditions and used and developed technologies to better exploit the resources to survive and maintain their culture. As populations increased, societies had to develop ways to deal with the extensive numbers of people, in their own group as well as outsiders.

Ethnohistoric Context

Systematic studies of Native Americans in southern California did not occur until the late 1800s or early 1900s and later. Thus, much of what is known about the Native American cultures in southern California comes from interviews with people discussing what they remembered about their childhood and what they remembered their fathers and grandfathers telling them about earlier ways of life. By talking with many people and by researching early—mostly Spanish—documents, and by reviewing the archaeological

record, ethnographers have put together a picture of many aspects of Native American culture of at least the Late Prehistoric and the Protohistoric periods.

Based on numerous sources of information, the APE lies in an area where the traditional territories of the Chumash and the Gabrielino/Tongva, and probably the Tataviam, adjoined and overlapped with each other, at least during the Late Prehistoric and Protohistoric periods. The homeland of the Chumash was primarily the coastal region from Morro Bay in the north to Malibu Canyon in the south, including the Santa Barbara Channel Islands, and inland to the San Joaquin and Simi Valleys (Grant 1978a). The homeland of the Gabrielino/Tongva was centered in the Los Angeles Basin, along the coast from Aliso Creek in the south to Topanga Creek in the north, reaching as far east as the San Bernardino-Riverside area (Bean and Smith 1978). The Tataviam held a smaller territory along the upper Santa Clara River drainage, primarily on the south-facing slopes of the Liebre and Sawmill mountains (King and Blackburn 1978), but they also used and inhabited the area of the APE.

The establishment of five Spanish missions, from 1772 to 1804, began a rapid decline of indigenous cultures and customs, and by the early 1800s virtually all of the Chumash population had been incorporated into the mission system (Grant 1978a). Presently, although the Chumash occupied a large territory and resource base, most of the available information describing the Chumash people and lifeways primarily deals with the coastal and island populations (Grant 1978a; King 1981).

The aboriginal environment afforded the Chumash a rich resource base. Their subsistence patterns included the gathering of plants and hunting of land animals, but were based more on marine resources. The consistent procurement of fish and marine mammals, as well as the movement of cargo and people to and from the Channel Islands, was enabled by the *tomol*, or plank canoe (Gamble 2002). The Chumash and the Gabrielino/Tongva are the only North American Indian tribes known to construct and use the plank canoe prior to European contact (Gamble 2002). Other material culture produced by the Chumash included steatite and sandstone bowls, mortars and pestles, basketry, and strings of shell money made from *Olivella* shells and Pismo clam shells (Grant 1978b; Romero 2010).

Pre-contact population estimates range from 8,000 to 20,000, scattered among an estimated 26 to 46 villages (Grant 1978a). The Chumash had at least six distinct languages, all belonging to the Hokan language family (Kroeber 1925; Grant 1978a). A decline in population began under Spanish rule (1769-1822) and continued through the Mexican and early American Periods (Kroeber 1925; Grant 1978a). Although many organized bands of Chumash descendants exist today throughout southern and central California, only the Santa Ynez Band of Chumash Indians is federally recognized (Santa Ynez Band of Chumash Indians 2010).

While there is little direct information in ethnographic literature about the Simi Hills area, it is known to have also been frequented also by the Gabrielino/Tongva, a Takic-speaking people who were among the most populous, wealthiest, and therefore most powerful ethnic nationality in aboriginal southern California (Bean and Smith 1978:538). Unfortunately, most Gabrielino/Tongva cultural practices had declined long before systematic ethnographic studies were instituted. Today, the leading ethnographic sources

on Gabrielino/Tongva culture are Bean and Smith (1978), Miller (1991), and McCawley (1996), on which most of the following discussion is based.

According to the archaeological record, the Gabrielino/Tongva were not the first inhabitants of the present-day Los Angeles region. Evidence suggests they may have arrived as early as the Middle Holocene, replacing or inter-marrying with indigenous Hokan speakers (Howard and Raab 1997; Porcasi 1998). By the time of European contact, the Gabrielino/Tongva influence had spread as far as the San Joaquin Valley, the Colorado River, and Baja California.

In equilibrium with the natural environment, different groups of the Gabrielino/Tongva adopted different types of subsistence economy, albeit all based on some combination of gathering, hunting, and/or fishing. The coastal groups relied primarily on the abundant marine resources available, while in the inland areas, the predominant food sources were acorns, sage, deer, and various small animals, including birds. Because of the similarities to other southern California tribes in economic activities, inland Gabrielino/Tongva groups' industrial arts, dominated by basket weaving, demonstrated no substantial difference from those of their neighbors. Coastal Gabrielino/Tongva material culture, on the other hand, reflected an elaborately developed artisanship most recognized through the medium of steatite.

The intricacies of Gabrielino/Tongva social organization are not well known, although there is evidence indicating the existence of a moiety system in which various clans belonged to one or the other of two main social/cultural divisions. There also seems to have existed at least three hierarchically ordered social classes, topped with an elite consisting of the chiefs, their immediate families, and the very rich. Some individuals owned land, and property boundaries were marked by the owner's personalized symbol. Villages were politically autonomous, composed of nonlocalized lineages, each with its own leader. The dominant lineage's leader was usually the village chief, whose office was generally hereditary through the male line. Often several villages were allied under the leadership of a single chief. The villages were frequently engaged in warfare against one another, resulting in what some consider to be a state of constant enmity between coastal and inland Gabrielino/Tongva groups.

As early as 1542, the Gabrielino/Tongva were in contact with the Spanish during the historic expedition of Juan Rodríguez Cabrillo, but it was not until the late 1700s that the Spaniards took steps to colonize Gabrielino/Tongva territory. Shortly afterwards, most of the Gabrielino/Tongva people were incorporated into Mission San Gabriel and other missions in southern California. Due to introduced diseases, dietary deficiencies, and forceful reduction, Gabrielino/Tongva population dwindled rapidly. By 1900, they had almost ceased to exist as a culturally identifiable group. In recent decades, however, there has been a renaissance of Native American activism and cultural revitalization among a number of groups of Gabrielino/Tongva descendants.

Mr. Rudy Ortega, a member of the Fernandeño Tataviam Band of Mission Indians, notes that the social and cultural ties and organization of the lineages established in the pre-mission period continued through the mission period from 1797 to 1846. While living at San Fernando Mission, the Tataviam ancestors adapted to mission life, nominally accepted Christianity, learned and took up new work skills within the mission economy, retained

their traditional languages, and maintained many aspects of traditional social, ceremonial, and political life within the mission (Ortega 2010).

Mr. Ortega further states that the Fernandeño village in the APE is indentified as *Jucjauynga* had seventy-six tribal members that were baptized during the period of recruitment from San Fernando Mission. The Fernandeños are defined Indians who were baptized in Mission San Fernando, and their descendants. The Indians who accepted baptism at the mission were composed of several language groups including the Chumash, Serrano or Kitanemuk, Tataviam, and western Tongva or Gabrielino. A small number of other Indians were also baptised at the mission between 1799 and 1855. Except for the Chumash, the other language groups are related and scholarship indicated they had interrelated cultures and political relations. Mr. Ortega also notes that the languages among the Kitanemuk, Tataviam, and Tongva are variations within the Takic language family, but while they shared similar language heritage, they did not share a common political identity. The famous California anthropologist Alfred Kroeber suggests that the Takic speaking Indians of the region were organized into tribelets, or small lineages, that held territory, controlled water, maintained local sovereignty, and had recognition from other surrounding groups. While villages can be corporate entities, according to Kroeber this is not the case for the Takic, and Chumash, peoples in the San Fernando region. Lineages or local groups of extended families were the primary functional political and cultural groupings. Takic villages were primarily kinship groups, that villages could move around according to need, and they were often identified by kinship group (Ortega 2010).

Regional Historic Context

Spanish colonization activities in the Los Angeles-Ventura-Santa Barbara region began officially in 1771, with the establishment of Mission San Gabriel in what is now Montebello. Ten years later, in an effort to ease dependence on the mission, the Spanish governor of Alta California recruited several dozen poor farmers from Mexico to take up residence on a patch of land later to be known as Los Angeles (Bean and Rawls 1988:33). Shortly after that, in March 1782, Mission San Buenaventura, the first non-Native settlement in present-day Ventura County, was founded by Fransciscan friar Junipero Serra and named after St. Bonaventure, a 13th century theologian (Gudde 1998:410).

Settlement in the Los Angeles-Ventura-Santa Barbara region was encouraged by the Spanish colonial government's concession of vast tracts of land, or ranchos, to soldiers set to retire from service (Ethington 2005). In present-day Ventura County, these included the enormous 113,009-acre Rancho Simi, formally *Rancho San José de Nuestra Senora de Altagarcia y Simi*, which was granted to the Pico brothers in 1795. After Mexico gained independence from Spain in 1822, the land grant was confirmed by the Mexican authorities in 1842. With the U.S. annexation of Alta California in 1848, it was again confirmed by the U.S. Public Land Commission in 1852.

American settlers flooded California during the second half of the 19th century, partly due to the discovery of gold and other precious metals in the Sierra Nevada in 1848, which increased demand for beef and other cattle products throughout the state. Cattle raising was a wildly lucrative business that provided the scaffolding for the economic and social growth and formed the basis for private property development in most of southern California during the early decades of the American period, just as it did in the Spanish and Mexican Periods. In 1861, a post office was established for the small town that had

formed around Mission San Buenaventura, and the name was eventually shortened to simply "Ventura" (Gudde 1998:410). In 1872, it became the county seat of newly created Ventura County, formerly a part of Santa Barbara County (Gudde 1998:410.).

The Southern Pacific Railway reached southern California in 1876, followed by the competing Atchison, Topeka and Santa Fe Railway in 1883-1885. The completion of the two transcontinental railways, particularly the latter, provided a new catalyst for economic development in southern California, based in land sales, and naturally, transport. Towns by the dozens sprang up all around Los Angeles, refining the transportation corridors and commuting patterns that took shape as suburban development spread rapidly outward. The first rail line across Ventura County, the Coast Line branch of the Southern Pacific Railway, was completed in 1888 (Storke 1891:183-194).

Closer to the APE, Rancho Simi was acquired around 1860 by U.S. Senator Thomas A. Scott, who later headed the Pennsylvania Railroad (Press Reference Library 1915:164; Murphy 1979:27-29). Scott invested in the land as a speculative bid based on oil reports in the region, but was later forced to lease it for farming and sheep ranching when no substantial oil reserves were found (Murphy 1979:27-29). After Scott died in 1881, his agent, Thomas R. Bard, remembered today as a state senator, Ventura County organizer, and "Father of Point Hueneme," formed the Simi Land and Water Company to create a new town on 96,000 acres of Rancho Simi land (*Columbia Encyclopedia* 2008; W&S Consultants 2001:28). Land sales commenced and the neophyte town was given the cosmopolitan name of "Simiopolis," which ultimately gave way to "Simi Valley" (*Columbia Encyclopedia* 2008; W&S Consultants 2001:28). Although sales reached 23,260 acres by 1891, the buyers apparently tended to be ranchers or speculators, leaving the area largely unoccupied (W&S Consultants 2001:28).

Further subdivision of the land in the early 20th century spurred some residential growth, the most notably example being Mortimer Ranch, a 1,787-acre housing development laid out in 1927, which became the basis of today's community of Santa Susana Knolls, located adjacent to the north of the SSFL (W&S Consultants 2001:29). Yet agriculture dominated eastern Ventura County well into the mid-20th century, as the steep valleys and rugged terrain of the Santa Monica Mountains provided the interior county communities with a natural barrier from Los Angeles County.

As roads improved and expanded, however, more former Angelinos became Ventura County residents, especially after U.S. Highway 101 reached freeway speed in the 1960s making the commute to Los Angeles more convenient. As a result, suburbanization accelerated throughout the county, but particularly in the eastern portion, where housing and land were more affordable for the working class.

The exponential growth of Simi Valley and the surrounding region in the latter half of the 20th century is easily illustrated by increases in population. Although the town's population more than doubled between 1950 and 1960, from around 3,000 to over 8,000, the growth was still light in terms of total population. By 1970, the year after Simi Valley incorporated as a city, the population count reached 59,250, an increase of more than 600%. As of May 2010, the population was estimated at 126,322, within city limits that encompass 42 square miles (City of Simi Valley 2010). Once characterized as a commuter bedroom community, Simi Valley has since established an individual identity through residential,

commercial, and civic development, and has been consistently named one of the "Safest Cities in America."

Santa Susana Field Laboratory

At the onset of World War II, and in the midst of a massive defense build-up, Los Angeles became a center for the production of aircraft, ammunitions, and other war supplies. Owing in part to its favorable weather, Los Angeles attracted such aviation titans as Donald Douglas, the founder of the McDonnell Douglas Corporation, who began production in Santa Monica, and the Lockheed Aircraft Company (now Lockheed Martin) did the same in Burbank, while North American Aviation (NAA) set up shop in Inglewood (Ethington 2005).

The SSFL is jointly owned by The Boeing Company (Boeing) and the National Aeronautics and Space Administration (NASA), with all land operated by Boeing. The property is divided into four administrative areas (Areas I, II, III, and IV) and areas of undeveloped land to both the north and south. Areas I, III, and IV and the undeveloped land are owned by Boeing. Area II is owned by NASA. Ninety acres of Area IV were leased to the DOE to conduct a broad range of energy-related research and development. The undeveloped lands of the SSFL have never been used for industrial activities.

Prior to development, the land at the SSFL was used for ranching. During 1948 North American Aviation (NAA) began using (by lease) what is now known as the northeastern portion, or Area I of the SSFL. Starting in 1948, activities at SSFL included research, development, and testing of liquid-fueled rocket engines and associated components such as pumps and valves. The majority of the SSFL was acquired with the purchase of the Silvernale property in 1954, and development of the western portion of the SSFL began soon after. Undeveloped land parcels to the south of the SSFL were acquired during 1968 and 1976 and to the north during 1998. No site-related operations were conducted in these undeveloped portions of the SSFL. Boeing acquired the property in 1998.

The majority of rocket engine testing and ancillary support operations occurred from the 1950s through the early 1970s. These were conducted by Rocketdyne in Areas I and III in support of various government space programs and in Area II on behalf of NASA. Rocket engine testing frequency decreased during the 1980s and 1990s, and ceased in 2006. In addition to the primary facility operation of rocket engine testing, the SSFL was used for research, development, and testing of water jet pumps, lasers, and liquid metal heat exchanger components, and research and development of related technologies.

Nuclear energy research, testing, and support facilities were located within the 90-acre portion of Area IV that was leased to DOE and designated as the Energy Technology Engineering Center (ETEC). Atomics International (AI), a division of NAA, and Rocketdyne conducted operations on behalf of DOE, with operations occurring primarily from the 1954 through the 1980s. DOE and its predecessor agencies sponsored nuclear energy research and energy development projects within Area IV of the SSFL. The research and energy development activities included nuclear energy operations (development, fabrication, disassembly, and examination of nuclear reactors, reactor fuel, and other radioactive materials) and large-scale liquid sodium metal experiments for testing liquid metal fast breeder reactor components.

Nuclear energy research activities within Area IV ceased in 1988 when DOE terminated all nuclear programs. DOE then shifted its focus to facility decontamination and demolition (D&D), and environmental cleanup.

RESEARCH METHODS

RECORDS SEARCH

On March 23, 2010, CRM TECH archaeologist Nina Gallardo (see App. 1 for qualifications) conducted the historical/archaeological resources records search at the South Central Coastal Information Center (SCCIC). The SCCIC, located on the campus of the California State University, Fullerton, is the State of California's official cultural resource records repository for the Counties of Ventura, Los Angeles, and Orange, and a part of the California Historical Resource Information System, established and maintained under the auspices of the Office of Historic Preservation.

During the records search, Gallardo examined maps and records on file at the SCCIC for previously identified cultural resources in or near the APE and existing cultural resources reports pertaining to the vicinity. Previously identified cultural resources include properties designated as California Historical Landmarks or Points of Historical Interest, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

HISTORICAL BACKGROUND RESEARCH

Terri Jacquemain, CRM TECH Historian (see App. 1 for qualifications), conducted the historical background research on the basis of published literature in local/regional history and historic maps of the vicinity. Among maps consulted for this study were the U.S. Geological Survey's (USGS) topographic maps dated 1903 and 1941-1944, which are collected at the Science Library of the University of California, Riverside.

FIELD SURVEY

On April 19-21, 2010, CRM TECH Field Director Daniel Ballester (see App. 1 for qualifications) carried out the systematic, on-foot field survey of the APE with project archaeologists Robert Porter, Evan Mills, and Will Jenson. CRM TECH Principal Investigator Michael Hogan joined the crew on April 19. Utilizing a hand-held GPS unit, the field personnel established project boundaries before commencing the survey work.

Some areas were surveyed at an intensive level by walking parallel transects spaced 10-15 meters (approx. 33-50 feet) apart, including small area of level terrain in the eastern portion of the APE, just above a large drainage (Fig. 4). Other areas were surveyed at a reconnaissance level due to the dense vegetation, including poison oak and thick stands of brush, and rugged and steep terrain (Figs. 3, 4). As part of the reconnaissance-level survey, all ridges, drainages, hilltops, and saddles were inspected, and sandstone outcrops were closely examined for any evidence of bedrock milling features, potential rock shelters, caches of artifacts, and rock art. The crew attempted, within reason, to reach all areas

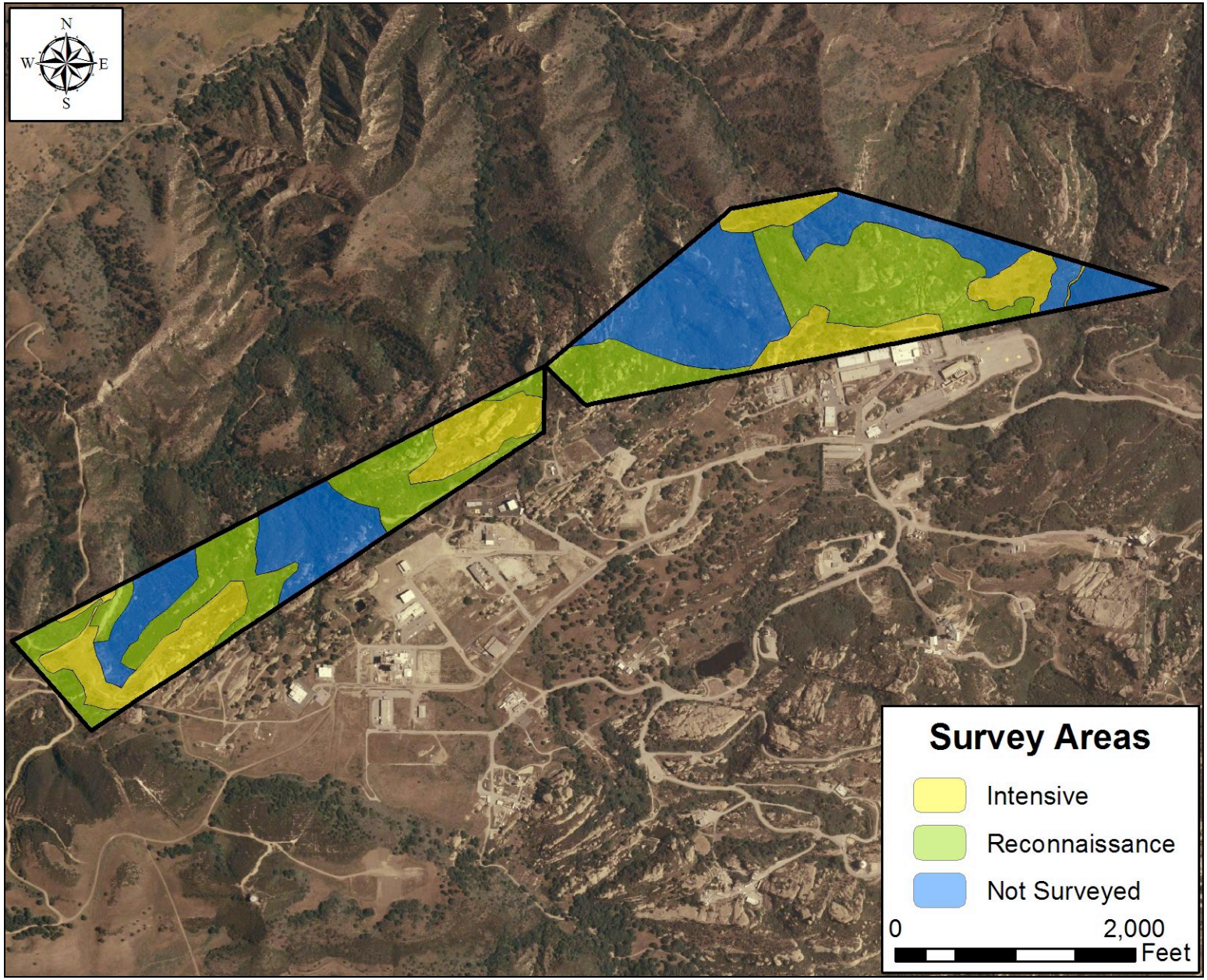

Figure 4. Field survey coverage of the APE.

where human activity may have occurred. Steep slopes with either loose soil or rock faces, as well as areas of impenetrable brush, were not surveyed.

Using these methods, the APE was systematically inspected and all reasonable effort was made to examine the property for any evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years ago or older). Ground visibility was poor (0-10%) throughout much the APE because of the dense vegetation. However, there were numerous areas where the vegetation was not so thick, as well as areas of bedrock outcrops that could be inspected for evidence human use.

When artifacts and/or features were discovered during the survey, their locations were marked with survey flags and entered into the handheld GPS unit. Upon completion of the survey, the artifacts and/or features were re-visited, photographed, and mapped. An appropriate level of recordation was completed on all archaeological resources identified through the survey efforts. Following guidelines established by the Office of Historic Preservation and common archaeological practices, localities with fewer than three artifacts were recorded as isolates.

Field recordation included a description of the resource and a location map for all finds, while scaled sketch maps were also produced for locations with more extensive archaeological remains. The field maps and descriptions were then compiled into standard site record forms and submitted to the SCCIC for assignment of permanent record numbers and inclusion in the California Historical Resources Information System.

RESULTS AND FINDINGS

RECORDS SEARCH

According to SCCIC records, the APE had not been surveyed systematically for cultural resources prior to this study, and no cultural resources had been recorded on or immediately adjacent to the property. Outside the APE but within a one-mile radius, SCCIC records show at least 26 previous cultural resources studies on various tracts of land and linear features (Table 1), including one that may have involved a small sliver of land in the northwest corner of the APE (Fig. 5).

As a result of these and other similar studies in the vicinity, 32 historical/archaeological sites and 3 isolates—i.e., localities with fewer than three artifacts—were previously recorded within the scope of the records search as listed in Table 2. None of these previously recorded sites or isolates was located immediately adjacent to the APE, and thus none of them requires further consideration during this study.

Fifteen of the sites listed in Table 2 have been combined into a new site, 56-001072, the Burro Flats Painted Cave site, located in Area II, approximately 0.7 mile southeast of the current APE. The Burro Flats Painted Cave site, as currently recorded, is located along the left (northern) bank of the northernmost fork of Bell Creek, a major drainage, on relatively level ground. The site consists of several elaborate rock art panels, areas of midden soil, milling features, rock shelters, a network of paths worn in the sandstone exposures, cupule rocks, and other evidence of habitation.

Table 1. Previous Cultural Resources Studies within the Scope of the Records Search		
Number	**Author/Date**	**Title**
VN-00028	Rosen 1975	Evaluation of the Archaeological Resources and Potential Impact of Proposed Widening and Realignment of the Ventura Freeway (Federal Highway 101), Ventura County
VN-00211	Fenenga 1973	An Archaeological Survey of the Area of Air Force Plant 57, Coca Test Area, Santa Susana Field Laboratory, Ventura County, Calif.
VN-00280	Kuhn 1980	Response Letter of April 21, 1980 Map of Simi Valley Showing the Areas Which Have Been Surveyed
VN-00389	Pence 1978	Archaeological Assessment of TT 3045, Simi Valley, California
VN-00571	McDowell 1987	Archaeological Reconnaissance of the Proposed Cerwin Ranch Development for Conditional Use Permit Number CUP-440
VN-00696	McDowell 1987	Archaeological Reconnaissance and Test of TT 3045, Simi Valley
VN-00714	Van Horn 1980	Archaeological Survey Report: The Ventura County Portion of the Las Virgenes Ranch
VN-00845	Lopez 1975	An Archaeological Survey of the Southern Pacific Milling Company's Runkle Canyon Gravel Quarry Lease, Simi Valley, Ventura County, California
VN-00924	Whitley and Simon 1990	Phase 1 Archaeological Survey and Resource Assessment of the Rancho Pacifica Property, Runkle Ranch, City of Simi Valley, Ventura County, California
VN-00968	W & S Consultants	Phase II Archaeological Test Excavation at CA-VEN-1018, Simi Valley, Ventura County, California
VN-01027	Romani, Larson, Romani, & Benson 1988	Astronomy, Myth, and Ritual in the West San Fernando Valley
VN-01039	Rozaire 1959	Pictographs at Burro Flats
VN-01051	Edberg	Shamans and Chiefs: Visions of the Future
VN-01052	Romani, Romani, and Larson	Astronomical Investigations at Burro Flats: Aspects of Ceremonialism at a Chumash/Gabrielino Rock Art and Habitation Site
VN-01058	Redfeldt 1979	Prehistoric Indian Rock Art of California
VN-01089	LaMonk	Pictograph Cave Burro Flats
VN-01174	Bissell 1989	Cultural Resources Summary of the Ahmanson Ranch Property, 5500 Acres in Ventura County, California
VN-01178	Whitley and Simon 1992	Phase I Archaeological Survey and Assessment of Two Areas of Unauthorized Grading on the Czerwinski Portion of the Runkle Ranch Specific Plan Area, Simi Valley, Ventura County, Calif.
VN-01406	Knight 1993	Recent Investigations at Burro Flats (CA-VEN-1072), Ventura County, California
VN-01446	Gutman et al. 1970	UCAS-271 Site Sheets for Santa Monica Mountains Rockshelters
VN-01818	Clewlow and Walsh 1999	Cultural Resource Assessment and Report on Archival Research, Surface Reconnaissance, and Limited Subsurface Evaluation at Rocketdyne Santa Susana Field Laboratory, Ventura County, Calif.
VN-02239	King and Parsons 1999	Archaeological Record of Settlement an Activity in the Simi Hills Malu'liwini
VN-02480	Whitley 2001	Class III Inventory/Phase I Archaeological Survey of the Santa Susana Field Laboratory Area 4, Ventura County, California
VN-02607	Craft and Mustain 2007	Archaeological Survey Report for Southern California Edison Company Big Rock 16kv Reconductor O&M Project, Ventura County, California
VN-02611	Craft and Mustain 2007	Archaeological Survey Report for Southern California Edison Company Energy Circuit 16kv Reconductor O/O Chatsworth Sub Dsp Project, Ventura County, California
VN-02711	Emmick et al. 2008	Cultural resources Inventory of Santa Susana Field Laboratory, NASA Areas I and II, Ventura County, California

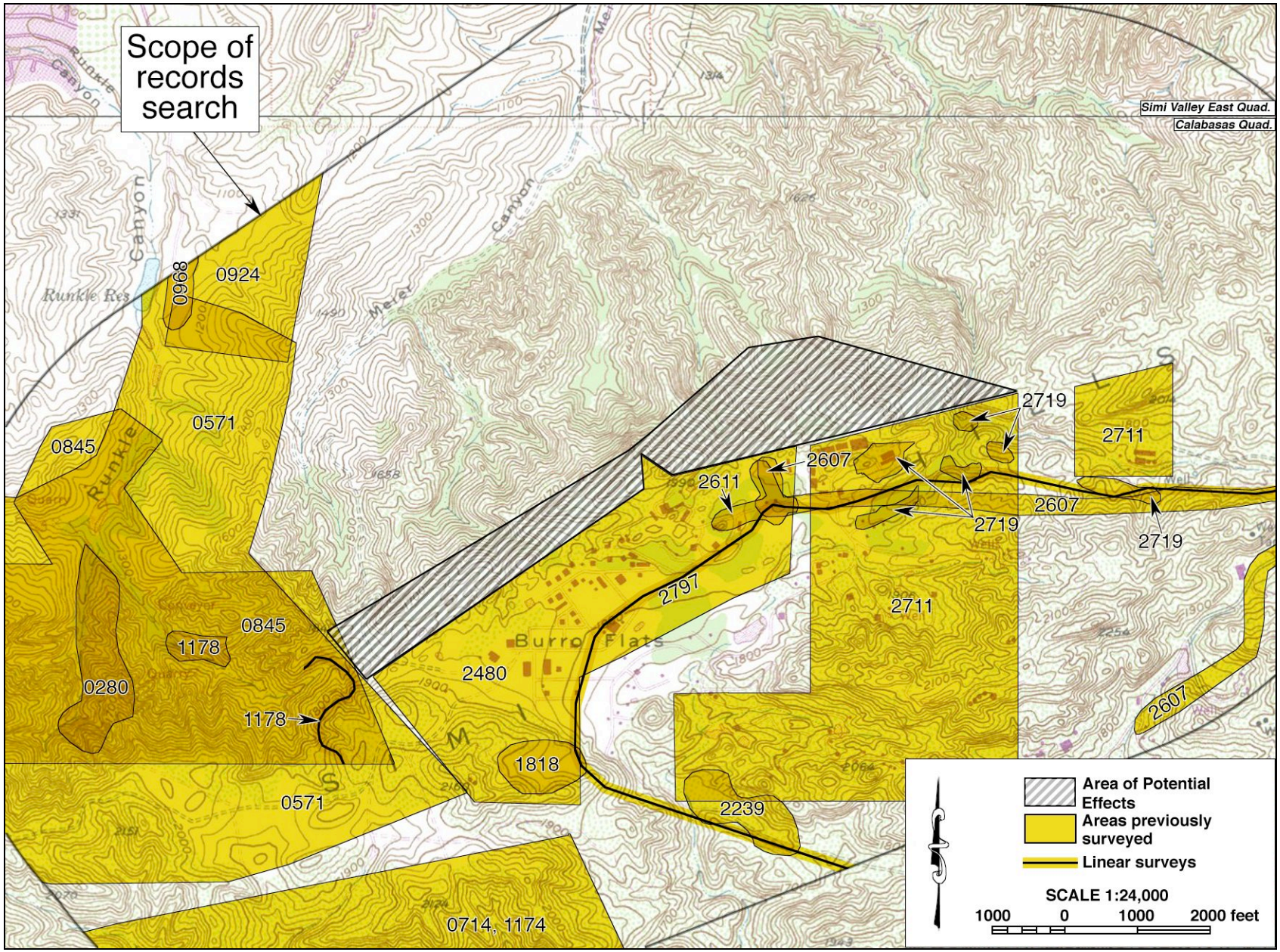

Figure 5. Previous cultural resources studies in the vicinity of the APE, listed by SCCIC file number. Locations of historical/archaeological sites are not shown as a protective measure.

Table 2. Previously Recorded Cultural Resources within the Scope of the Records Search		
Number	**Recorded by/Date**	**Description**
56-000151*	Rozaire 1959	Midden deposit
56-000152*	Rozaire 1960	Midden, pictographs
56-000153*	Rozaire 1960	Midden, pictographs
56-000154*	Rozaire 1960	Midden, mortars, petroglyphs
56-000155*	Rozaire 1960	Petroglyphs
56-000156*	Rozaire 1960	Pictograph, rock shelter
56-000157*	Rozaire 1960	Pictograph, rock shelter
56-000158*	Rozaire 1960	Pictograph, rock shelter
56-000159*	Rozaire 1960	Pictograph, rock shelter
56-000160*	Rozaire 1960	Pictograph, rock shelter
56-000161*	Rozaire 1960	Pictograph, rock shelter
56-000683	Kuhn 1980	Quartzite flakes
56-000763	Kuhn 1981	Rock shelter with lithic and groundstone
56-000731	Kuhn et al. 1981	Rock shelter with associated artifacts
56-000732	Kuhn et al. 1981	Rock shelter with associated artifacts
56-000733	Kuhn 1981	Rock shelter
56-000763	Kuhn 1982	Rock shelter
56-000764	Kuhn 1982	Rock shelter with midden
56-001017	Whitley 1990	Lithic quarry/workshop
56-001050	Knight and Stickle 1991	Rock shelter with pendant and chipped-stone artifacts
56-001065*	Knight and Krupp 1991	Two rock shelters with midden and associated artifacts
56-001066*	Knight and Stickle 1991	Rock shelter with pictograph panel
56-001067*	Knight and Krupp 1991	Prehistoric trail
56-001068*	Knight 1991	Rock shelter and three bedrock milling stations
56-001072	N/A	Burro Flats Painted Cave site (formerly Sites 56-000151 through 56-000161 and 56-001065 through 56-001068)
56-001119	Knight 1993	Bedrock milling station with two mortars and a cupule
56-001772	Whitley 2001	Cave with historic-period painting
56-001773	Whitley 2001	Rock shelter with associated artifacts
56-001774	Whitley 2001	Single bedrock mortar
56-001775	Whitley 2001	Rock shelter with midden and associated artifacts
56-001800	Bard 2007	Rock shelter with associated artifacts
56-100135	Whitley 1990	Isolate: quartzite scraper plane
56-100140	Knight 1991	Isolate: chert core
56-100198	Craft and Mustain 2007	Isolate: vessel rim sherd
56-152837	Craft and Mustain 2007	Historic-period laboratory building

* Combined into Site 56-001072

HISTORICAL BACKGROUND RESEARCH

Historical maps consulted for this study (Figs. 6, 7) suggest that the APE is relatively low in sensitivity for cultural resources from the historic period. Around the turn of the 20th century, no man-made features of any kind were observed in or near the APE in the Simi Hills (Fig. 6). Forty years later, while a few isolated buildings, probably farmsteads, were scattered nearby, and a winding dirt road crossed the western tip of the APE, no evidence of any settlement or land development activities was noted within or adjacent to the APE (Fig. 7). Despite the establishment of the SSFL on adjacent land shortly after that, the entire APE has evidently remained relatively vacant and undeveloped to the present time.

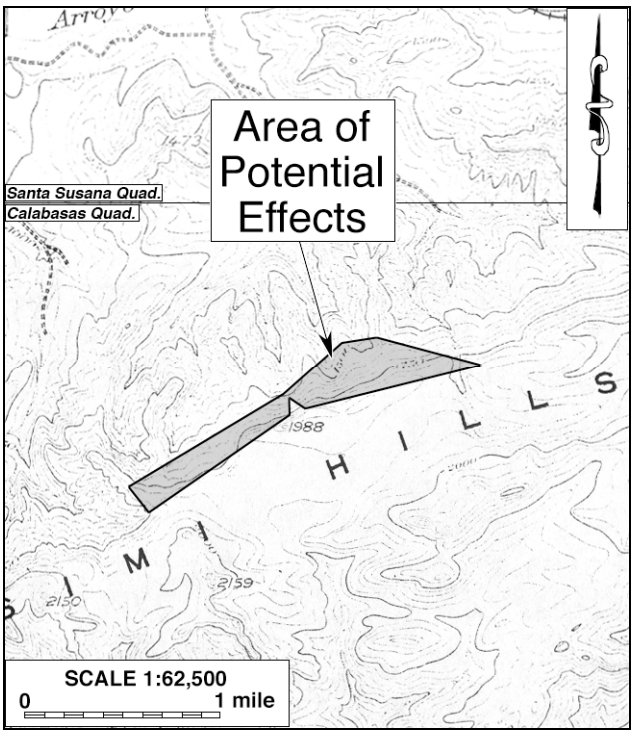

Figure 6. The APE and vicinity in 1893-1901. (Source: USGS 1903a; 1903b)

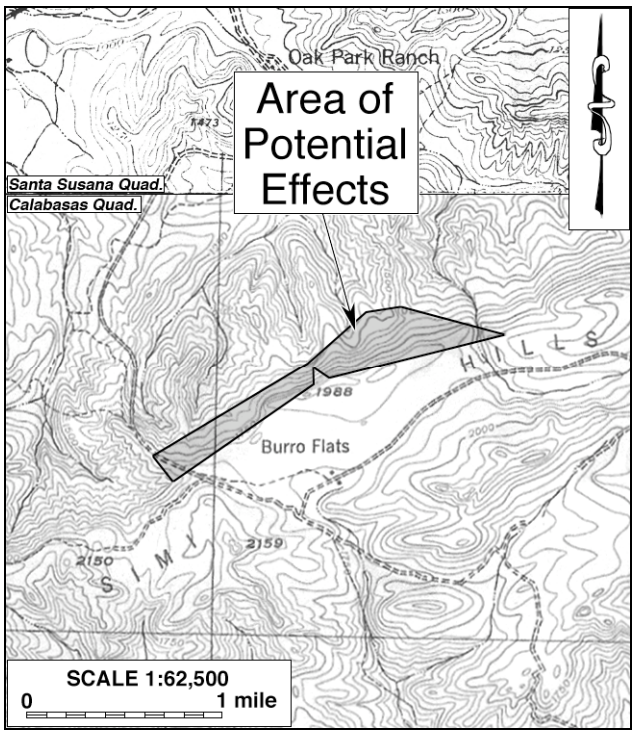

Figure 7. The APE and vicinity in 1938. (Source: USGS 1941; 1944)

FIELD SURVEY

During the field survey, all accessible areas were surveyed for cultural resources, and areas of potential human use were inspected. As a result, eight previously unknown archaeological sites and isolates, subsequently designated 56-001803 through 56-001805 and 56-100471 through 56-100475 by the SCCIC, were identified and recorded within the APE (Table 3; Fig. 8), all of which are predominantly of prehistoric—i.e., Native American—origin. These sites and isolates are discussed in further detail below, and a confidential map showing their locations in the APE is presented in Appendix 2. Additionally, a known, potential rock shelter was visited. As with other potential rock shelters and cache areas in the APE, no evidence of prehistoric use could be found. A rock wall in front of the opening of the rock shelter, thought to be historical in age, was determined otherwise through closer examination. Therefore, that feature was not recorded.

Table 3. Archaeological Sites and Isolates Recorded during the Current Study

Number	Description	Eligibility to NRHP
56-001803	Lithic scatter	Undeterminable at this time
56-001804	Lithic scatter	Undeterminable at this time
56-001805	Lithic scatter with natural water cistern	Undeterminable at this time
56-100471	Isolate: quartzite shatter	No
56-100472	Isolate: quartzite flake	No
56-100473	Isolate: quartzite core	No
56-100474	Isolate: quartzite flake	No
56-100475	Isolate: biface mano fragment	No

Figure 8. Artifacts and archaeological features found in the APE. *Clockwise from upper left*: natural water cistern at Site 56-001805; quartzite flake at Isolate 56-100472; quartzite flake at site 56-001806; adorned metal fragment at Site 56-001804.

Site 56-001803

A total of seven chipped-stone artifacts, including four flakes and three cores, were observed at this small lithic reduction site. The artifacts were made from two types of quartzite material, one reddish gray in color and the other grayish tan. All three cores were multidirectional and made from quartzite of poor quality. The four flakes have all been identified as secondary reduction flakes. There are no bedrock milling features or rock shelters nearby. The site area is covered with dense vegetation growth, and disturbance by natural erosion and wildfires is minimal.

Site 56-001804

Site 56-001804 consists of a small lithic reduction area located near a natural drainage, at the foot of a large north-facing slope near the northern boundary of the APE. A spring is located approximately 50 m to the northeast of the site. Four chipped-stone artifacts made from quartzite were found at the site, including three secondary flakes and one multidirectional core. A few metal fragments, apparently from a cast-iron stove that may have been historical in origin, were also noted at the northern end of the site. The area is covered with thick vegetation, and has been minimally disturbed by natural erosion, wildfires, and horses observed grazing in the area.

Site 56-001805

Located on top of a sandstone outcrop, Site 56-001805 features a large natural water cistern that measures approximately 7 x 2 x 3 m in size. At the time of the survey, the cistern was filled with water, with small freshwater shrimp living at the bottom. A prehistoric lithic scatter is located at the base of the boulder, adjacent to the sandstone outcrop, suggesting that the cistern was likely used by Native people during prehistoric times.

The lithic scatter measures approximately 12 x 8 m in area, and contains a total of 12 chipped-stone artifacts, including 1 core and 11 flakes, all of them of quartzite material. The area is covered with dense vegetation, which limits ground visibility. Disturbances are minimal, caused mainly by natural erosion, wildfires, and animal activities.

A small dam, measuring 3 ft wide and 8 in high, has been created at the northern end of the cistern using local rocks and modern concrete. It appears that the cistern would hold water with or without the dam. On the east side of the cistern, an overhang in the rock formation created a small shelter that is about 4 m wide, 3 m deep and 1.5 m high (Fig. 7).

Isolate 56-100471

This isolate consists of a dark gray quartzite shatter, measuring 2.4 x 1.4 x 1.1 cm in size. The artifact was found in an area of dense vegetation growth.

Isolate 56-100472

This isolate consists of a single quartzite flake, found roughly 135 m southwest of Site 56-001803. The flake measures approximately 4.9 x 3.4 x 1.9 cm in size, and was also found in an area of dense vegetation growth.

Isolate 56-100473

A single core fashioned from a blue-gray quartzite cobble was recorded at this location. It measures 10.7 x 10.4 x 8.7 cm in size, and exhibits crushed and battered striking platforms and random flake removal scars. Roughly 40% of the cortex remains on the cobble. Like the other isolates, the core was found in an area of dense vegetation growth.

Isolate 56-100474

This isolate is a reddish gray quartzite flake, measuring 5.9 x 3.8 x 1.2 cm in size. The flake was found amid dense vegetation and a group of large sandstone outcrops on a north-facing slope.

Isolate 56-100475

This isolate consists of a medium-size granite biface mano fragment with moderate use on both sides and pecking, measuring roughly 10 x 8.8 x 5.4 cm in size. The mano is located within a small drainage covered with dense vegetation.

DISCUSSION

Ground visibility was poor over much of the APE, which is also marked by steep drainages and barren bedrock outcrops. Areas that are relatively level, as well as boulder outcrops that might contain rock shelters or caches, were surveyed for cultural resources, if the vegetation and terrain permitted access. The fact that numerous isolated finds and three sites were found and recorded, even in areas of dense vegetation and poor ground visibility, indicate that the field survey coverage was thorough.

The fact that many of the other previously recorded sites in the vicinity are rock shelters with associated artifacts or features is commensurate with the landscape and the notion that the area was generally used for the procurement of resources while living in more suitable areas nearby. Noteworthy, also, is that these previously recorded rock shelters seem to be in more hospitable areas, close to water sources and on relatively level ground—areas that are, generally, not found in the APE. Nevertheless, intensive survey efforts were expended during this study to look for evidence of caches and rock shelters that were used by the native people, but none was found within the APE.

MANAGEMENT CONSIDERATIONS

Based on the research results discussed above, the following sections present the significance evaluation of the three sites and five isolates found within the APE, and the conclusion on whether any of them qualifies as a historic property as defined by Section 106 guidelines.

SIGNIFICANCE CRITERIA

The term "historic property," according to the Advisory Council on Historic Preservation, "means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior" (36 CFR 800.16(l)). The eligibility for inclusion in the National Register is determined by applying the Secretary of the Interior's criteria, developed by the National Park Service as per provision of the National Historic Preservation Act. 36 CFR 60.4 provides the criteria as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
> (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> (b) that are associated with the lives of persons significant in our past; or
> (c) that 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

(d) that have yielded, or may be likely to yield, information important in prehistory or history. (36 CFR 60.4)

Against these criteria, the sites and isolates discovered during this study are evaluated as to their qualifications as historic properties. The results of the evaluation are discussed below.

EVALUATION

Isolates

As stated above, five prehistoric isolates, or localities with fewer than three artifacts, were recorded within APE during this study, consisting of a total of four chipped-stone artifacts and one groundstone artifact. By definition, such isolates do not qualify as archaeological sites due to the lack of contextual integrity. As such, they do not constitute potential historic properties.

Archaeological Sites

Three previously unknown archaeological sites were recorded during this study. All three are prehistoric in nature, although some artifacts of possible historical origin were also noted at Site 56-001804. The sites contain primarily scatters of worked lithic material, such as flakes and cores, while one, 56-001805, also contains a natural water cistern at the base of the outcrop containing the feature, with a small rock shelter nearby. The presence of the artifacts, together with the large quantity of water observed in the cistern, lends itself to the conclusion that the cistern was almost certainly used for water-storage purposes in prehistoric times.

Other than the cistern at 56-001805, the cultural constituents of the three sites are quite common for prehistoric sites found in this area, and the number of artifacts visible on the ground surface is limited. However, their presence may indicate that other archaeological features or artifacts lie buried beneath the surface, which cannot be detected through a standard surface survey.

In light of these findings, the archaeological data potential of Sites 56-001803 through 56-001805 largely depends upon the presence or absence of subsurface cultural deposits. Therefore, their historical significance—and qualifications as historical properties under Section 106—cannot be determined without further archaeological investigations, including subsurface testing. Depending on the feasibility for the sites to be preserved *in situ* during the gamma walkover survey or future potential development in or near the APE, however, such investigations, and a conclusive evaluation of the sites, may or may not be necessary, as discussed further below.

CONCLUSION AND RECOMMENDATIONS

The foregoing report has provided background information on the APE, outlined the methods used in the current study, and presented the results of the various avenues of research. In summary, three previously unknown prehistoric archaeological sites and five

isolated prehistoric artifacts were identified and recorded within the APE during this study. The isolates are not considered potential historic properties for Section 106-compliance purposes, but the sites will require future archaeological investigations to be adequately evaluated.

As the best way to protect the three sites, CRM TECH recommends that the proposed gamma walkover survey, as well as any future, as yet-unplanned development activities for the APE take into account the presence of Sites 56-001803 through 56-001805 and facilitate the preservation of the sites *in situ*, if possible. In order to ensure the proper protection of Sites 56-001803 through 56-001805, CRM TECH recommends that an Environmentally Sensitive Area (ESA) be designated at each site to avoid accidental disturbance of any cultural materials (Fig. 9). The ESA should encompass the location of each site in its entirety, along with a 50-foot buffer zone, and should be clearly demarcated with the assistance of a qualified archaeologist prior to the commencement of such operations. The 50-foot buffer zone appears to be adequate, given the low density of artifacts that were recorded at each site and the fact that a thorough search of the area was conducted to find all cultural materials in the area.

If the preservation of any of the three sites proves to be infeasible, CRM TECH recommends that an appropriate archaeological testing and evaluation program be completed at the site(s) to be impacted to ascertain its significance under Section 106 provisions. Further recommendations regarding the final evaluation and treatment of the site(s) will be formulated on the basis of the results of the testing and evaluation program.

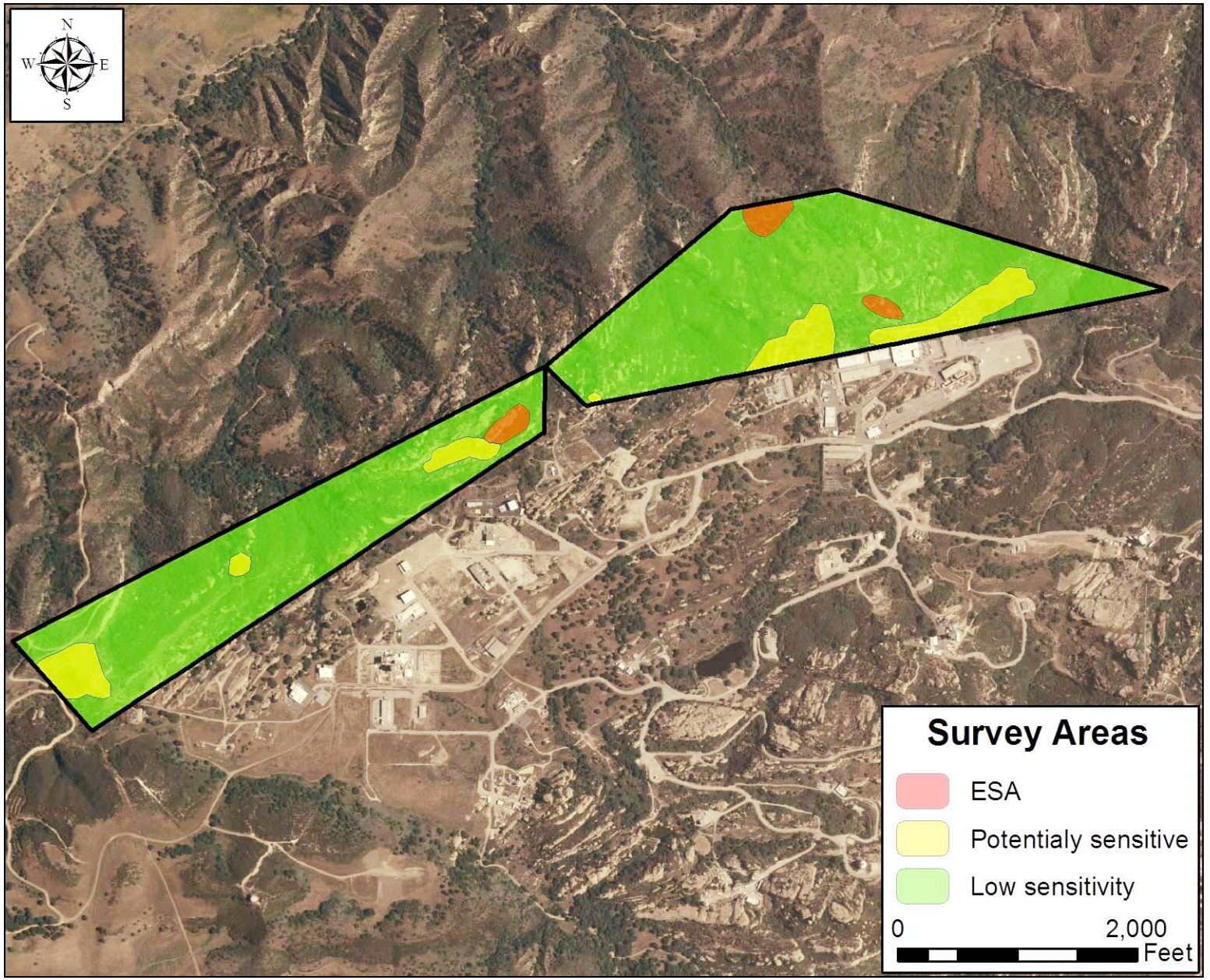

Figure 9. Archaeological sensitivity within the APE, showing, as indicated, Environmentally Sensitive Areas (ESAs), areas that could potentially contain cultural resources, and areas that are, based on topography, landform, and survey coverage, assigned a low sensitivity .

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APPENDIX 1

PERSONNEL QUALIFICATIONS

PRINCIPAL INVESTIGATOR/HISTORIAN
Bai "Tom" Tang, M.A.

Education

1988-1993	Graduate Program in Public History/Historic Preservation, UC Riverside.
1987	M.A., American History, Yale University, New Haven, Connecticut.
1982	B.A., History, Northwestern University, Xi'an, China.
2000	"Introduction to Section 106 Review," presented by the Advisory Council on Historic Preservation and the University of Nevada, Reno.
1994	"Assessing the Significance of Historic Archaeological Sites," presented by the Historic Preservation Program, University of Nevada, Reno.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1993-2002	Project Historian/Architectural Historian, CRM TECH, Riverside, California.
1993-1997	Project Historian, Greenwood and Associates, Pacific Palisades, California.
1991-1993	Project Historian, Archaeological Research Unit, UC Riverside.
1990	Intern Researcher, California State Office of Historic Preservation, Sacramento.
1990-1992	Teaching Assistant, History of Modern World, UC Riverside.
1988-1993	Research Assistant, American Social History, UC Riverside.
1985-1988	Research Assistant, Modern Chinese History, Yale University.
1985-1986	Teaching Assistant, Modern Chinese History, Yale University.
1982-1985	Lecturer, History, Xi'an Foreign Languages Institute, Xi'an, China.

Honors and Awards

1988-1990	University of California Graduate Fellowship, UC Riverside.
1985-1987	Yale University Fellowship, Yale University Graduate School.
1980, 1981	President's Honor List, Northwestern University, Xi'an, China.

Cultural Resources Management Reports

Preliminary Analyses and Recommendations Regarding California's Cultural Resources Inventory System (with Special Reference to Condition 14 of NPS 1990 Program Review Report). California State Office of Historic Preservation working paper, Sacramento, September 1990.

Numerous cultural resources management reports with the Archaeological Research Unit, Greenwood and Associates, and CRM TECH, since October 1991.

Membership

California Preservation Foundation.

PRINCIPAL INVESTIGATOR/ARCHAEOLOGIST
Michael Hogan, Ph.D., RPA*

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
1980-1981	Education Abroad Program, Lima, Peru.
2002	Section 106—National Historic Preservation Act: Federal Law at the Local Level. UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist/Field Director, CRM TECH, Riverside.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands.
1992-1998	Assistant Research Anthropologist, University of California, Riverside
1992-1995	Project Director, Archaeological Research Unit, U. C. Riverside.
1993-1994	Adjunct Professor, Riverside Community College, Mt. San Jacinto College, U.C. Riverside, Chapman University, and San Bernardino Valley College.
1991-1992	Crew Chief, Archaeological Research Unit, U. C. Riverside.
1984-1998	Archaeological Technician, Field Director, and Project Director for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Author and co-author of, contributor to, and principal investigator for numerous cultural resources management study reports since 1986.

Memberships

* Register of Professional Archaeologists.
Society for American Archaeology.
Society for California Archaeology.
Pacific Coast Archaeological Society.
Coachella Valley Archaeological Society.

PROJECT ARCHAEOLOGIST/REPORT WRITER
Deirdre Encarnación, M.A.

Education

2003	M.A., Anthropology, San Diego State University, California.
2000	B.A., Anthropology, minor in Biology, with honors; San Diego State University, California.
1993	A.A., Communications, Nassau Community College, Garden City, N.Y.
2001	Archaeological Field School, San Diego State University.
2000	Archaeological Field School, San Diego State University.

Professional Experience

2004-	Project Archaeologist/Report Writer, CRM TECH, Riverside/Colton, California.
2001-2003	Part-time Lecturer, San Diego State University, California.
2001	Research Assistant for Dr. Lynn Gamble, San Diego State University.
2001	Archaeological Collection Catalog, SDSU Foundation.

PROJECT ARCHAEOLOGIST
Nina Gallardo, B.A.

Education

2004 B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.
- Surveys, excavations, mapping, and records searches.

Honors and Awards

2000-2002 Dean's Honors List, University of California, Riverside.

PROJECT ARCHAEOLOGIST/FIELD DIRECTOR
Daniel Ballester, B.A.

Education

1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.
2007	Certificate in Geographic Information Systems (GIS), California State University, San Bernardino.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside, California.

Professional Experience

2002-	Field Director, CRM TECH, Riverside/Colton, California.
1999-2002	Project Archaeologist, CRM TECH, Riverside, California.
1998-1999	Field Crew, K.E.A. Environmental, San Diego, California.
1998	Field Crew, A.S.M. Affiliates, Encinitas, California.
1998	Field Crew, Archaeological Research Unit, University of California, Riverside.

PROJECT HISTORIAN
Terri Jacquemain, M.A.

Education

2004	M.A., Public History and Historic Resource Management, University of California, Riverside.
2002	B.S., Anthropology, University of California, Riverside.

Professional Experience

2003-	Historian/Architectural Historian/Report Writer, CRM TECH, Riverside/Colton, California.
2002-2003	Teaching Assistant, Religious Studies Department, University of California, Riverside.
1997-2000	Reporter, *Inland Valley Daily Bulletin*, Ontario, California.
1991-1997	Reporter, *The Press-Enterprise*, Riverside, California.

Memberships

California Council for the Promotion of History.
Friends of Public History, University of California, Riverside.

APPENDIX 2

LOCATIONS OF ARCHAEOLOGICAL SITES AND ISOLATES WITHIN THE APE

(Confidential)