

**ARCHAEOLOGICAL AND PALEONTOLOGICAL
ASSESSMENT REPORT FOR THE BRAWLEY SOLAR
PROJECT, BRAWLEY, IMPERIAL COUNTY,
CALIFORNIA**

Prepared for:

ORNI 30, LLC
6140 Plumas Street
Reno, Nevada 89519

Prepared by:

CHAMBERS GROUP, INC.
9620 Chesapeake Drive, Suite 202
San Diego, California 92123
(858) 541-2800

March 2021

This page intentionally left blank

NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION

Authors: Sandra Pentney, Kellie Kandybowicz, Niranjala Kottachchi, Eduvijes Davis-Mullens, Richard Shultz

Firm: Chambers Group, Inc.

Client/Project Proponent: ORNI 30, LLC

Report Date: March 2021

Report Title: Archaeological and Paleontological Assessment Report for the Brawley Solar Project, Brawley, Imperial County, California

Type of Study: Cultural Resources Phase 1 Pedestrian Survey

New Sites: 6

Updated Sites: 1

USGS Quad: *Westmorland East* 7.5-minute quadrangle

Acreage: 225

Permit Numbers: N/A

Key Words: County of Imperial, City of Brawley, Positive Survey, CEQA, Intensive Pedestrian Survey, Best Canal, Spruce No. 3 Canal, Spruce No. 3 Drain, trash scatter, Niland to Calexico Railroad, *Westmorland East* USGS Quadrangle

TABLE OF CONTENTS

	<u>Page</u>
NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION.....	III
SECTION 1.0 – INTRODUCTION	1
1.1 PROJECT DESCRIPTION	1
1.2 PROJECT LOCATION	1
1.3 REGULATORY FRAMEWORK	3
1.3.1 California Environmental Quality Act.....	3
1.3.2 Paleontological Resources	3
1.3.3 Cultural Resources	3
SECTION 2.0 – SETTINGS.....	8
2.1 ENVIRONMENTAL SETTING	8
2.1.1 Habitats / Vegetation Communities	8
2.1.2 Geological and Paleontological.....	9
2.2 CULTURAL SETTING	10
2.2.1 Prehistory.....	10
2.2.2 Ethnography.....	12
2.2.3 History.....	16
SECTION 3.0 – RESEARCH DESIGN	19
3.1 PALEONTOLOGICAL RESOURCES	19
3.2 CULTURAL RESOURCES	19
3.2.1 Reports within the Study Area.....	19
3.2.2 Previously Recorded Cultural Resources within the Study Area	21
3.2.3 Native American Heritage Commission	21
SECTION 4.0 – FIELD METHODS.....	22
SECTION 5.0 – RESULTS	23
5.1 RESULTS OF PALEONTOLOGICAL SURVEY.....	23
5.2 RESULTS OF ARCHAEOLOGICAL SURVEY	23
SECTION 6.0 – SUMMARY AND RECOMMENDATIONS	29
6.1 SUMMARY.....	29
6.2 RECOMMENDATIONS	29
6.2.1 Paleontological.....	29
6.2.2 Cultural.....	30
SECTION 7.0 – SITE PHOTOGRAPHS.....	34
SECTION 8.0 – REFERENCES	37

APPENDICES

APPENDIX A Confidential Paleontological and Cultural Records Search Results
APPENDIX B Confidential DPR Series 523 Forms
APPENDIX C Site Evaluation for 5003 Best Road Residence

LIST OF TABLES

	<u>Page</u>
Table 1: Previous Cultural Resources Studies within the Study Area	20
Table 2: Previously Recorded Cultural Resources within the Study Area.....	21
Table 3: Newly Identified Cultural Resources Within Project Site.....	23

LIST OF FIGURES

	<u>Page</u>
Figure 1: Project Location and Vicinity Map	2
Figure 2: Gastropods & bivalves within silty clays of possible Lake Cahuilla lacustrine sediment, facing north/overview.	34
Figure 3: Possible exposure of Lake Cahuilla lacustrine, facing north.	34
Figure 4: Survey area west of Best Road, facing north.....	35
Figure 5: Historic Japanese blue on white porcelain ceramic fragment located near structure foundation at 21267-002.....	35
Figure 6: Overview of Niland to Calexico Railroad and culvert undercrossing dated to 1930 at north end of Project area, facing southwest.	36
Figure 7: Overview of Spruce No. 3 Lateral, showing construction dates of 1956 and 1963, facing west/southwest. Located at the southeast corner of Hovley Road and Andre Road.	36

SECTION 1.0 – INTRODUCTION

Chambers Group, Inc. (Chambers Group) was retained by ORNI 30, LLC (ORNI) to complete an archaeological assessment as well as a paleontological assessment, including a literature review and pedestrian survey, for the development of the Brawley Solar Project (Project) in Brawley, Imperial County (County), California. The proposed Project includes the construction and operation of a solar energy farm and associated facilities.

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 225-acre proposed area. This report outlines the archaeological and paleontological findings and results of both efforts.

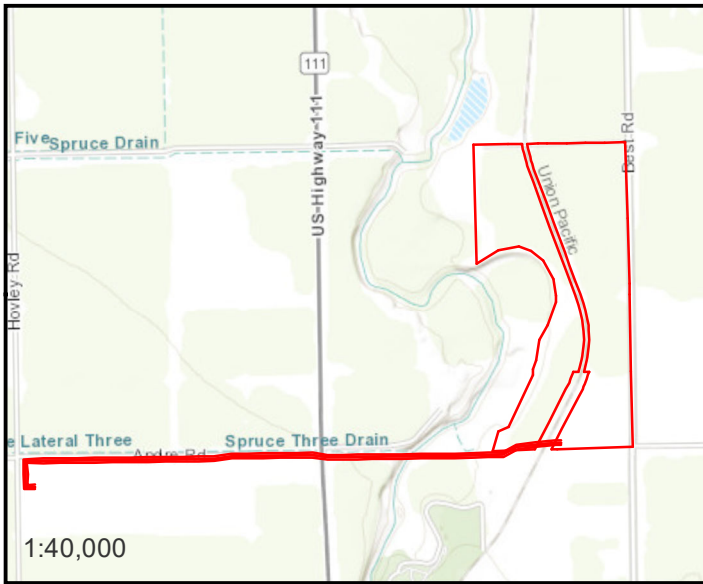
The following studies have been conducted in accordance with the California Environmental Quality Act (CEQA). This report includes appropriate mitigation measures to ensure less than significant impacts to any cultural and paleontological resources potentially affected during construction.

1.1 PROJECT DESCRIPTION

ORNI is proposing to build, operate, and maintain the Brawley Solar Energy Facility, a 40 megawatt (MW)/160 megawatt-hour (MWh) photovoltaic (PV) solar farm and 40 MW/160 MWh battery energy storage system (BESS) on approximately 225 acres in Brawley, Imperial County. Power generated by the Project would be low-voltage direct current (DC) power that would be collected and routed to a series of inverters and their associated pad-mounted transformers. The inverters would convert the DC power generated by the panels to alternating current (AC) power, and the pad-mounted transformers would step up the voltage. The Project would connect to the North Brawley Geothermal Power Plant southwest of the Project site via an approximately 1.6-mile-long aboveground 92 kilovolt (kV) generation tie line (gen-tie line). Energy generated and stored by the Project will be sold to the wholesale market or retail electric providers in furtherance of the goals of the California Renewable Energy Portfolio Standards and other similar renewable programs in the Pacific Southwest power market.

1.2 PROJECT LOCATION

The Project is located 19 miles north of El Centro at North Best Avenue, Brawley, California, on six privately owned parcels (Project site). The Project is located within the U.S. Geological Survey (USGS) *Westmorland East*, California, 7.5-minute topographic quadrangle, Township 13 South, Range 14 East, in Sections 10, 15, 16, and 17. Currently the Project site contains fallow alfalfa fields. The Project site is bordered by undeveloped agricultural land to the north and east and a mixture of undeveloped agricultural land and dirt lots used for staging activities to the south, and the City of Brawley Wastewater Treatment Plant is located along the western edge of the Project site. The elevation at the Project site is approximately 145 feet below mean sea level (bmsl). Maps of the Project location and Project vicinity are provided in Figure 1.



— Project Location

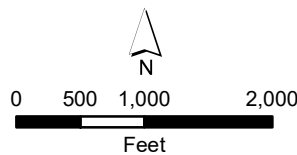


Figure 1
Brawley Solar Project
Project Location & Vicinity

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 in 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 CRHR 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.

City of Brawley

The section regarding Resource Management Elements (RME) in the City of Brawley General Plan Update 2030 describes the cultural and paleontological goals, objectives, and policies to protect such resources (City of Brawley 2008).

IMP-RME Goal 6: Preserve and Promote the Cultural Heritage of the City and Surrounding Region

- IMP-RME Program 6.1

Protect Historical and Archaeological Resources: During the development review process, identify proposed development projects located near or on sites with important archaeological and historic resources or in areas where cultural resources are expected to occur. Require a site inspection by a professional archaeologist and assess potential impacts of the proposed project on archaeological and/or historic resources. If significant impacts are identified according to Appendix K of the California Environmental Quality Act, either modify the project to avoid impacting the resource or implement mitigation measures to reduce the impact. Mitigation may involve archaeological investigation and resource recovery. Enforce the provision of the California Environmental Quality act regarding the preservation or salvage of significant historical and archaeological resources discovered before or during construction activities.

IMP-RME Goal 7: Preserve and Promote the Cultural Heritage of the City and Surrounding Region.

- RME Objective 7.1: Prevent the loss or compromise of significant archeological, historical, and other cultural resources located within the City.
 - RME Policy 7.1.1: Identify, designate, and protect facilities of historical significance and maintain an inventory.
 - RME Policy 7.1.2: Promote the education and awareness of the City's cultural resources.
 - RME Policy 7.1.3: The City shall consult with the Native American tribes under SB 18 for General Plan Amendments.
 - RME Policy 7.1.4: When significant archeological sites or artifacts are discovered on a site, coordination with professional archeologists, relevant state agencies, and concerned Native American tribes regarding preservation of sites or professional retrieval and preservation of artifacts prior to development of the site shall be required.
 - RME Policy 7.1.5: If archeological excavations are recommended on a project site, the City shall require that all such investigations include Native American consultation, which shall occur prior to project approval.
 - RME Policy 7.1.6: Require professionally prepared archaeological reports be completed by a certified archeologist. The report shall include a literature search and a site survey for any project located within a potential sensitive area as defined by the City's Important Archaeological Areas map or areas identified by the local Native American tribes.
 - RME Policy 7.1.7: Assure that adequate review of subsurface paleontological sensitivity is conducted prior to ground disturbance.
 - RME Policy 7.1.8: Ensure that development adjacent to a place, structure or object found to be of historic significance should be designed so that the uses permitted and the architectural design will protect the visual setting of the historical site.

- RME Policy 7.1.9: Consider acquisition of identified historical buildings for public uses.

Plan:

To prevent the destruction of important artifacts during development in these areas, the City will require a site inspection by a professional archaeologist during the development review process for all projects located in the potential resource area. If the archaeologist indicates that significant resources exist on the site and will be impacted by the proposed development project, the impact shall be avoided or mitigated according to the California Environmental Quality Act Guidelines. Mitigation may involve archaeological investigation and resource recovery. The City will also develop and maintain an inventory of archaeological sites in the Planning Area (City of Brawley 2008).

SECTION 2.0 – SETTINGS

2.1 ENVIRONMENTAL SETTING

The proposed Project is located within the mid-region of the lower Colorado Desert physiography. Brawley, Imperial County, California, has an average annual temperature of 72.3 degrees Fahrenheit (°F) (22.4 degrees Celsius [22°C]). Virtually no rainfall occurs during the year; about 2.4 inches of precipitation falls annually and the difference in precipitation between the driest month and the wettest month is 0.39 inch. Average temperatures vary during the year; 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

Seven vegetation communities — Quail Bush Scrub, Agricultural, Bare Ground, Disturbed, Bush Seepweed Scrub, Arrow Weed Thickets, and Tamarisk Thickets — were observed within the Project site.

Areas classified as Quail Bush Scrub are dominated by quail bush with scattered bush seepweed (*Sueda nigra*) present in areas where the habitat gently slopes into more alkaline soils. Plant species observed within the Project site included bush seepweed, big saltbush (*Atriplex lentiformis*), and spiny chlorocantha (*Chloracantha spinosa*). Large swaths of the Project site consist of plots of agricultural fields that are no longer in use. Bermuda grass (*Cynodon dactylon*) is found in these areas with alfalfa (*Medicago sativa*) seedlings in lower numbers.

Agricultural fields are similar to Bare Ground habitat where areas have higher water permeability and higher fossorial rodent habitat potential. Mexican palo verde (*Parkinsonia aculeata*) are planted along the outside of several agriculture fields as wind breaks for agricultural purposes; these areas are therefore considered agricultural habitat.

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 (*Tamarix* sp.) seedlings were the only vegetation observed in these areas.

Bush seepweed is dominant in the shrub canopy with scattered quail bush present. The shrub layer is intermittent to continuous with an herbaceous layer that is very sparse. Stands occur in gently sloping plains bordering agricultural fields or irrigation ditches and areas with disturbed hydrology due to man-made alteration. Soils are deep and saline or alkaline (Sawyer et al. 2009). Species observed within the Project site included bush seepweed and big saltbush.

The shrub canopy is intermittent to continuous, with shrubs reaching 2 to 3 meters in height. Vegetation is dominated by arrow weed (*Pluchea sericea*) and extends along the water feature, occasionally extending over the bank and into the access road. The herbaceous layer is open and intermittent, existing in between stands of cattail (*Typha* sp.) and arrow weed. The habitat exists in irrigation ditches consisting of soils that are sandy and loamy where water is permeable.

Plant species observed included arrow weed, tamarisk, cattail, big saltbush, saltgrass (*Distichlis spicata*), and salt heliotrope (*Heliotropium curassavicum*). Tamarisk dominates the tree canopy and is thick and

continuous. This non-native shrub layer is sparse with isolated quail bush present, while the herbaceous layer contains very little vegetation. Trees average 15 meters in height exist in irrigation ditches and on the upper banks along water features. Species observed within the Project site included tamarisk and big saltbush.

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); six soil types are known to occur within and/or adjacent to the site and are described below.

Badland occurs along the western portion of the Project site. The parent material is composed of alluvium. This soil is not rated as hydric, and the runoff class is high.

The Imperial Silty Clay complex is seen throughout the Project site. 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).

Imperial Glenbar Silty Clay Loam occurs along the western portion and eastern edge of the Project site. The parent material is clayey alluvium derived from mixed and/or clayey lacustrine deposits. The available water capacity is moderate (approximately 8.6 inches) with a depth to the water table of more than 80 inches.

Indio-Vent complex occurs in the southern portion of the Project site just east of the New River. The parent material is alluvium derived from mixed and/or eolian deposits. The available water capacity is moderate (approximately 8.5 inches) with a depth to the water table of more than 80 inches.

Meloland Very Fine Sandy Loam occurs along the drainages in the southern portion of the Project site. The parent material is alluvium derived from mixed and/or eolian deposits. The available water capacity is moderate (approximately 7.8 inches) and a low runoff class. The depth to the water table is more than 80 inches.

Vint and Indio Very Fine Sandy Loam occurs along the drainage in the southwest portion of the Project site. The parent material is alluvium derived from mixed sources and/or eolian deposits. The available water capacity is moderate at about 6.8 inches. The depth to the water table is more than 80 inches.

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).

Existing Conditions

The original survey area included a small section of the lot located on the southeast corner of Andre Road and Western Avenue. This 5.5-acre section of the Project area was not surveyed due to the presence of the existing, fenced-off Ormat Brawley North facility, which was built between 2006 and 2008 (NETR Online 2020). The level of disturbance was evaluated to be high, and it was determined unnecessary to survey that small section of the Project area.

2.2 CULTURAL SETTING

2.2.1 Prehistory

The Project site is located in the mid-section of the lower Colorado Desert, in which ancient Lake Cahuilla was situated – the present-day Salton Sea is illustrative of lower stands of the former Ancient Lake Cahuilla. In addition to paleontological potential, archaeological deposits found around the shoreline of Lake Cahuilla radiocarbon date to at least 1,440 years before present (B.P.) (Waters 1983; Hubbs et al. 1962) and shows demonstrable evidence of cultural activity in the area. Lake Cahuilla presented a massive freshwater oasis, allowing seasonal occupations resulting in archaeological deposits that include pottery, ground and chipped stone artifacts, and archaeological features such as rock fish traps (Waters 1983; Phukan et al. 2019). As an ethnographic landscape, the Cahuilla, Kumeyaay, Kamia, and the tribes which now comprise the Colorado River Indian Tribes (CRIT), the Mojave, Chemehuevi, Hopi, and Navajo settled in various locations around the basin, including the Colorado delta (Phukan et al. 2019). The Kumeyaay and Cahuilla constructed the stone fish trap features, which can be difficult to identify 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 located in the area tend to be associated with Lake Cahuilla due to its temporal context and functional use as a landscape, which yield archaeological data of high significance regarding 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, Quechan, Kumeyaay, Kamia, and the Colorado River Indian Tribes (CRIT). The two closest tribal reservations to the Project site are the Torres-Martinez Reservation located to northwest of the Project site and Fort Yuma reservation located to the southeast of the Project site. The Torres-Martinez Indian Reservation is currently home to the desert Cahuilla Indians and is on the northwest side of the Salton Sea, roughly 55 miles from the Project site. Fort Yuma is located approximately 51 miles closer to the California-Arizona border and is the home of the Quechan. Following is a brief ethnographic and archaeological summary of the Cahuilla, Quechan, Kumeyaay, Kamia, and 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).

Quechan

The Quechan are a Native American Tribe that primarily occupied the surrounding area of the Gila and Colorado Rivers. Historically, the Quechan people were given the name “Yuma” by the Spanish explorers. They are one of several Yuman-speaking groups that resided in California and western Arizona (Bee 1983).

The Quechan lived in small settlements located along the Colorado River, north and south of the Gila River confluence, and along the Gila River. These settlements consisted of several hundred people organized into extended family groups. These settlements were created to be on the move. Often times the families would move into the river bottom during the summer farming season and would return to the high banks of the river during spring flooding. The settlements would also move up or down the rivers depending on food shortages or warfare. Substantial housing was not common among Quechan villages because of the warm climate. Dome-shaped arrow weed houses and ramadas were the most common since it allowed for airflow (Bee 1983; Kroeber 1976).

The Quechan were primarily gatherers and farmers. Hunting wild game was not a viable option due to the harsh desert conditions found outside the Colorado River floodplain. The Quechan cultivated food such as maize, melons, pumpkins, wild grass seeds, and beans. Other crops such as black-eyed beans, watermelon, and wheat were introduced by European immigrants. The Quechan practiced a varied farming strategy, meaning they would plant several food crops at various time of the year. Maize and melons were often planted in February and were not dependent on seasonal flooding. Other crops were planted after the spring flooding of the Colorado River. In autumn, wheat was often planted and harvested just before the spring flooding; while wild grasses, which provided seeds that were ground into a meal, were planted into less fertile soils. Some other wild foods were screw bean pods and mesquite, which could be gathered in times of a low-yielding crop year (Bee 1983; Kroeber 1976).

Warfare was a basis of Quechan culture. They often used two types of warfare: the raiding party and the war party. The raiding party was often used to evoke mayhem and capture horses or captives. The war party consisted of a village raid followed by an organized battle in which both parties would face one another in two lines ending in hand-to-hand combat. Warfare among the tribes was intertwined with myth and ceremony. Traditionally, warfare was connected to ritual and tribal prestige rather than conflict over resources or territory. The Quechan often engaged in warfare with both the Maricopa and the Cocopah, who were sometimes called the Pima. Warfare may have increased in intensity and scale in the eighteenth and early nineteenth century for economic reasons. This departure from the ritual warfare tradition may have been related to the taking of captives to trade to the Spanish for horses or other goods (Bee 1983; Kroeber 1976).

Kumeyaay

The 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 now 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, 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 Kumeyaay (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 people from the Mojave, Chemehuevi, Hopi, and Navajo. While the Hopi and Navajo 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).

City of Brawley

Just as the Imperial Valley was starting to develop, a circular was released by the U.S. Government in 1902 claiming nothing would grow in this desert area, even with plentiful water. This now famous "libel" changed the name of Brawley, which was initially slated to be called Braly. A man named J.H. Braly from Los Angeles had underwritten shares of water stock and was assigned 4,000 acres of land at the center of the site where Brawley now stands. When Braly read this circular, he appealed to the Imperial Land Company to be released from his bargain. They told him they expected to build a city on his land and call it Braly. However, J.H. Braly wanted no part of it; he did not want his name connected with what he envisioned as a failure. George E. Carter, who was building the grade for the new railroad, heard of Braly's wish and took over Braly's contract for the 4000 acres (City of Brawley 2020).

The Imperial Land Company got wind of the deal and sent emissaries to Carter, who sold out. Meanwhile, A.H. Heber (a principal in the townsite organizing company) had a friend in Chicago by the name of Brawley and suggested the town be called that name. The company ordered the new town platted in October of 1902. Brawley had a petition signed and was ready to incorporate in June 1907 but deferred the matter until the new Imperial County was formed out of a portion of San Diego County that year. Then

in February 1908, a petition was filed, and Brawley was allowed to call an election. The vote was 34 to 22 in favor of incorporation (City of Brawley 2020).

For more than a century, Brawley has remained close to its roots of being a small, agricultural community. Many of its businesses cater to area farmers and ranchers who also call Brawley home. From the beginning, those who believed in Brawley were successful in creating imaginative ways to develop an oasis in what was once a hostile environment. Now as then, the town folk of Brawley pull together to create a united vision that is attractive to visitors, homeowners, consumers, developers and businesspeople alike. Incorporated in 1908, was a “tent city” of only 100 persons who were involved in railroads and the earliest introduction of agriculture. It had a population of 11,922 in 1950, but population growth was slow from the 1960s to the early 1990s (City of Brawley 2020).

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; [Confidential Appendix A]). 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 (November 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 San Diego Natural History Museum (SDNHM) on October 07, 2020 (McComas 2020). The SDNHM determined that the proposed Project has the potential to impact late Pleistocene to Holocene-age Lake Cahuilla Beds. Eight recorded fossil localities have been recorded by the SDNHM within a 1-mile radius of the Project site including three localities that were recovered during paleontological monitoring of excavations at the borrow pit for the California Department of Transportation (Caltrans) Brawley Bypass project located along the west side of the proposed Project (McComas 2020). These discoveries include fragments of petrified wood, foraminiferal tests, shells of freshwater snails, mussels, pea clams, and ostracods, as well as bones and teeth of freshwater bony fish, a phalanx (toe bone) of an amphibian, and isolated postcranial remains of unidentified rodents, canids, and felids.

3.2 CULTURAL RESOURCES

A records search dated October 14, 2020, was obtained from the South Coastal Information Center (SCIC) at San Diego State University (Confidential Appendix A). The records search provided information on all documented cultural resources and previous archaeological investigations within the 1-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 CRHR 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, 14 cultural resource studies have previously been completed within the 1-mile records search radius. Of the 14 previous studies, 9 of these studies 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-00079	1976	Von Werlhof, Jay, and Sherilee Von Werlhof	Archaeological examinations of certain geothermal test well sites near Brawley.	N/A
IM-00095	1977	Von Werlhof, Jay, and Sherilee Von Werlhof	Archaeological examinations of five (5) geothermal test well sites near Brawley.	N/A
IM-00146	1978	Von Werlhof, Jay and Sherilee Von Werlhof	Archaeological examinations of a proposed geothermal test area near Brawley.	N/A
IM-00476	1993	Singer, Clay A., John Atwood, and Shelley Marie Gomes	Cultural Resource Records Search for Southern California Gas Company Line 6902 South Imperial County, California.	N/A
IM-00602	1996	Von Werlhof, Jay	Archaeological examination of the Davis Material Site: Reclamation Plan #177-95-COP #1187-95.	N/A
IM-00657	1998	Crafts, Karen C.	Negative Archaeological survey report for the proposed widening of shoulders on State Route 111 in Imperial County between the cities of Brawley and Calipatria.	N/A
IM-00671	1999	Crafts, Karen C.	Historic Property Survey for State Route 78/111 Brawley Bypass.	N/A
IM-00692	1998	Crafts, Karen	Historic Property Survey Report-Negative Findings-Widening the shoulders on State Route 111 in Imperial County between the cities of Brawley and Calipatria.	N/A
IM-00834	1998	Crafts, Karen C.	Negative Archaeological Survey Report for the Construction of the State Route 78/111 Brawley Bypass.	N/A
IM-00835	1989	Fisher, Jim	Historic Architectural Survey report for the Brawley bypass Imperial County.	N/A
IM-00913	2003	Perry, Laureen M.	An Intensive Cultural Resources Inventory of 30 acres for the Brawley Wastewater Treatment Wetlands Pilot Project in Brawley, Imperial County, California	N/A
IM-01149	1999	Eckhardt, William T.	Archaeological Constraints Report for the proposed expansion of Brawley Wastewater Treatment Plant.	N/A
IM-01158	1996	Archaeological Consulting Services, LTD.	An Archaeological Assessment of the Niland-Imperial Pipeline Expansion Corridor, Imperial County, California.	13-005951
IM-01228	2006	SWCA Environmental Consultants	Volume 1- Cultural Resources Final Report of Monitoring and Findings for the QWEST Network Construction Project, State of California.	N/A

*Bold reports are within Project site boundaries

3.2.2 Previously Recorded Cultural Resources within the Study Area

Based upon the records search conducted by the SCIC, five previously recorded cultural resources were recorded within the 1-mile record search radius. Results show that none of the previously recorded resources are mapped within the Project site boundaries (Table 2).

Table 2: Previously Recorded Cultural Resources within the Study Area					
Primary Number	Trinomial	Age	Site Description	Inside Project Site Boundaries	Relocated
P-13-00880	CA-IMP-00880	Prehistoric	Indian Trail N.W & S.E.	Outside	N/A
P-13-02409	CA-IMP-02409	Prehistoric	Small ceramic kiln site	Outside	N/A
P-13-07993	CA-IMP-07993	Historic	Moderate-size farm complex	Outside	N/A
P-13-07994	CA-IMP-07994	Historic	Single-story rectangular structure	Outside	N/A
P-13-08682	CA-IMP-08166H	Historic	Portion of the Niland to Calexico Railroad	Outside	Yes

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 2, 2020. The results of the search were returned on October 28, 2020, and were positive. The NAHC response provided contact information for the 18 tribes that may have information on cultural resources on the Project site.

Letters requesting information were sent via certified mail on October 19, 2020. Emails were also sent to the contacts in an effort to elicit a quicker response. As of February 1, 2020, the Viejas Band of Kumeyaay Indians has requested to be involved with monitoring efforts. Consultation and communications are ongoing with San Pasqual Band of Mission Indians, who have also requested to be involved as the Project progresses. The Agua Caliente Band of Cahuilla Indians declined involvement and defers to the other tribes in the area. Communication with the remaining 15 tribes is ongoing.

SECTION 4.0 – FIELD METHODS

Survey of the Project site took place over the course of November 2 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. Much of the proposed Project survey area was vegetated by agricultural fields (Figure 4) while others were in areas previously disturbed for emplacement of water channels and culverts for agricultural purposes. In agricultural fields on the eastern side of the Project area, visibility ranged from 10 percent to 90 percent; the remainder of the Project area had 100 percent visibility.

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. Sediment approximately 2 inches below the surface was examined to determine the geologic unit (s) present. Active drainages exposing the subsurface deposits were visually scanned for paleontological resources. Notes were taken on the geology and lithology of the geologic unit(s), and photographs were taken to document the survey (Figures 2 and 3).

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), and 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 were 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 analysis and post-processing.

SECTION 5.0 – RESULTS

5.1 RESULTS OF PALEONTOLOGICAL SURVEY

Late Pleistocene to Holocene Lake Cahuilla deposits exposed and/or underlying the proposed Project area consist of dark brown to gray, silty clays interpreted as freshwater lacustrine; and, in drainages where exposed, these same sediments are interbedded with finer to medium sands containing pebbles. The latter indicates the influence of fluvial action within the environment.

No paleontological resources were discovered during the survey within exposed cuts. Numerous bivalves and gastropods were, however, identified on the surface in exposed sediments around the perimeter of agricultural fields. These finds were in silty clays resembling Lake Cahuilla Beds, but it is uncertain as to what depth these finds came from. They appear to be in sediments that may have been disturbed during previous excavations for the emplacement of canals and water drainages.

5.2 RESULTS OF ARCHAEOLOGICAL SURVEY

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 positive result. A records search request was submitted to the SCIC at San Diego State University, San Diego, October 5, 2020. The records search results (Confidential Appendix A) were received on October 22, 2020. The results indicate that five previously recorded resources have been identified within a 1-mile radius of the Project site; none are mapped within the Project site boundaries. These results are summarized in Table 2 above. In addition, 14 cultural resources studies have been conducted in the vicinity, with 9 being within the Project site (Table 1).

During completion of the survey, resource CA-IMP-08166H was relocated. Although not mapped within the actual Project site boundaries, a segment of CA-IMP-8166H was relocated due to its bisecting position between the two adjacent Project areas. Additionally, six newly recorded historic-period resources were identified (Table 3). The new historic-period resources 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 (Confidential Appendix B). These six historic-period sites will be assigned primary numbers by the SCIC (pending). A description of the new finds follows.

Table 3: Newly Identified Cultural Resources Within Project Site

Resource Name (Temporary)	Trinomial Number	Date Recorded	Age	Description	Recommended Evaluation
21267-001	Pending	November 2, 2020	Historic	Single-story residence	Recommended not eligible
21267-002	Pending	November 2, 2020	Historic	House/pads; glass and ceramic scatter	Not Evaluated
21267-003 (Iso)	Pending	November 3, 2020	Historic	Green glass bottle base	Not Evaluated
21267-004	Pending	November 5, 2020	Multi-component	Glass bottle, sanitary and food can scatter	Not Evaluated

Table 3: Newly Identified Cultural Resources Within Project Site					
Resource Name (Temporary)	Trinomial Number	Date Recorded	Age	Description	Recommended Evaluation
21267-005	Pending	November 5, 2020	Multi-component	Historic glass bottle, sanitary and food can scatter; modern refuse	Not Evaluated
21267-006	Pending	November 5, 2020	Historic	Canals / water conveyance, part of irrigation district	Not Evaluated

21267-001

21267-001 is a historic farm/ranch complex, including a single-story house, numerous miscellaneous outbuildings, and a fenced area on the east side of the property. The farm/ranch is located at 5003 Best Road, Brawley, CA 92227, at the northwest corner of Best Road and Ward Road, which runs parallel to the east-west Livesley Drain. The complex is in the southeasternmost location within the Project site boundaries and is bordered to the north and northwest by agricultural fields. The complex is visible as early as 1945 on the USGS map and 1953 in aerial imagery (NETR Online 2020). The house and associated structures are still present. The building appears to correspond to typical minimal traditional style of form and construction, resting on a perimeter foundation of poorly consolidated concrete made with local materials. Wood joists are noted in the interior where exposed, suggesting a post-and-pier foundation for the floor of the building. The outline is a simple rectangle with a low, gabled roofline and minimal pitch. Roof eaves minimally extend, with boxed in soffits. The exterior is treated in stucco, using techniques typical of the period; tarpaper wrap, with wire mesh, a brown/scratch coat, and a finish coat. There are several wood-trimmed piercings for wood-cased double-sash windows. Cast-iron waste pipes are embedded into the exterior surface along one wall.

Several outbuildings are present, but their function remains unknown at this time. These are wood-framed and sided, and most are in a state of collapse or disrepair. Construction techniques and the greater fullness of the dimensions of the dimensional lumber suggest that these buildings are contemporaneous with the main residential building.

The 5003 Best Road residence was evaluated in March 2021 by Chambers Group based on the criteria for listing in the CRHR and was recommended not eligible (Appendix C).

21267-002

21267-002 is the location of a formerly standing historic-era residential house, consisting of one remaining outbuilding foundation, two cement slabs (likely driveways), and historic debris, which includes ceramics and glass bottle fragments. The remaining components of the house and associated features are located immediately adjacent to and west of Best Road and the Best Canal; this is also the eastern entrance from Best Road to the City of Brawley Wastewater Treatment Plant. The perimeter foundation is constructed from concrete and contains inserted lag-bolts to secure the sill-plate of the building. This feature is a requirement following the 1933 Long Beach earthquake and was promulgated into the California building code in the 1930s. The foundation measures 208 inches in length, 111 inches in width, and has a height

of approximately 37 inches. The two concrete slab measurements range from 21 to 40 feet in length, are both 16 feet in width, and have a height of 5 inches. The glass fragments were predominately nondiagnostic; however, the presence of a patinated manganese glass fragment and a hobbleskirt design of what appears to be a Georgia-green-colored Coca-Cola bottle are dated to roughly the 1880s to the 1950s (Toulouse 1971). Also observed were two Japanese blue on white porcelain ceramic fragments, likely from a saucer and a bowl or cup (Figure 5). The house and associated features are visible as early as 1945 on the USGS map and 1953 in aerial imagery and is no longer present on the 1974 USGS map but visible in aerial imagery until 2012 (NETR Online 2020).

21267-I-003

21267-I-003 is an isolated green glass bottle base with an Anchor-Hocking maker's mark dating to 1971 (Toulouse 1971). The glass base was located on the north side of a graded pad in a highly disturbed area, which is due to previous construction and continuous vehicle traffic around the irrigation systems and wastewater treatment plant. The isolate was likely redeposited when the pad and water basin were constructed sometime between 2010 and 2012. The isolated artifact could possibly have been separated from historic trash deposit site 21267-004, which is located 450 feet to the east/southeast.

21267-004

21267-004 is an overlapping deposit site with two distinct periods of deposition. An early deposit is evidenced by the presence of manganese-clarified glass, which has since taken on its characteristic purple color due to absorption of ultraviolet solar radiation. Bottle types appear to consist of pepper sauce and/or liniment types and exhibit characteristics of being manufactured before the complete adoption of the automatic bottle machine. This is evidenced by the presence of hand-applied and tooled finishes. This manufacturing feature roughly dates between 1880 and 1918 but is likely to date before 1903, at which time the automatic bottle machine was put into commercial production. The overlaying historic-period deposit consists of common consumer goods such as liquor bottles, a bimetallic beer can, a condensed milk can, an oval fillet can, and a possible quart oil can, along with a bundle of wire mesh fence material, a variety of shot casings, and two cobble hearth features. Identified bottle maker's marks include Latchford-Marble Glass that dates to between 1938 and 1956, an Owens-Illinois mark dated 1940, Gallo Flavor Guard dating between 1933 and 1964, and a Roma Wines mark dating between the 1950s and early 1970s (SHA 2021). A bimetallic beer can with pull tab opening dates to the early 1960s, and the matchstick filler condensed milk can measuring $2 \frac{8}{16}$ inches by $2 \frac{5}{16}$ inches corresponds to Simonis' type 20, which dates between 1950 and 1985 (Simonis 1997). Also present are a number of shot casings with headstamps relating to Activ, Remington, and Clever manufacturers. Activ Corporation of Kearneysville, West Virginia, produced a plastic hulled shell from the 1970s through the late 1990s. Clever has produced shot shells since 1952. Remington began manufacturing plastic shot shells in 1960, with Peters shells being produced in their characteristic blue color until the late 1960s (Standler 2006). Also noted in association with these deposits are two cobble hearth features with extant charcoal fragments. Based on this data it is suggested that the earlier component of the deposit may be related to railroad construction or maintenance, while the later component may be related to the expansion of post-war leisure time expansion and sport hunting activities.

21267-005

21267-005 is a historic-era site with deposits dating between the 1920s and the 1950s. The trash scatter consists of matchstick filler and sanitary cans, glass bottles and jars, 12- and 16-ounce beverage (beer)

cans, and a variety of unidentified burned fragments. The deposit is located west of railroad tracks, north of the proposed Project tie-line, on the bank along New River. The areas to the east and south of the site are disturbed by the installation of the aboveground water conveyance and the wastewater treatment plant. Identified items observed include a small pill bottle with screw-top finish, a bottle with a maker's mark suggesting a C in a circle design, perhaps representative of the Chattanooga Glass Company of Chattanooga, Tennessee, whose mark was used between approximately 1927 and 1988, a bottle fragment with an Owens-Illinois mark and date code of 1940, and a bottle base with Latchford-Marble Glass mark that dates to between 1938 and 1956. Also noted was a 12-ounce bimetallic beverage (beer) can dating between 1960 and 1975 and a 16-ounce all-metal beverage (beer) can that predates 1975, a church key-opened sanitary can that postdates 1935, and several matchstick filler condensed milk cans whose measurements are unclear at this time. In addition, several fragments of saw-cut bone, both bleached, and burned, were scattered throughout the deposit.

21267-006

21267-006 is a concrete, linear water conveyance element of the irrigation district. The irrigation system runs east-west along Andre Road between Hovley Road on the west to the wastewater facility tie-in on the east (west of Best Road).

The tie-line corridor is paralleled by the Spruce No. 3 Lateral and the Spruce No. 3 Drain. Both of these features of the early irrigation network course through the tie-line corridor. The Spruce 3 Lateral is supplied by the Smilax Lateral, which draws water from the north-south running Spruce Main Canal, which is supplied by the West Side Main Canal. As the Spruce 3 Lateral and Drain travel easterly along Andre Road, both alignments jog north-northeasterly approximately 16 meters (50 feet), midway between Hovley Road and State Route (Highway) 111, and continue their easterly trajectory, where Spruce 3 Lateral continues to supply lands to the north. Spruce 3 Drain terminates at the New River.

The Spruce line of irrigation canals, laterals, and drains was established by the Irrigation District Water Company No. 8 in the early 1900s. The alignments are noted on the Thurston map of 1914 and are indicated on a series of 7.5-minute USGS topographic quadrangles in the same format and arrangement.

The Spruce No. 3 Lateral is concrete-lined and controlled by a series of gates and turnouts (Figure 7). The main channel is composed of formed-in-place concrete with walls opened outward approximately 30 degrees from vertical. The width of the lateral is approximately 8 feet at the top, with a depth of approximately 4 feet. Approximately 0.5 mile east of Hovley Road the alignment of the lateral shifts north approximately 50 feet, with a turnout gate directing water underground, where it returns to the surface in the alignment to the north, continuing easterly towards Highway 111, where it undercrosses the roadway and continues to supply the fields to the north until it reaches the New River. Date stamps on turnouts and head gates indicate that these features were added between the middle 1950s to the middle 1970s. Turnout gate 75, located near North Western Avenue, is dated to 1956 as is the head gate, while the adjacent upstream underground culvert frame is dated to 1963. Turnout gate 76 is dated to 1974. The head gate near Hovley Road is a jack type with a ferrous rod and jack assembly controlling a wooden gate located in tracks inset into the concrete lateral. The jack rests on a wood crossbeam set atop concrete pillars that rest on the sidewall of either side of the lateral. All turnout gates appear to be nonferrous metal slide gates that are controlled by dowling pins inserted into the perforated gate post, with the dowling pin resting on two wood beams affixed to the concrete pillars straddling either side of the gate opening.

The Spruce No. 3 Drain parallels the No. 3 Lateral and is offset approximately 30 feet to the south. The No. 3 Drain, as with nearly all drains in the system, was designed and constructed with an eye toward utility and function. The alignment is directly cut into the ground with spoils used to create elevated roadways along the margins. Width of the drain varies but is roughly 30 feet wide, with sidewalls sloping approximately 30 degrees from vertical. The drain has been subject to continual routine maintenance activities since its initial construction, with removed sediments relocated on the roadbeds adjacent. Approximately 0.5 mile east of Hovley Road, the alignment of the drain shifts north approximately 50 feet, continues eastward, undercrossing Highway 111, and terminates at the New River, where excess water is drained.

While the irrigation network is considered an historic resource, individual elements such as laterals and drains are ubiquitous and often are a result of relining efforts to control water loss beginning in the 1950s, obliterating the original dirt canal systems. Similarly, drains are under constant maintenance and restructuring to maintain shape, form, and water flow through removal of vegetation and sediments (Shultz 2017). As such, both the Spruce No. 3 Lateral and the Spruce No. 3 Drain are not recommended eligible for inclusion on the NRHP or in the CRHR.

CA-IMP-8166H

CA-IMP-8166H is the Niland to Calexico Railroad, which was constructed between 1902 and 1904 by the Southern Pacific Company and runs 65 miles from Niland to Calexico. The resource was recorded in 2003 by Collins and Pflaum as a standard gauge track on a gravel base and is still in use today (Ehringer 2011).

A portion of the Niland to Calexico Railroad was revisited and updated as part of the current survey of the Project area, which is bisected by the railroad in a north-south direction, between an unnamed dirt road, west of Best Canal turn-out number 116 in the north, and the Livesley Drain in the south. Five undercrossing features were identified within the Project area crosspassing under the existing railroad line. These features are constructed of poured-in-place, board-formed concrete with head wall and wing-walls either side to form a revetment-style retainer for the track ballast; and areas are constructed of cement and mortar and allow feeder lines from Best Canal, which is to the east of the railroad, to supply water to the adjacent agricultural lands. The feeder line undercrossing construction dates range from 1928 to 1930 (Figure 6). The wall measurements range from approximately 36 to 96 inches in height and average between 8 to 12 inches in width. The dates of construction are stamped into the sides of the main walls.

Feature 1: Two parallel feeder lines are immediately south of the intersection of the railroad and an unnamed dirt road, west of Best Canal turn-out number 116. The undercrossings, both dating to 1930, with the southern line turning slightly southwesterly on the west side of the tracks, are located at the northern end of the Project area.

Feature 2: This is an undercrossing at the intersection of the railroad and an unnamed dirt road, west of Best Canal turn-out number 115, which dates to 1928.

Feature 3: This is an undercrossing at the intersection of the railroad and an unnamed dirt road, west of Best Canal turn-out number 114, which dates to 1930.

Feature 4: This is a southwesterly undercrossing offshoot stemming from and immediately south of the feeder line for Feature 3, which is west of Best Canal turn-out number 114 and dates to 1930.

Feature 5: This is the southernmost undercrossing at the intersection of the railroad and an unnamed dirt road, west of Best Canal turn-out number 110, which dates to 1930.

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. Eight recorded fossil localities have been identified within a 1-mile radius of the Project site with none being located inside the Project area.

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 nine cultural resource studies and one archaeological resource within the Project site.

The survey yielded six new historic-period and multi-component resources (21267-001, 21267-002, 21267-I-003, 21267-004, 21267-005, and 21267-006) within the Project site; a segment of the previously recorded resource, CA-IMP-8166H, was relocated and updated. One of the two farmhouses and associated structures, 21267-001, is still standing and has been evaluated for CRHR eligibility and has been recommended not eligible; what remains of the other, 21267-002, comprises a foundation, two cement slabs, and a small glass and ceramic scatter. Isolate 21267-I-003, a single green glass bottle base, was likely redeposited during the construction of the graded pad and retention basin southeast of the City of Brawley Wastewater Treatment Plant, possibly stemming from one of the two historic scatters which are located in relatively close proximity. Site 21267-004 is multi-component with a small glass and can scatter dating to the 1930s as well as 1970s and is located immediately west of the Niland to Calexico Railroad (CA-IMP-8166H) at the south end of the Project area. Site 21267-005 is multi-component with the first trash scatter dating from the early to mid-1950s and the second dating from the last deposition date through the present. Sites 21267-004 and 21267-005 were likely deposited during the construction of the railroad, water treatment plant, and irrigation system and “revisited” during the following decades during maintenance or upkeep. The segment of CA-IMP-8166H, the Niland to Calexico Railroad, which bisects the two adjacent Project areas from north to south, was revisited and relocated; updates were made to the resource by recording five cement and mortar undercrossing feeder lines from Best Canal dating to 1928 and 1930.

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-disturbance 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 will 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 will 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.

The site does have paleontological sensitivity, with high potential for paleontological resource discovery; therefore, it is recommended that a qualified paleontologist is retained and is on site for construction monitoring. These requirements are outlined in the proposed mitigation measures below.

6.2.2 Cultural

The records search and archaeological survey resulted in the identification of 12 resources within 1 mile of the Project site. Six new sites were identified and recorded within the Project site during the survey. One of the previously recorded resources identified in close proximity to the Project site during the records search bisects two adjacent Project areas and was relocated; this record will also be updated.

Based on the background research and results of the survey, it is not recommended that any further archaeological testing or evaluation occur, apart from resource 21267-001 which was evaluated in March 2021 by Chambers Group, for any of the above listed archaeological sites prior to construction.

Prior to permitting ground-disturbing work within the Project site, it is recommended that the County consult with the Viejas Band of Kumeyaay Indians, per their request for involvement during monitoring efforts for all ground-disturbing activities, to identify any concerns they may have regarding the Project. The San Pasqual Band of Mission Indians also requested to be notified of any discoveries located during the survey, which will determine their level of involvement. 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 Once a geotechnical report has been completed for the project, a qualified paleontologist shall review the boring logs and determine how deep paleontologically sensitive formations may be across the project site. The paleontologist shall use this information along with the results of the paleontological survey to determine if paleontological monitoring is warranted. If monitoring IS warranted, a qualified paleontologist shall prepare a mitigation and monitoring plan to be implemented during project construction.

For any areas identified as likely to impact paleontologically sensitive MM PALEO 2-6 shall be followed.

MM PALEO-2 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.

Timing/Implementation: Prior to construction. Enforcement/Monitoring: Imperial County Department of Planning and Development Services

MM PALEO-3 Prior to commencing construction activities and thus prior to any ground disturbance in the proposed Project site, the Supervising Paleontological Resources Specialist and Paleontological 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.

Timing/Implementation: Prior to construction. Enforcement/Monitoring: Qualified Paleontologist and Imperial County Department of Planning and Development Services

MM PALEO-4 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 on site 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 to serve 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.

Timing/Implementation: During construction. Enforcement/Monitoring: Qualified Paleontologist and Imperial County Department of Planning and Development Services

MM PALEO-5 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.

Timing/Implementation: During construction. Enforcement/Monitoring: Qualified Paleontologist and Imperial County Department of Planning and Development Services

MM PALEO-6 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 paleontological finds.

Timing/Implementation: Post construction. Enforcement/Monitoring: Qualified Paleontologist and Imperial County Department of Planning and Development Services

MM CUL-1 Developer shall retain the services of a Qualified Archaeologist and require that all initial ground-disturbing work be monitored by someone trained in artifact and feature

identification in monitoring contexts. The Consultant shall provide a Supervising Archaeological Specialist and a Paleontological Monitor present at the Project construction phase kickoff meeting.

Timing/Implementation: Prior to construction. Enforcement/Monitoring: Imperial County Department of Planning and Development Services

MM CUL-2 Prior to commencing construction activities and thus prior to any ground disturbance in the proposed Project site, the supervising Archaeological Resources Specialist and Archaeological 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.

Timing/Implementation: Prior to construction. Enforcement/Monitoring: Qualified Archaeologist and Imperial County Department of Planning and Development Services

MM CUL-3 In the event of the discovery of previously unidentified archaeological materials, the Contractor shall immediately cease all work activities within approximately 100 feet of the discovery. After cessation of excavation, the Contractor shall immediately contact the Imperial County Department of Planning and Development Services. Except in the case of cultural items that fall within the scope of the Native American Grave Protection and Repatriation Act, the discovery of any cultural resource within the Project area shall not be grounds for a “stop work” notice or otherwise interfere with the Project’s continuation except as set forth in this paragraph. In the event of an unanticipated discovery of archaeological materials during construction, the Applicant shall retain the services of a Qualified Professional Archaeologist meeting the Secretary of the Interior’s Standards for a Qualified Archaeologist to evaluate the significance of the materials prior to resuming any construction-related activities in the vicinity of the find. If the Qualified Archaeologist determines that the discovery constitutes a significant resource under CEQA and it cannot be avoided, the Applicant shall implement an archaeological data recovery program.

Timing/Implementation: During construction. Enforcement/Monitoring: Qualified Archaeologist and Imperial County Department of Planning and Development Services

MM CUL-4 The Contractor shall provide the Supervising Archaeological 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, an Archaeological Monitor shall be present on site at the commencement of ground-disturbing activities related to the Project. The monitor, in consultation with the Supervising Archaeologist, 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 to serve as an ongoing reference resource and to provide a resource for final reporting upon completion of the Project.

The Supervising Archaeologist, Archaeological 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.

Timing/Implementation: During construction. Enforcement/Monitoring: Qualified Archaeologist and Imperial County Department of Planning and Development Services

MM-CUL-5 If archaeological resources are discovered, construction shall be halted within 50 feet of the find and shall not resume until a Qualified Archaeologist can determine the significance of the find and/or the find has been fully investigated, documented, and cleared.

Timing/Implementation: During construction. Enforcement/Monitoring: Qualified Archaeologist and Imperial County Department of Planning and Development Services

MM-CUL-6 At the completion of all ground-disturbing activities, the Consultant shall prepare an Archaeological 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 South Coastal Information Center (SCIC), as required.

Timing/Implementation: During construction. Enforcement/Monitoring: Qualified Archaeologist and Imperial County Department of Planning and Development Services

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 Imperial County 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 Imperial County Coroner shall be notified immediately. If the human remains are determined to be prehistoric, the County 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



Figure 2: Gastropods & bivalves within silty clays of possible Lake Cahuilla lacustrine sediment, facing north/overview.



Figure 3: Possible exposure of Lake Cahuilla lacustrine, facing north.



Figure 4: Survey area west of Best Road, facing north.

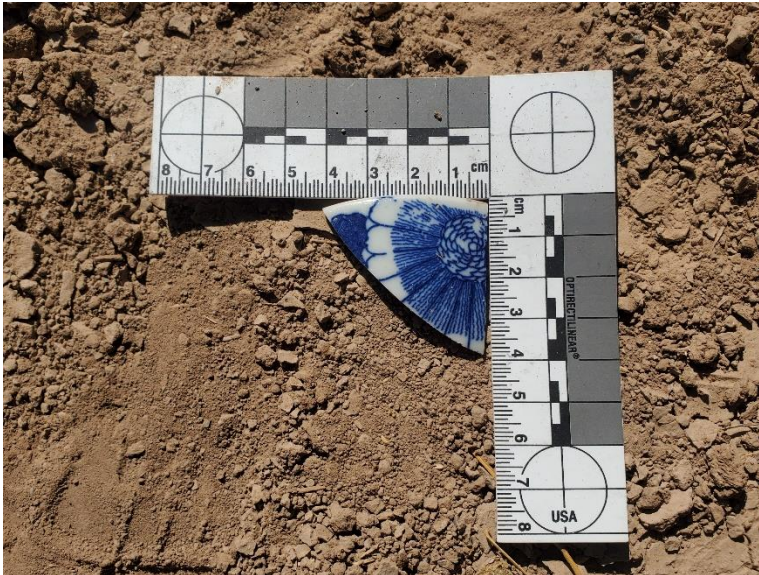


Figure 5: Historic Japanese blue on white porcelain ceramic fragment located near structure foundation at 21267-002.



Figure 6: Overview of Niland to Calexico Railroad and culvert undercrossing dated to 1930 at north end of Project area, facing southwest.



Figure 7: Overview of Spruce No. 3 Lateral, showing construction dates of 1956 and 1963, facing west/southwest. Located at the southeast corner of Hovley Road and Andre Road.

SECTION 8.0 – REFERENCES

- Alles, D.L.
2004 Geology of the Salton Trough. Electronic document, <http://fire.biol.wvu.edu/trent/alles/GeologySaltonTrough.pdf>.
- Almstedt, Ruth Farrell
1982 The Kumeyaay and Ipai. In *APS/SDG&E Interconnection Project Native American Cultural Resources*, pp. 6-21. Document on file with San Diego Gas & Electric Company, San Diego, California.
- Barker, James
1976 Ethnographic Sketch of the Yuha Desert Region. In *Background to Prehistory of the Yuha Desert*. Edited by Philip J. Wilke, pp. 21-42. Ballena Press Anthropological Papers 5.
- Bee, Robert L.
1983 Quechan. In *Handbook of North American Indians: Volume 10: Southwest*. Edited by Alfonso Ortiz, pp. 86-98. Smithsonian Institution, Washington D.C.
- Bean, John Lowell
1978 Cahuilla. In *Handbook of North American Indians: Volume 8, California*. Robert F. Heizer, ed., pp. 575-587. Smithsonian Institution, Washington, D.C.
- Bean, John Lowell, and Harry W. Lawton
1973 Some Explanations for the rise of Cultural Complexity in Native California with Comments on Proto-Agriculture and Agriculture. In *Native Californians: A Theoretical Perspective*. Edited by Lowell J. Bean and Thomas C. Blackburn, pp. 19-48. Ballena Press, Socorro, New Mexico.
- Bean, John Lowell, and Silvia Vane
2002 The Native Americans of Joshua Tree National Park: An Ethnographic Overview and Assessment Study. https://www.nps.gov/parkhistory/online_books/jotr/history5.htm. Web page accessed November 11, 2020.
- Byrd, Brian F., and Seetha N. Reddy
1999 Collecting and Residing Near the Shore: The Role of Small and Large Sites in Settlement Reconstruction. *Pacific Coast Archaeological Society Quarterly* 35(1):33-56.
- Castetter, Edward F., and Willis H. Bell
1951 Yuman Indian Agriculture: Primitive Subsistence on the Lower Colorado and Gila Rivers. University of New Mexico Press.
- Castillo, Edward D.
1978 The Impact of Euro-American Exploration and Settlement. In *Handbook of North American Indians*. Edited by R. F. Heizer, pp. 99-127. Smithsonian Institution: Washington, D.C.

City of Brawley

2008 City of Brawley Draft General Plan Update 2030. www.brawley-ca.gov/cms/kcfinder/upload/files/planning/Final_GP_Master-PDF.pdf. Accessed December 2020.

2020 Our Roots. www.brawley-ca.gov/section/our-roots. Accessed December 2020.

Cleland, Robert G.

1941 *The Cattle on a Thousand Hills: Southern California, 1850-1870*. Huntington Library, San Marino, California.

Climate-Data

2021 Brawley, CA Climate. <https://en.climate-data.org/north-america/united-states-of-america/california/brawley-16250/>. Accessed January 5, 2021.

County of Imperial Planning and Development Services Department

2016 Imperial County Conservation and Open Space Element, pp. 38. <https://www.icpds.com/assets/planning/conservation-open-space-element-2016.pdf>. Accessed January 5, 2021.

Cuero, Delfina

1970 *The Autobiography of Delfina Cuero: A Diegueno Women*. As told to Florence C. Shipke Malki Museum Press, Morongo Indian Reservation.

Deur, Douglas, and Deborah Confer

2012 *People of Snowy Mountain, People of the River: A Multi-Agency Ethnographic Overview and Compendium Relating to Tribes Associated with Clark County, Nevada*. *Anthropology Faculty Publications and Presentations*. 98.

Ehringer, C.

2011 Site form for CA-IMP-8166H. On file at the South Coastal Information Center, San Diego, CA.

Forbes, Jack

1965 *Warriors of the Colorado: The Yumas of the Quechan Nation and their Neighbors*. University of Oklahoma Press, Norman, Oklahoma.

Gifford, Edward W.

1918 Clans and Moieties in Southern California. *University of California Publications in American Archaeology and Ethnology* 14(2):155-219. Berkeley.

1931 The Kamia of Imperial Valley. *Bureau of American Ethnology Bulletin No. 97*. U.S. Government Printing Office, Washington, D.C.

Hoover, M.B., H.E. Rensch, E.G. Rensch, and W.N. Abeloe

2002 *Historic Spots in California*. Revised by Douglas E. Kyle. Stanford University Press. Stanford, California. 4th Edition.

- Hubbs, Carl L., and R.R. Miller
1948 The Great Basin. Part II, The zoological evidence. University of Utah, Bulletin 38: 18-144.
- Hubbs, Carl L., George S. Bien, and Hans E. Suess
1962 La Jolla Natural Radiocarbon Measurements II*. *Radiocarbon*, 4, pp.204-238.
- Jefferson, G.T.
2006 Review of Salton Sea Restoration Program Draft Programmatic Environmental Impact Report. On file at the Colorado Desert District Stout Research Center, Anza-Borrego Desert State Park.
- Jennings, Charles W.
1967 Geologic Map of California: Salton Sea Sheet. California Division of Mines and Geology.
- Kroeber, Alfred L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, D. C.
1976 *Handbook of the Indians of California*. Reprinted. Dover Publications, Inc. New York.
- Lawton, Harry W., and Lowell J. Bean
1968 A Preliminary Reconstruction of Aboriginal Agricultural Technology among the Cahuilla. *The Indian Historian* 1(5):18-24, 29.
- Lech, S.
2012 *Pioneers of Riverside County: The Spanish, Mexican and Early American Periods*. Arcadia Publishing: 1-19.
- Luomala, Katherine
1978 Tipai-Ipai. In *Handbook of North American Indians: Volume 8, California*. Edited by Robert F. Heizer, pp. 592-609. W.C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- McComas, Katie
2020 Unpublished museum collections records. San Diego Natural History Museum. October 27.
- Meighan, Clement
1954 A Late Complex in Southern California Prehistory. *The Southwestern Journal of Anthropology* 10:215-227.
- Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Inc., New York.
- Moratto, Michael J., Adella Schroth, John M. Foster, Dennis Gallegos, Roberta S. Greenwood, Gwendolyn R. Romani, Melinda C. Romano, Laurence H. Shoup, Mark T. Swanson, and Eric C. Gibson
1994 Archaeological Investigation at Five Sites on the Lower San Luis Rey River, San Diego County, California. *Journal of California and Great Basin Anthropology*. 23(1):179-214.

National Park Service (NPS)

- 1983 Archeology and Historic Preservation; *Secretary of the Interior's Standards and Guidelines*. 48 FR 44716-42.

NETR Online

- 2021 Historic Aerials. <https://www.historicaerials.com/viewer>. Accessed December 2020.

Office of Historic Preservation (OHP)

- 1995 *Instructions for Recording Historical Resources: Introduction*. California Department of Transportation with the California Office of Historic Preservation, Sacramento: 2.

Phukan, Anjali, Todd J. Braje, Thomas K. Rockwell, and Isaac Ullah

- 2019 Shorelines in the Desert: Mapping Fish Trap Features along the Southwest Coast of Ancient Lake Cahuilla, California. *Advances in Archaeological Practice* 7(4), pp.325-336.

Pritzker, Barry M.

- 2000 "Tipai-Ipai" in *A Native American Encyclopedia: History, Culture, and Peoples*, Oxford: Oxford University Press.

Rogers, Malcolm J.

- 1939 *Early Lithic Industries of the Lower Basin of the Colorado and Adjacent Desert Regions*. San Diego Museum Papers, No. 3. 1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1(1):167-198.

- 1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1(2):167-198. Albuquerque.

Russell, John C., Clyde M. Woods, and Jackson Underwood

- 2002 An Assessment of the Imperial Sand Dunes as a Native American Cultural Landscape. Document prepared for the Bureau of Land Management, Sacramento, California.

Sawyer, J.O., T. Keeler-Wolf, and Evans, J.M.

- 2009 *A Manual of California Vegetation, Second Edition*. California Native Plant Society, Sacramento, California.

Schaefer, J., and D. Laylander.

- 2007 The Colorado Desert: Ancient Adaptations to Wetlands and Wastelands. In *California Prehistory: Colonization, Culture, and Complexity*. Edited by T.L. Jones and K.A. Klar, pp. 247-258. AltaMira Press, New York.

Shipek, Florence

- 1972 Table of Tipai-Ipai population. Included on p. 596 of Luomala, Katherine (1978), Tipai-Ipai. In *Handbook of North American Indians: Volume 8, California*. Edited by Robert F. Heizer, pp. 592-609. W.C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

- 1988 *Pushed into the Rocks*. University of Nebraska Press, Lincoln, Nebraska.

Shultz, Richard D.

- 2017 Historic Property Survey Report for the Imperial Avenue Extension Project, El Centro, California. Document on file RECON, San Diego.

Simonis, Don

- 1997 *Simonis Milk Can Guide*. Bureau of Land Management, Kingman Field Office. Published by New Mexico Archeological Council, Albuquerque.

Society of Historical Archaeology (SHA)

- 2021 Glass Making and Glass Makers: Bottle and Glass Makers Markings. <https://sha.org/bottle/makersmarks.htm>. Accessed December 2020.

Society of Vertebrate Paleontology (SVP)

- 2010 Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources Society of Vertebrate Paleontology. Impact Mitigation Guidelines Revision Committee. Pages 1–11. Bethesda, MD.

Spier, Leslie

- 1923 Southern Diegueño Customs. *University of California Publications in American Archaeology and Ethnology*. 20(16):295-358. Berkeley.

Standler, Ronald

- 2006 Shotshell Cartridge History. <http://www.rbs0.com/shotshell.htm>. Accessed January 2021.

Stearns, R.E.C.

- 1901 The fossil fresh-water shells of the Colorado Desert, their distribution, environment, and variation, U.S. National Museum, Proceedings 24(1256): 271-299.

Thurston, Albert G.

- 1914 Irrigation District and Road Map, Imperial Valley - David Rumsey Historical Map Collection.
https://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~258905~5522242:Irrigation-district-and-road-map,-I?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No.

Titus, M. D.

- 1987 Evidence for Prehistoric Occupation of Sites on San Clemente Island by Hokan and Uto-Aztecan Indians. Unpublished master's thesis, Department of Anthropology, University of California, Los Angeles.

Toulouse, Julian Harrison

- 1971 *Bottle Makers and Their Marks*. Thomas Nelson, New York.

True, Delbert. L.

- 1966 Archaeological Differentiation of Shoshonean and Yuman Speaking Groups in Southern California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Los Angeles.

- 1980 The Pauma Complex in Northern San Diego County: 1978. *Journal of New World Archaeology* 3(4)1-39.
- True, Delbert L., Clement W. Meighan, and Harvey Crew
1974 Archaeological Investigations at Molpa, San Diego County. University of California Publications in Anthropology 11, Berkeley.
- University of California Museum of Paleontology (UCMP)
2020 Paleontological Database. <http://www.ucmp.berkeley.edu/>. Accessed November 2020.
- United States Department of Agriculture (USDA)
2020 Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions Available at: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>. Accessed December 2020.
- United States Geological Survey (USGS)
2018 *Westmorland East* 7.5-minute Topographic Quadrangle.
- Vellanoweth, Rene L., and Jeffrey H. Altschul
2002 Antiquarians, Cultural Historians, and Scientists: *The Archaeology of the Bight*. In *Islanders and Mainlanders: Prehistoric Context for the Southern California Bight*, edited by Jeffery H. Altschul and Donn R. Grenda, pp. 85-112. SRI Press, Tucson.
- Waters, Michael R.
1980 Lake Cahuilla: Later Quaternary Lacustrine History of the Salton Trough, California. Unpublished master's thesis, University of Arizona, Tucson.
1983 Late Holocene lacustrine chronology and archaeology of ancient Lake Cahuilla, California. *Quaternary Research*, 19(3), 373-387.
- Waugh, M. Georgie
1986 Intensification and Land-Use: Archaeological Indication of Transition and Transformation in a Late Prehistoric Complex in Southern California. Ph.D. dissertation, University of California, Davis. University Microfilms, Ann Arbor, Michigan.
- Whitley, David S.
2005 *Introduction to Rock Art Research*. Left Coast Press, Walnut Creek, California.
- Woods, Clyde M.
1982 Miguel to the Colorado River and Miguel to Mission Top: Identification and Evaluation of Native American Cultural Resources. APS/SDG&E Interconnection Project. Document on file with San Diego Gas & Electric Company.

APPENDIX A – CONFIDENTIAL CULTURAL RECORDS SEARCH RESULTS



APPENDIX B – CONFIDENTIAL DPR SERIES 523 FORMS



APPENDIX C – 5003 BEST ROAD EVALUATION



5003 Best Road Residence CRHR Evaluation
Temporary resource number: 21267-001 (Trinomial pending)
Kellie Kandybowicz
Cultural Resource Specialist, Chambers Group Inc.
March 18, 2021

During the Phase I pedestrian survey for the Brawley Solar Project in November 2020, the historic-era farm/ranch complex at 5003 Best Road was encountered within Project boundaries. The vacant residence was evaluated in March 2021 to determine if its removal during project development would contribute to any adverse effects and significant impacts as a cultural resource. The resource assessment was conducted in compliance with the California Environmental Quality Act (CEQA) and evaluated under the criteria of the California Register of Historic Resources (CRHR; OHP 2021).

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.

Historical Context

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).

As the Imperial Valley was starting to develop, a circular was released by the U.S. Government in 1902 claiming nothing would grow in this desert area, even with plentiful water. A man named J.H. Braly from Los Angeles had underwritten shares of water stock and was assigned 4,000 acres of land at the center of the site where Brawley now stands. George E. Carter, who was building the grade for the new railroad, heard of Braly’s wish to be released from his bargain, as he envisioned the city as a potential failure, and took over Braly’s contract for the 4000 acres. The Imperial Land Company got wind of the deal and sent

emissaries to buy out Carter. The company ordered the new town platted in October of 1902 (City of Brawley 2020).

Brawley was eventually incorporated in 1908 and was a “tent city” of only 100 persons who were involved in railroads and the earliest introduction of agriculture. It had a population of 11,922 in 1950, had growth that was slow from the 1960s to the early 1990s, and as of 2019, Brawley’s population is 26,000. Although the town has grown substantially, for more than a century, Brawley has remained close to its roots of being an agricultural-driven community (City of Brawley 2020).

5003 Best Road Residence

The farm/ranch complex is located at 5003 Best Road, Brawley, CA 92227, at the northwest corner of Best Road and Ward Road, which runs parallel to the east-west Livesley Drain and is bordered to the north and northwest by agricultural fields. The complex is within U.S. Geological Survey (USGS) *Westmorland East*, California, 7.5-minute topographic quadrangle, Township 13 South, Range 14 East, in tract 120 and APN number 037-140-006. The property is located within the Imperial Irrigation District.

In 1908, the property on which the farm/ranch complex is located was surveyed for sale to Ms. Myrta Livesley and on April 19, 1911 a patent (No. 189395) was recorded by the General Land Office in Los Angeles, California for claimants Edward J. Standlee, Thomas A. Livesley, and William E. Miller (USDI 2021). No additional documentation was located on the early development and residents of the property or the construction of the farm/ranch structures, which includes a single-story house, numerous miscellaneous outbuildings, and a fenced area on the east side of the property. The residence is first visible on the 1945 USGS map and in 1953 aerial imagery (NETR 2020). Based on the construction style, the house was likely built circa 1935 (City of San Diego 2007).

Over the last 100 years, the land on which the complex was built has been sold multiple times. The original land title held by the aforementioned individuals, most notably Mr. Livesley, was developed for agricultural use. The property was eventually owned by the Flammang family, Loma Farms, and most recently by ORNI 19, LLC (County of Imperial 2021).

Thomas A. Livesley

Thomas A. Livesley was born to Samuel and Margaret Livesley of Wisconsin. His father was a prominent British hop grower. The sixth of ten siblings, he was born in 1863 in Ironton, Sauk County, Wisconsin during the middle of the Civil War. At the age of ten his father bought and moved the family to a ranch in nearby LaValle. In 1879, at 16 he was listed by the census as “laborer” and at 21 as a “carpenter.” Thomas is said to have traveled west with John Morrison in 1885 and was one of the “two Livesley boys.” It is known that in 1889 Tom was a butcher at the same Seattle address as his brother George who was a grocer. In 1890 he was part of “Livesley Brothers” hop dealers with siblings Robert and George (Bush 2000).

In February 1890, Tom married Myrta Emeline Hubbell in Seattle. She was the daughter of prominent LaValle farmer and Judge Wellington Hubbell who had also moved to Seattle. They did not have any children and were divorced in 1903 (Bush 2000).

In the early 1900s, Thomas spent time in California, where he was in the grapefruit business, as well as having a melon ranch. He met his second wife Edna DeBeck in San Francisco who was Canadian and had attended Mills College in Oakland where she studied nursing. They were married in Vancouver, BC in September 1908. The Livesleys bought several hundred acres and began to grow cantaloupes, that were

sold though Hiram Wood and his company The Woods Company. It is recorded that Thomas purchased land in what would become the City of Brawley from 1908 to 1911, including the property on which the 5003 Best Road farm/ranch complex was constructed. In 1908, Thomas founded his hop business "T.A. Livesley and Co." with his partner and friend Jack Roberts. Mr. Roberts was involved until 1924 when they amicably dissolved their partnership and Thomas became sole owner. It is unknown if Thomas ever resided in Brawley or just held land patents for agricultural use. At an unknown date, likely after initial construction, the drain immediately south of the 5003 Best Road property was named the Livesley Drain (Bush 2000).

At an unknown date between 1911 and 1927, Thomas and his wife moved to Salem, Oregon. Between 1910 and 1921 the couple had four children. Thomas was a busy man who had many resources and businesses and by 1924 became known as the "Hop King" because he was the largest grower of hops in Oregon. He also served as Vice President of Oregon Linen Mills. In 1927, Tom commissioned the Livesley Tower, an 11-story office building in downtown Salem. Space in this building was managed and leased by the Livesleys until its sale in 1960. The Livesleys had a mansion built which was designed by Ellis F. Lawrence, the founder of the University of Oregon School of Architecture; this house would later be sold in 1988 to the state to become the Governor's Mansion (Bush 2000).

Thomas was elected as Mayor of Salem, Oregon and served from 1927 to 1931. His mayorship was marked by much improvement, noticeably moving Salem toward a council-manager form of government, replacing many of the town's wooden bridges with concrete ones, construction of the Salem Airport, and the installation of streetlights. He was adamant that these changes be made with concern for the beauty of the city. He was known as the "Good Roads" mayor. He later served as Marion County State Representative from 1937 to 1939 (Bush 2000).

Thomas lived a full and successful life and passed away in Salem of skin cancer in July of 1947, at the age of 84 (Bush 2000).

Change of Title

At an unknown date, the 5003 Best Road property was sold by the Livesley family. In 1976, based on Permit 14097, ownership of the property was held by Joe Flammang (County of Imperial 2021). In 1980, a grant of all minerals, gases, and water in a portion of the west half of the south half of Tract 120 was divided between Dennis Flammang, Joseph Flammang, Paula Ann McCormick, and Mary Dee Flammang (Stewart Title of California 2006).

Joseph Flammang, one of the Flammang children, was born in Brawley in 1946 to parents John and Lois. In 1962, Mr. and Mrs. Flammang started a farm family business. Joseph grew up and attended school in Brawley and later attended Cal Poly in Pomona, California. After college, he traveled to Iran on a farming project for the Iran California Company. He farmed in Brawley, starting John Flammang Farms in 1998, and in later years was a substitute high school teacher. There is minimal information available on Joseph's siblings aside from their property ownership. Joseph passed away on February 22, 2018 (Legacy 2021).

In 1988, based on Permit 28722, the property owners were Loma Farms, Inc., a California corporation owned by John Flammang. In 2008, a geothermal lease was executed by the Flammangs and McCormick with ORNI 17, LLC as the lessor. Based on the County of Imperial's Assessor the land was most recently sold to ORNI 19, LLC in 2009 who plan to construct a solar energy field (Stewart Title of California 2006).

Residence Construction

The main residential building appears to correspond to typical Minimal Traditional style of form and construction, which dates range from 1935 to 1955, and is resting on a perimeter foundation of poorly consolidated concrete made with local materials (City of San Diego 2007). Wood joists are noted in the interior where exposed, suggesting a post-and-pier foundation for the floor of the building. The outline is a simple rectangle with a low, gabled roofline and minimal pitch. Roof eaves minimally extend, with boxed in soffits. The exterior is treated in stucco, using techniques typical of the period; tarpaper wrap, with wire mesh, a brown/scratch coat, and a finish coat. There are several wood-trimmed piercings for wood-cased double-sash windows. Cast-iron waste pipes are embedded into the exterior surface along one wall.

Several outbuildings are present, but their function remains unknown at this time. These are wood-framed and sided, and most are in a state of collapse or disrepair. Construction techniques and the greater fullness of the dimensions of the dimensional lumber suggest that these buildings are contemporaneous with the main residential building. The house and associated structures are still present. There are many mature trees lining the eastern and northern perimeters.

Evaluation Recommendation

Based on the evaluation of the residence, either as a complex or as individual structures, none of the four criteria are met for inclusion in the CRHR and the resource is recommended not eligible (OHP 2021).

Criterion 1: This resource does not meet the criteria under Criterion 1 as it is not associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States. Therefore, this resource is recommended not eligible for the CRHR under Criterion 1.

Criterion 2: This resource does not meet Criterion 2 as it is not associated with the lives of persons who are important to local, California history. While research has yielded information to suggest that one of the original land patent holders, Thomas A. Livesley, was fairly prominent in Salem, Oregon, neither he nor his family, or those also listed on the 1911 land patent, were specifically associated with Brawley or Imperial Valley, California history. There is no evidence that Mr. Livesley or his family ever resided at 5003 Best Road and were not mentioned as being influential in literature regarding the Imperial Irrigation District between the 1900s and 1940s or the history of Imperial Valley between the 1900s and 1930s (Dowd 1956; Tout 1931). It is likely that Mr. Livesley and the other parties listed on the land patent were involved in speculative agriculture but were not personally invested in the overall development of Brawley or within Imperial Valley.

Additionally, there is no evidence that the subsequent property titles holders, namely the Flammangs, were of particular significance in Brawley. The Flammangs were owners of a few farms over the decades, but there is no documentation stating any noteworthy influence in Brawley, Imperial Valley, or California. Therefore, this resource is recommended not eligible for the CRHR Criterion 2.

Criterion 3: This resource does not meet Criterion 3 for embodying the distinctive characteristics of a type, period, or method of construction; or as a representative work of a master; or for possessing high artistic values. represent a very common property type throughout the United States, California, and San Diego. Many Traditional Style residences were constructed throughout the United States during the twentieth century and these examples are neither unique nor innovative for the period in which they were constructed. Therefore, this resource is recommended not eligible for the CRHR under Criterion 3.

Criterion 4: This resource does not meet Criterion 4 since it is unlikely to yield information important to prehistory or history. It is unlikely that this property has the potential to broaden our understanding of the history of the United States, California, or San Diego during the twentieth century. Therefore, this resource is recommended not eligible for the CRHR under Criterion 4.

Photos



Figure 1: Main residence, facing northwest



Figure 2: Fenced lot east of main residence, facing northeast towards Best Road



Figure 3: Main residence and outbuilding, facing southeast

References

- Bush, Sam.
2000 Thomas Albert Livesley Biography.
<http://freepages.rootsweb.com/~pattyrose/genealogy/engel/reports/LivesleyGeorge1837bio.htm>. Accessed March 2021.
- City of Brawley
2008 City of Brawley Draft General Plan Update 2030. www.brawley-ca.gov/cms/kcfinder/upload/files/planning/Final_GP_Master-PDF.pdf. Accessed March 2021.
- City of San Diego
2007 San Diego Modernism Historic Context Statement.
https://www.sandiego.gov/sites/default/files/modernism_2007.pdf. Accessed March 2021.
- County of Imperial
2021 Email communication with Linda Hunt, Permit Specialist, on March 12, 2021.
- Dowd, M.J.
1956 IID: The First 40 Years-History of Imperial Irrigation District and the Development of Imperial Valley. <https://www.iid.com/home/showdocument?id=6000>. Accessed March 2021.
- Hoover, M.B., H.E. Rensch, E.G. Rensch, and W.N. Abeloe
2002 *Historic Spots in California*. Revised by Douglas E. Kyle. Stanford University Press. Stanford, California. 4th Edition.
- Legacy
2021 Joseph M. Flammang Obituary.
<https://www.legacy.com/obituaries/ivpressonline/obituary.aspx?n=joseph-m-flammang&pid=188320677&fhid=18208>. Accessed March 2021.
- NETR Online
2020 Historic Aerials. <https://www.historicaerials.com/viewer>. Accessed December 2020.
- Office of Historic Preservation (OHP)
2021 California Register of Historical Resources Criteria for Designation.
https://ohp.parks.ca.gov/?page_id=21238. Accessed March 2021.
- Stewart Title of California, Inc.
2006 Loma Farms ALTA Title Insurance Policy. On file at Chambers Group Inc.
- Tout, Otis.

- 1931 BEING: An Account of the Principal Events in the History of Imperial Valley, Southern California, U.S.A.
https://spaces.imperial.edu/omar.ramos/history/the_first_thirty_years.pdf. Accessed March 2021.

United States Department of the Interior (USDI)

- 2021 Bureau of Land Management General Land Office Records. Patent No. 189395 Record.
<https://gloreCORDS.blm.gov>. Accessed March 2021.

United States Geological Survey (USGS)

- 2018 *Westmorland East* 7.5-minute Topographic Quadrangle.