

**APPENDIX D – ARCHAEOLOGICAL AND PALEONTOLOGICAL ASSESSMENT REPORT  
FOR THE ENERGY SOURCE MINERAL, LLC PROJECT**



**ARCHAEOLOGICAL AND PALEONTOLOGICAL  
ASSESSMENT REPORT FOR THE ENERGY SOURCE  
MINERAL, LLC PROJECT, CALIPATRIA, IMPERIAL  
COUNTY, CALIFORNIA**

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January 2021

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## NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION

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**Client/Project Proponent:** Energy Source Mineral, LLC.

**Report Date:** January 2021

**Report Title:** Archaeological and Paleontological Assessment Report for the Energy Source Minerals, LLC Project, Calipatria, Imperial County, California

**Type of Study:** Cultural Resources Phase 1 Pedestrian Survey

**New Sites:** 2

**Updated Sites:** None

**USGS Quad:** *Niland* 7.5-minute quadrangle

**Acreage:** 92

**Permit Numbers:** N/A

**Key Words:** County of Imperial, City of Calipatria, Positive Survey, CEQA, Intensive Pedestrian Survey, *Niland* USGS Quadrangle

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## **SECTION 1.0 – INTRODUCTION**

Chambers Group, Inc. (Chambers Group) has been contracted by Energy Source Mineral, LLC., within the City of Calipatria, Imperial County (County), California, to complete an archaeological assessment as well as a paleontological assessment, including a literature review and pedestrian survey, for the proposed Energy Source Mineral, LLC Project (Project). The proposed Project includes the construction and operation of a commercial lithium hydroxide production plant within the Salton Sea geothermal field in Imperial County, California.

The purpose of this investigation is to assess the potential for significant archaeological and paleontological deposits and/or materials within the Project site and to determine if the current Project has the potential to adversely affect any significant cultural or paleontological materials. Chambers Group completed an archaeological and paleontological literature review, records search, and intensive pedestrian survey of the 92-acre proposed area. This report outlines the archaeological and paleontological findings and results of both efforts.

The following studies have been conducted in accordance with the California Environmental Quality Act (CEQA). This report includes appropriate mitigation measures to ensure less than significant impacts to any cultural and paleontological resources potentially affected during construction.

### **1.1 PROJECT DESCRIPTION**

The Project consists of the development of a commercial lithium hydroxide production facility (ATLIS Plant). The facility will process geothermal brine from the neighboring Hudson Ranch Power I Geothermal Plant (HR1) to produce lithium hydroxide, as well as zinc and manganese products. The HR1 power plant exists within the northeast corner of the 65.12-acre parcel, west of the proposed construction area located in Calipatria, Imperial County, California. The Project will consist of the following activities:

- Construction and operation of a plant to extract lithium, manganese, zinc, and other commercially viable substances from geothermal brine and process the extracted substances to produce commercial quantities of lithium and, to the extent possible, manganese and zinc products and other products
- Construction and operation of brine supply and return pipelines and other associated interconnection facilities with the HR1 power plant
- Construction of a primary access road from McDonald Road (approximately 500 feet west of the HR1 entrance) and an emergency access entrance only from Davis Road
- Paving of McDonald Road from State Route (Highway) 111 to English Road (approximately 3 miles)
- Construction of a power interconnection line from the Imperial Irrigation District (IID) and HR1 switchyard located at the northeast corner of the Hudson Ranch Power I (HR1) site
- Construction of associated facilities between HR1 and the Project site to facilitate the movement of brine and other services

- Construction of a laydown yard that will also support temporary offices during construction as well as serve as a truck management yard during operations
- Construction of offices, repair facilities, shipping and receiving facilities, and other infrastructure components

## 1.2 PROJECT LOCATION

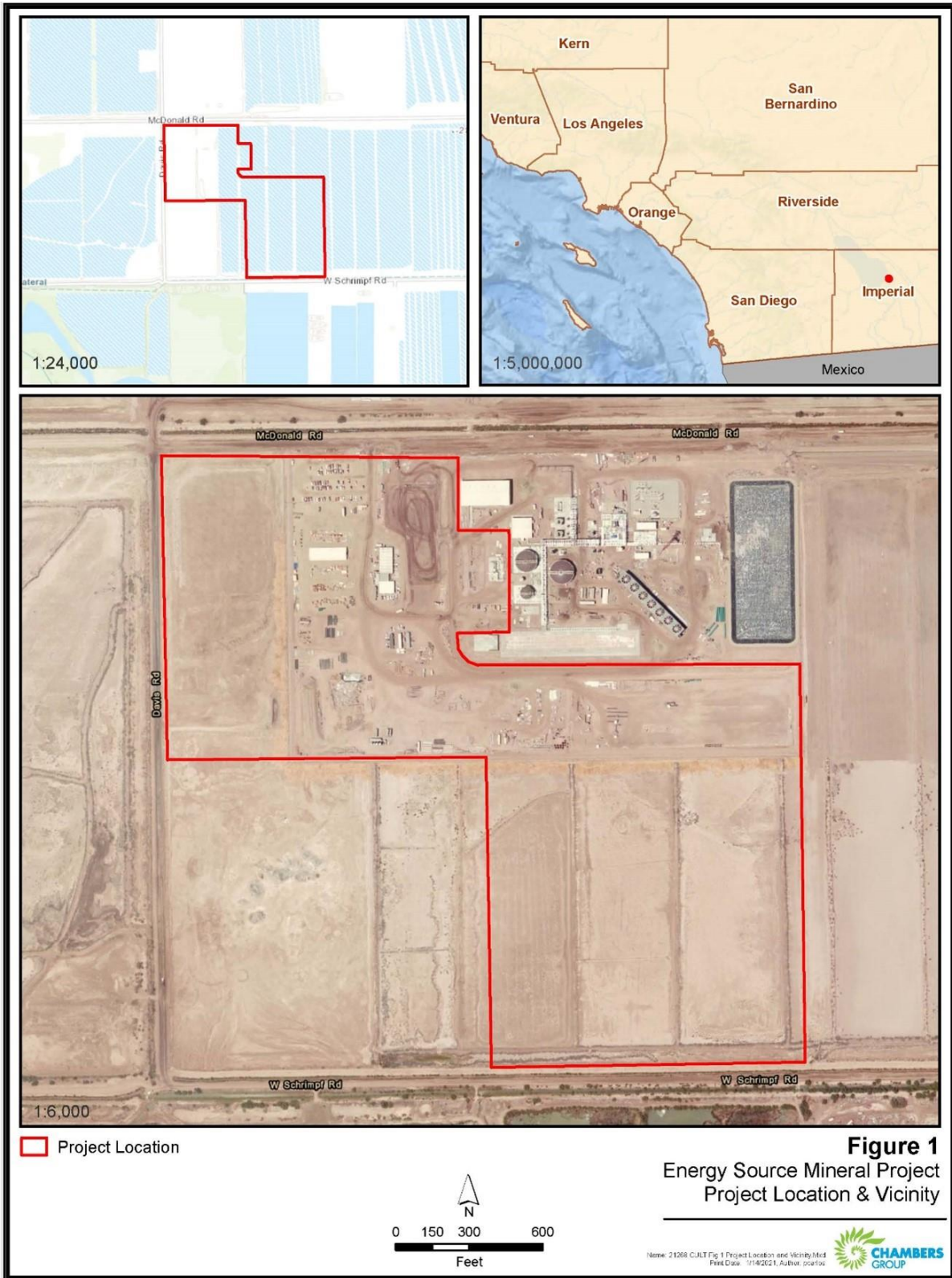
The Project site is located in Calipatria, Imperial County, California, which is approximately 3.8 miles southwest of the community of Niland (Figure 1). The Project plant and facilities will be located at 477 West McDonald Road on three parcels (APNs 020-100-025, 020-100-044, 020-100-046) privately owned by Hudson Ranch Power I (HR1) LLC. The Project site is bounded by McDonald Street to the north, Davis Road to the west, Schrimpf Lane to the south, and a vacant field to the east. Currently, the HR1 power plant exists within the northeast corner of the 65.12-acre parcel. The plant facilities will be built on an approximately 37-acre area that is being subdivided out of the existing 65.12 acres, with an additional 15 acres on the northwestern side of a second adjacent parcel and approximately 40 acres on the southeast end of a third parcel, for a total of approximately 92 acres. These three partial parcels will be merged to form the new parcel for the Project.

The Project site is surrounded by open, vacant land. To the west of the Project site is IID-owned vacant marsh land adjoining the Salton Sea. To the north of the Project site is vacant land that is mostly used for duck hunting clubs and the location of the production and injection wells for HR1. To the south is vacant land that has never been in any production. To the east are open, fallow, possibly temporarily inundated fields.

The Project site is situated in the lower Colorado Desert approximately 2.25 miles east of the Salton Sea, 3.03 miles from Highway 111, 15 miles north/northwest of Brawley, and 52 miles from the Colorado River in a location geologically known as the Salton Trough. The Salton Trough is an area bordered on the east by the San Andreas Fault and to the south by the Gulf of California. Specifically, the Project site is located on the United States Geological Survey (USGS) *Niland* 7.5-minute quadrangle, Section 24, Township 11 South, Range 13 East. The elevation at the Project site is approximately 225 feet below mean sea level (bmsl).



Figure 1: Project Location and Vicinity Map



### **1.3 REGULATORY FRAMEWORK**

#### **1.3.1 California Environmental Quality Act**

Work for this Project was conducted in compliance with CEQA. The regulatory framework as it pertains to cultural resources under CEQA is detailed below.

#### **1.3.2 Paleontological Resources**

CEQA requires that public agencies and private interests identify the potential environmental consequences of their projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code [PRC] Section 5020.1 [b]). Appendix G in Section 15023 provides an Environmental Checklist of questions (PRC 15023, Appendix G, Section VII, Part f) that includes the following: “Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?” CEQA does not define “a unique paleontological resource or site.” However, the Society of Vertebrate Paleontology (SVP) has provided guidance specifically designed to support state and federal environmental review. The SVP broadly defines significant paleontological resources as follows (SVP 2010, page 11): “Fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).”

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve our understanding of paleochronology, paleoecology, paleophylogeography, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well represented lineages can be equally important for studying evolutionary pattern and process, evolutionary rates, and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiometric dating is possible. As such, common fossils (especially vertebrates) may be scientifically important and therefore considered significant.

#### **1.3.3 Cultural Resources**

Under the provisions of CEQA, including the CEQA Statutes (PRC §§ 21083.2 and 21084.1), the CEQA Guidelines (Title 14 California Code of Regulations [CCR], § 15064.5), and PRC § 5024.1 (Title 14 CCR § 4850 et seq.), properties expected to be directly or indirectly affected by a proposed project must be evaluated for California Register of Historical Resources (CRHR) eligibility (PRC § 5024.1).

The purpose of the CRHR is to maintain listings of the state’s historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change. The term *historical resources* includes a resource listed in or determined to be eligible for listing in the CRHR; a resource included in a local register of historical resources; and any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (CCR § 15064.5[a]). The criteria for listing properties in the CRHR were expressly developed in accordance with previously established criteria developed for listing in the National Register

of Historic Places (NRHP). The California Office of Historic Preservation (OHP 1995:2) regards “any physical evidence of human activities over 45 years old” as meriting recordation and evaluation.

### California Public Resources Code

Section 5097.5 of the PRC states:

“No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.”

As used in this PRC section, “public lands” means lands owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

### California Register of Historic Resources

A cultural resource is considered “historically significant” under CEQA if the resource meets one or more of the criteria for listing on the CRHR. The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing cultural resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for inclusion in the CRHR. A resource is considered significant if it:

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

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the California Register must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Under CEQA, if an archeological site is not a historical resource but meets the definition of a “unique archeological resource” as defined in PRC § 21083.2, then it should be treated in accordance with the provisions of that section. A *unique archeological resource* is defined as follows:

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Resources that neither meet any of these criteria for listing in the CRHR nor qualify as a “unique archaeological resource” under CEQA PRC § 21083.2(g) are viewed as not significant. Under CEQA, “A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects” (PRC § 21083.2[h]).

Impacts that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to historical resources from a proposed project are thus considered significant if the project (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource, which contributes to its significance; or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

### **Imperial County**

Section III(B) of the Imperial County Conservation and Open Space Element describes the cultural resources, goals, and objectives to protect such resources (County of Imperial 2016). The planning goals and objectives are described below.

Goal 3 of the goals and objectives section of the Imperial County Conservation and Open Space Element addresses the preservation of cultural resources. Goal 3 states that the County will “preserve the spiritual and cultural heritage of the diverse communities of Imperial County” (County of Imperial 2016). Three objectives are enumerated to assist in implementation of the goal:

- **Objective 3.1:** Protect and preserve sites of archaeological, ecological, historical, and scientific value, and/or cultural significance.
- **Objective 3.2:** Develop management strategies to preserve the memory of important historic periods, including Spanish, Mexican, and early American settlements of Imperial County.
- **Objective 3.3:** Engage all local Native American Tribes in the protection of tribal cultural resources, including prehistoric trails and burials sites.

## SECTION 2.0 – SETTINGS

### 2.1 ENVIRONMENTAL SETTING

As noted in Section 1.0, the proposed Project is located within the mid-region of the lower Colorado Desert physiography. Calipatria is approximately 10 miles north of Brawley, Imperial County, California. The average annual temperature in Brawley is 72.3 °F (22.4 °C). Virtually no rainfall occurs during the year; about 2.4 inches of precipitation falls annually. The difference in precipitation between the driest month and the wettest month is 0.39 inch. The average temperatures vary during the year by 69.6 °F (20.9 °C). The warmest month of the year is July, with an average temperature of 91.6 °F (33.1 °C). In January, the average temperature is 54.0 °F (12.2 °C) (Climate-Data 2021).

#### 2.1.1 Habitats / Vegetation Communities

Two vegetation communities, Ruderal and Bare Ground, were observed within the Project site. Areas classified as Ruderal tend to be dominated by pioneering species that readily colonize disturbed ground and that are typically found in temporary, often frequently disturbed habitats (Barbour et al. 1999). The soils in ruderal areas are typically characterized as compacted or frequently disturbed. Often, Ruderal areas are dominated by species of the Tamarix, Brassica, Malva, Salsola, Eremocarpus, Amaranthus, and Atriplex genera. Ruderal vegetation occurs in the disturbed southern portion of the Project site that was previously used as a duck hunting club. Vegetation found on site typical of this vegetation included scattered iodine bush (*Allenrolfea occidentalis*) with a few scattered Mediterranean tamarisk (*Tamarix ramosissima*). Bare Ground (BG) areas are generally devoid of vegetation but do not contain any form of pavement. BG has higher water permeability and higher fossorial rodent habitat potential. BG is present throughout the entire Project site with large, uninterrupted expanses in the eastern portion of the Project site. Scattered, dead Mediterranean tamarisk seedlings were the only vegetation observed in these areas.

#### 2.1.2 Geological and Paleontological

The survey area is located within the Imperial Valley and is within a large geologic structure referred to as the Salton Trough, a graben or rift valley extending approximately 1,000 miles in length. This graben was created when the San Andreas Fault system and the East Pacific Rise split Baja California from mainland Mexico approximately 5 million years ago. The southern portion of this rift valley is now known as the Gulf of California, while the northern part is known as the Salton Trough. Plate tectonic activity has continued to open this rift with the Salton Trough as the hinge point. The North American Plate is to the east and the Pacific Plate to the west. The Colorado River may have begun depositing huge loads of silt in the upper trough as early as 5.5 million years ago (Alles 2004).

By some time in the Pliocene Epoch (2 to 4 million years ago), the river had created a delta of sufficient height to form a dam isolating the Imperial Valley and Coachella Valley portions of the Salton Trough from the Gulf of California (Waters 1980). This silt dam continues to keep seawater out of the Salton Trough, which is more than 200 feet below sea level. A series of very high freshwater lake stands that occurred during the late Pleistocene have been documented in the Salton Trough, suggesting that the Colorado River began flowing into the Salton Trough on an occasional basis from that time. Ranging in elevation up to 170 feet above sea level, these Pleistocene freshwater lake shorelines date to between 25,000 and 45,000 years ago (Waters 1980). The height of these Pleistocene lake stands reflects the elevation of the natural silt dam which separates the Gulf from the Salton Trough. These Pleistocene lake stands have been called Lake Cahuilla to refer to both the Pleistocene and Holocene lakes (Waters 1980).



## **Site-Specific Geology and Soils**

After review of U.S. Department of Agriculture (USDA) Soil Conservation Service and by referencing the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2020), it was determined that the survey area is located within the Imperial Valley Area (CA683) and the soils are characterized as Imperial Silty Clay complex. The parent material is clayey alluvium derived from mixed or clayey lacustrine deposits. The available water capacity is classified as moderate (approximately 8.3 inches) with a depth to the water table of more than 80 inches (USDA 2020).

## **Paleontological Significance**

Lake Cahuilla was a former freshwater lake that periodically occupied a major portion of the Salton Trough during late Pleistocene to Holocene time (approximately 37,000 to 240 years ago), depositing sediments that underlie the entire Project site (mapped as Quaternary lake deposits by Jennings [1967]). Generally, Lake Cahuilla sediments consist of an interbedded sequence of both freshwater lacustrine (lake) and fluvial (river/stream) deposits. The Lake Cahuilla Beds have yielded well-preserved subfossil remains of freshwater clams and snails (Stearns 1901) and sparse remains of freshwater fish (Hubbs and Miller 1948). The paleontological resources of the Lake Cahuilla Beds are considered significant because of the paleoclimatic and palaeoecological information they can provide (Jefferson 2006), and these deposits are therefore assigned a high paleontological potential (SVP 2010).

## **2.2 CULTURAL SETTING**

### **2.2.1 Prehistory**

The Project site is located in the mid-section of the lower Colorado Desert, in which Lake Cahuilla is situated. In addition to paleontological potential, the archaeological deposition found around the shoreline of Lake Cahuilla radiocarbon dates as old as 1440 Before present (B.P.) or 650 Anno Domini (A.D.) (Waters 1983; Hubbs et al. 1962) and shows demonstrable evidence of cultural activity in the area. Due to Lake Cahuilla previously creating a massive freshwater oasis, seasonal occupations are evident in archaeological deposition, which includes pottery, ground and chipped stone artifacts, and archaeological features such as rock fish traps (Waters 1983; Phukan et al. 2019). In regard to the ethnographic landscape, the Cahuilla, Kumeyaay, and Cocopa settled in various locations, including the northern portion of basin, southern portion of basin, and the delta, respectively (Phukan et al. 2019). Only the Cocopa used fishing nets as means of subsistence methods, while Kumeyaay and Cahuilla constructed the stone fish trap features, which can be difficult to identify as such during pedestrian transect survey. Moreover, evidence from middens and human coprolites suggest subsistence on either razorback suckers or bonytail chubs, demonstrating environmental importance of this area (Phukan et al. 2019). Cultural resources found in the area are associated with Lake Cahuilla due to temporal context and functional use of landscape, which yield high archaeological significance of how people adapted to the changing environment around the lake.

Archaeological studies have been limited in the Salton Sea desert region. This paucity of archaeological investigation has resulted in undefined and imperfect archaeological classification schemas and typologies. Therefore, the prehistoric time periods used by archaeologists to describe the southern Imperial County desert region borrow heavily from those chronologies established for San Diego County prehistory, with some minor Colorado Desert-specific clarifications. The three general time periods

accepted in the region are the San Dieguito Complex, the Archaic period, and the Late Prehistoric period. These periods are briefly described below.

The earliest recognized occupation of the region, dating to 10,000 to 8,000 years before present (B.P.), is known as the San Dieguito complex (Rogers 1939, 1945). Assemblages from this occupation generally consist of flaked stone tools. Evidence of milling activities is rare for sites dating to this period. It is generally agreed that the San Dieguito complex shows characteristics of the Western Pluvial Lakes Tradition (WPLT), which was widespread in California during the early Holocene. The WPLT assemblage generally includes scrapers, choppers, and bifacial knives. Archaeologists theorize this toolkit composition likely reflects a generalized hunting and gathering society (Moratto 1984; Moratto et al. 1994; Schaeffer and Laylander 2007).

The following period, the Archaic (8,500 to 1,300 B.P.), is traditionally seen as encompassing both coastal and inland adaptations, with the coastal Archaic represented by the shell middens of the La Jolla complex and the inland Archaic represented by the Pauma complex (True 1980). Coastal settlement is also thought to have been significantly affected by the stabilization of sea levels around 4,000 years ago that led to a general decline in the productivity of coastal ecosystems. Artifacts associated with this period include milling stones, unshaped manos, flaked cobble tools, Pinto-like and Elko projectile points, and flexed inhumations (Schaefer and Laylander 2007). Colorado Desert rock art studies have led researchers to suggest Archaic Period origins for many petroglyph and pictograph styles and elements common in later times (Whitley 2005). More recently, several important late Archaic period sites have been documented in the northern Coachella Valley, consisting of deeply buried middens with clay-lined features and living surfaces, cremations, hearths and rock shelters. Faunal assemblages show a high percentage of lagomorphs (rabbits and hares). The larger sites suggest a more sustained settlement type than previously known for the Archaic period in this area (Schaefer and Laylander 2007).

The Late Prehistoric period (1,300 to 200 B.P.) is marked by the appearance of small projectile points indicating the use of the bow and arrow, the common use of ceramics, and the general replacement of inhumations with cremations, all characteristic of the San Luis Rey complex as defined by Meighan (1954). The San Luis Rey complex is divided temporally into San Luis Rey I and San Luis Rey II, with the latter distinguished mainly by the addition of ceramics. Along the coast of northern San Diego County, deposits containing significant amounts of Donax shell are now often assigned to the Late Prehistoric, based on a well-documented increase in the use of this resource at this time (e.g., Byrd and Reddy 1999). The inception of the San Luis Rey complex is suggested by True (1966; True et al. 1974) to mark the arrival of Takic speakers from regions farther inland. Waugh (1986) is in general agreement with True but suggests that the migration was probably sporadic and took place over a considerable period. Titus (1987) cites burials showing physical differences between pre- and post-1,300 B.P. remains to further support this contention. However, some researchers have suggested that these Shoshonean groups may have arrived considerably earlier, perhaps as early as 4,000 years ago. Vellanoweth and Altschul (2002:102-105) provide an excellent summary of the various avenues of thought on the Shoshonean Incursion.

### **2.2.2 Ethnography**

The Project site was occupied by the Cahuilla, Kumeyaay, Kamia, and the Colorado River Indian Tribes (CRIT). The closest reservation is the Torres-Martinez Indian Reservation, currently home to the desert Cahuilla Indians, and is on the northwest side of the Salton Sea, roughly 41 miles from the Project site. Following is a brief ethnographic and archaeological summary of the Cahuilla, Kumeyaay, Kamia, and Colorado River Indian Tribes (CRIT).

## Cahuilla

The Project site currently falls within the ethnographic territory of the Cahuilla, whose ancestors may have entered this region of Southern California approximately 3,000 years ago (Moratto 1984: 559-560). The Cahuilla ancestral territory is located near the geographic center of Southern California and varied greatly topographically and environmentally, ranging from forested mountains to desert areas. Natural boundaries such as the lower Colorado Desert provided the Cahuilla separate territory from the neighboring Mojave, Ipai, and Tipai. In turn, mountains, hills, and plains separated the Cahuilla from the adjacent Luiseño, Gabrielino, and the Serrano (Bean 1978: 575).

The Cahuilla relied heavily on the exploitation and seasonal availability of faunal and floral resources through a pattern of residential mobility that emphasized hunting and gathering. Important floral species used in food, for manufacturing of products, and/or for medicinal uses primarily included acorns, mesquite and screw beans, piñon nuts, and various cacti bulbs (Bean 1978:578). Coiled-ware baskets were common and used for a variety of tasks including food preparation, storage, and transportation (Bean 1978:579).

Networks of trails linked villages and functioned as hunting, trading, and social conduits. Trade occurred between the Cahuilla and tribes such as the Gabrielino as far west as Santa Catalina and the Pima as far east as the Gila River. Both goods and technologies were frequently exchanged between the Cahuilla and nearby Serrano, Gabrielino, and Luiseño cultural groups (Bean 1978:575-582).

The Cahuilla are believed to have first come into contact with Europeans prior to the Juan Bautista de Anza expedition in 1774; however, little direct contact was established between the Cahuilla and the Spanish except for those baptized at the Missions San Gabriel, San Luis Rey, and San Diego (Bean 1978:583-584). Following the establishment of several *asistencias* near the traditional Cahuilla territories, many Spanish cultural forms — especially agriculture and language — were adopted by the Cahuilla people (Bean 1978:583-584; Lech 2012:17-30).

Through the Rancho and American periods, the Cahuilla continued to retain their political autonomy and lands despite more frequent interactions with European-American immigrants. In 1863, a large number of the population was killed by a sweeping smallpox epidemic that affected many of the tribal groups in Southern California. The first reservations established in Imperial County ca. 1865 saw many of the Cahuilla remaining on their traditional lands. After 1891, however, all aspects of the Cahuilla economic, political, and social life were closely monitored by the federal government; a combination of missionaries and government schools drastically altered the Cahuilla culture (Bean 1978:583-584).

## Kumeyaay

In addition to the Cahuilla, Native American people occupying the region also included the Kumeyaay. The Kumeyaay or Tipai-Ipai were formerly known as the Kamia or Diegueños, the former Spanish name applied to the Mission Indians living along the San Diego River, and are referred to as the Kumiai in Mexico. Today, members of the tribe prefer to be called Kumeyaay (Luomala 1978). The territory of the Kumeyaay extended north from Todos Santos Bay near Ensenada, Mexico to the mouth of the San Luis Rey River in north San Diego County, and east to the Sand Hills in central Imperial Valley near the current Project site. The Kumeyaay occupied the southern and eastern desert portions of the territory, while the Ipai inhabited the northern coastal region (Luomala 1978).



The primary source of subsistence for the of Kumeyaay was vegetal food. Seasonal travel followed the ripening of plants from the lowlands to higher elevations of the mountain slopes. Buds, blossoms, potherbs, wild seeds, cactus fruits, and wild plums were among the diet of Kumeyaay. The Kumeyaay practiced limited agriculture within the floodplain areas of their territory. Melons, maize, beans, and cowpeas were planted. Women sometimes transplanted wild onion and tobacco plants to convenient locations and sowed wild tobacco seeds. Deer, rodents, and birds provided meat as a secondary source of sustenance. Families also gathered acorns and piñon nuts at the higher altitudes. Village locations were selected for seasonal use and were occupied by exogamous, patrilineal clans. Three or four clans would winter together and then disperse into smaller bands during the spring and summer (Luomala 1978).

Kumeyaay structures varied with the seasons. Summer shelter consisted of a wind break, tree, or a cave fronted with rocks. Winter dwellings had slightly sunken floors with dome-shaped structures made of brush thatch covered with grass and earth (Gifford 1931; Luomala 1978).

Upon death, the Kumeyaay cremated the body of the deceased. Ashes were placed in a ceramic urn and buried or hidden in a cluster of rocks. The family customarily held a mourning ceremony one year after the death of a family member. During this ceremony, the clothes of the deceased individual were burned to ensure that the spirit would not return for his or her possessions (Gifford 1931; Luomala 1978).

It is estimated that the pre-contact Kumeyaay population living in this region ranged from approximately 3,000 (Kroeber 1925) to 9,000 (Luomala 1978). Beginning in 1775, the semi-nomadic life of the Kumeyaay began to change as a result of contact with European-Americans, particularly from the influence of the Spanish missions. Through successive Spanish, Mexican, and Anglo-American control, the Kumeyaay people were forced to adopt a sedentary lifestyle and accept Christianity (Luomala 1978). As of 1968, Kumeyaay population was somewhere between approximately 1,322 (Shipek 1972 in Luomala 1978) and 1,522 (Luomala 1978), and by 1990 an estimated 1,200 Kumeyaay lived on reservation lands while 2,000 lived elsewhere (Pritzker 2000).

Trade was a very important feature of Kumeyaay subsistence, coastal groups traded salt, dried seafood, dried greens, and abalone shells to inland and desert groups for products such as acorns, agave, mesquite beans, and gourds (Almstedt 1982:10; Cuero 1970:33; Luomala 1978:602). Travel and trade were accomplished by means of an extensive network of trails. Kumeyaay living in the mountains of eastern San Diego County frequently used these trails to travel down to the Kamia settlement of *Xatopet* on the east/west portion of the Alamo River to trade and socialize in winter (Castetter and Bell 1951; Gifford 1918:168; Spier 1923:300; Woods 1982).

## **Kamia**

The Kamia lived to the east of the Project site in an area that included Mexicali and bordered the Salton Sea. The traditional territory of the Kamia included the southern Imperial Valley from the latitude of the southern half of the Salton Sea to well below what is the United States–Mexico international border (Forbes 1965; Luomala 1978:593). The Kamia tribe of Indigenous Peoples of the Americas live at the northern border of Baja California in Mexico and the southern border of California in the United States. Their main settlements were along the New and Alamo Rivers (Gifford 1931). Their Kumeyaay language belongs to the Yuman–Cochimí language family.

Subsistence of the Kamia consisted of hunting and gathering and floodplain horticulture (Barker 1976; Gifford 1931). In normal years, the Colorado River would overflow its banks in the spring and early summer

and fill rivers such as the New and Alamo. When the floodwaters receded, the Kamia would plant in the mud. A dam was maintained at *Xatopet* on the east/west portion of the Alamo River to control water flow and allow farming in years when water flow was insufficient (Castetter and Bell 1951:43). Gifford (1931:22) and Castetter and Bell (1951:43) suggested these were recent adaptations and not traditional life ways. Bean and Lawton (1973); Lawton and Bean (1968), and Shipek (1988) argue that irrigation was indigenous.

The Kamia's major food staple was mesquite and screwbean, called by the Kamia *anxi* and *iyix*, respectively (Gifford 1931:23), along with the seeds of the ironwood (*Olneya tesota*), also known as *Palo fierro* in Spanish and palo verde were also used. Neither palo verde nor ironwood was considered a particularly desirable food resource (Castetter and Bell 1951:195-196). Acorns were also an important seasonal food, were gathered in the mountains to the west of Kamia territory in October and acquired through trade from the southern Kumeayaay (Gifford 1931).

Hunting contributed to the diet in a minor way in terms of overall caloric intake but provided valuable protein and skin and bone for clothing, blankets, and tools. Small game, primarily rabbits, was most frequently taken, using bow and arrow or rabbit stick (*macana*). Sometimes fires were set along sloughs to drive rabbits out. Individuals with bow and arrow also hunted deer and mountain sheep. Fish were also taken in sloughs with bow and arrow and by hand, hooks, basketry scoops, and seine nets (Gifford 1931:24).

### **Colorado River Indian Tribes**

The population of the CRIT reservation comprises of people from the Mojave, Chemehuevi, Hopi, and Navajo. While the Hopi and Navajo whom were forced into the reservation from further east, both the Mojave and Chemehuevi have been in this region since the tribe split off from the Southern Paiute in the area of current-day Las Vegas (Bean and Vane 2002). Although the origins of the Chemehuevi are of the Southern Paiute, their culture has been heavily influenced by the Mojave (Deur and Confer 2012), testifying to the close relationship between the two tribes. Relationships between the Chemehuevi and the Mojave have not always been peaceful; however, the Mojave retained the rights to travel through the newly established Chemehuevi territory (Bean and Vane 2002).

The subsistence pattern of the Chemehuevi was agriculturally based. Maize, squash, melons, gourds, beans, cowpeas, winter wheat, and some grasses were key crops grown in the floodplain areas along the Colorado River. Hunting and gathering were also important elements of the subsistence strategy undertaken by younger adults while the elderly stayed in the village to tend to the crops (Deur and Confer 2012).

Spiritually, the Chemehuevi were tied to their land, with spiritual power coming from particular landmarks within their territory such as mountain peaks, caves, or springs. Puha trails link the landmarks together and are also considered to have spiritual power (Deur and Confer 2012). The manner in which ceremonies were practiced showed the tribe's close ties with the Mojave. Hunting and gathering traditions followed the traditional Paiute pattern, as did burial practices. Other ceremonial practices testify to the Mojave influence (Deur and Confer 2012).

Mojave were also agrarian and had a reliance on fishing in the Colorado River. It should be noted that the Chemehuevi deferred fishing rights to the Mojave (Deur and Confer 2012). The Mojave people during the protohistoric and historic times were semi-sedentary. Floodplain farming was common, and the Colorado

River made up the center of their territory. The extent of their territory extended on either side of the Colorado River to the east as far as the highest crest of the Black Mountains, the Buck Mountains, and the Mojave Mountains and to the west to the Sacramento, Dead, and Newberry Mountains. From north to south their territory ran from the Mohave Valley to south of what is now the City of Blythe (Bean and Vane 2002).

The Mojave peoples were nationalistic, considering their home territory to be their own country (Deur and Confer 2012). Frequently warring with the Halchidoma, the Mojave and Quechan joined forces to evict the Halchidoma from their territory. The Mojave then encouraged the Chemehuevi to move into the river area (Russell et al. 2002). Trade was of particular importance to the Mojave, who had extensive trail networks to take them to the Pacific Coast in the west, and to the Cahuilla in the south and east (Bean and Vane 2002).

In the spring and summer months the Mojave lived along the banks of the Colorado River where they harvested crops and fished for sustenance. Crops were planted in the spring as the river, swollen from the winter rains, receded. Seeds were planted in the newly exposed and saturated mud. While the Mojave peoples relied on their crops, their major food staple was mesquite and screwbean pods, which were gathered. In the winter they moved their settlement areas to rises above the river to avoid seasonal flooding (Russell et al 2002).

### **2.2.3      History**

The first significant European settlement of California began during the Spanish Period (1769 to 1821) when 21 missions and four presidios were established between San Diego and Sonoma. Although located primarily along the coast, the missions dominated economic and political life over the greater California region. The purpose of the missions was primarily for political control and forced assimilation of the Native American population into Spanish society and Catholicism, along with economic support to the presidios (Castillo 1978).

In the 1700s, due to pressures from other colonizers (Russians, French, British), New Spain decided that a party should be sent north with the idea of founding both military presidios and religious missions in Alta California to secure Spain's hold on its lands. The aim of the party was twofold. The first was the establishment of presidios, which would give Spain a military presence within its lands. The second was the establishment of a chain of missions along the coast slightly inland, with the aim of Christianizing the native population. By converting the native Californians, they could be counted as Spanish subjects, thereby bolstering the colonial population within a relatively short time (Lech 2012: 3-4).

The party was led by Gaspar de Portolá and consisted of two groups: one would take an overland route, and one would go by sea. All parties were to converge on San Diego, which would be the starting point for the chain of Spanish colonies. What became known as the Portolá Expedition set out on March 24, 1769. Portolá, who was very loyal to the crown and understood the gravity of his charge, arrived in what would become San Diego on July 1, 1769. Here, he immediately founded the presidio of San Diego. Leaving one group in the southern part of Alta California, Portolá took a smaller group and began heading north to his ultimate destination of Monterey Bay. Continuing up the coast, Portolá established Monterey Bay as a Spanish possession on June 3, 1770, although it would take two expeditions to accomplish this task. Having established the presidios at San Diego and Monterey, Portolá returned to Mexico. During the first four years of Spanish presence in Alta California, Father Junípero Serra, a member of the Portolá expedition and the Catholic leader of the new province, began establishing what would become a chain

of 21 coastal missions in California. The first, founded concurrently at San Diego with the presidio, was the launching point for this group. During this time, four additional missions (San Carlos Borromeo de Carmelo, San Antonio de Padua, San Gabriel Arcángel, and San Luis Obispo de Tolosa) were established (Lech 2012: 1-4).

The Mexican Period (1821-1848) began with the success of the Mexican Revolution in 1821, but changes to the mission system were slow to follow. When secularization of the missions occurred in the 1830s, the missions' vast land holdings in California were divided into large land grants called ranchos. The Mexican government granted ranchos throughout California to Spanish and Hispanic soldiers and settlers (Castillo 1978; Cleland 1941). Even after the decree of secularization was issued in 1833 by the Mexican Congress, missionaries continued to operate a small diocesan church. In 1834, the San Gabriel Mission, including over 16,000 head of cattle, was turned over to the civil administrator.

In 1848, the Treaty of Guadalupe Hidalgo ended the Mexican American War and marked the beginning of the American Period (1848 to present). The discovery of gold that same year sparked the 1849 California Gold Rush, bringing thousands of miners and other new immigrants to California from various parts of the United States, most of whom settled in the northern part of the state. For those settlers who chose to come to southern California, much of their economic prosperity was fueled by cattle ranching rather than by gold. This prosperity, however, came to a halt in the 1860s because of severe floods and droughts, as well as legal disputes over land boundaries, which put many ranchos into bankruptcy.

Imperial County was formed in 1907 from a portion of San Diego County known as Imperial Valley and is the newest of California's counties. It is known for being one of California's most prosperous agricultural communities because of its vast canal systems stemming from the Colorado River. The first diversion of the Colorado River was in 1905 and continued through 1942 when the All-American Canal was completed. It is this water, conveyed from the Colorado River, that makes Imperial County so rich (Hoover et al. 2002).

The City of Calipatria get its name from the words "California" and "patria," which means "fatherland." The City was first designated as Date City by the Imperial Valley Farm Land Association, established in 1914 (USGS 2021); Calipatria became incorporated in 1919 (City of Calipatria 2021). Today Calipatria is located 23 miles north of El Centro and is considered to be in the north El Centro metropolis area although it is predominately composed of agricultural land. Calipatria is 180 feet below sea level (City of Calipatria 2021); it boasts to be the lowest established city in the Western Hemisphere. Calipatria is also noted for its 184-foot flagpole where the flag flies at sea level. This historic flag monument was in part dedicated to the community when the story of a tragic vehicle accident in 1957 that befell a local Japanese-American pharmacist, whose wife passed away in the accident, brought international press and recognition to this small town in the Imperial Valley in 1957; the monument was erected shortly thereafter as a memorial for their fellow townspeople (City of Calipatria 2021).

## SECTION 3.0 – RESEARCH DESIGN

### 3.1 PALEONTOLOGICAL RESOURCES

Chambers Group conducted a desktop review that included a review of published and unpublished paleontological literature and a search of museum records obtained by the San Diego Natural History Museum (SDNHM; McComas 2020). Using the results of the literature review and records search, Chambers Group, evaluated the paleontological resource potential of the geologic units underlying the Project site. A field survey was conducted for the geologic units identified as highly sensitive to assist in determining where paleontological monitoring may be necessary during Project implementation.

Determining the probability that a given project site might yield paleontological resources requires a knowledge of the geology and stratigraphy of the project site, as well as researching any nearby fossil finds by: (1) reviewing published and unpublished maps and reports; (2) consulting online databases; (3) seeking any information regarding pertinent paleontological localities from local and regional museum repositories, and (4) if needed, conducting a reconnaissance site visit or paleontological resources field survey.

The University of California Museum of Paleontology (UCMP) online paleontological database was used to search for previously recorded paleontological localities in the Project vicinity (UCMP 2020). Only a single right dentary fragment from a Camelidae species was found near Coachella in 1953 (V5303). In addition, Chambers Group obtained paleontological record search data from the SDNHM on October 27, 2020 (McComas 2020). The SDNHM determined that the proposed Project has the potential to impact late Pleistocene to Holocene-age Lake Cahuilla Beds. Although no recorded fossil localities have been identified within a one-mile radius of the Project site, it is recommended that, due to the high sensitivity of the Lake Cahuilla Beds, a paleontological resource mitigation program and monitoring be conducted on excavation activities extending down into undisturbed sediment.

### 3.2 CULTURAL RESOURCES

A records search dated October 22, 2020, was obtained from the South Coastal Information Center (SCIC) at San Diego State University (Appendix A). The records search provided information on all documented cultural resources and previous archaeological investigations within the one-mile record search radius. Resources consulted during the records search conducted by the SCIC included the NRHP, California Historical Landmarks, California Points of Historical Interest, and the California State Historic Resources Inventory. Results of the records search and additional research are detailed below.

#### 3.2.1 Reports within the Study Area

Based upon the records search conducted by the SCIC, 22 cultural resource studies have previously been completed within the one-mile records search radius. Of the 22 previous studies, five of these studies (IM-01096, IM-01484, IM-01505, IM-01559, and IM-01642) were within the current Project site and are shown in **bold** (Table 1).

**Table 1: Previous Cultural Resources Studies within the Study Area**

Report Number	Year	Author	Title	Resources
IM-00225	1980	WESTEC Services, INC.	APPENDIX A-History of Local Development.	N/A
IM-00230	1981	WESTEC Services, INC.	Salton Sea anomaly cultural resource review data-support package.	N/A
IM-00234	1981	WESTEC Services, INC.	Salton Sea Anomaly – Master Environmental Impact Report	N/A
IM-00236	1981	WESTEC Services, INC.	Volume II – Salton Sea Anomaly Master Environmental Impact Report and MAGMA Power Plant #3 (49 MW) Environmental Impact Report Appendices.	N/A
IM-00237	1981	WESTEC Services, INC.	Volume I – Salton Sea Anomaly Master Environmental Impact Report and MAGMA Power Plant #3 (49 MW) Environmental Impact Report DRAFT	N/A
IM-00254	1981	WESTEC Services, INC.	Final Salton Sea Anomaly Master Environmental Impact Report and MAGMA Power Plant #3 (49 MW) Environmental Impact Report Comments and Responses	N/A
IM-00255	1981	WESTEC Services, INC.	Final Salton Sea Anomaly Master Environmental Impact Report and MAGMA Power Plant #3 (49 MW) Environmental Impact Report Volume I.	N/A
IM-00512	1994	RTP Environmental Associates INC.	Conditional Use Permit and Environmental Information for the Hazard Area Exploration Wells.	N/A
IM-00513	1994	OGDEN Environmental and Energy Services	Biological Technical Report in Support of an Environmental Assessment for the Hazard Area Geothermal Exploration Project.	N/A
IM-00636	1980	Von Werlhof, Jay	Imperial Valley College Foundation Environmental Studies for Ten Geothermal Exploratory Wells.	N/A
<b>IM-01096</b>	<b>2007</b>	<b>ASM Affiliates</b>	<b>Cultural Resources Survey of the Hudson Ranch I Geothermal Project, Imperial County, California.</b>	<b>N/A</b>
IM-01181	2000	TETRA TECH, INC.	Draft Salton Sea Restoration Project Environmental Impact.	
IM-01255	2001	MCGOWN, LUCILLE RONAN, GORDON A. CLOPINE, DORIS HOOVER BOWERS, JAY VON WERLHOF, RUTH DEETTE SIMPSON, RONALD V. MAY, and PAT KING	The Archaeological Survey Association of Southern California’s Lake Le Conte Survey.	

**Table 1: Previous Cultural Resources Studies within the Study Area**

Report Number	Year	Author	Title	Resources
IM-01385	2008	Laylander, Don. Sarah Stringer-Bowsher, and Jerry Schaefer	Cultural Resources Review for the Sonny Bono Salton Sea National Wildlife Refuge Complex, Imperial and Riverside Counties, California.	
IM-01470	2010	Schaefer, Jerry, Shelby Gunderman, and Don Laylander	Cultural Resource Study for the Hudson Ranch II Project, Imperial County, California.	
<b>IM-01484</b>	<b>2010</b>	<b>Imperial County Planning Department</b>	<b>SIMBOL Calipatria I Plant Project</b>	
IM-1494	2012	Ecology and Environment, Inc.	County of Imperial Hudson Ranch Power II CUP #G10-0002/ SIMBOL II CUP #12-0005 DRAFT Environmental Impact Report.	
<b>IM-01505</b>	<b>2012</b>	<b>Ecology and Environment, Inc.</b>	<b>County of Imperial SIMBOL Calipatria Plant I CUP#12-0004 DRAFT Environmental Impact Report Volume 1.</b>	
<b>IM-01559</b>	<b>2011</b>	<b>Giacinto, Adam</b>	<b>Cultural Resource Study for the SIMBOL SM Calipatria Plant I, Imperial County, California.</b>	
<b>IM-01642</b>	<b>2012</b>		<b>County of Imperial-Hudson Ranch Power II CUP #G10-002/SIMBOL II CUP #12-0005 Final Environmental Impact Report, Volumes I and II.</b>	
IM-01643	2016		Geo-Genco Geothermal Project, Imperial County, California.	
IM-01695	2016	Castells, Shelby Gunderman	Cultural Resource Study for the Geo-Genco Geothermal Project, Imperial County, California.	13-014277, 13-014278

### 3.2.2 Previously Recorded Cultural Resources within the Study Area

Based upon the records search conducted by the SCIC, six previously recorded cultural resources were recorded within the one-mile record search radius (Table 2). Results show no previously recorded resources within the Project site.

**Table 2: Previously Recorded Cultural Resources within the Study Area**

Primary Number	Trinomial	Resource Name	Site Description
P-13-003251	CA-IMP-003251	4-IMP-3251H	Pond of good water. 7 feet across, 2 feet deep.
P-13-003257	CA-IMP-003257	4-IMP-3257H	Mud volcanoes, 119 ft wide
P-13-009110	CA-IMP-008395		Remnants of five carbon dioxide (CO <sub>2</sub> ) wells installed near the southern end of the Salton Sea.



**Table 2: Previously Recorded Cultural Resources within the Study Area**

Primary Number	Trinomial	Resource Name	Site Description
P-13-014277	CA-IMP-012061		UPDATE Resource CA-IMP-12061/Small historic trash scatter (could not be relocated due to graded road)
P-13-014278			1-mile segment of the lateral distribution system of the East Highland canal
P-13-014279		N DRAIN	1-mile segment of the N Drain-part of the lateral distribution system of the East Highland canal

### **3.2.3 Native American Heritage Commission**

#### **Sacred Lands File Search**

Chambers Group submitted a request for a search of the Sacred Lands Files (SLF) housed at the California Native American Heritage Commission (NAHC) on October 15, 2020. The results of the search were returned on October 20, 2020, and were negative, stating that the absence of specific site information in the SLF does not indicate the absence of cultural resources in the Project site that still may be impacted by Project development. The NAHC response provided contact information for the 27 tribes that may have information on cultural resources on the Project site.

Letters requesting information were sent via certified mail on October 23, 2020. Emails were also sent to the contacts in an effort to elicit a quicker response. As of January 22, 2020, the Quechan Indian Tribe has requested consultation and communications are ongoing.



## **SECTION 4.0 – FIELD METHODS**

Survey of the Project site took place over the course of November 4 and 5, 2020, and included Chambers Group archaeologists Kellie Kandybowicz, B.A., Sarah Roebel, B.A., and paleontologist Niranjala Kottachchi, M.A. The Project site was surveyed at 15-meter intervals, and crews were equipped with submeter accurate Global Positioning Systems (GPS) units for recording spatial data and to document the survey area and all findings through ArcGIS Collector and Survey 123. The purpose of the field survey was to visually inspect the ground surface for both paleontological and archaeologically significant materials. No geographic obstructions or impediments were present, and the crew was able to survey the Project site in its entirety. All of the Project site was clear of vegetation, thus facilitating visual inspection of the ground surface; overall ground visibility was high (95 percent).

The paleontologist examined the surface soils, assessed for exposed fossils, and evaluated the stratigraphy for its potential to contain preserved paleontological resources. The survey focused on areas underlain by ancient Lake Cahuilla Beds previously interpreted to have a high sensitivity to produce paleontological resources. The archaeologists assessed the ground surface for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools), historic-period artifacts (e.g., metal, glass, ceramics), sediment discoloration that might indicate the presence of a cultural midden, as well as depressions and other features indicative of the former presence of structures or buildings (e.g., post holes, foundations).

When an artifact or feature was observed during survey, the GPS data was recorded using the ArcGIS Collector application, photographs and measurements were taken, and when applicable, for historic glass artifacts, the maker's marks and date codes were recorded for further out-of-field analysis.

## SECTION 5.0 – RESULTS

### 5.1 RESULTS OF PALEONTOLOGICAL SURVEY

Because the area was previously graded to a depth of 3 feet, likely in the late 1950s, for utilization as a retention basin, much of the surface sediment, consisting of 2 inches of medium to coarse sand with small clay nodules, was disturbed. Below this, soil becomes clay rich and is interpreted to be that of the Cahuilla Lake Beds. Additionally, because this area is still an active geothermal field as part of the Salton Sea, inactive fumaroles or mud pots were present on the southwest end of the Project site and active fumaroles were found on the south end outside the Project survey area. The parcels were once utilized as duck hunting ponds back in the 1970s, and therefore the soil surface consisted of approximately an inch of silty sands. Below this, silty clays of Lake Cahuilla Beds were present. No paleontological resources were discovered during the surveys. Notes were taken on the geology and lithology of the geologic unit(s), and photographs were taken to document the survey.

### 5.2 RESULTS OF ARCHAEOLOGICAL SURVEY

An archival records search, background studies, and intensive pedestrian survey of the Project site were conducted as part of a Phase I cultural resource study. The NAHC Sacred Lands File search returned a negative result and indicated that no known sacred sites or tribal cultural resources exist within the one-mile search radius but advised that resources may still be present that are currently unknown. A records search request was submitted to the SCIC at San Diego State University, San Diego, October 10, 2020. The records search results (Confidential Appendix A) were received on October 22, 2020. The results indicate that no cultural resources have been previously identified within the Project site; six resources, however, have been identified within a one-mile radius of the Project site. These results were summarized in Table 2 above. In addition, 22 cultural resources studies have been conducted in the vicinity, with five being within the Project site (Table 1).

During completion of the survey, two newly discovered historic-period sites were identified, as shown in Table 3. The new historic period sites were fully documented with the appropriate DPR 523 series forms for each of the new resources and will be submitted to the SCIC for inclusion in the archaeological database (Appendix B). These two historic-period sites will be assigned primary numbers by the SCIC (pending). A description of the new finds can be found following Table 3.

**Table 3: Newly Identified Cultural Resources Within Project Site**

Resource Name (Temporary)	Trinomial Number	Date Recorded	Age	Description	Recommended Evaluation
21267-001	Pending	November 4, 2020	Historic	Retention basin dated to 1950s-1960s; Historic debris scatter dated to 1950s-1960s	Not Evaluated
21267-002	Pending	November 4, 2020	Historic (Multi-Component)	Historic debris scatter dated to ca. 1930s; Duck hunting pond	Not Evaluated

**Table 3: Newly Identified Cultural Resources Within Project Site**

Resource Name (Temporary)	Trinomial Number	Date Recorded	Age	Description	Recommended Evaluation
				features with shooting hides ca. 1970s	

**21268-001** is a historic-period machine-made water retention basin with a small glass scatter locus. Both the feature and the artifacts date to roughly the 1950s-1960s. The water retention basin was excavated sometime in the late 1950s, which is represented by the lack of presence on the 1952 aerial photograph (NETR Online 2020) and the positive presence on the 1976 topo map (USGS 1976). The glass bottle and jar fragments date from between the 1930s and 1960s and are predominately beverage bottles. The glass scatter is composed of over 100 various colors of glass fragments with 10 to 20 intact bottle or legible bases with dateable maker’s marks. One example is a colorless bottle fragment with an applied color label (ACL) depicting the blue and white Barq’s Root Beer label which states “DRINK Barq’s IT’S GOOD” This bottle was manufactured by Glass Containers, Inc during the 1930s-1960s (Toulouse 1971). Another intact green glass bottle was observed which was also manufactured by Glass Containers, Inc. during the 1930s-1960s (Toulouse 1971). The glass scatter was partially on the surface with some having been covered over the past decades. It is plausible that the trash scatter was created during or around the time of construction of the retention basin. See Figures 2, 3, and 5.

**21268-002** is a multi-component, historic-period trash scatter and duck pond feature dating to two separate occupation periods. The first occupation period is between 1910 and 1940; the second occupation period likely began between the 1950s and 1970s, and its use extended through 2010 when the duck ponds were fully abandoned.

The first occupation dates, likely ranging approximately from the 1910s possibly to the 1940s, is based on the dates obtained from the maker’s marks on the intact glass jars. An intact, cobalt blue Vick’s VapoRub jar with two triangles on the base was observed in the southeast corner of the easternmost duck pond and dates to the 1910s to the 1930s, the production date range for that specific maker’s mark. A colorless Chesebrough Vaseline jar fragment was also located in the same vicinity with a date range of 1918-1938, which is based on the visible embossing on the side of the jar (Toulouse 1971; SHA 2021). In addition, ceramic houseware fragments, a porcelain insulator, small unidentifiable metal fragments, and other glass shards were present.

The second occupation period begins approximately between the 1950s and the 1970s, based on topographical maps and aerial photography, and extends up until 2010 when the duck ponds were abandoned. Additionally, the presence of the historic-period trash scatter in the soils of the duck ponds indicates that the area was disturbed at least post-1950s. This second occupation consists of the construction and use of duck ponds with multiple hides used for the sport of duck hunting (Figures 6 and 7). The duck ponds were excavated at the earliest in the late 1950s, which is represented by the lack of presence on the 1953 aerial photograph (NETR Online 2021) and the positive presence on the 1992 aerial photograph; the years 1953-1992 are not represented (NETR Online 2020). The uncultivated land was likely flooded seasonally to attract waterfowl for hunting and is historically mapped as freshwater ponds, shown on the aerial images as early as 1992 (NETR Online 2021). On the 1956 topo map, the Southend Sportsman Club is visible on the adjacent lot to the west, indicating that type of activity in the area. Each

duck pond, separated by a berm approximately 12 feet wide and 4 high, is 400 feet in diameter and 1,177 feet in length.

## **SECTION 6.0 – SUMMARY AND RECOMMENDATIONS**

### **6.1 SUMMARY**

Chambers Group conducted paleontological and archaeological investigations within the Project site in November 2020. The work was performed under Chambers Group’s contract with Imperial County Planning and Development Services Department. The main goal of the investigations was to gather and analyze information needed to determine if the Project, as currently proposed, would impact paleontological and cultural resources.

The SDNHM determined that the proposed Project has the potential to impact late Pleistocene to Holocene-age Lake Cahuilla Beds. No recorded fossil localities have been identified within a one-mile radius of the Project site.

Archival record searches, background studies, and an intensive pedestrian survey of the Project site were conducted as part of a Phase I cultural resource study. The cultural record search identified five cultural resource studies and no archaeological resources within the Project site.

The survey yielded two new historic-period resources, 21268-001 and 21268-002, within the Project site. Over the years, those sites have been minimally obscured with sediment through aeolian and alluvial processes and are only slightly disturbed due to the amount of time since deposition. The historical debris component of 21268-002 is the most disturbed due to the construction of duck ponds which altered the depositional state of the original debris scatter.

### **6.2 RECOMMENDATIONS**

#### **6.2.1 Paleontological**

Prior to construction activity, a Qualified Paleontologist should prepare a Paleontological Resource Mitigation Plan (PRMP) to be implemented during ground-disturbing activity for the proposed Project. This program should outline the procedures for paleontological monitoring including extent and duration, protocols for salvage and preparation of fossils, and the requirements for a final mitigation and monitoring report. A qualified and trained paleontological monitor should be present on site to observe all earth-disturbing activities in previously undisturbed geologic deposits determined to have a high paleontological sensitivity (i.e., Lake Cahuilla Beds). Monitoring should consist of the visual inspection of excavated or graded areas and trench sidewalls. Screening of sedimentary matrix should be conducted, as some invertebrates may not be visible to the naked eye.

#### **6.2.2 Cultural**

The records search and archaeological survey resulted in the identification of eight resources within 1 mile of the Project site. Two new sites were identified and recorded within the Project site during the survey. The six previously recorded resources identified in the records search were not located within the Project site.

Based on the background research and results of the survey it is not recommended that any further archaeological testing or evaluation occur for any of the above listed archaeological sites prior to

construction. Due to the highly disturbed nature of the project site, archaeological monitoring is not required.

The site does have paleontological sensitivity and it is recommended that a qualified paleontologist is retained and is onsite for construction monitoring. These requirements are outlined in the proposed mitigation measures, below.

If human remains are found during ground-disturbing activities, State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Imperial County Medical Examiner-Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, the Imperial County Medical Examiner-Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the Medical Examiner-Coroner shall notify the NAHC, which shall notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials (NPS 1983).

Prior to permitting ground-disturbing work within the Project site, it is recommended that the County consult with the Quechan Indian Tribe and the Torres-Martinez Indian Tribe to identify any concerns they may have regarding the Project. No significant impacts to cultural or paleontological resources are anticipated as a result of the current undertaking if the recommendations included below are implemented.

**MM PALEO-1** Developer shall retain the services of a qualified paleontologist and require that all initial ground disturbing work be monitored by someone trained in fossil identification in monitoring contexts. The consultant shall provide a supervising paleontological specialist and a paleontological monitor present at the Project construction phase kickoff meeting.

**MM PALEO-2** Just prior to commencing construction activities and thus prior to any ground disturbance in the Proposed Project Site, the supervising cultural resources specialist and cultural resources monitor shall conduct initial Worker Environmental Awareness Program (WEAP) training to all construction personnel, including supervisors, present at the outset of the Project construction work phase, for which the lead contractor and all subcontractors shall make their personnel available. This WEAP training will educate construction personnel on how to work with the monitor(s) to identify and minimize impacts to paleontological resources and maintain environmental compliance, and be performed periodically for new personnel coming on to the project as needed.

**MM PALEO-3** The contractor shall provide the supervising paleontological resources specialist with a schedule of initial potential ground disturbing activities. A minimum of 48 hours will be provided to the consultant of commencement of any initial ground disturbing activities such as vegetation grubbing or clearing, grading, trenching, or mass excavation.

As detailed in the schedule provided, a paleontological monitor shall be present onsite at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the supervising paleontologist, shall observe initial ground disturbing activities and, as they proceed, make adjustments to the number of monitors as needed to provide adequate observation and oversight. All monitors will have stop-work authority to allow for recordation and evaluation of finds during construction. The monitor will maintain a daily record of observations as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project.

The supervising paleontologist, paleontological monitor, and the lead contractor and subcontractors shall maintain a line of communication regarding schedule and activity such that the monitor is aware of all ground disturbing activities in advance in order to provide appropriate oversight.

**MM-PALEO-4** If paleontological resources are discovered, construction shall be halted within 50 feet of any paleontological finds and shall not resume until a qualified paleontologist can determine the significance of the find and/or the find has been fully investigated, documented, and cleared.

**MM PALEO-5** At the completion of all ground disturbing activities, the consultant shall prepare a Paleontological Resources Monitoring Report summarizing all monitoring efforts and observations, as performed, and any and all prehistoric or historic archaeological finds, as well as providing follow-up reports of any finds to the SCCIC, as required.

**HUMAN REMAINS – LEGAL REQUIREMENTS** In the unlikely event that human remains are discovered during ground-disturbing activities, then the Proposed Project would be subject to California Health and Safety Code 7050.5, CEQA Section 15064.5, and California Public Resources Code Section 5097.98 (NPS 1983). If human remains are found during ground-disturbing activities, State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the Los Angeles County Medical Examiner-Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the Los Angeles County Medical Examiner-Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the Medical Examiner-Coroner shall notify the NAHC, which shall notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials (NPS 1983).



**SECTION 7.0 – SITE PHOTOGRAPHS**

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**Figure 2: View of water retention basin with HR1 in background, facing east/southeast.**



**Figure 3: Survey area inside retention basin, facing north.**





**Figure 4: Dried mud pot in Project site west of HR1, facing south.**



**Figure 5: Historic glass scatter in Project site west of HR1, facing west.**



**Figure 6: Dried duck pond  
in Project site south of  
HR1, facing east.**



**Figure 7: Duck pond hide in  
Project site, south of HR1,  
facing north.**

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## **APPENDIX A – CONFIDENTIAL CULTURAL RECORDS SEARCH RESULTS**



**APPENDIX B – CONFIDENTIAL DPR SERIED 523 FORMS**

