Appendix C:
Cultural Resources Supporting Information

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C-1: Cultural Resource Assessment–Travel Stop

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Draft

PHASE I SURVEY, LOVE'S TRAVEL STOP PROJECT, BAKER, SAN BERNARDINO COUNTY, CALIFORNIA

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MANAGEMENT SUMMARY

An intensive Phase I cultural resources survey was conducted for the Love's Travel Stop Project (Project), Baker, San Bernardino County, California. This study was conducted by ASM Affiliates, Inc. (ASM) with David S. Whitley, Ph.D., RPA, serving as project manager and principal investigator. ASM Associate Archaeologist K. Ross Way conducted the archaeological field survey and co-authored the report. Background studies and fieldwork for the survey were completed in September 2021. The study was undertaken to assist with California Environmental Quality Act (CEQA) compliance.

A records search of site files and maps at the South-Central Coastal Information Center (SCCIC), California State University, Fullerton, was completed on November 10, 2021. A search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed on October 4, 2021. Query letters were sent to tribal contacts provided by the NAHC; no responses have been received to date. These investigations determined that the study area had not been previously surveyed and no sacred sites or traditional cultural places had been identified within or adjacent to this area.

The Phase I survey fieldwork was conducted September 21, 2021, with parallel transects spaced at 15-meter (m) intervals across the study area. The total study area surveyed was approximately 23 acres.

No historical resources were discovered within the study area, and given the grading and off-road traffic disturbances present, the potential for buried subsurface remains is low. Based on these findings, the construction of the Project does not have the potential to result in adverse impacts to significant historical resources or properties, and no additional cultural resource studies are recommended. In the unlikely event that cultural resources are identified during project construction, work should be halted within a 100-foot radius of the find. It is recommended that a qualified archaeologist be contacted to evaluate the newly discovered resource, at which point further mitigation, including subsurface testing, may be required to determine the discovery's eligibility for California Register of Historical Resources (CRHR).

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc. (ASM) was retained by Lane Engineers, Inc. to conduct an intensive Phase I cultural resources survey for the Love's Travel Stop Project (Project), Baker, San Bernardino County, California. The purpose of this archaeological investigation was to assist with compliance with the California Environmental Quality Act (CEQA).

This current investigation included:

- A background records search and literature review to determine if any known archaeological sites were present in the project zone and/or whether the study area had been previously and systematically studied by archaeologists;
- A search of the NAHC Sacred Lands File to determine if any traditional cultural places or cultural landscapes have been identified within the area;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

David S. Whitley, Ph.D., RPA, served as principal investigator and ASM Associate Archaeologist K. Ross Way conducted the fieldwork and co-authored the report.

This manuscript constitutes a report on the Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the study area.

1.1 STUDY AREA LOCATION

The study area is located within the city limits of Baker, San Bernardino County, California (Figure 1). This places it within the western Mojave Desert, where it lies at an elevation of approximately 930 feet (ft.) above mean sea level (amsl). The Mojave Desert is a high desert occupying much of southeastern California and parts of southern Nevada, southwestern Utah, and northwestern Arizona. It is bounded on the north by the Great Basin Desert, on the south and east by the Sonoran Desert, on the west by the Tehachapi Mountains, and on the south by the San Gabriel and San Bernardino Mountains. The study area is approximately 16.5 miles (mi.) northeast of the Soda Mountains and Cronise Basin.

The study area consists of approximately 23 acres on the south side of Baker Boulevard between its intersection with Caltrans Avenue on the west and Silver Lane on the east. The southern boundary of the study area abuts the right-of-way for Interstate 15. The Project study area is located in the northwest corner of Section 29 in Township 14 North, Range 9 East (T14N/R9E), San Bernardino Base and Meridian (SBBM).

1.2 PROJECT DESCRIPTION

The proposed project consists of the construction of a Love's Travel Stop service station on the south side of Baker Boulevard between Caltrans Avenue and Silver Lane on an approximately 23-acre parcel.

1.3 REGULATORY CONTEXT

1.3.1 CEQA

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

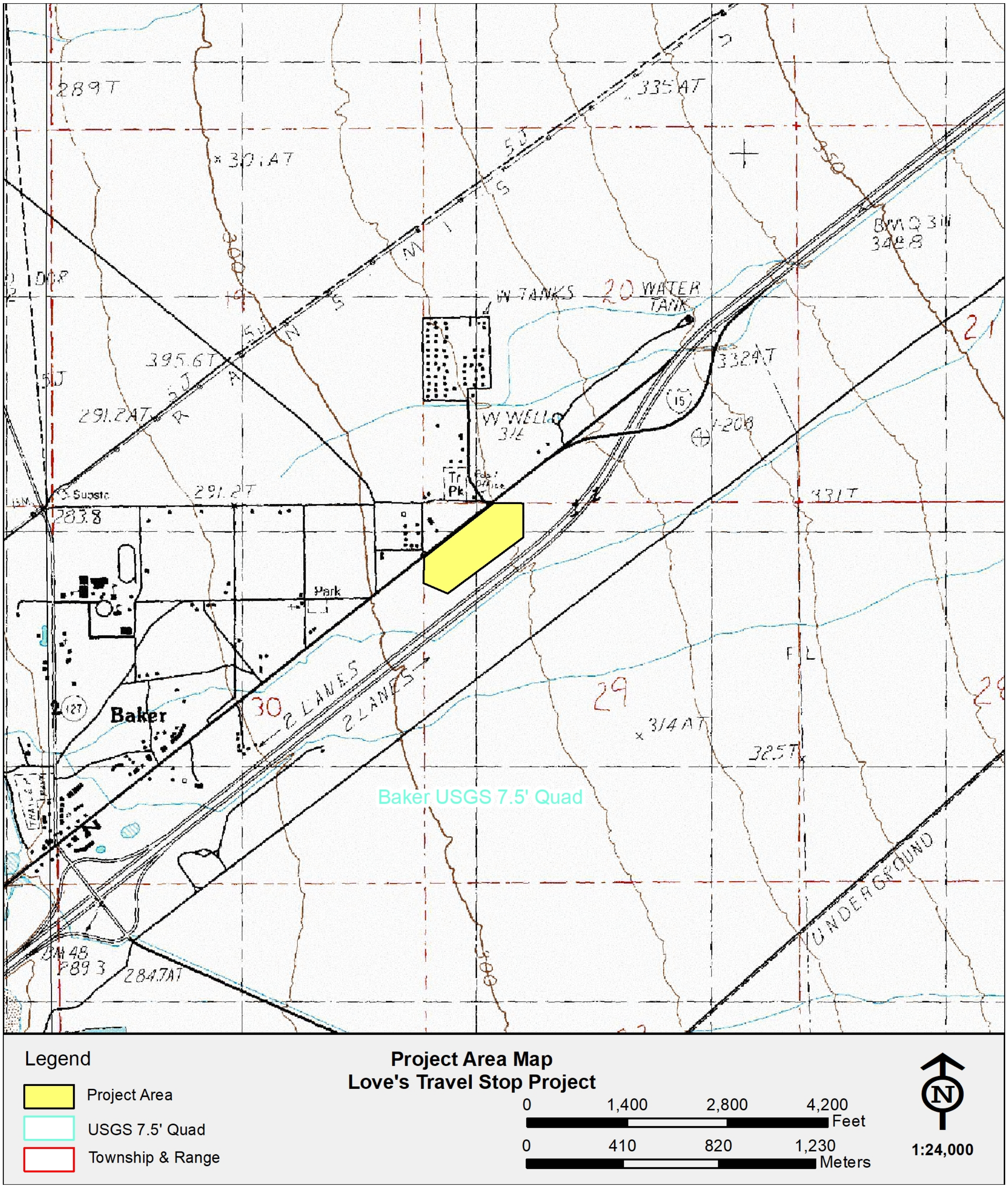

Figure 1. Location of the Love’s Travel Stop Project study area, Baker, San Bernardino County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND

At the time of the Phase I survey, the Project area consisted of open desert land bounded by dirt roads with residences to the north and paved asphalt roads on the east and south (Figures 2a and 2b). Although the study area has been impacted by vehicle traffic and modern dumping, the landscape has likely not changed much historically. Vegetation in the study area currently and historically has consisted mainly of creosote bush and saltbush scrub (Schoenherr 1992).

Figure 2a. Eastern portion of study area adjacent to Baker Boulevard.

Figure 2b. Study area overview at western boundary, looking east.

2.2 ETHNOGRAPHIC BACKGROUND

The Cronise Basin and Soda Mountains region was occupied during historic times by the Numic-speaking Southern Paiute. The ethnohistorical record for this group has been synthesized by Whitley and Nabokov (2000). The following ethnographic description of this tribal group is summarized from their account.

The presence of Southern Paiute peoples north and west of the lower Colorado River was documented by the first known Euro-American contact, that of Escalante in 1776, and was consistently reiterated in subsequent accounts, demonstrating considerable time-depth for a Southern Paiute occupation of this region. Also recorded, however, are details about Southern Paiute territorial changes during the historical period, primarily the movements of the Chemehuevi, considered one of the Southern Paiute bands, by the nineteenth century. Las Vegas Band territory fell on the western side of the Colorado River as it trends southward toward the Gulf of California. Though it was centered in the Las Vegas Valley, it fronts the west side of the river to just below Eldorado Canyon, and then continues southward along the inland side of Eldorado and Newberry Mountains. It extends westward into the Mojave Desert to Soda Lake and the Old Dad Mountains, and to the edge of Death Valley. Chemehuevi Band territory extends south and west from that of the Las Vegas Paiute, again inland from the Colorado River until slightly below Needles, where it turned east and headed to the river. A narrow southward projection of Chemehuevi territory fronts the river past Parker to just below Blythe. Kelly (1939:129) has suggested that the Chemehuevi are a nineteenth-century offshoot of the Las Vegas Band. Regardless, the current study area appears to have fallen within the territory of the Las Vegas Band.

The Southern Paiute are primarily considered to have been hunter-gatherers although, in locally favorable circumstances, horticulture was also practiced. In general terms, a seasonal round involving transhumance was followed. The primary subsistence emphasis involved women's collected plant foods. Where agriculture was practiced, this fit into the seasonal rounds of hunting and gathering, thereby accommodating both subsistence practices. The seasonal round typically began at aggregation camps or villages during the winter. Subsistence during this period was based on the use of stored resources, primarily pinyon nuts but, in other areas, mesquite. Toward the end of the winter/early spring, when the stored resources were depleted, less palatable foods were sought, such as juniper berries, Joshua tree and agave shoots, and caterpillars and locusts. Winter villages dispersed at this time, with single family groups spreading across the landscape in search of low-density resources. As spring progressed, various seeds became available and were sought on the valley bottoms. If agriculture was practiced, fields were prepared at this time.

Summer activities included large game hunting, a subsistence effort reserved or men. Large game included deer, bighorn sheep, and, in some areas, antelope. Small game, obtained by all members of a band or a family, was probably more important as a source of animal protein. This included various species of rodents, lagomorphs, lizards, birds, and the slow-moving desert tortoise. Seeds and berries of various kinds were also collected during summer. Where possible, summer gathering moved into the cooler upland areas, where plants maturation was slower than on the hotter and drier valley bottoms. Late summer and early fall brought all aspects of Southern Paiute society to the gardens where the produce was shared, even among those who themselves did not farm. In late summer and early fall, the population moved into higher elevations for the pinyon harvest. In general terms, however, fall was a season of great mobility, with people moving up and down mountains to obtain and cache the winter foods. Additionally large game hunting occurred, and rabbit drives were also conducted on the valley floors. With the completion of the fall harvest, families moved back to their winter aggregation camps.

The Southern Paiute were organized socio-politically into matrilocal bands, led by a headman and assistants. Headmen were responsible for scheduling, organizing and directing subsistence activities, such as pine-nut and seed harvests, and rabbit drives. They also organized and directed dances and ceremonial fandangos and conducted the annual Mourning Ceremony. Many headmen were also shamans, and thus served simultaneously as religious officials.

Like most Native American hunter-gatherers, the Southern Paiute practiced a form of shamanism: specifically, a type of shamanism has been termed the "guardian spirit," "dream-helper," or "spirit helper" (Whitley 2000). The primary characteristic of the guardian spirit complex was the belief that supernatural power was derived from spirit helpers, typically acquired through dreams or visions. These spirits were often animal tutelaries or guides, although they could also be ghosts or natural phenomena (like the wind or thunder), all of whom were seen during an altered state of consciousness experience.

The shaman (*pohagunt*, "[man] having supernatural power"), as the ritual functionary of Southern Paiute society, entered the supernatural world, through a trance, to see, interact with, and thereby obtain spirit helpers. He maintained a special relationship with his spirit helpers thereafter and, if they should be animal in nature, he was bound by a special relationship with all of the examples of that particular species.

By and large, group rituals were predominated by ceremonial displays of shamanic power: most commonly, this was by publicly curing a sick individual. Also practiced was the Mourning Ceremony or "Cry," which commemorated the deceased.

The practical aspect of the spirit helper complex is the fact that all success in life, whether concerned with esoteric or purely mundane matters, was thought predicated on supernatural power, *poha*. Numic religion, then, was in some senses organized around the principle of power. The result was that even non-shamans required some degree of supernatural potency to be successful, whether this was in marriage and child-bearing, in hunting, or in a favorite past-time, gambling. Inasmuch as supernatural power was itself a function of owning spirit helpers, it then followed that non-shamans too required some access to and assistance from a spirit helper, if they were to achieve even a modicum of success in their life. Shamans stood apart from non-shamans, then, not because they and they alone had a spirit helper; instead, they were different from the non-shaman because of the number of their spirit helpers, the intensity of their relationship with these spirit beings, and thus ultimately the quantity of power they maintained.

Myths served to both spell out in narrative form the nature of the Southern Paiute cosmology, and to fix it on the landscape. The cosmological structure of the universe consisted of five levels: the sky; the upper earth; the center earth; the lower earth; and the underworld. Charleston Peak, in the Spring Mountains northwest of Las Vegas, Nevada provided a natural model for the cosmological system, with ecological zonation correlating with the color symbolism that was associated with the different cosmological levels. Known as *Nuvugantu*, or "Snow Having," Charleston Peak is widely recognized as the origin point for the Southern Paiute and Chemehuevi. It is inhabited by Ocean Old woman, the creator force, and thus is a location of great sacredness and power.

2.3 ARCHAEOLOGICAL BACKGROUND

Recent regional summaries of western Mojave Desert prehistory have been published by Sutton (1988a, 1988b), with syntheses of the related Coso area immediately to the north published by Whitley et al. (1988) and Whitley (1994, 1998). Based on these studies, as well as the more wide-ranging cultural historical frameworks for eastern California provided by Hester (1973), Bettinger and Taylor (1974), Elston (1982), and Warren (1984), regional prehistory can be discussed in terms of a series of cultural historical periods, starting with the earliest evidence for human occupation in the western hemisphere.

It needs be noted, however, that this cultural historical record is profitably viewed in the context of the changing environmental and climatic conditions which have characterized this portion of the Mojave Desert during the prehistoric past. We begin, accordingly, with a brief paleoenvironmental summary.

Paleoenvironments in the Western Mojave Desert

Pertinent reconstructions of paleoenvironmental conditions have been provided by Elston (1982), Weide (1982), and Grayson (2011), among others. A recent synthesis and precipitation model developed for the Edwards Air Force Base (AFB) area by Ramirez and Bryson (1996) provides a surrogate for regional climatological studies. Based on their analysis and review, Ramirez and Bryson outline the major transitions from the last glacial maximum during the Pleistocene, at 18,000 YBP (years before present), to modern conditions. Overall, this period witnessed a reduction in annual rainfall of about 55 percent at Edwards AFB, representing an absolute loss of 194 mm (~7.5 inches) of precipitation to the current annual mean of about 147 mm (~6 inches). Equally importantly, this reduction in rainfall also occurred to different degrees in the Tehachapi and San Gabriel Mountains, which are the sources for much of the groundwater in the Mojave. For the Tehachapis, the proportional reduction was 57 percent, but this represents an absolute loss estimated at 323 mm (~13 inches) of rain annually, whereas for the San Gabriels it was even more extreme. There the reduction over 18,000 years was fully 76 percent of the Pleistocene estimate, translating to -850 mm or about -34 inches annually. As is immediately clear, the transition from the Pleistocene has involved a major desiccation overall in this portion of the west.

In general terms the late Pleistocene (18,000-11,000 YBP) was not as severe in the western Mojave Desert as is sometimes assumed, nor was the transition to modern conditions as regular as once believed. Winters were probably slightly milder than they currently are, with summers somewhat cooler. Subalpine coniferous woodlands probably covered most valley floors with bristlecone, pinyon, and limber pines. Ramirez and Bryson (1996) have however identified two major tendencies during the late Pleistocene, based on their precipitation modeling. From about 17,750 to 14,750 YBP, they posit a dramatic reduction of about 10 percent in rainfall. Allowing for standard errors in chronological measurements, potential lag times in response rates and minor regional variations, this period corresponds reasonably well with the history of Pleistocene Lake Searles, north of Barstow near Trona, which is thought to have reached its maximum high-stand at about 16,000 YBP, and then to have gone into negative hydrological conditions until about 13,000 YBP. The period from about 14,750 to 12,100 YBP according to these researchers is, in contrast, marked by greater climatic variability; overall desiccation is estimated at only 3 percent.

Conditions change dramatically between 12,100 and 10,100 YBP, during the so-called terminal Pleistocene. Ramirez and Bryson (1996) estimate a significant drought during this period, representing a 31 percent reduction in precipitation. This corresponds to what archaeologists have termed the “Clovis drought” (Haynes 1991; discussed below). In the Mojave Desert, all Pleistocene megafauna were probably extinct by the end of this time period.

The early Holocene, from about 10,100 to 8100 YBP, in contrast, is much more moderate, with comparatively mild oscillations and a reduction of only 5 percent in precipitation. However, minimally by 8100 YBP the Pleistocene vegetation regime can be (conservatively) assumed to have retreated, with woodlands restricted to higher elevations and therefore much more limited in overall extent.

Conditions deteriorated markedly thereafter, during the middle Holocene, within which Ramirez and Bryson (1996) identify two periods. From about 8100 to 6700 YBP, a significant decline in rainfall occurred, with a reduction estimated at 16 percent. From this point to about 4300 YBP conditions continued to decline, but less dramatically so. Loss in precipitation during this 3,400 year stretch is only estimated at about 9 percent. These data correlate closely with Bach's (1995) independent analysis of dune activity in the western Mojave. He estimated that Holocene dune building peaked between about 8000 and 5000 YBP.

This middle Holocene period corresponds generally to a posited dry and hot period called the Altithermal (discussed below). Although the existence and/or nature of the Altithermal is debated and in some cases is even denied for the southern Great Basin (e.g., Weide 1982), in general terms Ramirez and Bryson's (1996) precipitation model supports its continued relevance in local archaeological reconstructions.

This point is further emphasized by the next climatic phase, from about 4300 to 1900 YBP, where precipitation conditions reversed and an estimated 17% *increase* in rainfall is seen as occurring. Notably, and based on archaeological evidence, Whitley (1994, 1998, 2000; Whitley et al. 1988) has argued that improved environmental conditions immediately after the Altithermal—which is to say during this period—resulted in a major human demographic increase and adaptive radiation into new environments throughout south-central California.

At about 1,900 years ago, however, conditions are thought to have returned to what they were at 4300 YBP, and to have stayed in this same general range ever since. The modern vegetation regime can be confidently assumed to have been in place at this point. However, the lowest precipitation level is estimated to have occurred only about 300 YBP, during what is essentially the Protohistoric Period (Ramirez and Bryson 1996). Although it is then easy to characterize the changing environmental conditions over the last 18,000 years as involving major desiccation, this more detailed exposition shows that this long-term tendency involved significant oscillations, and these oscillations were of such magnitude that they probably had significant impacts on prehistoric human populations.

More recently, Meek (1999) has outlined aspects of the complexity of the central Mojave Desert lake basin prehistory, emphasizing the importance of the Mojave River in understanding this prehistoric record. Instead of filling from Fremont Valley, Meek argues instead that the Harper basin (which has a highest shoreline of 2155 ft.) filled from the Mojave River in a series of episodes, all of which occurred prior to ~21,500 YBP. Subsequently the Mojave River emptied into various different basins as a result of changing geomorphological conditions, including Coyote, Cronese, Troy, and Afton basins, and Soda and Silver lakes. No single basin, then, contains a complete paleoclimatic history for the region, and the rising and declining water levels in these basins may not be a result of simultaneous paleoclimatic changes.

With this overview of regional paleoclimate, it is then appropriate to turn to the regional prehistoric record.

Pre-Clovis (earlier than 11,200 YBP)

Perhaps the most long-lived problem in New World prehistory has been the question of the antiquity of first human occupation, with two positions dividing the discipline: the Pre-Clovis or long chronology, which posits a late Pleistocene first-migration at some undetermined point prior to 11,200 YBP; and the Clovis-first, or short chronology hypothesis, which argues for an initial migration at the immediate end of the Pleistocene, now set at 11,200 YBP. Historically, the Mojave Desert region has played an important role in this debate due to the presence of putative early sites in Panamint Valley and around Pleistocene Lake China—the Coso Range region to the north of the study area, in the Ridgecrest and Trona region. E.L. Davis (e.g., 1978), in particular, argued for the presence of Pre-Clovis sites in this region based on three lines of evidence:

(1) typological similarities between surface lithic tool assemblages in this region and well-dated typologies in the Old World;
(2) the locational context of certain surface sites on well-dated Pleistocene lake terraces and sediments; and
(3) the association between surface cultural artifacts and dated paleontological remains.

Because Davis' evidence consisted of surface finds that were largely based on typological comparisons which were never directly dated using chronometric techniques, her conclusions were not widely accepted in the profession. More recently developed evidence (Dorn et al 1986; Whitley and Dorn 1988, 1993; Whitley et al. 1999a, 1999b; Whitley 1999, 2000), however, suggests an occupation of the region at least as early as 15,500 YBP. These dates were obtained from the direct dating of the rock varnish coating petroglyphs and surface lithic tools, using two independent chronometric techniques: cation-ratio dating, which provides calibrated ages; and the analysis of varnish micro-stratigraphy, which provides relative age control and has independently confirmed the cation-ratio dates.

Based on these techniques, Whitley and Dorn have obtained a suite of five Pre-Clovis age petroglyphs from the Coso area alone (in addition to a number of Holocene-dated specimens). These range in age from 16,500 $\pm$1000 RYBP (radiocarbon years before present) to 12,000 $\pm$600 RYBP. In addition, in the Rodman Mountains, southeast of Barstow, a petroglyph independently identified by a paleontologist as a possible late Pleistocene camelid has been dated by these same techniques to about 12,000 RYBP; these animals were extinct in the Mojave Desert by about 10,000 years ago (Whitley 1999). Most recently, advancements in the analysis of varnish micro-stratigraphy allow for the identification of diagnostic temporal signals in SEM varnish thin-sections. Key micro-stratigraphic signals are present in the varnish thin-sections at the Pleistocene-Holocene transition, and at approximately 14,000 and 21,000 YBP. Coso petroglyphs older than 14,000 years based on cation-ratio dating display the 14,000 micro-stratigraphic diagnostic but not the 21,000 YBP signal, thus demonstrating that this chronometric technique is correctly placing them in the proper part of the Pleistocene.

The best example of multiple lines of evidence supporting the validity of these Pre-Clovis ages is provided by a spiral motif from the Little Lake site, located on the western edge of the Coso range, near Highway 395 (Whitley et al. 1996). The cation-ratio age for this petroglyph is 14,500

±1300 RYBP. The petroglyph exhibits the 14,000 but not the 20,000 years micro-stratigraphic signature. Equally importantly, this petroglyph is located on a talus scree slope which rests on the Pleistocene channel of the Owens River, and thus the petroglyph must post-date the age of this river. The dating of this river channel, which occurred after the petroglyph had been dated, indicates that it stopped flowing at approximately 16,200 RYBP (Cerling and Craig 1994). The combination of the micro-lamination evidence and this geomorphological data brackets the age of the petroglyph between 14,000 and 16,200 years, an age range which corresponds correctly with the CR age of 14,500 RYBP.

Although there is controversy concerning these early dates from the Cosos and other parts of the Mojave Desert, there is increasing evidence that they are probably correct. This evidence includes the replication of these two techniques by a variety of labs and researchers worldwide. Moreover, there are a certain related circumstances that greatly bolster the Pre-Clovis position more generally (Whitley and Dorn 1993). First, attention to the geomorphology and paleoclimatology of the latest Pleistocene indicates that the Pre-Clovis period was one of net erosional degradation. Lowered eustatic sea-levels combined with a series of major flood events resulted in the stripping of sediments in major portions of North America, rather than the gentle forms of deposition that are required for archaeological site preservation. A general exception to this pattern occurred however in the Basin and Range Province, which includes the study area, where a variety of geomorphological contexts preserve late Pleistocene surfaces. Boulders and cliff faces containing rock art are one of these, as these contexts were not subjected to this erosional destruction. There are, thus, few extant geomorphological contexts within which Pre-Clovis finds could be expected to be found in North America, albeit those that might exist are most likely to be found in the Great Basin.

Second, changes in this net erosional or depositional regime explain why there is a sudden "explosion" of later Clovis age sites and a relative dearth of Pre-Clovis sites in the archaeological record: The Clovis sites appear at exactly the point when the geomorphological conditions change to favor site preservation.

Third, archaeological evidence from South America has included a number of well-dated Paleoindian sites falling between 10,000 and 11,200 YBP. As pointed out recently (Whitley and Dorn 1993), it would have been physically impossible for first migrants to have entered North America sometime after 12,000 YBP and to have colonized South America within 1,000 years. This would require rates of population growth unheard-of for human beings, and migration speeds that are manifestly implausible. Thus, even the South American Paleoindian evidence tends to discount the likelihood of the short chronology for the peopling of the New World.

Finally, there is now also compelling evidence for an immediately Pre-Clovis site in South America: Monte Verde, Chile (Dillehay 1997), dated to around 12,000-13,000 RYBP. This site and its widespread acceptance by the archaeological community makes entirely implausible the argument that humans only arrived in the Americas 11,200 years ago.

Although the evidence, accordingly, is mounting for the Pre-Clovis occupation of eastern California, per se, at this point there is relatively little that can be said about this occupation, beyond the simple argument for its presence. Until additional evidence is presented, we will not be able to determine whether Pre-Clovis peoples were sedentary or mobile, or big-game hunters versus foragers.

Paleoindian (11,200 to 9000 YBP)

Although the initial occupation of the continent is controversial, there is widespread agreement on the subsequent Paleoindian period, which is typically viewed as pertaining to mobile big-game hunters who exploited Pleistocene megafauna. The hallmarks of the Paleoindian period are the fluted, collaterally-flaked and basally-thinned and -ground Clovis and Folsom spear points, during the earlier portions of the period, followed by a series of large, well-flaked but unfluted lanceolate points towards the end of the period, some of which are stemmed. Some scenarios suggest that the big-game hunting practiced by these Paleoindian peoples may be responsible for the extinction of the Pleistocene megafauna, such as Imperial Mammoth, *Bison antiquus*, and the North American horse. Aside from this so-called Pleistocene overkill problem, the image of Paleoindians as specialized big-game hunters has become pervasive for North America though it is far from proven in all parts of the continent. Recent evidence, however, indicates that the earlier portions of the Paleoindian period comprised a lengthy and severe drought, thus demonstrating that the large mammal herds were already under extreme environmental stress, regardless of the effects of human predation (Haynes 1991). As noted above, paleoclimatic reconstruction in the vicinity of the study area indicates that a drought also occurred in this specific region (Ramirez and Bryson 1996), further supporting the notion that all Mojave Desert populations—human and animal—existed in stressed conditions at that time.

Very substantial although sometimes overlooked evidence of Paleoindian use of eastern California has been found in a number of areas, including Pilot Knob Valley, northeast of the study area; on the shores of Pleistocene Lake China and within the Coso Range, per se; in Fort Irwin, northeast of Barstow; at Boron, to the west; in the El Paso Mountains, north of the study area; and in the Tehachapi Mountains, further to the northwest (e.g., Glennan 1971, 1987; Davis 1978; Warren and Phagan 1988; Yohe 1992a). According to Warren and Phagan (1988), only seven fluted points had been found in the Mojave Desert, although their tabulation apparently excludes the region north of the Garlock Fault, and thus the Coso-Panamint-Death Valley area. To this list, however, we can add four Paleoindian points from the Coso Range and Rose Valley, three from Pilot Knob Valley, and another basally-thinned point which is on display at the Death Valley National Monument Visitor Center which apparently was found within the monument. To these can also be added four fluted point bases from the Edwards AFB area (Mark Campbell, personal communication, 2000) and a fluted point base and approximately 10,000 YBP radiocarbon date from Boron. Even more importantly, *49* fluted points were recovered by Davis (1978) around China Lake, substantially bolstering the evidence of Paleoindian use of this general region. Clearly, there was very substantial Paleoindian occupation of this area.

Typically, the Paleoindian evidence consists of isolated (in some cases reused) Paleoindian projectile points, although there is also evidence for Paleoindian petroglyph manufacture in the Cosos (Whitley and Dorn 1987, 1988; Whitley et al. 1999a, 1999b). Furthermore, an obsidian Paleoindian point from the central Mojave Desert (Sutton and Wilke 1984) and another from the Rose Spring site (Yohe 1992b) have been sourced to the Coso Sugarloaf Quarry. When combined with the large number of points collected by Davis (1978) around China Lake, it is clear that this area was very important for these early occupants.

Although it is likely that Paleoindian habitation sites are somewhere preserved in the region, they have yet to be found and a better understanding of the Paleoindian period in this portion of eastern California will only be obtained when such sites are discovered and investigated (cf. Warren and Phagan 1988). In the meantime, growing evidence for Paleoindian occupation on the off-shore Channel Islands (e.g., Morris and Erlandson 1993), with the maritime adaptation this implies, suggests that the monolithic interpretation of all North American Paleoindian period sites as necessarily a product of specialized big-game hunting may be incorrect, and that more regional subsistence variation may emerge once better evidence from the far west has been discovered and analyzed (cf. Willig and Aikens 1988).

Early Archaic (9000 to 6000 YBP)

The Early Archaic period, or so-called Western Pluvial Lakes Tradition, represents the early Holocene in paleoenvironmental terms. Its hallmark is generally considered to be the widely dispersed but ambiguously dated Western Stemmed Tradition projectile points. These include the local variants known as Lake Mohave and Silver Lake points, which may in fact actually date between 10,500 and 7500 YBP and thus be partly coeval with fluted points. Combined with studies of the lithic technologies of Early Archaic and Paleoindian sites, this chronological overlap suggests that the Western Stemmed Tradition may have been an in-situ development out of the earlier Paleoindian tradition (Willig and Aikens 1988).

Early Archaic sites are most commonly found on the lowest terraces above latest Pleistocene and early Holocene lake basins and stream deltas. (Notably, fluted points are also sometimes found at these same sites and geomorphological locations, contributing to the chronological ambiguity of both point types). Early Archaic sites are, accordingly, widely regarded as part of a lacustrine-focused adaptive strategy. Although a number of authors have cautioned against too simplistic an interpretation of these associations, pointing to the fact that Early Archaic sites are also found in other environments, it nonetheless is apparent that, in eastern California at least, this environmental association and its inferred subsistence implications maintain some verity. Indeed, it can be noted that recent research in the Great Basin has exactly emphasized the general importance of lacustrine adaptations in general terms, in contrast to Jennings' (1957) earlier model of a long-lived "desert culture" tradition.

Be these controversies as they may, Davis (1978; Davis et al. 1969) has identified and discussed the importance of a number of putative Early Archaic sites in the Panamint region. These are located in both the China Lake Basin and the Panamint Valley in former lacustrine environments, and are indicative of the fact that some lakeshore use if not occupation did occur during the early Holocene in this region. However, this must be matched against the fact that Western Stemmed Tradition points have also been recovered as isolates in upland environments in the Cosos (Elston et al. 1983). Thus, although lakeshore exploitation may have been an emphasis during the Early Archaic in this portion of eastern California, this period apparently also included mobile hunting in other environments as well.

Middle Archaic (6000 to 4000 YBP)

Be this early evidence as it may, what is incontrovertible is that, regardless of date of *initial* occupation, *substantial* inhabitation did not occur until much later, with the start of the Middle Archaic or Pinto Period, at about 6000 YBP. This lasted until approximately 4000 YBP. A number of sites from this time period are known from the Rosamond area, specifically associated with the prehistoric shoreline of Rosamond Lake. Notably, sites dating to this time period apparently emphasize the use of rhyolite as a lithic resource, almost to the exclusion of cryptocrystallates such as chert and jasper (Sutton 1988a, 1988b).

The Middle Archaic, however, corresponds essentially to the Altithermal paleoenvironmental period, and is a controversial topic in Mojave Desert prehistory due to its cultural and chronological ambiguity. That is, aside from the controversy concerning the nature of the *paleoclimate* during this period, as discussed above. Much of the *archaeological* ambiguity instead stems from the uncertainty in the chronological placement of the Pinto series projectile points. Seemingly, there are as many chronological scenarios for the placement of Pinto points as there are archaeologists working on the problem (cf. Meighan 1981; Jenkins and Warren 1984). What this ultimately may suggest is that much more regional variation existed during certain periods of the prehistoric past than is currently being recognized.

In the Coso area to the north, but not necessarily elsewhere in eastern California, there is little if any evidence for Middle Archaic occupation, at least if Meighan's (1981) obsidian hydration date revisions for the Pinto series points from the Little Lake site are accepted. That is, existing evidence could be interpreted to signal a diminution in occupation, if not an outright abandonment, in this region, apparently corresponding to the hot and dry climatological conditions of the Altithermal. However, it is also possible that local inhabitants may have adopted a subsistence strategy and settlement pattern with little archaeological visibility on the landscape during this period; e.g., a highly mobile pattern. Although this alternative interpretation of the apparent dearth of Middle Archaic sites must be acknowledged, it seems implausible in light of the fact that extremely dry conditions would be more commonly predicted to result in a stronger form of "tethered nomadism," and thus greater archaeological visibility, around water sources. Moreover, there is very clear evidence for Middle Archaic settlements in the Fort Irwin area (e.g., Jenkins and Warren 1984), to the east of Barstow, suggesting that not all portions of eastern California were abandoned at this time; again, emphasizing the possibility of more regional variability than heretofore acknowledged.

Late Archaic (4000 to 1500 YBP)

Much less controversy surrounds the subsequent Late Archaic period, or Elko Period, lasting from about 4000 to 1500 YBP, which correlates with improved and wetter environmental conditions across the far west, including within the study area, as Ramirez and Bryson's (1996) reconstruction indicates. Although sites from this time period are sometimes considered rare in the Mojave Desert, it is notable that many of the subsequent Rose Spring Period villages (see below) were first occupied during this earlier phase. That is, as has been noted by a number of authors, there seems to be a strong continuity between the Elko Period and subsequent times, with the latter period materials masking or burying the Elko remains. In the Antelope Valley region this begins with a major increase in population beginning about 3000 YBP (Sutton 1988b:23).

Similar patterns have been noted in surrounding regions. For example, the start of the Late Archaic in the Coso Range region, to the north, is posited to represent the initial establishment of the primary settlement and subsistence systems that are currently archaeological visible (Whitley 1994, 1998), while this same period has been recognized as experiencing a major, far western North American-wide expansion of settlements into new environments and increases in population, stretching from the Great Basin of eastern California, through the southern Sierra Nevada, across the Transverse Ranges, and down to the coast (Whitley et al. n.d.). The primary temporal diagnostics for the Late Archaic are Elko and Gypsum series projectile points.

In the Coso Range, the Late Archaic is signaled by the establishment of major winter villages, typically at springs, in valley bottoms on the western and wetter side of the range. Analyses of paleoethnobotanical and faunal remains suggest a generalized foraging strategy, emphasizing all available resources (e.g., Gumerman 1985), including buckwheat stands around small mud-playas (Whitley et al. 1988). This evidence is complemented by an extensive but seemingly non-logistically organized use of all upland environments. Included here is a significant quantity of isolated projectile points in the uplands, suggesting mobile hunting patterns (Elston et al. 1983). Furthermore, the Late Archaic witnessed the beginning of the intensive exploitation of the Coso Sugarloaf obsidian quarry, an event that apparently correlates with the beginning of the inland-to-coastal obsidian trade in south-central California (Whitley et al. n.d.).

Rose Spring (1500 to 800 YBP)

The Rose Spring Period is differentiated from the earlier Late Archaic/Elko Period by the introduction of the bow and arrow and a change from spear points to arrow points at circa AD 500 (cf. Yohe 1992a). This transition is, in technical terms, dramatic. In fact, the introduction of this new weaponry technology probably did not have any immediate major impacts on social or cultural systems. At least initially, the settlement and subsistence systems were stable, and lithic technology and production did not noticeably change (Allen 1986).

Moreover, and as implied above, in all other respects Rose Spring times appear to have been a continuum from the earlier patterns, so that the change in hunting technology was probably less important than we might otherwise presume. Within the Antelope Valley area, Desert Village Complexes, representing a major change in magnitude of settlements, were founded at least by Rose Spring times, and perhaps towards the end of the earlier Elko phase. Two of these have been identified by Sutton (1988a, 1988b) in the foothills of the Antelope Valley, with a third between Rosamond and Rogers Dry Lake, and a possible fourth at Koehn Lake. It is possible, if not likely, that these represent the founding of the tribelet system of political organization in the region.

At approximately AD 1000-1200, however, a shift in settlement and subsistence practices began that, ultimately, culminated in the protohistoric/ethnographic patterns referred to as the Later Prehistoric or Numic Period (discussed below). This involved the abandonment of some winter villages (or at least a reduction in the intensity of their use); the establishment of logistical base camps around springs in the upland environments; an increasing emphasis on a relatively specialized diet focused on seeds and the pinyon nut; and a great increase in the production of petroglyphs (Whitley 1994). That is, settlement patterns became more organized and focused, while subsistence was increasingly specialized, and ritual became more common.

The causes for this transition are not yet fully understood. Bettinger and Baumhoff (1982), for example, have accepted it as an empirical fact, with the subsistence change then linked to the putative spread of Numic peoples out of eastern California at about this time. They have then taken the position that the phenomenon to be explained is not the cause of the subsistence change, but the reasons why such a change was adaptively more successful, and how it can then be used to account for the historical distribution of Numic languages. The implicit assumption in such an approach is that evolutionary transitions are to be expected due to the inherent tendency for greater fitness to emerge in populations.

While this last tendency may or may not be so, it overlooks pertinent related evidence; namely, that this same time period experienced a major drought that effected all portions of western North America, from northern Mexico through the Southwest, across the Great Basin, and even into the Channel Islands. Moreover, the environmental stress engendered by this drought has been cited as a causal factor in the abandonment of Anasazi pueblos in the Southwest, as well as the southward retreat of Mesoamerican civilization with the collapse of Tula. Perhaps more to the point, Arnold (1993) has noted the influence of this drought in creating resource stress that was a contributing factor to the appearance of a simple chiefdom in the Chumash region near Santa Barbara. Similarly, Whitley (1994, 1998) has argued that this transition in eastern California represents the first appearance of Numic bands and headmen; specifically, that it was the increasing perceived need for ritual specialists in the form of rain shamans during this period of environmental degradation that led to the establishment of bands and the creation of headmen. In this interpretation, the accelerated production of Coso petroglyphs (which are known ethnographically to have been tied to rain shamanism) is taken as a reflection of the growing number of ritual specialists, with the appearance of a logistically-oriented settlement pattern a sign of increasing sociopolitical control and organization.

Late Prehistoric (800 to 140 YBP)

The Late Prehistoric (or, in some areas, Numic) Period, from 800 YBP to the Historic Period, represents a continued growth in local population, with numbers of people apparently quite high. It is distinguished from previous Rose Spring times by the introduction of brownware ceramics and a change in projectile point types: from Rose Springs types to Desert Side-Notched and Cottonwood Triangular. Sutton (1988a, 1988b) notes that a boundary of some sort developed during this period: Desert Side-Notched points, brownware ceramics and obsidian are all common from the Fremont Valley northward; south of this area, in the Antelope Valley proper, ceramics and obsidian are rare, and Cottonwood Triangular points are the predominant projectile point type. This apparently correlates with similar patterns further towards the coast: at about 800-1,000 years ago the desert-to-coast obsidian trade dried up, and Rose Spring-like projectile points were replaced by Cottonwood-like points, with Desert Side-Notched points rare.

The Protohistoric/Historic phase of the Late Prehistoric, representing the last 300 years, is apparently marked by a major disruption in indigenous settlement, and a corresponding paucity of sites. According to Earle (1990), missionization pulled many of the region's inhabitants away. Note, however, that ~300 YBP also represents a brief period of extreme drought, as indicated by Ramirez and Bryson's (1996) paleoclimatic model. Hence deteriorating environmental conditions may have contributed to social disruptions combined with the introduction of new diseases, all of which would have had detrimental effects on the local population. Subsequently, the Antelope Valley area was used as a staging ground for rustlers and other miscreants, who were raiding the missions' livestock. The result was that the area became somewhat of a no-man's land which, no doubt, has also contributed to the paucity of ethnographic information on it.

2.4 HISTORICAL BACKGROUND

Overviews of Mojave Desert Euro-American history have been published by Peirson (1970), Smith (2006), Stickel et al. (1980), and Vredenburgh et al. (1981). The brief sketch presented here summarizes these sources, with an emphasis on mining history in the region.

Initial Euro-American interest in the Mojave Desert emphasized exploration and travel, initially with the desert area representing little more than an impediment in east to west movements. Francisco Garcés was the first Euro-American credited with crossing the desert. He was a member of Captain Juan Bautista de Anza's 1774-5 expedition, which was tasked with finding an overland route for supplies, livestock, families, and missionaries from New Spain to the coastal settlements of Alta California. Garcés was followed sporadically by a series of additional explorers, including Jedediah Smith (in 1826), George C. Yount (1927), James O. Pattie (1828), and Ewing Yound (1829). In 1830, Antonio Armijo, a Mexican merchant, took the first caravan of pack animal from Santa Fe, New Mexico, all the way across the Mojave and through Cajon Pass. Armijo's route became known as the Spanish Trail and it served as the main caravan route between Santa Fe and Los Angeles.

California by the early 1850s had become a part of the United States (U.S.), and was experiencing significant immigration, at least partly, if not largely, due to the 1849 Gold Rush. One result was the need for a transcontinental railroad. In 1853, four surveys were organized by the War Department to find the most practical route to the Pacific. Lt. Robert Stockman Williamson led a survey of the Mojave Desert for this effort. At about the same time, other federal agencies began to sponsor land surveys in and around the Mojave Desert. In 1852, the Boundary Commission sent Col. Henry Washington to erect a baseline monument on Mt. San Bernardino, which became a fixed reference point for all future southern California surveys. In 1855, Washington was dispatched into the central Mojave. The first transcontinental railroad was completed in 1869, linking the Central Pacific and Union Pacific lines.

Westbound wagon traffic also increased in the late 1850s along the Spanish Trail or, as it was then known, the Mormon Road (which ran south of the Cima Volcanic Field and hence south of the study area). This ultimately led to a rise in hostilities between native people still living in the desert and the immigrants. In an effort to protect U.S. citizens, the government sent out military detachments to construct and man various redoubts and forts in the Mojave Desert. Some of these were located near the Colorado River, including Fort Mojave (active by 1859) and Camp Cady (ca. 1860), but others were erected at Marl Springs, Rock Springs, and Bitter Springs. The presence of the military in the desert temporarily worsened conditions, resulting in battles and the forced removal of indigenous Native Americans to reservations, but by the early 1870s much of the conflict had ceased.

Baker was founded as a station on Borax king Francis Marion Smith's Tonopah and Tidewater Railroad (T&T) in 1908. The town was named for Richard C. Baker, business partner of Smith, in building the railroad. The railroad was built not only to tap into the gold mining camps of the region, but to open up the wealthy Death Valley colemanite beds. Baker later became president of the T&T himself (Bright 1998; Hildebrand 1982; Lingenfelter 1986).

2.4.1 Mining

Mining also played a significant role in Mojave Desert history. Mining by Americans began in the 1860s, although many discoveries did not develop for several decades until the costs of production and transportation were reduced by the railroad. Before the arrival of Euro-Americans in the area, Ancestral Puebloan people mined for turquoise at several sites in the eastern Mojave including Halloran Springs, and persistent traditions of Spanish and/or Mexican mining activity tantalized early American miners. Some of the soldiers stationed at the remote outposts along the Mojave Road, especially in the vicinity of Marl Springs, are thought to have conducted small-scale exploration in 1860. The following year, gold was discovered in the Vanderbilt area, but 30 years passed before this deposit was developed. In 1863, prospectors discovered silver and subsequently formed the Rock Springs Mining District, also known as the Macedonian Mining District. The intensive isolation of the area made profitable excavation almost impossible, and troubles with Native Americans caused its abandonment by 1866.

The first significant mining activity began in the mid-1860s, and profitably produced silver for more than a decade despite difficulties caused by geographic isolation. In 1865, prospectors discovered silver on the north side of Clark Mountain, and organized the Clarke Mining District that July. The mountain was named after the district, itself labeled in honor of William H. Clarke of Visalia, California, owner of the popular saloon. Ivanpah (later called Old Ivanpah) was the main town, located in the heart of the Clark District (west of the current study area). The Clarks, described by one modern author as "the most important [mineral area] . . . of all San Bernardino County," produced a considerable amount of silver between 1869 and 1880, when profits began to decline and people moved away. The district hung on until the late 1890s, when a crash in the price of silver ended mining there. The extraordinary remoteness of the area caused profitability problems as well.

The other major mine before the turn of the twentieth century was the Bonanza King Mine, located near the present 7IL Ranch. Discovered in 1880 by Ivanpah prospectors, the Bonanza King produced rich silver ore until 1885, and sporadically thereafter. The mill, believed to have been near the current 7IL Ranch headquarters, burned in 1885 and was not immediately rebuilt.
Later owners revived the mine several times, most significantly between 1905-1907 and 1915-1920. Bonanza King workers lived near the mine in the town of Providence, where stone ruins still stand. The profitability of the mine was helped by the construction of the Atlantic & Pacific

Railroad to the south; Bonanza King Stock was listed on the New York Stock Exchange, and output eventually totaled more than one and a half million dollars.

Railroads helped stimulate mining in the Mojave. The Atlantic & Pacific was completed in 1883, but had little effect on the Ivanpah mines, which were already in decline. Beginning in 1893, the Nevada Southern Railway, built north from Goffs to Barnwell, tapped the Vanderbilt area, the Sagamore Mine, and other potentially profitable ventures, and helped stimulate prospecting and small-scale mining in the area. Just after the turn of the century, that railroad extended branches from Barnwell through the New York Mountains to the Ivanpah Valley, as well as to Searchlight, both of which coincided with additional mining activity.

The "Great Years" of mining in the eastern Mojave, so named because adequate capital financed substantial production of both precious metals and industrial metals, came between 1900 and the end of World War I. In 1900, a boom at Tonopah, Nevada, sent prospectors throughout the desert region, and a large number of claims were staked in the Mojave. Several Mojave mines were big producers. The Cooper World, in the Clark Mountains, produced 100 tons each day, making it one of the larger cooper mines in California at the time. The Von Trigger Mine, later known as the California Mine, produced 30,000 tons of copper between 1907 and 1909. The Paymaster Mine, discovered in 1900 on the slope of Old Dad Mountain, produced some $75,000 worth of gold between 1910 and 1914. These small bonanzas were short-lived. The depression that followed World War I caused substantial contraction of mining nationwide; small producers like those in the Mojave simply found it impossible to operate economically.

The Great Depression sparked an increased in gold mining in the Mojave Desert. The Depression caused an increase in the price of gold, and labor expenses were low. These factors, combined with another key ingredient, described by one author as "men not having much else to do," caused a surge of gold mining activity in the area. The Colosseum Mine (located in the Clark Mountains), discovered as early as 1880 but never mined comprehensively began substantial production in 1929; and the Telegraph Mine, first located in 1930, produced $100,000 in gold between 1932 and 1938.

The entrance of the U.S. into World War II in late 1941 prompted a change in mining activity in the eastern Mojave, accelerating a shift from production of precious metals to excavation of industrial minerals. During World War II, mining of almost all precious metals was halted by executive order to free resources for America's war effort. Some resources made more valuable by the war were found in the eastern Mojave, including cooper from several small mines, and tin and tungsten from the Evening Star Mine. The most important wartime production came from the Vulcan Mine in the Providence Mountains, which supplied iron ore for the blast furnaces of Kaiser's Fontana steel mill and turned Kelso into a boom town of 1,500 people.

After the shutdown of the Vulcan Mine in 1948, much of the remaining mining activity in the eastern Mojave focused on salable materials such as cinders. The Aiken Cinder Mine and the Cima Cinder Mine both began operation around 1948, and profitably worked their deposits through the 1990s. The primary exception to the focus on saleable minerals was the Mountain Pass Mine (now Molycorp Mine), which was purchased by Molybdenum Corporation of America in 1951 and has been one of the largest producers of rare earth elements in the world.

3. ARCHIVAL RECORDS SEARCH

An archival records search was conducted at the South Central Coastal Information Center (SCCIC) by SCCIC staff members to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study area; (ii) if the study area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. Additionally, a search of the NAHC Sacred Lands File was conducted in order to ascertain whether traditional cultural places or cultural landscapes had been identified within or adjacent to the study area. The results of these searches are summarized here and provided in Confidential Appendix A.

3.1 SCCIC RECORDS SEARCH RESULTS

The records search at the SCCIC indicated that no previous archaeological surveys had been completed within the study area; however, 15 surveys had been completed within 0.5 mi. of the study area (Table 1) with only one cultural resource identified (P-36-007694, Boulder Transmission lines).

Table 1. Survey Reports within 0.5 Mile of the Study Area

Report No.	Year	Author (s) / Affiliation	Title
SB-00612	1978	San Bernardino County Museum	An Archaeological – Historical Assessment for the Proposed System Improvements for a Water System Master Plan for Victor Valley County Water District
SB-06004	2008	Fred Budinger / TetraTech	Roy Rogers, 15182 El Evado Road, Victorville, CA
SB-07120	2009	Matthew Weatherbee / SRS, Inc.	Phase I Archaeological Assessment for Various Water Projects in the City of Victorville, San Bernardino County, California
SB-07156	2011	Bai “Tom” Tang, Daniel Ballester, and Nina Gallardo	Historical/Archaeological Resources Survey Report: Water Supply System Improvements Projects, Fiscal Years 2010-2011 – 2014/2015, Victorville Water District, San Bernardino County, California

3.2 NAHC SACRED LANDS FILE SEARCH RESULTS

The NAHC Sacred Lands File did not indicate the presence of any cultural places within the study area. Query letters were sent to tribal contacts provided by the NAHC requesting any additional information or concerns that they may wish to share about the proposed project; no responses have been received to date.

4. METHODS AND RESULTS

The study area is approximately 23 acres in size. Prior to survey, historical USGS topographic maps were consulted to identify and potential historic resources that may have been present. The study area was then examined with the field crew walking parallel transects spaced at 15-m intervals in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g., organically enriched midden soil). Special attention was paid to rodent burrow back dirt piles, in the hope of identifying subsurface soil conditions that might be indicative of archaeological features or remains. No cultural resources were collected during the survey.

The study area was surveyed on September 21, 2021. Soils throughout the study area are sandy-silty alluvium with volcanic and granitic lithic clasts ranging in size from gravel to small boulders. The study area currently consists of an empty field and road margins. Vegetative cover was minimal (see Figures 2a and 2b) and ground surface visibility overall can be considered very good and adequate for Phase I coverage.

4.1 INVENTORY RESULTS

No cultural resources of any kind were identified during the field survey. The study area had visible signs of disturbance evidenced by the crisscrossing two-track roads and is likely entirely disturbed due to its location near a major intersection and residential neighborhoods. Notable amounts of domestic trash were observed throughout the study area due to the proximity to an existing service station and the nature its location relative to the Interstate 15 access. This refuse included various types of beverage containers, food containers, auto parts, oil cans, broken glass, tires, lumber segments, segments of wire, asphalt, landscape rock, and landscape cleanup debris. This domestic debris has migrated into the surrounding landscape through both roadside dumping and natural processes.

5. SUMMARY AND RECOMMENDATIONS

An intensive Phase I archaeological survey was conducted for the Love's Travel Stop Project, Baker, San Bernardino County, California. A records search of site files and maps was conducted at the South-Central Coastal Information Center and a search of the NAHC Sacred Lands File was completed. These investigations determined that the study area had not been previously surveyed in its entirety and no sites had been recorded within or near it. No Native American sacred sites or cultural landscapes had been identified within or immediately adjacent to the study area.

No cultural resources of any kind were identified as a result of the survey. The study area has been previously disturbed by grading and disking activities.

5.1 RECOMMENDATIONS

An archival records search, background studies, and an intensive, on-foot surface reconnaissance of the Love's Travel Stop Project study area, Baker, San Bernardino County, California, were conducted as part of a Phase I archaeological survey. No cultural resources were identified during the survey and therefore the development of this project does not have the potential to result in adverse effects or impacts to historical properties or resources, and no additional archaeological work is recommended.

In the unlikely event that archaeological materials are discovered during construction of the project, it is recommended that a qualified archaeologist be contacted to evaluate the discovery.

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C-2: CONFIDENTIAL Appendix A to the Cultural Resources Assessment–Travel Stop

This appendix contains sensitive information relating to cultural resources and is not intended for public distribution pursuant to Public Resources Code Section 21082.3(C)(2). A copy of confidential Appendix C.2 is on file with the County of San Bernardino and is available to qualified professionals upon request.

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C-3: Cultural Resources Assessment–Mobile Home Park

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PHASE I SURVEY,
LOVE'S MOBILE HOME PARK PROJECT,
BAKER, SAN BERNARDINO COUNTY, CALIFORNIA

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MANAGEMENT SUMMARY

An intensive Phase I cultural resources survey was conducted for the Love's Mobile Home Park Project (Project), Baker, San Bernardino County, California. This study was conducted by ASM Affiliates, Inc. (ASM) with David S. Whitley, Ph.D., RPA, serving as project manager and principal investigator. ASM Associate Archaeologist K. Ross Way conducted the archaeological field survey and co-authored the report. Background studies and fieldwork for the survey were completed in September 2021. The study was undertaken to assist with California Environmental Quality Act (CEQA) compliance.

A records search of site files and maps at the South-Central Coastal Information Center (SCCIC), California State University, Fullerton, was completed on November 10, 2021. A search of the Native American Heritage Commission (NAHC) Sacred Lands File was completed on on October 4, 2021. Query letters were sent to tribal contacts provided by the NAHC; no responses have been received to date. These investigations determined that the study area had not been previously surveyed and no sacred sites or traditional cultural places had been identified within or adjacent to this area.

The Phase I survey fieldwork was conducted September 21, 2021, with parallel transects spaced at 15-meter (m) intervals across the study area. The total study area surveyed was approximately 2.55 acres.

No historical resources were discovered within the study area, and given the grading and off-road traffic disturbances present, the potential for buried subsurface remains is low. Based on these findings, the construction of the Project does not have the potential to result in adverse impacts to significant historical resources or properties, and no additional cultural resource studies are recommended. In the unlikely event that cultural resources are identified during project construction, work should be halted within a 100-foot radius of the find. It is recommended that a qualified archaeologist be contacted to evaluate the newly discovered resource, at which point further mitigation, including subsurface testing, may be required to determine the discovery's eligibility for California Register of Historical Resources (CRHR).

1. INTRODUCTION AND REGULATORY CONTEXT

ASM Affiliates, Inc. (ASM) was retained by Lane Engineers, Inc. to conduct an intensive Phase I cultural resources survey for the Love's Mobile Home Park Project (Project), Baker, San Bernardino County, California. The purpose of this archaeological investigation was to assist with compliance with the California Environmental Quality Act (CEQA).

This current investigation included:

- A background records search and literature review to determine if any known archaeological sites were present in the project zone and/or whether the study area had been previously and systematically studied by archaeologists;
- A search of the NAHC *Sacred Lands File* to determine if any traditional cultural places or cultural landscapes have been identified within the area;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

David S. Whitley, Ph.D., RPA, served as principal investigator and ASM Associate Archaeologist K. Ross Way conducted the fieldwork and co-authored the report.

This manuscript constitutes a report on the Phase I survey. Subsequent chapters provide background to the investigation, including historic context studies; the findings of the archival records search; a summary of the field surveying techniques employed; and the results of the fieldwork. We conclude with management recommendations for the study area.

1.1 STUDY AREA LOCATION

The study area is located within the city limits of Baker, San Bernardino County, California (Figure 1). This places it in the western Mojave Desert, where it lies at an elevation of approximately 930 feet (ft.) above mean sea level (amsl). The Mojave Desert is a high desert occupying much of southeastern California and parts of southern Nevada, southwestern Utah, and northwestern Arizona. It is bounded on the north by the Great Basin Desert, on the south and east by the Sonoran Desert, on the west by the Tehachapi Mountains, and on the south by the San Gabriel and San Bernardino Mountains. The study area is approximately 16.5 miles (mi.) northeast of the Soda Mountains and Cronise Basin.

The study area consists of approximately 2.55 acres on the north side of Baker Boulevard between the intersections of Silver Lane and an existing Chevron service station. The Project study area is located in Section 29 in Township 14 North, Range 9 East (T9N/R9E), San Bernardino Base and Meridian (SBBM).

1.2 PROJECT DESCRIPTION

The proposed project consists of the construction of a Love's mobile home park on an approximately 2.55-acre plot on the northeast side of Baker Boulevard between Silver Lane on the north and an adjacent existing Chevron service station at 72922 Baker Boulevard along the western boundary. The Baker Post Office and additional housing developments are located adjacent to the project area on the north.

1.3 REGULATORY CONTEXT

1.3.1 CEQA

CEQA is applicable to discretionary actions by state or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely affected, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historical Resources (CRHR). In practice, the federal NRHP criteria for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC § 5024.1, Title 14 CCR, Section 4852 and § 15064.5(a)(3)).

Significant cultural resources are those archaeological resources and historical properties that:

(A) Are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Are associated with the lives of persons important in our past;

(C) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(D) Have yielded, or may be likely to yield, information important in prehistory or history.

Unique resources under CEQA, in slight contrast, are those that represent:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC § 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources.

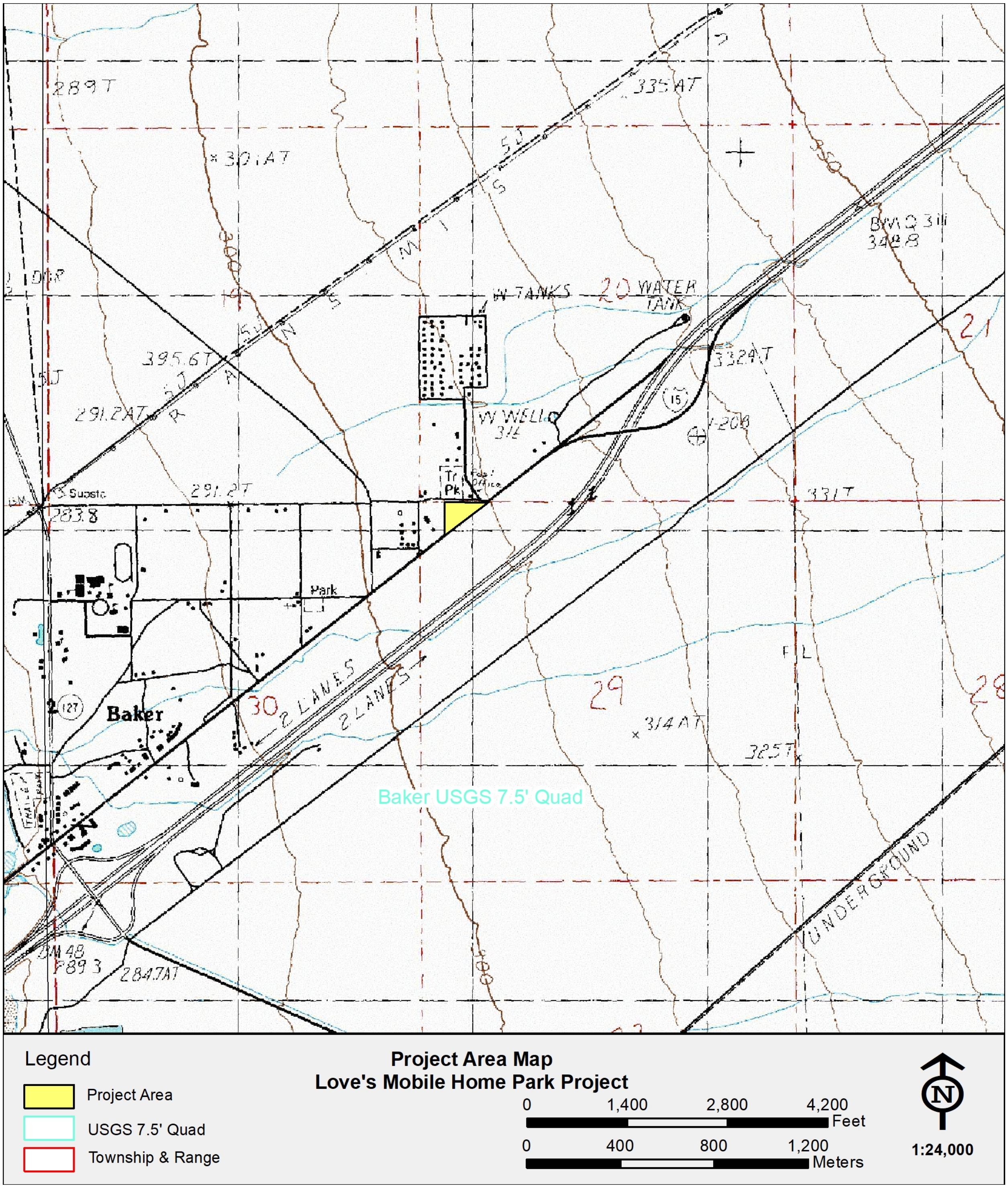

Figure 1. Location of the Love's Mobile Home Park Project study area, Baker, San Bernardino County, California.

2. ENVIRONMENTAL AND CULTURAL BACKGROUND

2.1 ENVIRONMENTAL BACKGROUND

At the time of the Phase I survey, the Project study area consisted of open desert land bounded by dirt roads with residences to the north and paved asphalt roads on the east and south (Figures 2a and 2b). Although the study area has been impacted by vehicle traffic and modern dumping, the landscape has likely not changed much historically. Vegetation in the study area currently and historically has consisted mainly of creosote bush and saltbush scrub (Schoenherr 1992).

Figure 2a. Study area from the western boundary adjacent to Baker Boulevard.

Figure 2b. Study area overview at eastern boundary, looking west.

2.2 ETHNOGRAPHIC BACKGROUND

The Cronise Basin and Soda Mountains region was occupied during historic times by the Numic-speaking Southern Paiute. The ethnohistorical record for this group has been synthesized by Whitley and Nabokov (2000). The following ethnographic description of this tribal group is summarized from their account.

The presence of Southern Paiute peoples north and west of the lower Colorado River was documented by the first known Euro-American contact, that of Escalante in 1776, and was consistently reiterated in subsequent accounts, demonstrating considerable time-depth for a Southern Paiute occupation of this region. Also recorded, however, are details about Southern Paiute territorial changes during the historical period, primarily the movements of the Chemehuevi, considered one of the Southern Paiute bands, by the nineteenth century. Las Vegas Band territory fell on the western side of the Colorado River as it trends southward toward the Gulf of California. Though it was centered in the Las Vegas Valley, it fronts the west side of the river to just below Eldorado Canyon, and then continues southward along the inland side of Eldorado and Newberry Mountains. It extends westward into the Mojave Desert to Soda Lake and the Old Dad Mountains, and to the edge of Death Valley. Chemehuevi Band territory extends south and west from that of the Las Vegas Paiute, again inland from the Colorado River until slightly below Needles, where it turned east and headed to the river. A narrow southward projection of Chemehuevi territory fronts the river past Parker to just below Blythe. Kelly (1939:129) has suggested that the Chemehuevi are a nineteenth-century offshoot of the Las Vegas Band. Regardless, the current study area appears to have fallen within the territory of the Las Vegas Band.

The Southern Paiute are primarily considered to have been hunter-gatherers although, in locally favorable circumstances, horticulture was also practiced. In general terms, a seasonal round involving transhumance was followed. The primary subsistence emphasis involved women's collected plant foods. Where agriculture was practiced, this fit into the seasonal rounds of hunting and gathering, thereby accommodating both subsistence practices. The seasonal round typically began at aggregation camps or villages during the winter. Subsistence during this period was based on the use of stored resources, primarily pinyon nuts but, in other areas, mesquite. Toward the end of the winter/early spring, when the stored resources were depleted, less palatable foods were sought, such as juniper berries, Joshua tree and agave shoots, and caterpillars and locusts. Winter villages dispersed at this time, with single family groups spreading across the landscape in search of low-density resources. As spring progressed, various seeds became available and were sought on the valley bottoms. If agriculture was practiced, fields were prepared at this time.

Summer activities included large game hunting, a subsistence effort reserved or men. Large game included deer, bighorn sheep, and, in some areas, antelope. Small game, obtained by all members of a band or a family, was probably more important as a source of animal protein. This included various species of rodents, lagomorphs, lizards, birds, and the slow-moving desert tortoise. Seeds and berries of various kinds were also collected during summer. Where possible, summer gathering moved into the cooler upland areas, where plants maturation was slower than on the hotter and drier valley bottoms. Late summer and early fall brought all aspects of Southern Paiute society to the gardens where the produce was shared, even among those who themselves did not farm. In late summer and early fall, the population moved into higher elevations for the pinyon harvest. In general terms, however, fall was a season of great mobility, with people moving up and down mountains to obtain and cache the winter foods. Additionally large game hunting occurred, and rabbit drives were also conducted on the valley floors. With the completion of the fall harvest, families moved back to their winter aggregation camps.

The Southern Paiute were organized socio-politically into matrilocal bands, led by a headman and assistants. Headmen were responsible for scheduling, organizing and directing subsistence activities, such as pine-nut and seed harvests, and rabbit drives. They also organized and directed dances and ceremonial fandangos and conducted the annual Mourning Ceremony. Many headmen were also shamans, and thus served simultaneously as religious officials.

Like most Native American hunter-gatherers, the Southern Paiute practiced a form of shamanism: specifically, a type of shamanism has been termed the "guardian spirit," "dream-helper," or "spirit helper" (Whitley 2000). The primary characteristic of the guardian spirit complex was the belief that supernatural power was derived from spirit helpers, typically acquired through dreams or visions. These spirits were often animal tutelaries or guides, although they could also be ghosts or natural phenomena (like the wind or thunder), all of whom were seen during an altered state of consciousness experience.

The shaman (*pohagunt*, "[man] having supernatural power"), as the ritual functionary of Southern Paiute society, entered the supernatural world, through a trance, to see, interact with, and thereby obtain spirit helpers. He maintained a special relationship with his spirit helpers thereafter and, if they should be animal in nature, he was bound by a special relationship with all of the examples of that particular species.

By and large, group rituals were predominated by ceremonial displays of shamanic power: most commonly, this was by publicly curing a sick individual. Also practiced was the Mourning Ceremony or “Cry,” which commemorated the deceased.

The practical aspect of the spirit helper complex is the fact that all success in life, whether concerned with esoteric or purely mundane matters, was thought predicated on supernatural power, *poha*. Numic religion, then, was in some senses organized around the principle of power. The result was that even non-shamans required some degree of supernatural potency to be successful, whether this was in marriage and child-bearing, in hunting, or in a favorite past-time, gambling. Inasmuch as supernatural power was itself a function of owning spirit helpers, it then followed that non-shamans too required some access to and assistance from a spirit helper, if they were to achieve even a modicum of success in their life. Shamans stood apart from non-shamans, then, not because they and they alone had a spirit helper; instead, they were different from the non-shaman because of the number of their spirit helpers, the intensity of their relationship with these spirit beings, and thus ultimately the quantity of power they maintained.

Myths served to both spell out in narrative form the nature of the Southern Paiute cosmology, and to fix it on the landscape. The cosmological structure of the universe consisted of five levels: the sky; the upper earth; the center earth; the lower earth; and the underworld. Charleston Peak, in the Spring Mountains northwest of Las Vegas, Nevada provided a natural model for the cosmological system, with ecological zonation correlating with the color symbolism that was associated with the different cosmological levels. Known as *Nuvugantu*, or “Snow Having,” Charleston Peak is widely recognized as the origin point for the Southern Paiute and Chemehuevi. It is inhabited by Ocean Old woman, the creator force, and thus is a location of great sacredness and power.

2.3 ARCHAEOLOGICAL BACKGROUND

Recent regional summaries of western Mojave Desert prehistory have been published by Sutton (1988a, 1988b), with syntheses of the related Coso area immediately to the north published by Whitley et al. (1988) and Whitley (1994, 1998). Based on these studies, as well as the more wide-ranging cultural historical frameworks for eastern California provided by Hester (1973), Bettinger and Taylor (1974), Elston (1982), and Warren (1984), regional prehistory can be discussed in terms of a series of cultural historical periods, starting with the earliest evidence for human occupation in the western hemisphere.

In needs be noted, however, that this cultural historical record is profitably viewed in the context of the changing environmental and climatic conditions which have characterized this portion of the Mojave Desert during the prehistoric past. We begin, accordingly, with a brief paleoenvironmental summary.

Paleoenvironments in the western Mojave Desert

Pertinent reconstructions of paleoenvironmental conditions have been provided by Elston (1982), Weide (1982), and Grayson (2011), among others. A recent synthesis and precipitation model developed for the Edwards Air Force Base (AFB) area by Ramirez and Bryson (1996) provides a surrogate for regional climatological studies. Based on their analysis and review, Ramirez and Bryson outline the major transitions from the last glacial maximum during the Pleistocene, at 18,000 YBP (years before present), to modern conditions. Overall, this period witnessed a reduction in annual rainfall of about 55 percent at Edwards AFB, representing an absolute loss of 194 mm (~7.5 inches) of precipitation to the current annual mean of about 147 mm (~6 inches). Equally importantly, this reduction in rainfall also occurred to different degrees in the Tehachapi and San Gabriel Mountains, which are the sources for much of the groundwater in the Mojave. For the Tehachapis, the proportional reduction was 57 percent, but this represents an absolute loss estimated at 323 mm (~13 inches) of rain annually, whereas for the San Gabriels it was even more extreme. There the reduction over 18,000 years was fully 76 percent of the Pleistocene estimate, translating to -850 mm or about -34 inches annually. As is immediately clear, the transition from the Pleistocene has involved a major desiccation overall in this portion of the west.

In general terms the late Pleistocene (18,000-11,000 YBP) was not as severe in the western Mojave Desert as is sometimes assumed, nor was the transition to modern conditions as regular as once believed. Winters were probably slightly milder than they currently are, with summers somewhat cooler. Subalpine coniferous woodlands probably covered most valley floors with bristlecone, pinyon, and limber pines. Ramirez and Bryson (1996) have however identified two major tendencies during the late Pleistocene, based on their precipitation modeling. From about 17,750 to 14,750 YBP, they posit a dramatic reduction of about 10 percent in rainfall. Allowing for standard errors in chronological measurements, potential lag times in response rates and minor regional variations, this period corresponds reasonably well with the history of Pleistocene Lake Searles, north of Barstow near Trona, which is thought to have reached its maximum high-stand at about 16,000 YBP, and then to have gone into negative hydrological conditions until about 13,000 YBP. The period from about 14,750 to 12,100 YBP according to these researchers is, in contrast, marked by greater climatic variability; overall desiccation is estimated at only 3 percent.

Conditions change dramatically between 12,100 and 10,100 YBP, during the so-called terminal Pleistocene. Ramirez and Bryson (1996) estimate a significant drought during this period, representing a 31 percent reduction in precipitation. This corresponds to what archaeologists have termed the “Clovis drought” (Haynes 1991; discussed below). In the Mojave Desert, all Pleistocene megafauna were probably extinct by the end of this time period.

The early Holocene, from about 10,100 to 8100 YBP, in contrast, is much more moderate, with comparatively mild oscillations and a reduction of only 5 percent in precipitation. However, minimally by 8100 YBP the Pleistocene vegetation regime can be (conservatively) assumed to have retreated, with woodlands restricted to higher elevations and therefore much more limited in overall extent.

Conditions deteriorated markedly thereafter, during the middle Holocene, within which Ramirez and Bryson (1996) identify two periods. From about 8100 to 6700 YBP, a significant decline in rainfall occurred, with a reduction estimated at 16 percent. From this point to about 4300 YBP conditions continued to decline, but less dramatically so. Loss in precipitation during this 3,400 year stretch is only estimated at about 9 percent. These data correlate closely with Bach's (1995) independent analysis of dune activity in the western Mojave. He estimated that Holocene dune building peaked between about 8000 and 5000 YBP.

This middle Holocene period corresponds generally to a posited dry and hot period called the Altithermal (discussed below). Although the existence and/or nature of the Altithermal is debated and in some cases is even denied for the southern Great Basin (e.g., Weide 1982), in general terms Ramirez and Bryson's (1996) precipitation model supports its continued relevance in local archaeological reconstructions.

This point is further emphasized by the next climatic phase, from about 4300 to 1900 YBP, where precipitation conditions reversed and an estimated 17% *increase* in rainfall is seen as occurring. Notably, and based on archaeological evidence, Whitley (1994, 1998, 2000; Whitley et al. 1988) has argued that improved environmental conditions immediately after the Altithermal—which is to say during this period—resulted in a major human demographic increase and adaptive radiation into new environments throughout south-central California.

At about 1,900 years ago, however, conditions are thought to have returned to what they were at 4300 YBP, and to have stayed in this same general range ever since. The modern vegetation regime can be confidently assumed to have been in place at this point. However, the lowest precipitation level is estimated to have occurred only about 300 YBP, during what is essentially the Protohistoric Period (Ramirez and Bryson 1996). Although it is then easy to characterize the changing environmental conditions over the last 18,000 years as involving major desiccation, this more detailed exposition shows that this long-term tendency involved significant oscillations, and these oscillations were of such magnitude that they probably had significant impacts on prehistoric human populations.

More recently, Meek (1999) has outlined aspects of the complexity of the central Mojave Desert lake basin prehistory, emphasizing the importance of the Mojave River in understanding this prehistoric record. Instead of filling from Fremont Valley, Meek argues instead that the Harper basin (which has a highest shoreline of 2155 ft.) filled from the Mojave River in a series of episodes, all of which occurred prior to ~21,500 YBP. Subsequently the Mojave River emptied into various different basins as a result of changing geomorphological conditions, including Coyote, Cronese, Troy, and Afton basins, and Soda and Silver lakes. No single basin, then, contains a complete paleoclimatic history for the region, and the rising and declining water levels in these basins may not be a result of simultaneous paleoclimatic changes.

With this overview of regional paleoclimate, it is then appropriate to turn to the regional prehistoric record.

Pre-Clovis (earlier than 11,200 YBP)

Perhaps the most long-lived problem in New World prehistory has been the question of the antiquity of first human occupation, with two positions dividing the discipline: the Pre-Clovis or long chronology, which posits a late Pleistocene first-migration at some undetermined point prior to 11,200 YBP; and the Clovis-first, or short chronology hypothesis, which argues for an initial migration at the immediate end of the Pleistocene, now set at 11,200 YBP. Historically, the Mojave Desert region has played an important role in this debate due to the presence of putative early sites in Panamint Valley and around Pleistocene Lake China—the Coso Range region to the north of the study area, in the Ridgecrest and Trona region. E.L. Davis (e.g., 1978), in particular, argued for the presence of Pre-Clovis sites in this region based on three lines of evidence:

(1) typological similarities between surface lithic tool assemblages in this region and well-dated typologies in the Old World;
(2) the locational context of certain surface sites on well-dated Pleistocene lake terraces and sediments; and
(3) the association between surface cultural artifacts and dated paleontological remains.

Because Davis' evidence consisted of surface finds that were largely based on typological comparisons which were never directly dated using chronometric techniques, her conclusions were not widely accepted in the profession. More recently developed evidence (Dorn et al 1986; Whitley and Dorn 1988, 1993; Whitley et al. 1999a, 1999b; Whitley 1999, 2000), however, suggests an occupation of the region at least as early as 15,500 YBP. These dates were obtained from the direct dating of the rock varnish coating petroglyphs and surface lithic tools, using two independent chronometric techniques: cation-ratio dating, which provides calibrated ages; and the analysis of varnish micro-stratigraphy, which provides relative age control and has independently confirmed the cation-ratio dates.

Based on these techniques, Whitley and Dorn have obtained a suite of five Pre-Clovis age petroglyphs from the Coso area alone (in addition to a number of Holocene-dated specimens). These range in age from 16,500 $\pm$1000 RYBP (radiocarbon years before present) to 12,000 $\pm$600 RYBP. In addition, in the Rodman Mountains, southeast of Barstow, a petroglyph independently identified by a paleontologist as a possible late Pleistocene camelid has been dated by these same techniques to about 12,000 RYBP; these animals were extinct in the Mojave Desert by about 10,000 years ago (Whitley 1999). Most recently, advancements in the analysis of varnish micro-stratigraphy allow for the identification of diagnostic temporal signals in SEM varnish thin-sections. Key micro-stratigraphic signals are present in the varnish thin-sections at the Pleistocene-Holocene transition, and at approximately 14,000 and 21,000 YBP. Coso petroglyphs older than 14,000 years based on cation-ratio dating display the 14,000 micro-stratigraphic diagnostic but not the 21,000 YBP signal, thus demonstrating that this chronometric technique is correctly placing them in the proper part of the Pleistocene.

The best example of multiple lines of evidence supporting the validity of these Pre-Clovis ages is provided by a spiral motif from the Little Lake site, located on the western edge of the Coso range, near Highway 395 (Whitley et al. 1996). The cation-ratio age for this petroglyph is 14,500 $\pm$1300 RYBP. The petroglyph exhibits the 14,000 but not the 20,000 years micro-stratigraphic signature.

Equally importantly, this petroglyph is located on a talus scree slope which rests on the Pleistocene channel of the Owens River, and thus the petroglyph must post-date the age of this river. The dating of this river channel, which occurred after the petroglyph had been dated, indicates that it stopped flowing at approximately 16,200 RYBP (Cerling and Craig 1994). The combination of the micro-lamination evidence and this geomorphological data brackets the age of the petroglyph between 14,000 and 16,200 years, an age range which corresponds correctly with the CR age of 14,500 RYBP.

Although there is controversy concerning these early dates from the Cosos and other parts of the Mojave Desert, there is increasing evidence that they are probably correct. This evidence includes the replication of these two techniques by a variety of labs and researchers worldwide. Moreover, there are a certain related circumstances that greatly bolster the Pre-Clovis position more generally (Whitley and Dorn 1993). First, attention to the geomorphology and paleoclimatology of the latest Pleistocene indicates that the Pre-Clovis period was one of net erosional degradation. Lowered eustatic sea-levels combined with a series of major flood events resulted in the stripping of sediments in major portions of North America, rather than the gentle forms of deposition that are required for archaeological site preservation. A general exception to this pattern occurred however in the Basin and Range Province, which includes the study area, where a variety of geomorphological contexts preserve late Pleistocene surfaces. Boulders and cliff faces containing rock art are one of these, as these contexts were not subjected to this erosional destruction. There are, thus, few extant geomorphological contexts within which Pre-Clovis finds could be expected to be found in North America, albeit those that might exist are most likely to be found in the Great Basin.

Second, changes in this net erosional or depositional regime explain why there is a sudden "explosion" of later Clovis age sites and a relative dearth of Pre-Clovis sites in the archaeological record: The Clovis sites appear at exactly the point when the geomorphological conditions change to favor site preservation.

Third, archaeological evidence from South America has included a number of well-dated Paleoindian sites falling between 10,000 and 11,200 YBP. As pointed out recently (Whitley and Dorn 1993), it would have been physically impossible for first migrants to have entered North America sometime after 12,000 YBP and to have colonized South America within 1,000 years. This would require rates of population growth unheard-of for human beings, and migration speeds that are manifestly implausible. Thus, even the South American Paleoindian evidence tends to discount the likelihood of the short chronology for the peopling of the New World.

Finally, there is now also compelling evidence for an immediately Pre-Clovis site in South America: Monte Verde, Chile (Dillehay 1997), dated to around 12,000-13,000 RYBP. This site and its widespread acceptance by the archaeological community makes entirely implausible the argument that humans only arrived in the Americas 11,200 years ago.

Although the evidence, accordingly, is mounting for the Pre-Clovis occupation of eastern California, per se, at this point there is relatively little that can be said about this occupation, beyond the simple argument for its presence. Until additional evidence is presented, we will not be able to determine whether Pre-Clovis peoples were sedentary or mobile, or big-game hunters versus foragers.

Paleoindian (11,200 - 9000 YBP)

Although the initial occupation of the continent is controversial, there is widespread agreement on the subsequent Paleoindian period, which is typically viewed as pertaining to mobile big-game hunters who exploited Pleistocene megafauna. The hallmarks of the Paleoindian period are the fluted, collaterally-flaked and basally-thinned and -ground Clovis and Folsom spear points, during the earlier portions of the period, followed by a series of large, well-flaked but unfluted lanceolate points towards the end of the period, some of which are stemmed. Some scenarios suggest that the big-game hunting practiced by these Paleoindian peoples may be responsible for the extinction of the Pleistocene megafauna, such as Imperial Mammoth, *Bison antiquus*, and the North American horse. Aside from this so-called Pleistocene overkill problem, the image of Paleoindians as specialized big-game hunters has become pervasive for North America though it is far from proven in all parts of the continent. Recent evidence, however, indicates that the earlier portions of the Paleoindian period comprised a lengthy and severe drought, thus demonstrating that the large mammal herds were already under extreme environmental stress, regardless of the effects of human predation (Haynes 1991). As noted above, paleoclimatic reconstruction in the vicinity of the study area indicates that a drought also occurred in this specific region (Ramirez and Bryson 1996), further supporting the notion that all Mojave Desert populations—human and animal—existed in stressed conditions at that time.

Very substantial although sometimes overlooked evidence of Paleoindian use of eastern California has been found in a number of areas, including Pilot Knob Valley, northeast of the study area; on the shores of Pleistocene Lake China and within the Coso Range, per se; in Fort Irwin, northeast of Barstow; at Boron, to the west; in the El Paso Mountains, north of the study area; and in the Tehachapi Mountains, further to the northwest (e.g., Glennan 1971, 1987; Davis 1978; Warren and Phagan 1988; Yohe 1992a). According to Warren and Phagan (1988), only seven fluted points had been found in the Mojave Desert, although their tabulation apparently excludes the region north of the Garlock Fault, and thus the Coso-Panamint-Death Valley area. To this list, however, we can add four Paleoindian points from the Coso Range and Rose Valley, three from Pilot Knob Valley, and another basally-thinned point which is on display at the Death Valley National Monument Visitor Center which apparently was found within the monument. To these can also be added four fluted point bases from the Edwards AFB area (Mark Campbell, personal communication, 2000) and a fluted point base and approximately 10,000 YBP radiocarbon date from Boron. Even more importantly, *49* fluted points were recovered by Davis (1978) around China Lake, substantially bolstering the evidence of Paleoindian use of this general region. Clearly, there was very substantial Paleoindian occupation of this area.

Typically, the Paleoindian evidence consists of isolated (in some cases reused) Paleoindian projectile points, although there is also evidence for Paleoindian petroglyph manufacture in the Cosos (Whitley and Dorn 1987, 1988; Whitley et al. 1999a, 1999b). Furthermore, an obsidian Paleoindian point from the central Mojave Desert (Sutton and Wilke 1984) and another from the Rose Spring site (Yohe 1992b) have been sourced to the Coso Sugarloaf Quarry. When combined with the large number of points collected by Davis (1978) around China Lake, it is clear that this area was very important for these early occupants.

Although it is likely that Paleoindian habitation sites are somewhere preserved in the region, they have yet to be found and a better understanding of the Paleoindian period in this portion of eastern California will only be obtained when such sites are discovered and investigated (cf. Warren and Phagan 1988). In the meantime, growing evidence for Paleoindian occupation on the off-shore Channel Islands (e.g., Morris and Erlandson 1993), with the maritime adaptation this implies, suggests that the monolithic interpretation of all North American Paleoindian period sites as necessarily a product of specialized big-game hunting may be incorrect, and that more regional subsistence variation may emerge once better evidence from the far west has been discovered and analyzed (cf. Willig and Aikens 1988).

Early Archaic (9000 - 6000 YBP)

The Early Archaic period, or so-called Western Pluvial Lakes Tradition, represents the early Holocene in paleoenvironmental terms. Its hallmark is generally considered to be the widely dispersed but ambiguously dated Western Stemmed Tradition projectile points. These include the local variants known as Lake Mohave and Silver Lake points, which may in fact actually date between 10,500 and 7500 YBP and thus be partly coeval with fluted points. Combined with studies of the lithic technologies of Early Archaic and Paleoindian sites, this chronological overlap suggests that the Western Stemmed Tradition may have been an in-situ development out of the earlier Paleoindian tradition (Willig and Aikens 1988).

Early Archaic sites are most commonly found on the lowest terraces above latest Pleistocene and early Holocene lake basins and stream deltas. (Notably, fluted points are also sometimes found at these same sites and geomorphological locations, contributing to the chronological ambiguity of both point types). Early Archaic sites are, accordingly, widely regarded as part of a lacustrine-focused adaptive strategy. Although a number of authors have cautioned against too simplistic an interpretation of these associations, pointing to the fact that Early Archaic sites are also found in other environments, it nonetheless is apparent that, in eastern California at least, this environmental association and its inferred subsistence implications maintain some verity. Indeed, it can be noted that recent research in the Great Basin has exactly emphasized the general importance of lacustrine adaptations in general terms, in contrast to Jennings' (1957) earlier model of a long-lived "desert culture" tradition.

Be these controversies as they may, Davis (1978; Davis et al. 1969) has identified and discussed the importance of a number of putative Early Archaic sites in the Panamint region. These are located in both the China Lake Basin and the Panamint Valley in former lacustrine environments, and are indicative of the fact that some lakeshore use if not occupation did occur during the early Holocene in this region. However, this must be matched against the fact that Western Stemmed Tradition points have also been recovered as isolates in upland environments in the Cosos (Elston et al. 1983). Thus, although lakeshore exploitation may have been an emphasis during the Early Archaic in this portion of eastern California, this period apparently also included mobile hunting in other environments as well.

Middle Archaic (6000 to 4000 YBP)

Be this early evidence as it may, what is incontrovertible is that, regardless of date of *initial* occupation, *substantial* inhabitation did not occur until much later, with the start of the Middle Archaic or Pinto Period, at about 6000 YBP. This lasted until approximately 4000 YBP. A number of sites from this time period are known from the Rosamond area, specifically associated with the prehistoric shoreline of Rosamond Lake. Notably, sites dating to this time period apparently emphasize the use of rhyolite as a lithic resource, almost to the exclusion of cryptocrystallates such as chert and jasper (Sutton 1988a, 1988b).

The Middle Archaic, however, corresponds essentially to the Altithermal paleoenvironmental period, and is a controversial topic in Mojave Desert prehistory due to its cultural and chronological ambiguity. That is, aside from the controversy concerning the nature of the *paleoclimate* during this period, as discussed above. Much of the *archaeological* ambiguity instead stems from the uncertainty in the chronological placement of the Pinto series projectile points. Seemingly, there are as many chronological scenarios for the placement of Pinto points as there are archaeologists working on the problem (cf. Meighan 1981; Jenkins and Warren 1984). What this ultimately may suggest is that much more regional variation existed during certain periods of the prehistoric past than is currently being recognized.

In the Coso area to the north, but not necessarily elsewhere in eastern California, there is little if any evidence for Middle Archaic occupation, at least if Meighan’s (1981) obsidian hydration date revisions for the Pinto series points from the Little Lake site are accepted. That is, existing evidence could be interpreted to signal a diminution in occupation, if not an outright abandonment, in this region, apparently corresponding to the hot and dry climatological conditions of the Altithermal. However, it is also possible that local inhabitants may have adopted a subsistence strategy and settlement pattern with little archaeological visibility on the landscape during this period; e.g., a highly mobile pattern. Although this alternative interpretation of the apparent dearth of Middle Archaic sites must be acknowledged, it seems implausible in light of the fact that extremely dry conditions would be more commonly predicted to result in a stronger form of “tethered nomadism,” and thus greater archaeological visibility, around water sources. Moreover, there is very clear evidence for Middle Archaic settlements in the Fort Irwin area (e.g., Jenkins and Warren 1984), to the east of Barstow, suggesting that not all portions of eastern California were abandoned at this time; again, emphasizing the possibility of more regional variability than heretofore acknowledged.

Late Archaic (4000 to 1500 YBP)

Much less controversy surrounds the subsequent Late Archaic period, or Elko Period, lasting from about 4000 to 1500 YBP, which correlates with improved and wetter environmental conditions across the far west, including within the study area, as Ramirez and Bryson’s (1996) reconstruction indicates. Although sites from this time period are sometimes considered rare in the Mojave Desert, it is notable that many of the subsequent Rose Spring Period villages (see below) were first occupied during this earlier phase. That is, as has been noted by a number of authors, there seems to be a strong continuity between the Elko Period and subsequent times, with the latter period materials masking or burying the Elko remains. In the Antelope Valley region this begins with a major increase in population beginning about 3000 YBP (Sutton 1988b:23).

Similar patterns have been noted in surrounding regions. For example, the start of the Late Archaic in the Coso Range region, to the north, is posited to represent the initial establishment of the primary settlement and subsistence systems that are currently archaeological visible (Whitley 1994, 1998), while this same period has been recognized as experiencing a major, far western North American-wide expansion of settlements into new environments and increases in population, stretching from the Great Basin of eastern California, through the southern Sierra Nevada, across the Transverse Ranges, and down to the coast (Whitley et al. n.d.). The primary temporal diagnostics for the Late Archaic are Elko and Gypsum series projectile points.

In the Coso Range, the Late Archaic is signaled by the establishment of major winter villages, typically at springs, in valley bottoms on the western and wetter side of the range. Analyses of paleoethnobotanical and faunal remains suggest a generalized foraging strategy, emphasizing all available resources (e.g., Gumerman 1985), including buckwheat stands around small mud-playas (Whitley et al. 1988). This evidence is complemented by an extensive but seemingly non-logistically organized use of all upland environments. Included here is a significant quantity of isolated projectile points in the uplands, suggesting mobile hunting patterns (Elston et al. 1983). Furthermore, the Late Archaic witnessed the beginning of the intensive exploitation of the Coso Sugarloaf obsidian quarry, an event that apparently correlates with the beginning of the inland-to-coastal obsidian trade in south-central California (Whitley et al. n.d.).

Rose Spring (1500 - 800 YBP)

The Rose Spring Period is differentiated from the earlier Late Archaic/Elko Period by the introduction of the bow and arrow and a change from spear points to arrow points at circa AD 500 (cf. Yohe 1992a). This transition is, in technical terms, dramatic. In fact, the introduction of this new weaponry technology probably did not have any immediate major impacts on social or cultural systems. At least initially, the settlement and subsistence systems were stable, and lithic technology and production did not noticeably change (Allen 1986).

Moreover, and as implied above, in all other respects Rose Spring times appear to have been a continuum from the earlier patterns, so that the change in hunting technology was probably less important than we might otherwise presume. Within the Antelope Valley area, Desert Village Complexes, representing a major change in magnitude of settlements, were founded at least by Rose Spring times, and perhaps towards the end of the earlier Elko phase. Two of these have been identified by Sutton (1988a, 1988b) in the foothills of the Antelope Valley, with a third between Rosamond and Rogers Dry Lake, and a possible fourth at Koehn Lake. It is possible, if not likely, that these represent the founding of the tribelet system of political organization in the region.

At approximately AD 1000-1200, however, a shift in settlement and subsistence practices began that, ultimately, culminated in the protohistoric/ethnographic patterns referred to as the Later Prehistoric or Numic Period (discussed below). This involved the abandonment of some winter villages (or at least a reduction in the intensity of their use); the establishment of logistical base camps around springs in the upland environments; an increasing emphasis on a relatively specialized diet focused on seeds and the pinyon nut; and a great increase in the production of petroglyphs (Whitley 1994). That is, settlement patterns became more organized and focused, while subsistence was increasingly specialized, and ritual became more common.

The causes for this transition are not yet fully understood. Bettinger and Baumhoff (1982), for example, have accepted it as an empirical fact, with the subsistence change then linked to the putative spread of Numic peoples out of eastern California at about this time. They have then taken the position that the phenomenon to be explained is not the cause of the subsistence change, but the reasons why such a change was adaptively more successful, and how it can then be used to account for the historical distribution of Numic languages. The implicit assumption in such an approach is that evolutionary transitions are to be expected due to the inherent tendency for greater fitness to emerge in populations.

While this last tendency may or may not be so, it overlooks pertinent related evidence; namely, that this same time period experienced a major drought that effected all portions of western North America, from northern Mexico through the Southwest, across the Great Basin, and even into the Channel Islands. Moreover, the environmental stress engendered by this drought has been cited as a causal factor in the abandonment of Anasazi pueblos in the Southwest, as well as the southward retreat of Mesoamerican civilization with the collapse of Tula. Perhaps more to the point, Arnold (1993) has noted the influence of this drought in creating resource stress that was a contributing factor to the appearance of a simple chiefdom in the Chumash region near Santa Barbara. Similarly, Whitley (1994, 1998) has argued that this transition in eastern California represents the first appearance of Numic bands and headmen; specifically, that it was the increasing perceived need for ritual specialists in the form of rain shamans during this period of environmental degradation that led to the establishment of bands and the creation of headmen. In this interpretation, the accelerated production of Coso petroglyphs (which are known ethnographically to have been tied to rain shamanism) is taken as a reflection of the growing number of ritual specialists, with the appearance of a logistically-oriented settlement pattern a sign of increasing sociopolitical control and organization.

Late Prehistoric (800 - 140 YBP)

The Late Prehistoric (or, in some areas, Numic) Period, from 800 YBP to the Historic Period, represents a continued growth in local population, with numbers of people apparently quite high. It is distinguished from previous Rose Spring times by the introduction of brownware ceramics and a change in projectile point types: from Rose Springs types to Desert Side-Notched and Cottonwood Triangular. Sutton (1988a, 1988b) notes that a boundary of some sort developed during this period: Desert Side-Notched points, brownware ceramics and obsidian are all common from the Fremont Valley northward; south of this area, in the Antelope Valley proper, ceramics and obsidian are rare, and Cottonwood Triangular points are the predominant projectile point type. This apparently correlates with similar patterns further towards the coast: at about 800-1,000 years ago the desert-to-coast obsidian trade dried up, and Rose Spring-like projectile points were replaced by Cottonwood-like points, with Desert Side-Notched points rare.

The Protohistoric/Historic phase of the Late Prehistoric, representing the last 300 years, is apparently marked by a major disruption in indigenous settlement, and a corresponding paucity of sites. According to Earle (1990), missionization pulled many of the region's inhabitants away. Note, however, that ~300 YBP also represents a brief period of extreme drought, as indicated by Ramirez and Bryson's (1996) paleoclimatic model. Hence deteriorating environmental conditions may have contributed to social disruptions combined with the introduction of new diseases, all of which would have had detrimental effects on the local population. Subsequently, the Antelope Valley area was used as a staging ground for rustlers and other miscreants, who were raiding the missions' livestock. The result was that the area became somewhat of a no-man's land which, no doubt, has also contributed to the paucity of ethnographic information on it.

2.4 HISTORICAL BACKGROUND

Overviews of Mojave Desert Euro-American history have been published by Peirson (1970), Smith (2006), Stickel et al. (1980), and Vredenburgh et al. (1981). The brief sketch presented here summarizes these sources, with an emphasis on mining history in the region.

Initial Euro-American interest in the Mojave Desert emphasized exploration and travel, initially with the desert area representing little more than an impediment in east to west movements. Francisco Garcés was the first Euro-American credited with crossing the desert. He was a member of Captain Juan Bautista de Anza's 1774-5 expedition, which was tasked with finding an overland route for supplies, livestock, families, and missionaries from New Spain to the coastal settlements of Alta California. Garcés was followed sporadically by a series of additional explorers, including Jedediah Smith (in 1826), George C. Yount (1927), James O. Pattie (1828), and Ewing Yound (1829). In 1830, Antonio Armijo, a Mexican merchant, took the first caravan of pack animal from Santa Fe, New Mexico, all the way across the Mojave and through Cajon Pass. Armijo's route became known as the Spanish Trail and it served as the main caravan route between Santa Fe and Los Angeles.

California by the early 1850s had become a part of the United States (U.S.), and was experiencing significant immigration, at least partly, if not largely, due to the 1849 Gold Rush. One result was the need for a transcontinental railroad. In 1853, four surveys were organized by the War Department to find the most practical route to the Pacific. Lt. Robert Stockman Williamson led a survey of the Mojave Desert for this effort. At about the same time, other federal agencies began to sponsor land surveys in and around the Mojave Desert. In 1852, the Boundary Commission sent Col. Henry Washington to erect a baseline monument on Mt. San Bernardino, which became a fixed reference point for all future southern California surveys. In 1855, Washington was dispatched into the central Mojave. The first transcontinental railroad was completed in 1869, linking the Central Pacific and Union Pacific lines.

Westbound wagon traffic also increased in the late 1850s along the Spanish Trail or, as it was then known, the Mormon Road (which ran south of the Cima Volcanic Field and hence south of the study area). This ultimately led to a rise in hostilities between native people still living in the desert and the immigrants. In an effort to protect U.S. citizens, the government sent out military detachments to construct and man various redoubts and forts in the Mojave Desert. Some of these were located near the Colorado River, including Fort Mojave (active by 1859) and Camp Cady (ca. 1860), but others were erected at Marl Springs, Rock Springs, and Bitter Springs. The presence of the military in the desert temporarily worsened conditions, resulting in battles and the forced removal of indigenous Native Americans to reservations, but by the early 1870s much of the conflict had ceased.

Baker was founded as a station on Borax king Francis Marion Smith's Tonopah and Tidewater Railroad (T&T) in 1908. The town was named for Richard C. Baker, business partner of Smith, in building the railroad. The railroad was built not only to tap into the gold mining camps of the region, but to open up the wealthy Death Valley colemanite beds. Baker later became president of the T&T himself (Bright 1998; Hildebrand 1982; Lingenfelter 1986).

2.4.1 Mining

Mining also played a significant role in Mojave Desert history. Mining by Americans began in the 1860s, although many discoveries did not develop for several decades until the costs of production and transportation were reduced by the railroad. Before the arrival of Euro-Americans in the area, Ancestral Puebloan people mined for turquoise at several sites in the eastern Mojave including Halloran Springs, and persistent traditions of Spanish and/or Mexican mining activity tantalized early American miners. Some of the soldiers stationed at the remote outposts along the Mojave Road, especially in the vicinity of Marl Springs, are thought to have conducted small-scale exploration in 1860. The following year, gold was discovered in the Vanderbilt area, but 30 years passed before this deposit was developed. In 1863, prospectors discovered silver and subsequently formed the Rock Springs Mining District, also known as the Macedonian Mining District. The intensive isolation of the area made profitable excavation almost impossible, and troubles with Native Americans caused its abandonment by 1866.

The first significant mining activity began in the mid-1860s, and profitably produced silver for more than a decade despite difficulties caused by geographic isolation. In 1865, prospectors discovered silver on the north side of Clark Mountain, and organized the Clarke Mining District that July. The mountain was named after the district, itself labeled in honor of William H. Clarke of Visalia, California, owner of the popular saloon. Ivanpah (later called Old Ivanpah) was the main town, located in the heart of the Clark District (west of the current study area). The Clarks, described by one modern author as "the most important [mineral area] . . . of all San Bernardino County," produced a considerable amount of silver between 1869 and 1880, when profits began to decline and people moved away. The district hung on until the late 1890s, when a crash in the price of silver ended mining there. The extraordinary remoteness of the area caused profitability problems as well.

The other major mine before the turn of the twentieth century was the Bonanza King Mine, located near the present 7IL Ranch. Discovered in 1880 by Ivanpah prospectors, the Bonanza King produced rich silver ore until 1885, and sporadically thereafter. The mill, believed to have been near the current 7IL Ranch headquarters, burned in 1885 and was not immediately rebuilt.
Later owners revived the mine several times, most significantly between 1905-1907 and 1915-1920. Bonanza King workers lived near the mine in the town of Providence, where stone ruins still stand. The profitability of the mine was helped by the construction of the Atlantic & Pacific

Railroad to the south; Bonanza King Stock was listed on the New York Stock Exchange, and output eventually totaled more than one and a half million dollars.

Railroads helped stimulate mining in the Mojave. The Atlantic & Pacific was completed in 1883, but had little effect on the Ivanpah mines, which were already in decline. Beginning in 1893, the Nevada Southern Railway, built north from Goffs to Barnwell, tapped the Vanderbilt area, the Sagamore Mine, and other potentially profitable ventures, and helped stimulate prospecting and small-scale mining in the area. Just after the turn of the century, that railroad extended branches from Barnwell through the New York Mountains to the Ivanpah Valley, as well as to Searchlight, both of which coincided with additional mining activity.

The "Great Years" of mining in the eastern Mojave, so named because adequate capital financed substantial production of both precious metals and industrial metals, came between 1900 and the end of World War I. In 1900, a boom at Tonopah, Nevada, sent prospectors throughout the desert region, and a large number of claims were staked in the Mojave. Several Mojave mines were big producers. The Cooper World, in the Clark Mountains, produced 100 tons each day, making it one of the larger cooper mines in California at the time. The Von Trigger Mine, later known as the California Mine, produced 30,000 tons of copper between 1907 and 1909. The Paymaster Mine, discovered in 1900 on the slope of Old Dad Mountain, produced some $75,000 worth of gold between 1910 and 1914. These small bonanzas were short-lived. The depression that followed World War I caused substantial contraction of mining nationwide; small producers like those in the Mojave simply found it impossible to operate economically.

The Great Depression sparked an increased in gold mining in the Mojave Desert. The Depression caused an increase in the price of gold, and labor expenses were low. These factors, combined with another key ingredient, described by one author as "men not having much else to do," caused a surge of gold mining activity in the area. The Colosseum Mine (located in the Clark Mountains), discovered as early as 1880 but never mined comprehensively began substantial production in 1929; and the Telegraph Mine, first located in 1930, produced $100,000 in gold between 1932 and 1938.

The entrance of the U.S. into World War II in late 1941 prompted a change in mining activity in the eastern Mojave, accelerating a shift from production of precious metals to excavation of industrial minerals. During World War II, mining of almost all precious metals was halted by executive order to free resources for America's war effort. Some resources made more valuable by the war were found in the eastern Mojave, including cooper from several small mines, and tin and tungsten from the Evening Star Mine. The most important wartime production came from the Vulcan Mine in the Providence Mountains, which supplied iron ore for the blast furnaces of Kaiser's Fontana steel mill and turned Kelso into a boom town of 1,500 people.

After the shutdown of the Vulcan Mine in 1948, much of the remaining mining activity in the eastern Mojave focused on salable materials such as cinders. The Aiken Cinder Mine and the Cima Cinder Mine both began operation around 1948, and profitably worked their deposits through the 1990s. The primary exception to the focus on saleable minerals was the Mountain Pass Mine (now Molycorp Mine), which was purchased by Molybdenum Corporation of America in 1951 and has been one of the largest producers of rare earth elements in the world.

3. ARCHIVAL RECORDS SEARCH

An archival records search was conducted at the South Central Coastal Information Center (SCCIC) by SCCIC staff members to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study area; (ii) if the study area had been systematically surveyed by archaeologists prior to the initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. Additionally, a search of the NAHC Sacred Lands File was conducted in order to ascertain whether traditional cultural places or cultural landscapes had been identified within or adjacent to the study area. The results of these searches are summarized here and provided in Confidential Appendix A.

3.1 SCCIC RECORDS SEARCH RESULTS

The records search at the SCCIC indicated that no previous archaeological surveys had been completed within the study area; however, 15 surveys had been completed within 0.5 mi. of the study area (Table 1) with only one cultural resource identified (P-36-007694, Boulder Transmission lines).

Table 1. Survey Reports within 0.5 Mile of the Study Area

Report No	Year	Author (s)/Affiliation	Title
SB-00612	1978	San Bernardino County Museum	An Archaeological – Historical Assessment for the Proposed System Improvements for a Water System Master Plan for Victor Valley County Water District
SB-06004	2008	Fred Budinger/ TetraTech	Roy Rogers, 15182 El Evado Road, Victorville, CA
SB-07120	2009	Matthew Weatherbee/ SRS, Inc.	Phase I Archaeological Assessment for Various Water Projects in the City of Victorville, San Bernardino County, California
SB-07156	2011	Bai “Tom” Tang, Danial Ballester, and Nina Gallardo	Historical/Archaeological Resources Survey Report: Water Supply System Improvements Projects, Fiscal Years 2010-2011 – 2014/2015, Victorville Water District, San Bernardino County, California

3.2 NAHC SACRED LANDS FILE SEARCH RESULTS

The NAHC Sacred Lands File did not indicate the presence of any cultural places within the study area. Query letters were sent to tribal contacts provided by the NAHC requesting any additional information or concerns that they may wish to share about the proposed project; no responses have been received to date.

4. METHODS AND RESULTS

The study area is approximately 2.55 acres in size. Prior to survey, historical USGS topographic maps were consulted to identify and potential historic resources that may have been present. The study area was then examined with the field crew walking parallel transects spaced at 15-meter intervals across in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g., organically enriched midden soil). Special attention was paid to rodent burrow back dirt piles, in the hope of identifying sub-surface soil conditions that might be indicative of archaeological features or remains. No cultural resources were collected during the survey.

The study area was surveyed on September 21, 2021. Soils throughout the study area are sandy-silty alluvium with volcanic and granitic lithic clasts ranging in size from gravel to small boulders. The study area currently consists of an empty field and road margins. Vegetative cover was minimal (see Figures 2a and 2b) and ground surface visibility overall can be considered very good and adequate for Phase I coverage.

4.1 INVENTORY RESULTS

No cultural resources were identified during the field survey. The study area had visible signs of disturbance evidenced by the crisscrossing two-track roads and is likely entirely disturbed due to its location near a major intersection and residential neighborhoods. Notable amounts of domestic trash were observed throughout the study area due to the proximity to an existing service station and the nature of its location relative to the Interstate 15 access. This refuse included various types of beverage containers, food containers, auto parts, oil cans, broken glass, tires, lumber segments, segments of wire, asphalt, landscape rock, and landscape cleanup debris. This domestic debris has migrated into the surrounding landscape through both roadside dumping and natural processes.

5. SUMMARY AND RECOMMENDATIONS

An intensive Phase I archaeological survey was conducted for the Love's Mobile Home Park Project, Baker, San Bernardino County, California. A records search of site files and maps was conducted at the South-Central Coastal Information Center and a search of the NAHC Sacred Lands File was completed. These investigations determined that the study area had not been previously surveyed in its entirety and no sites had been recorded within or near it. No Native American sacred sites or cultural landscapes had been identified within or immediately adjacent to the study area.

No cultural resources of any kind were identified as a result of the survey. The study area has been previously disturbed by grading and off-road activities.

5.1 RECOMMENDATIONS

An archival records search, background studies, and an intensive, on-foot surface reconnaissance of the Love's Mobile Home Park Project study area, Baker, San Bernardino County, California, were conducted as part of a Phase I archaeological survey. No cultural resources were identified during the survey and therefore the development of this project does not have the potential to result in adverse effects or impacts to historical properties or resources, and no additional archaeological work is recommended.

In the unlikely event that archaeological materials are discovered during construction of the project, it is recommended that a qualified archaeologist be contacted to evaluate the discovery.

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C-4: CONFIDENTIAL Appendix A to the Cultural Resources Assessment–Mobile Home Park

This appendix contains sensitive information relating to cultural resources and is not intended for public distribution pursuant to Public Resources Code Section 21082.3(C)(2). A copy of confidential Appendix C.2 is on file with the County of San Bernardino and is available to qualified professionals upon request.

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