

**HISTORICAL/ARCHAEOLOGICAL RESOURCES SURVEY REPORT**

**EL MIRAGE FIELD  
RUNWAY EXTENSION PROJECT**

**Shadow Mountains Area  
San Bernardino County, California**

**For Submittal to:**

County of San Bernardino Planning Department  
385 North Arrowhead Avenue  
San Bernardino, CA 92415

**Prepared for:**

General Atomics Aeronautical Systems, Inc.  
22500 East Avenue R-8  
Palmdale, CA 93591

**Prepared by:**

CRM TECH  
1016 East Cooley Drive, Suite A/B  
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator  
Michael Hogan, Principal Investigator

August 22, 2017  
CRM TECH Contract No. 3230

**Title:** Historical/Archaeological Resources Survey Report: El Mirage Field Runway Extension Project, Shadow Mountains Area, San Bernardino County, California

**Author(s):** Bai “Tom” Tang, Principal Investigator, History  
Michael Hogan, Principal Investigator, Archaeology  
Terri Jacquemain, Historian/Report Writer  
Daniel Ballester, Archaeologist/Field Director  
Nina Gallardo, Archaeologist/Native American Liaison

**Consulting Firm:** CRM TECH  
1016 East Cooley Drive, Suite A/B  
Colton, CA 92324  
(909) 824-6400

**Date:** August 22, 2017

**For Submittal to:** San Bernardino County Planning Department  
385 North Arrowhead Avenue  
San Bernardino, CA 92415  
(909) 387-8311

**Prepared for:** General Atomics Aeronautical Systems, Inc.  
22500 East Avenue R-8  
Palmdale, CA 93591  
(661) 789-5508

**USGS Quadrangle:** Shadow Mountains and Shadow Mountains SE, Calif., 7.5’ quadrangles (Sections 10 and 11, T6N R7W, San Bernardino Baseline and Meridian)

**Project Size:** Approximately 65 acres

**Keywords:** Western Victor Valley, Mojave Desert; Phase I historical/archaeological resources survey; El Mirage Field, Adelanto Airport, formerly Mirage Auxiliary Field No. 3, circa 1943; Site 36-031274 (CA-SBR-31274H): two segments of original runways; no “historical resources” or “tribal cultural resources” under CEQA

## EXECUTIVE SUMMARY

In July and August 2017, at the request of the General Atomic Aeronautical Systems, Inc., CRM TECH performed a cultural resources study for a proposed runway expansion and drainage improvement project at El Mirage Field in the Shadow Mountains area to the west of the City of Adelanto, San Bernardino County, California. The subject property of the study consists of approximately 65 acres of mostly undeveloped desert land in and near the boundaries of El Mirage Field, within Sections 10 and 11 of T6N R7W, San Bernardino Baseline and Meridian.

The study is part of the environmental review process for the proposed project, as required by the lead agency, namely the County of San Bernardino, pursuant to the California Environmental Quality Act (CEQA). The purpose of the study is to provide the County with the necessary information and analysis to determine whether the project would cause substantial adverse changes to any “historical resources” or “tribal cultural resources,” as defined by CEQA, that may exist in or around the project area.

In order to identify such resources, CRM TECH conducted a historical/archaeological resources records search, contacted selected Native American representatives, pursued historical and geoarchaeological background research, and carried out an intensive-level field survey of the entire project area. During the field survey, two small segments of the airfield’s original WWII-era runways that cross the project area were recorded into the California Historical Resources Inventory as Site 36-031274 (CA-SBR-31274H), but were determined not to meet the definition of a “historical resource.” No other potential “historical resources” or “tribal cultural resources” were encountered throughout the course of the study.

However, the project area lies in close proximity to the El Mirage Dry Lake, which may have contained potable water intermittently as late as 700-100 B.P. Previously archaeological findings along the former shoreline suggest that long-term habitation by the Native people did occur around the lake in prehistoric times. Although no surface manifestation was observed in the project area during this study, the possibility of encountering subsurface deposits of prehistoric cultural remains during the proposed project cannot be ruled out. Therefore, the archaeological sensitivity of the subsurface sediments in the project area remains undetermined.

Based on these findings, CRM TECH presents the following recommendations to the County of San Bernardino:

- The proposed project will not cause a substantial adverse change to any known “historical resources” or “tribal cultural resources.”
- Periodic monitoring, or “spot-checking,” by a qualified archaeologist should be required during earth-moving operations associated with project to ensure the timely identification of any archaeologically sensitive sediments that may be unearthed. When such sediments are encountered, continuous archaeological monitoring will become necessary. The archaeological monitoring program should be coordinated with local Native American groups, who may wish to participate.
- If buried cultural materials are encountered during the earth-moving operations, all work in the immediate vicinity should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

Under these conditions, CRM TECH further recommends that the proposed project may be cleared to proceed in compliance with cultural resources provisions of CEQA.

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	i
INTRODUCTION .....	1
SETTING.....	4
Current Natural Setting.....	4
Cultural Setting.....	5
Prehistoric Context.....	5
Ethnohistorical Context .....	5
Historical Context .....	6
RESEARCH METHODS .....	7
Records Search.....	7
Geoarchaeological Analysis.....	7
Native American Participation.....	8
Historical Research .....	8
Field Survey .....	8
RESULTS AND FINDINGS .....	9
Records Search.....	9
Geoarchaeological Analysis.....	9
Native American Participation.....	10
Historical Research .....	10
Field Survey .....	12
DISCUSSION .....	13
CONCLUSION AND RECOMMENDATIONS .....	14
REFERENCES .....	15
APPENDIX 1: Personnel Qualifications .....	18
APPENDIX 2: Correspondence with Native American Representatives.....	24
APPENDIX 3: Cultural Resources Record Forms (Confidential).....	29

## LIST OF FIGURES

Figure 1. Project vicinity.....	1
Figure 2. Project area .....	2
Figure 3. Recent aerial photograph of the project area.....	3
Figure 4. Typical landscapes in the project area.....	4
Figure 5. The project area and vicinity in 1853-1856.....	11
Figure 6. The project area and vicinity in 1930-1937.....	11
Figure 7. The project area and vicinity in 1954-1955.....	12

## INTRODUCTION

In July and August 2017, at the request of the General Atomic Aeronautical Systems, Inc., CRM TECH performed a cultural resources study for a proposed runway expansion and drainage improvement project at El Mirage Field in the Shadow Mountains area to the west of the City of Adelanto, San Bernardino County, California (Fig. 1). The subject property of the study consists of approximately 65 acres of mostly undeveloped desert land in and near the boundaries of El Mirage Field, within Sections 10 and 11 of T6N R7W, San Bernardino Baseline and Meridian (Figs. 2, 3).

The study is part of the environmental review process for the proposed project, as required by the lead agency, namely the County of San Bernardino, pursuant to the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of the study is to provide the County with the necessary information and analysis to determine whether the project would cause substantial adverse changes to any “historical resources” or “tribal cultural resources,” as defined by CEQA, that may exist in or around the project area.

In order to identify such resources, CRM TECH conducted a historical/archaeological resources records search, contacted selected Native American representatives, pursued historical and geoarchaeological background research, and carried out an intensive-level field survey of the entire project area. The following report is a complete account of the methods, results, and final conclusion of the study. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

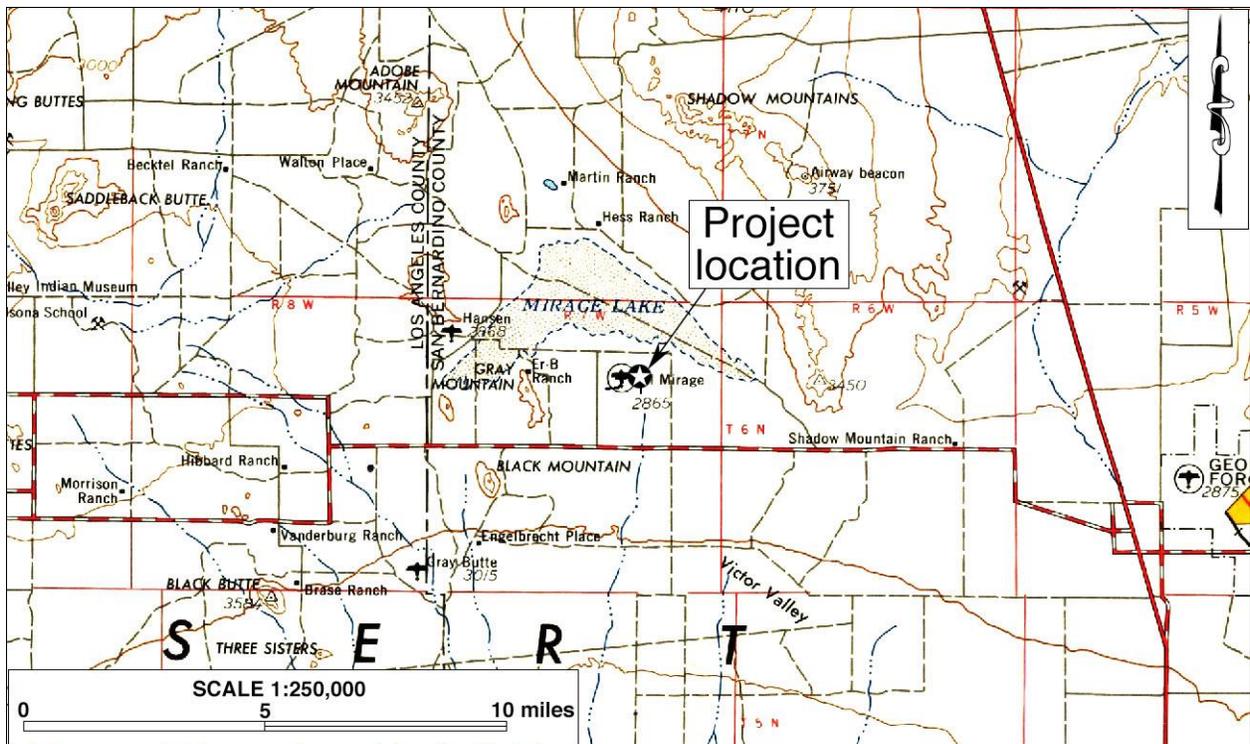


Figure 1. Project vicinity. (Based on USGS San Bernardino, Calif., 1:250,000 quadrangle [USGS 1969])

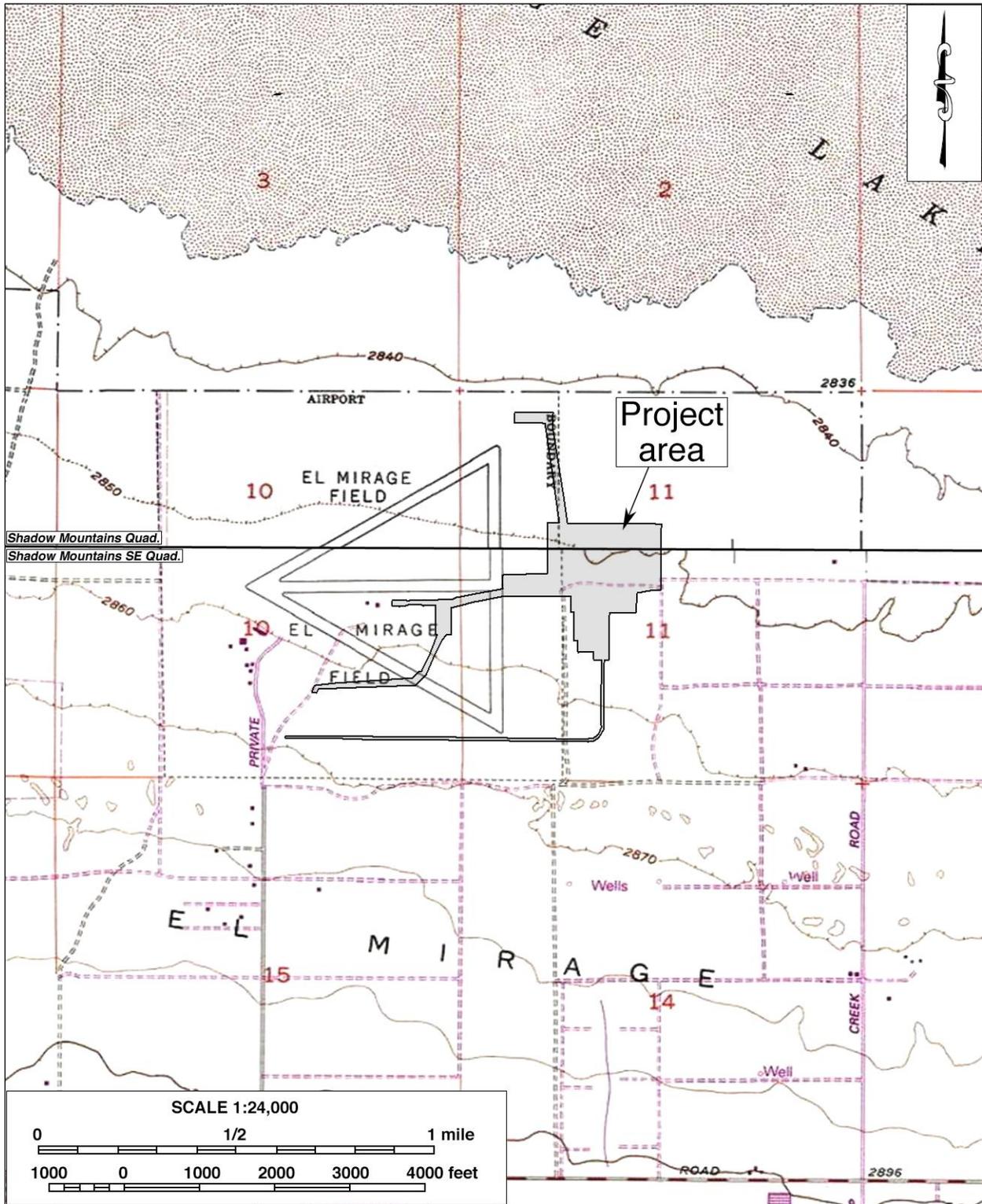


Figure 2. Project area. (Based on USGS Shadow Mountains and Shadow Mountains Southeast, Calif., 1:24,000 quadrangles [USGS 1993a; 1993b])

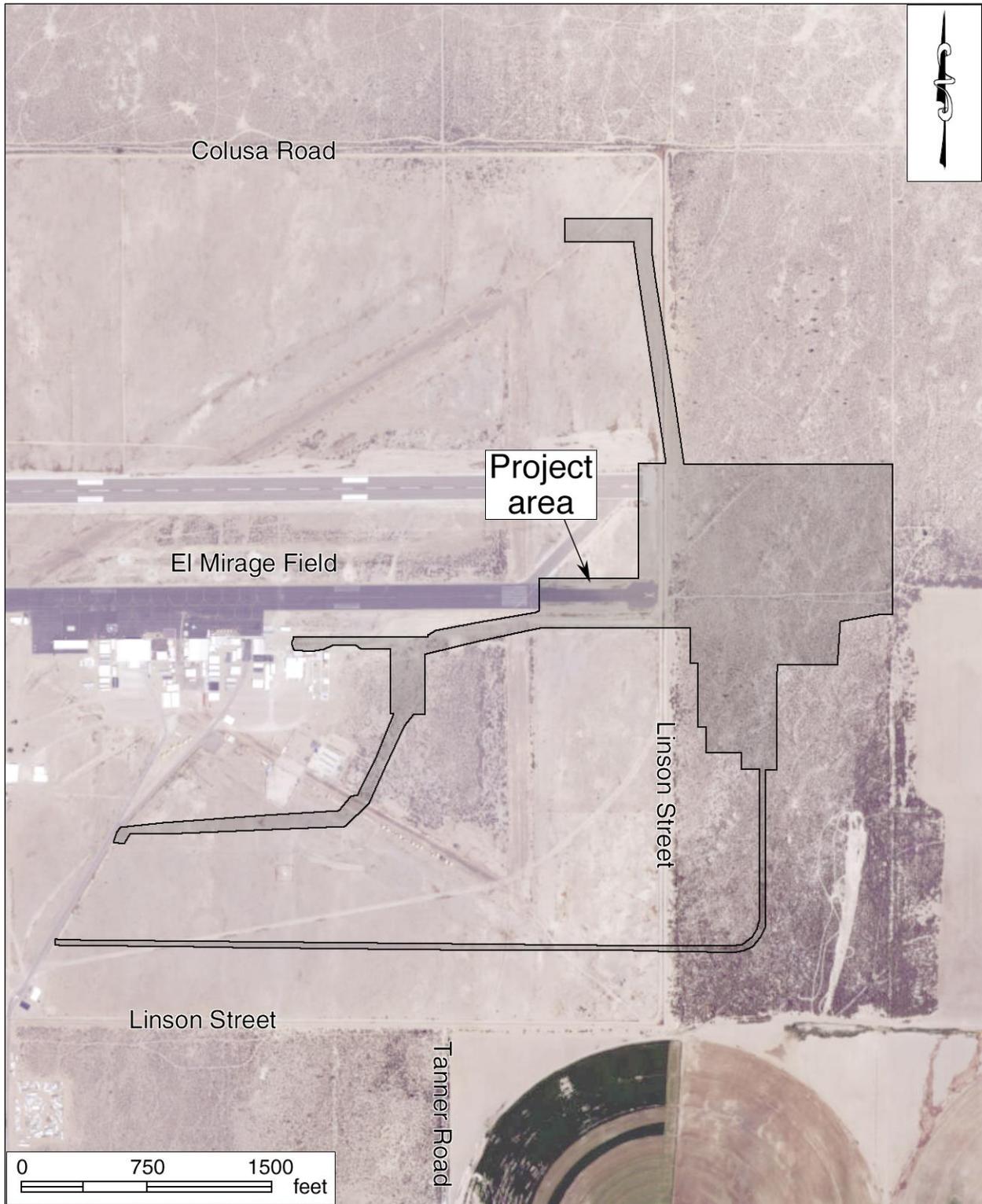


Figure 3. Recent aerial photograph of the project area. (Based on Google Earth imagery)

## SETTING

### CURRENT NATURAL SETTING

El Mirage Field is situated approximately 10 miles west of the City of Adelanto, in the western portion of the greater Victor Valley area, on southern edge of the Mojave Desert, and to the north of the San Bernardino-San Gabriel mountain ranges. It lies near the southern rim of the El Mirage Dry Lake, which accumulates seasonal run-off from the Shadow Mountains to the north, a disjointed range characterized by two distinct ridge lines separated by broad, sloping *bajadas*.

The climate and environment in the area is typical of the high desert country, so named because of its relatively higher elevation than the Colorado Desert region to the southeast. The climate is marked by extremes in temperature and aridity, with summer highs reaching well over 110°F and winter lows dipping below freezing. Average annual precipitation is less than five inches, most of which occurs in winter or during occasional monsoon storms.

The irregularly shaped project area is encompassed entirely within the 640-acre El Mirage Field, and is located north of the intersection El Mirage Road and El Mirage Airport Road. The terrain is relatively level, with elevations ranging between approximately 2,845 and 2,870 feet above mean sea level, declining gradually to the north. Soils consist of grayish brown fine- to coarse-grained sands mixed with small rocks and gravel. Mostly undeveloped desert land, the project area is crossed by both paved and unpaved runways and access roads, including a north-south segment of Linson Street (Fig. 3). A chain link fence along the east side of Linson Street transects the project area.

Vegetation in the vicinity belongs to the Joshua Tree Woodland Plant Community, featuring creosote bushes (*Larrea tridentata*), brittlebrush (*Encelia farinosa*), and other small grasses and shrubs as well as its namesake Joshua trees (*Yucca brevifolia*). The portion of the project area on the east side of the fence contains most of the vegetation, which is dense at some locations, while the western portion has evidently been cleared of all vegetation in the past and hosts only a sparse regrowth of the typical desert grasses and shrubs (Fig. 4).



Figure 4. Typical landscapes in the project area. *Left*: highly disturbed area in the western portion, view to the west; *right*: more native land in the eastern portion, view to the north. (Photographs taken on July 21, 2017)

## **CULTURAL SETTING**

### **Prehistoric Context**

In order to understand the progress of Native American cultures prior to European contact, archaeologists have devised chronological frameworks on the basis of artifacts and site types that date back some 12,000 years. Currently, the chronology most frequently applied in the Mojave Desert divides the region's prehistory into five periods marked by changes in archaeological remains, reflecting different ways in which Native peoples adapted to their surroundings. According to Warren (1984) and Warren and Crabtree (1986), the five periods are as follows: Lake Mojave Period, 12,000 years to 7,000 years ago; Pinto Period, 7,000 years to 4,000 years ago; Gypsum Period, 4,000 years to 1,500 years ago; Saratoga Springs Period, 1,500 years to 800 years ago; and Protohistoric Period, 800 years ago to European contact.

More recently, Hall (2000) presented a slightly different chronology for the region, also with five periods: Lake Mojave (ca. 8000-5500 B.C.), Pinto (ca. 5500-2500 B.C.), Newberry (ca. 1500 B.C.-500 A.D.), Saratoga (ca. 500-1200 A.D.), and Tecopa (ca. 1200-1770s A.D.). According to Hall (*ibid.*:14), small mobile groups of hunters and gatherers inhabited the Mojave Desert during the Lake Mojave sequence. Their material culture is represented by the Great Basin Stemmed points and flaked stone crescents. These small, highly mobile groups continued to inhabit the region during the Pinto Period, which saw an increased reliance on ground foods, small and large game animals, and the collection of vegetal resources, suggesting that "subsistence patterns were those of broad-based foragers" (*ibid.*:15). Artifact types found in association with this period include the Pinto points and *Olivella* sp. spire-lopped beads.

Distinct cultural changes occurred during the Newberry Period, in comparison to the earlier periods, including "geographically expansive land-use pattern...involving small residential groups moving between select localities," long-distance trade, and diffusion of trait characteristics (Hall 2000:16). Typical artifacts from this period are the Elko and Gypsum Contracting Stem points and Split Oval beads. The two ensuing periods, Saratoga and Tecopa, are characterized by seasonal group settlements near accessible food resources and the intensification of the exploitation of plant foods, as evidenced by groundstone artifacts (*ibid.*:16).

Hall (2000:16) states that "late prehistoric foraging patterns were more restricted in geographic routine and range, a consequence of increasing population density" and other variables. Saratoga Period artifact types include Rose Spring and Eastgate points as well as Anasazi grayware pottery. Artifacts from the Tecopa Period include Desert Side-notched and Cottonwood Triangular points, buffware and brownware pottery, and beads of the Thin Lipped, Tiny Saucer, Cupped, Cylinder, steatite, and glass types (*ibid.*).

### **Ethnohistorical Context**

The project area is a part of the homeland of the Vanyume people, linguistically a sub-group of the Serrano population immediately to the south. The traditional territory of the Serrano is centered in the San Bernardino Mountains, but also includes portions of the San Bernardino Valley and the southern rim of the Mojave Desert. The Vanyume people settled mainly on the desert floor along

the Mojave River and its tributaries. The basic written sources on Serrano and Vanyume culture are Kroeber (1925), Strong (1929), and Bean and Smith (1978). The following ethnographic discussion is based on these sources.

Prior to European contact, the Serrano were primarily hunter-gatherers and occasionally fishers. They were loosely organized into exogamous clans, which were led by hereditary heads, and the clans in turn, were affiliated with one of two exogamous moieties. The exact nature of the clans, their structure, function, and number are not known, except that each clan was the largest autonomous political and landholding unit, the core of which was the patrilineage. There was no pan-tribal political union among the clans.

Families lived in circular, domed structures made from willow and tule thatching and containing a central fire pit. These homes were used mainly for sleep and storage, while most of the daily household activities occurred in the open or under the shade of a ramada. Other important structures in Serrano life were large ceremonial house, granaries and sweat lodges, the last being a circular semi-subterranean hut framed with willow, covered with earth, and having only one entrance. In terms of Serrano technology, shells, wood bone stone, and plant fibers were employed to create everyday household and tools, as well as fashion decorative baskets and blankets.

Although contact with Europeans may have occurred as early as 1771 or 1772, Spanish influence on Serrano and Vanyume lifeways was negligible until the 1810s, when a mission *asistencia* was established on the southern edge of Serrano territory. Between then and the end of the mission era in 1834, most of the Serranos were removed to the nearby missions, while the number of Vanyumes, never large, dwindled rapidly until the group virtually disappeared well before 1900. Today, most of the Serrano descendants are found on the San Manuel and Morongo Indian Reservations.

## **Historical Context**

Because of its harsh, unforgiving environment, non-Indian settlement in the Mojave Desert was late to start and slow in subsequent development. Although the Mojave Desert received its first European visitor, the famed Spanish explorer Francisco Garcés, as early as 1776, for the next 70 years the inland regions of Alta California were largely ignored by the Spanish and Mexican authorities in their colonization schemes. During that period, the presence of non-Indians in the Mojave Desert was essentially confined to a few trails that were established over the years, most notably the Old Spanish Trail, a pack-train road established between southern California and Santa Fe, New Mexico, in the 1830s.

Beginning in the early 1860s, as the gold mines in the Sierra Nevada declined in production, groups of former forty-niners embarked on fresh explorations into the desert between California, Nevada, and Arizona. Before long, new mining districts sprang up throughout the Mojave Desert. However, early discoveries were frequently incidental to desert crossings on the way to rich diggings elsewhere, as in the case of the La Paz gold rush in Arizona (Warren et al. 1981:96). A few mining towns, such as Ivanpah and Calico, boomed in the 1870s and 1880s, but the first major strike in the Mojave Desert did not occur until the Old Woman Mountains boom of 1898-1901 (Gallegos et al. 1980:133). Also around the turn of the century, large deposits of limestone and granite were discovered in the Victor Valley, and cement making became a leading industry in the region.

In the mid-19th century, a few new desert trails were developed on the basis of the Old Spanish Trail, such as the Mormon Trail and the Mojave Road, by which many of the legendary wagon trains from the eastern United States entered California. Since the 1870s, the Mojave Desert has seen the establishment of a number of modern transportation thoroughfares across its vast reaches, including the Southern Pacific, the Santa Fe, and the Union Pacific Railroads; the fabled U.S. Route 66; and today's I-15 and I-40. Several urban centers have gradually emerged along these arteries, mostly along the western and southern rims of the Mojave Desert.

In recent decades, the growth in the Victor Valley has been characterized by the emergence of urban enclaves such as Victorville, Apple Valley, and Adelanto as “bedroom communities” in support of the industrial and commercial centers in the San Bernardino Valley and the Greater Los Angeles area. As a result, the Victor Valley became one of the fastest growing regions in California. The bulk of the Mojave Desert, however, remains sparsely populated and rarely touched by human activities, even to the present time.

The small settlement of El Mirage formed on the north side of the El Mirage Dry Lake around the turn of the century and was officially recognized when a post office was established in 1917, though later decommissioned in 1937 (Garrett 1992:24; Schroth 2003:2.3). During the early years, the community featured a school, several cattle ranches, a glass manufacturing plant, an oil prospecting pump and, at higher elevations in the Shadow Mountains, more than 100 mine prospects (*ibid.*). Meanwhile the dry lakebed reportedly has been the site of an experimental rice field and as a backdrop for filmmaking in the past (Schroth 2003:2.3), and is currently the occasional site of all-terrain racing competitions. El Mirage Field, which dates to 1943, is discussed in further detail in the sections below.

## **RESEARCH METHODS**

### **RECORDS SEARCH**

On July 12, 2017, CRM TECH archaeologist Nina Gallardo conducted the historical/archaeological resources records search at the South Central Coastal Information Center (SCCIC), California State University, Fullerton. During the records search, Gallardo reviewed maps and records on file at the SCCIC for previously identified historical/archaeological resources in or near the project area and existing cultural resources reports pertaining to the vicinity. Previously identified historical/archaeological resources include properties designated as California Historical Landmarks, Points of Historical Interest, or San Bernardino County Historical Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

### **GEOARCHAEOLOGICAL ANALYSIS**

As part of the research procedures, CRM TECH geologist/archaeologist Harry M. Quinn performed a geoarchaeological analysis to assess the project area's potential for the deposition and preservation

of subsurface cultural deposits from the prehistoric period, which cannot be detected through a standard surface archaeological survey. Sources consulted for this purpose included primarily topographic, geologic, and soil maps and reports pertaining to the surrounding area. Findings from these sources were used to develop a geomorphologic history of the project area and assess geoarchaeological sensitivity for subsurface cultural deposits.

## **NATIVE AMERICAN PARTICIPATION**

To aid in the identification of potential Native American cultural resources in the project vicinity, on July 11, 2017, CRM TECH submitted a written request to the State of California's Native American Heritage Commission (NAHC) for a records search in the commission's sacred lands file (see App. 2). On August 4, CRM TECH contacted the San Manuel Band of Mission Indians (SMBMI), the nearest federally recognized Native American group, via telephone for additional information on potential Native American cultural resources in the vicinity. Responses from the NAHC and the SMBMI are summarized in the pertinent section below.

## **HISTORICAL RESEARCH**

Historical background research for this study was conducted by CRM TECH historian Terri Jacquemain on the basis of published literature in local and regional history, including the history of El Mirage Field, as well as historic maps and aerial photographs of the surrounding area. Among the maps consulted for this study were U.S. General Land Office (GLO) land survey plat maps dated 1856 and the U.S. Geological Survey's (USGS) topographic maps dated 1937, 1955, and 1993. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the U.S. Bureau of Land Management, located in Moreno Valley. The aerial photographs, taken between 1952 and 2017, are available at the NETR Online website and through the Google Earth software.

## **FIELD SURVEY**

On July 21, 2017, CRM TECH field director Daniel Ballester and project archaeologist Ben Kerridge carried out the intensive-level, on-foot field survey of the project area. The survey was completed by walking a series of parallel north-south and east-west transects spaced 10 meters (approximately 33 feet) apart. In this way, the entire project area was systematically and carefully inspected for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years ago or older). Ground visibility was poor (10%) in areas with dense vegetation growth and excellent (90%) in areas with little to no ground cover.

When archaeological features were encountered, their locations were marked with survey flags. Upon completion of the survey, the features were re-visited, photographed, and treated with further field recordation procedures to document their physical characteristics and exact locations. The resulting data, including feature descriptions, a location map with UTM coordinates, and a scaled sketch map, were subsequently compiled into standard site record forms and submitted to the SCCIC for inclusion in the California Historical Resources Inventory.

## RESULTS AND FINDINGS

### RECORDS SEARCH

According to SCCIC records, the project area had not been surveyed for cultural resources prior to this study, and no cultural resources had been identified within or adjacent to the project boundaries. Outside the project area but within a one-mile radius, SCCIC records show that one large-scale archaeological reconnaissance adjacent to the northern boundary of El Mirage Field was completed in 2003 for a 25,000-acre off-road vehicle park (Schroth 2003). Because of the size of its study area, that survey was limited to a 10% sample (2,542 acres) chosen on the basis of environmental conditions most favorable for human activity. Two sample units closest to the project area produced a total of 12 sites and two isolates, all located between 200 and 4,000 feet to the north of the El Mirage Dry Lake. Of these, one site and both isolates were of prehistoric—i.e., Native American—origin.

The prehistoric site, 36-010582, was described as a lithic scatter containing two jasper flakes, six chert flakes, and two chalcedony flakes scattered over a 40x20-meter area located roughly 500 feet north of the lakebed. Ultimately, the site was determined to be highly disturbed and possibly formed by “erosion from an *in situ* site at a higher elevation” in the Shadow Mountains (Schroth 2003:4.8). The prehistoric isolates were both unifacial metate fragments found about 200 meters north of the lakebed. Similar to 36-010582, the artifacts were found in valley alluvium soils and considered to have arrived at their recorded locations as “secondary deposition from the nearby hills” (*ibid.*:4.17). The other cultural materials found in the two sample areas dated to the history-period and included eight trash dumps, two pumps, and building remains associated with the former Hess Ranch (*ibid.*:4.2-4.4, 4.11).

The only other known site within the one-mile scope of the records search, 36-003762, was a prehistoric lithic scatter found among sand dunes located a short distance from the southeast corner of the El Mirage Field property. It consisted of red and yellow jasper flakes and a projectile point along with some burned rabbit bones (Smith 1979; Lerch 1981). None of these previously recorded cultural resources was located in the immediate vicinity of the proposed project or anywhere within the El Mirage Field property. Therefore, they require no further consideration for this purpose of this study.

### GEOARCHAEOLOGICAL ANALYSIS

The project area is located within the Mojave Desert Geomorphic/Geologic Province of southeastern California (Jenkins 1980:40-41). The surrounding landscape is marked by scattered, isolated mountains and numerous broad, shallow basins, some with dry lakebeds at the low points (*ibid.*). The mountains and intermountain valleys generally have a northwest-southeast trend that is controlled primarily by faulting (Harms 1996; Coombs et al. 1997:7). Dibble (1960) classified the soils in the project vicinity, to the south of the El Mirage Dry Lake, as *Qa*, described as alluvial gravel, sand, and silt deriving from the granitic and metamorphic rock of the San Gabriel Mountains to the south. This is in contrast to the sediments north of the El Mirage Dry Lake, which are designated as *Qc* and described as clay and silt of the lakebed.

According to Schroth (2003:3.3), the history of the El Mirage Dry Lake and the potability of the water are largely unknown, but the lake likely contained potable water between 22,000 B.P. and 12,000 B.P. Since then, there may have been intermittent fillings as late as 700-100 B.P., as suggested by the presence of a prehistoric village site near the southeastern corner of the lakebed, some 2.5 miles east of the project location (*ibid.*). These episodes afforded greater access to water by aboriginal groups in the region, but the eventual desiccations of Lake El Mirage, Lake Mojave, and other pluvial lakes forced them to move closer to the Mojave River, which provided not only a dependable water source and subsistence resources but also a major route for interregional trade.

In light of past archaeological discoveries nearby and along the former shorelines of other dry lakes in the Mojave and Colorado Deserts, the project vicinity would have provided a favorable setting for habitation by the Native people in prehistoric times when potable water was present in the El Mirage Dry Lake. The presence of alluvium deriving from the San Gabriel Mountains on the ground surface suggests that prehistoric artifacts found on the surface or in shallow sediments may be the results of secondary deposition from higher elevations, like the prehistoric site and isolates found by Schroth (2003) on the north side of the dry lake. The archaeological sensitivity of the deeper sediments remains largely undetermined, but the possibility of encountering potentially significant prehistoric cultural deposits cannot be ruled out.

## **NATIVE AMERICAN PARTICIPATION**

In response to CRM TECH's inquiry, the NAHC states in a letter dated July 12, 2017, that the sacred lands record search yielded negative results for Native American cultural resources within the project area, but recommends that local Native American groups be contacted for further information. For that purpose, the commission provided a list of tribal representatives in the region to be considered for the government-to-government consultation process mandated by AB 52 for this project (see App. 2).

When reached by telephone on August 4, 2017, Jessica Mauck, Cultural Resources Analyst for the SMBMI, stated that the tribe would need more details about the project plans, such as the depth of disturbance, which she had previously requested from the County of San Bernardino. In light of the project's location near a desert lakebed and the Native American cultural resources found in the surrounding area, Ms. Mauck expressed the tribe's concerns over the possibility for human remains and associated funerary objects to be inadvertently uncovered during ground-disturbing activities. To help the tribe determine the need for Native American monitoring and identify other areas of potential concern, Ms. Mauck requested a copy of this report for tribal review.

## **HISTORICAL RESEARCH**

Historic maps consulted for this study suggest that the project area remained undeveloped open desert land prior to the construction of present-day El Mirage Field in 1943. In the 1850s, when the U.S. government conducted the earliest systematic land surveys in the Victor Valley, no man-made features of any kind were observed in or near the project area (Fig. 5). By the 1930s, a few crisscrossing dirt roads and scattered buildings, presumably farmsteads, had appeared in the vicinity (Fig. 6). Other than the roads, no evidence of any settlement or development activities was noted within the project boundaries (Fig. 6).

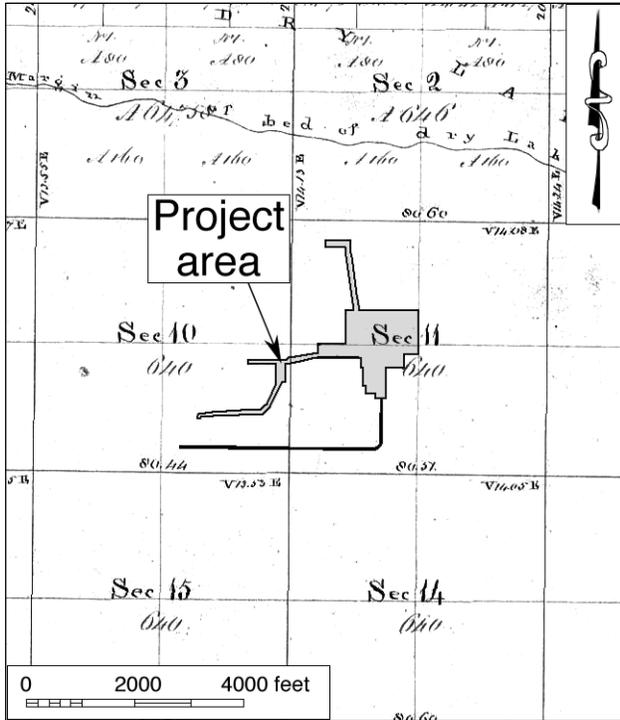


Figure 5. The project area and vicinity in 1853-1856.  
(Source: GLO 1856)

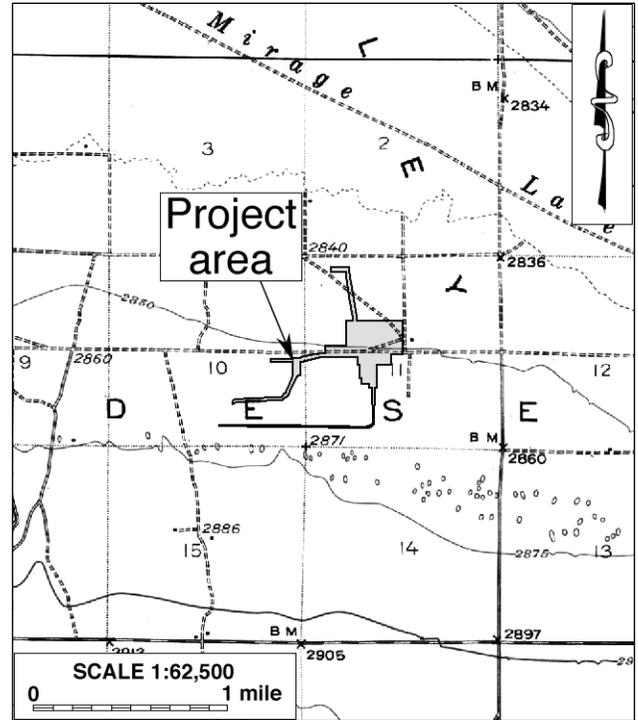


Figure 6. The project area and vicinity in 1930-1937.  
(Source: USGS 1937)

El Mirage Field was originally a rudimentary military installation named El Mirage Auxiliary Field No. 3, which was established on 640 acres in 1943 to serve as an auxiliary to the larger Victorville Army Airfield during World War II (California State Military Museum n.d.). At the time of its initial construction, the airfield consisted solely of four unpaved runways in an “array” configuration, i.e., a triangle of three 3,653-foot-long runways bisected by a fourth runway measuring 3,164 feet long (*ibid.*). It had no buildings, no static lighting, nor a fuel supply.

After the end of WWII, the airfield was declared surplus in 1945 (California State Military Museum n.d.). William G. “Gus” Briegleb (1912-2002), a well-known gliding sportsman and glider designer, purchased the property for \$12,000 in 1947 and turned it into a soaring site and an air sport destination (*ibid.*; National Soaring Museum n.d.). Since 1985, however, the airfield has been leased to the General Atomics Division of General Dynamics and used in the development of unmanned aircraft (California State Military Museum n.d.).

Historic maps and aerial photographs from the 1952-1955 era show that by then the four original runways had been paved with asphalt, and that a small cluster of modest-sized buildings had been added in the southwest corner of the property, to the west of the project area (Fig. 7; NETR Online 1952; 1954). Nevertheless, the original “array” configuration of the airfield remained intact at least into the late 1960s (NETR Online 1968).

After its conversion to drone development by General Atomics in 1985, most of the activities on the airfield have been concentrated along the east-west runway that bisects the original “array” configuration, while the triangular-shaped outer runways have been abandoned. Since 1994, the

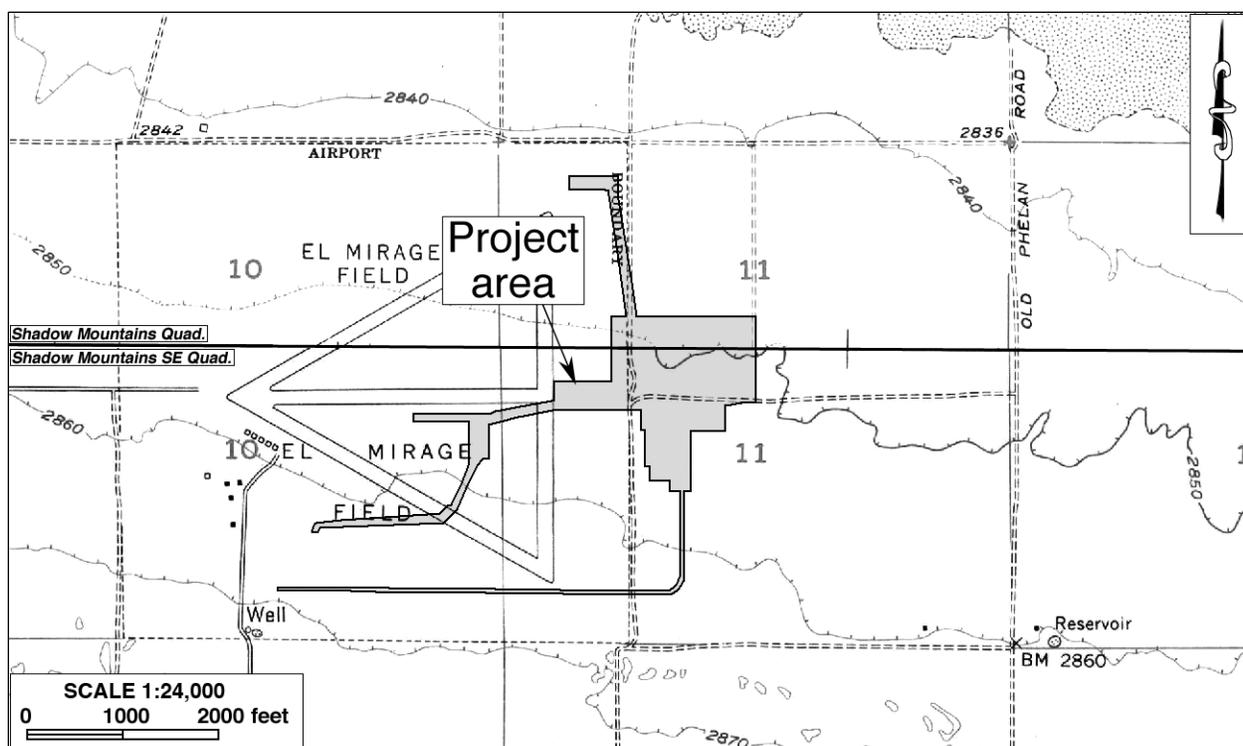


Figure 7. The project area and vicinity in 1954-1955. (Source: USGS 1955a; 1955b)

east-west runway had been rebuilt and greatly extended, and a large group of buildings has been constructed along its south side (NETR Online 1994-2012; Google Earth 1994-2017). More recently, a second east-west runway was added to the north side of the original in 2012-2013 (NETR Online 2012; Google Earth 2013). As a result of these developments, portions of the outer runways in the original 1943 configuration have been removed to make way for the new facilities (NETR Online 1994-2012; Google Earth 1994-2017).

## FIELD SURVEY

During the field survey, two segments of El Mirage Field’s original WWII-era runways that cross the project area were recorded into the California Historical Resources Inventory as Site 36-031274 (CA-SBR-31274H; see App. 3). As mentioned above, the triangular-shaped outer runways of the airfield have been abandoned in recent decades. The segments recorded as Site 36-031274 represent small portions of the eastern and southwestern sides of the triangle, each measuring approximately 173x130 feet. The former runways at these locations appear to receive only minimal maintenance for occasional use as access roads for ground vehicles, and the asphalt pavement is mostly obscured by dirt and blown sand.

No other buildings, structures, objects, sites, features, or artifacts more than 50 years of age were encountered within the project area during the survey. Due to a lack of access to areas outside the project boundaries, the scope of survey did not extend to the rest of El Mirage Field. Scattered modern refuse, mostly household items such as metal cans from the late 1960s and 1970s, were observed along the dirt roads in the project area, but none of them is of any historical interest.

## DISCUSSION

The purpose of this study is to identify any cultural resources within the project area and to assist the County of San Bernardino in determining whether such resources meet the official definition of “historical resources,” or “tribal cultural resources,” as provided in the California Public Resources Code, in particular CEQA. According to PRC §5020.1(j), “‘historical resource’ includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.”

More specifically, CEQA guidelines state that the term “historical resources” applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). Regarding the proper criteria for the evaluation of historical significance, CEQA guidelines mandate that “generally a resource shall be considered by the lead agency to be ‘historically significant’ if the resource meets the criteria for listing on the California Register of Historical Resources” (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage.
- (2) Is associated with the lives of persons important in our past.
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- (4) Has yielded, or may be likely to yield, information important in prehistory or history.  
(PRC §5024.1(c))

For “tribal cultural resources,” PRC §21074, enacted and codified as part of a 2014 amendment to CEQA through Assembly Bill 52, provides the statutory definition as follows:

“Tribal cultural resources” are either of the following:

- (1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - (A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.
  - (B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
- (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

In summary of the research results presented above, Site 36-031274, consisting of two segments of the abandoned WWII-era runways of El Mirage Field, is the only potential “historical resource” identified within the project area, and no potential “tribal cultural resource” was encountered. The identification of “historical resources” or “tribal cultural resources” that may be impacted by the proposed project, therefore, will focus on this site.

While the historic significance evaluation of the airfield as a whole is well beyond the scope of this study, it is worth noting that the overview of its history compiled in this report suggests several potential claims to historical prestige, such as its WWII-era military service, its role as an air sport destination in the post-WWII period, and its ownership and stewardship by Gus Briegleb, a notable glider sport personality, after 1947. None of these, however, is likely to bestow on El Mirage Field the level of significance or association required by the California Register criteria, nor does the airfield appear to retain sufficient historic integrity to relate to these episodes in its history.

Specific to Site 36-031274, the two small segments of the abandoned original runways do not demonstrate any unique, important, or particularly close association to any of the airfield's potential claims to fame. As typical infrastructure features of standard design and construction, they do not exhibit any special merits in terms of architecture, engineering, technology, or aesthetics, nor do they show the potential for any important archaeological data. Furthermore, like the airfield itself, these segments of the runways no longer retain sufficient historic integrity to relate to the notable episodes in the history of the property.

Based on these considerations, the present study concludes that Site 36-031274 does not appear to meet any of the criteria for listing in the California Historical Resources Register, and does not qualify as a "historical resource" under CEQA guidelines.

## **CONCLUSION AND RECOMMENDATIONS**

CEQA establishes that a project that may cause a substantial adverse change in the significance of a "historical resource" or a "tribal cultural resource" is a project that may have a significant effect on the environment (PRC §21084.1-2). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired."

As stated above, two small segments of El Mirage Field's original WWII-era runways that extend into the project boundaries were recorded as Site 36-031274 in the California Historical Resources Inventory during this study, but the site was determined not to meet the definition of a "historical resource." No other potential "historical resources" or "tribal cultural resources" were encountered throughout the course of the study.

However, the project area lies in close proximity to the El Mirage Dry Lake, which may have contained potable water intermittently as late as 700-100 B.P. Previously archaeological findings along the former shoreline suggest that long-term habitation by the Native people did occur around the lake in prehistoric times. Although no surface manifestation was observed in the project area during this study, the possibility of encountering subsurface deposits of prehistoric cultural remains during the proposed project cannot be ruled out. Therefore, the archaeological sensitivity of the subsurface sediments in the project area remains undetermined.

Based on these findings, CRM TECH presents the following recommendations to the County of San Bernardino:

- The proposed project will not cause a substantial adverse change to any known “historical resources” or “tribal cultural resources.”
- Periodic monitoring, or “spot-checking,” by a qualified archaeologist should be required during earth-moving operations associated with project to ensure the timely identification of any archaeologically sensitive sediments that may be unearthed. When such sediments are encountered, continuous archaeological monitoring will become necessary. The archaeological monitoring program should be coordinated with local Native American groups, who may wish to participate.
- If buried cultural materials are encountered during the earth-moving operations, all work in the immediate vicinity should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

Under these conditions, CRM TECH further recommends that the proposed project may be cleared to proceed in compliance with cultural resources provisions of CEQA.

## REFERENCES

- Bean, Lowell John, and Charles R. Smith  
 1978 Serrano. In Robert F. Heizer (ed.): *Handbook of North American Indians*, Vol. 8: *California*; pp. 570-574. Smithsonian Institution, Washington, D.C.
- Bean, Lowell John, Sylvia Brakke Vane, Michael Lerch, and Jackson Young  
 1981 Native American Places in the San Bernardino National Forest, San Bernardino and Riverside Counties, California. Report prepared by Cultural Systems Research, Inc., Menlo Park, California.
- California State Military Museum  
 n.d. Historic California Posts, Camps, Stations and Airfields: Mirage Auxiliary Field.  
<http://www.militarymuseum.org/MirageAuxFld.html>.
- Coombs, Gary B., Richard McCarty, Tara Shepperson, and Sharon Dean  
 1997 *The Archaeology of the Western Mojave*. Bureau of Land Management Cultural Resources Publications in Archaeology. U.S. Bureau of Land Management, California Desert District, Riverside
- Dibblee, Thomas W., Jr.  
 1960 Preliminary Geologic Map of the Shadow Mountains 15-Minute Quadrangle, Los Angeles County, California. Dibblee Geology Center, Santa Barbara, California.
- Gallegos, Dennis, John Cook, Emma Lou Davis, Gary Lowe, Frank Norris, and Jay Thesken  
 1980 Cultural Resources Inventory of the Central Mojave and Colorado Desert Regions, California. Bureau of Land Management, California Desert District, Riverside.
- Garrett, Lewis  
 1992 Postal History of San Bernardino County. *San Bernardino County Museum Association Quarterly* 39(4). San Bernardino County Museum Association, Redlands.
- GLO (General Land Office, U.S. Department of the Interior)  
 1856 Plat Map: Township No. VI North Range No. VII West, San Bernardino Meridian; surveyed in 1853-1856.
- Google Earth  
 1994-2017 Aerial photographs of the project vicinity, taken in 1994, 2005-2007, 2009, 2013, and 2015-2017. Available through the Google Earth software.

- Harms, Nancy S.  
 1996 *A Precollegiate Teachers Guide to California Geomorphic/Physiographic Provinces*. National Association of Geoscience Teachers, Far West Section, Concord, California.
- Hall, M. C.  
 2000 Archaeological Survey of 2472 Acres in Adjacent Portions of Lava, Lead Mountain, and Cleghorn Pass Training Areas, Marine Corps Air Ground Combat Center, Twentynine Palms, California (Volume I). Report prepared by the Archaeological Research Unit, University of California, Riverside, for the United States Marine Corps Natural Resources and Environmental Affairs Division.
- Jenkins, Olaf P.  
 1980 Geomorphic Provinces Map of California. *California Geology* 32(2):40-41. California Division of Mines and Geology, Sacramento.
- Kroeber, Alfred L.  
 1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Government Printing Office, Washington, D.C.
- Lerch Michael  
 1981 California Historical Resources Inventory site record update, 36-003762. On file, South Central Coastal Information Center, California State University, Fullerton.
- National Soaring Museum  
 n.d. William G. Briegleb (1912-2002). [https://www.soaringmuseum.org/files/ptn\\_Briegleb.pdf](https://www.soaringmuseum.org/files/ptn_Briegleb.pdf).
- NETR Online  
 1952-2012 Aerial photographs of the project vicinity, taken in 1952, 1954, 1968, 1994, 2005, 2009, 2010, and 2012. <http://www.historicaerials.com>.
- Schroth, Adella  
 2003 Survey of a Sample of the El Mirage Off-Road Vehicle Park, San Bernardino County, California. On file, South Central Coastal Information Center, California State University, Fullerton.
- Smith, G.  
 1979 California Historical Resources Inventory site record, 36-003762. On file, South Central Coastal Information Center, California State University, Fullerton.
- Strong, William Duncan  
 1929 *Aboriginal Society in Southern California*. University of California Publications in American Archaeology and Ethnology, Vol. 26. Reprinted by Malki Museum Press, Banning, California, 1972.
- USGS (United States Geological Survey, U.S. Department of the Interior)  
 1937 Map: Shadow Mountains, Calif. (15', 1:62,500); surveyed in 1930, 1931, and 1937.  
 1955a Map: Shadow Mountains SE, Calif. (7.5', 1:24,000); aerial photographs taken in 1954.  
 1955b Map: Shadow Mountains SE, Calif. (7.5', 1:24,000); aerial photographs taken in 1954, field-checked in 1955.  
 1969 Map: San Bernardino, Calif. (1:250,000); 1958 edition revised.  
 1993a Map: Shadow Mountains, Calif. (7.5', 1:24,000); 1955 edition photorevised in 1993.  
 1993b Map: Shadow Mountains SE, Calif. (7.5', 1:24,000); 1955 edition photorevised in 1993.
- Warren, Claude N.  
 1984 The Desert Region. In Michael J. Moratto (ed.): *California Archaeology*; pp. 339-430. Academic Press, Orlando, Florida.

Warren, Claude N., and Robert H. Crabtree

1986 Prehistory of the Southwestern Area. In Warren L. D'Azevedo (ed.): *Handbook of North American Indians*, Vol. 11: *Great Basin*; pp. 183-193. Smithsonian Institution, Washington, D.C.

Warren, Elizabeth von Till, Robert H. Crabtree, Claude N. Warren, Martha Knack, and Richard McCarty

1981 A Cultural Resources Overview of the Colorado Desert Planning Units. Bureau of Land Management, California Desert District, Riverside.