

4.5 CULTURAL RESOURCES

The following technical studies were used in the preparation of this section and are confidential unless included in Appendix F: literature review for the Mount Solar Signal Farm 1 Project; literature review for the Calexico Solar Farm 1 (Phases A and B) Project; literature review for the Calexico Solar Farm 2 (Phases A and B) Project; and *Calexico and Mount Signal Solar Farms, Calexico, Imperial County, Phase 1 Cultural Resources Survey Report* (ESA, October 2011).

4.5.1 Environmental Setting

The County of Imperial is rich in cultural resources and within the county, archaeological work can be separated into two distinct sections: prehistoric and historic. All prehistoric archaeology deals with aboriginal culture and systems which existed prior to Spanish colonization in 1769. Historical archaeology deals with uncovering facts that no known historical documentation has provided.

Thousands of prehistoric (aboriginal culture and systems existing prior to 1769) and hundreds of historic (uncovered facts containing no known historical documentation) are found throughout Imperial County. Prehistoric evidence in the form of trails, rock art, geoglyphs, fish traps, and resource procurement and manufacturing locations are found in the regions surrounding the fertile valley portion of the county. From a historical standpoint, the intensive use of Imperial Valley for irrigation agriculture since the beginning of this century has impacted any resources that may have existed on land that is now farmland or under the Salton Sea. Historic resource sites date back to 1540, when the Hernando de Alcaron Expedition discovered Alta California from near the intersection of Interstate 8 and Highway 186. The next major historical event occurred in 1775 when Juan Bautista de Anza first passed through the area. The Anza Trail itself constitutes a significant cultural resource in the Yuha Desert, as does the later Sonoran/Southern Emigrant Trail which served as a major route to and from coastal California from 1825 to 1865. Although very few structures or artifacts may remain from the use of these trails, the routes themselves are of historical significance. Various other structures, such as missions (Spanish period 1769-1821) and a fort (Mexican period 1821-1848) are still evident in regions throughout the county (Imperial County).

4.5.1.1 Regulatory Setting

This section identifies and summarizes federal, state, and local laws, policies, and regulations that are applicable to the projects.

Federal

National Historic Preservation Act (NHPA). Federal regulations (36 CFR Part 800.2) define historic properties as "any prehistoric or historic district, site, building, structure, or object included, or eligible for inclusion in, in the NRHP." Section 106 of the NHPA (Public Law 89-665; 80 Stat 915; USC 470, as amended) requires a federal agency with jurisdiction over a project to take into account the effect of the project on properties included in or eligible for the National Register of Historic Places (NRHP), and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The term "cultural resource" is used to denote a historic or prehistoric district, site, building, structure, or object, regardless of whether it is eligible for the NRHP.

Native American Graves Protection and Repatriation Act (1990); Title 25, United States Code (USC) Section 3001, et seq. The statute defines "cultural items," "sacred objects," and "objects of cultural patrimony;" establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for the return of specified cultural items.

State

State Office of Historic Preservation. The State Office of Historic Preservation (OHP) administers state and federal historic preservation programs and provides technical assistance to federal, state, and local government agencies, organizations, and the general public with regard to historic preservation programs designed to *identify, evaluate, register, and protect* California's historic resources.

Section 15064.5 of the State California Environmental Quality Act (CEQA) Guidelines also requires that Native American concerns and the concerns of other interested persons and corporate entities, including but not limited to museums, historical commissions, associations and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains (Health and Safety Code [HSC] Section 7050.5, PRC Sections 5097.94 et seq.).

Assembly Bill (AB) 4239 established the Native American Heritage Commission (NAHC) as the primary government agency responsible for identifying and cataloging Native American cultural resources. The bill authorized the Commission to act in order to prevent damage to and insure Native American access to sacred sites and authorized the Commission to prepare an inventory of Native American sacred sites located on public lands.

Public Resources Code (PRC) 5097.97. No public agency and no private party using or occupying public property or operating on public property under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the *United States Constitution* and the *California Constitution*; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require.

Public Resources Code 5097.98 (b) and (e) require a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the NAHC-identified Most Likely Descendants (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reenter the remains elsewhere on the property in a location not subject to further disturbance.

California Health and Safety Code, Section 7050.5. This code makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the County Coroner.

Local

Imperial County General Plan

The Imperial County General Plan provides goals, objectives, and policies for the identification and protection of significant cultural resources. The Open Space Element of the General Plan includes goals, objectives, and policies for the protection of cultural resources and scientific sites that emphasize identification, documentation, and protection of cultural resources. While Section 4.2, Land Use/Planning of this Environmental Impact Report (EIR) analyzes the project's consistency with the General Plan pursuant to State CEQA Guidelines Section 15125(d), the Imperial County Board of Supervisors and Planning Commission ultimately determine the project's consistency with the *General Plan*. Goals and Objectives applicable to the proposed projects are summarized in Table 4.5-1.

**TABLE 4.5-1. PROJECT CONSISTENCY WITH APPLICABLE GENERAL PLAN
CULTURAL RESOURCES GOALS AND OBJECTIVES**

General Plan Goal/Objective	Consistency with General Plan	Analysis
Goal 3: Important prehistoric and historic resources shall be preserved to advance scientific knowledge and maintain the traditional historic element of the Imperial Valley landscape.	Yes	The proposed solar farms and Off-site Transmission Facilities (OTF) within private land will not impact any significant cultural resources site. The proposed OTF within Bureau of Land Management (BLM) land may impact one significant site; however, appropriate mitigation will be implemented in order to reduce the impact to a level less than significant.
Objective 3.1 Protect and preserve sites of archaeological, ecological, historical, and scientific value, and/or cultural significance.	Yes	The proposed solar farms and OTF within private land will not impact any significant cultural resources site. The proposed OTF within BLM land may impact one significant site; however, appropriate mitigation will be implemented in order to reduce the impact to a level less than significant.

4.5.1.2 Existing Conditions

The proposed projects encompass a total of 4,228-acres including a 230 kV transmission line that would bisect the study areas from east to west along a private road just south of State Route (SR) 98. The off-site transmission facility (OTF) corridor would extend from a point near the intersection of Ferrell Road and a private road, approximately a half mile south of SR 98, west to Pulliam Road. These transmission facilities would then extend south along Pulliam Road to facilitate the interconnection of the projects to east-west transmission facilities currently being constructed as part of the recently approved Imperial Solar Energy Center South Project. The proposed interconnection point is located in the vicinity of the intersection of Pulliam Road and Anza Road.

A portion of the transmission facilities associated with the Imperial Solar Energy Center South Project is being constructed within Bureau of Land Management (BLM) lands, the construction and operation of which, were addressed in BLM Environmental Assessment (EA) 2010-64/2011-0007 and the Imperial Solar Energy Center South Project Final EIR (SCH #2010061038). The proposed OTF within BLM Land would involve the same configuration and development plan for the transmission corridor located within BLM as was evaluated in the Imperial Solar Energy Center South EIR/EA. Transmission facilities approved and/or currently being constructed in conjunction with the Solar Energy Center South Project would then connect with new transmission facilities proposed on BLM lands from the westerly terminus of the Imperial Solar Energy Center South Project transmission line (located within BLM lands) north to the existing Imperial Valley Substation.

Wide areas of cultural resources surveys were conducted within BLM lands as part of the Imperial Solar Energy Center South Final EIR/EA. Referred to as transmission corridor segments "IVS-1" and "IVS-7" within the Final EIR/EA, the cultural resources survey area of the currently proposed OTF portion of the project located within BLM land (i.e., OTF --BLM land) encompassed a 300-foot wide corridor and comprised over 275 acres of land.

Cultural Setting

The cultural setting of the project study areas is described in the Solar Energy Center South Project Final EIR/EA, Section 3.7, Cultural Resources (see pages 3.7-1 through 3.7-19). As described, the project areas are in the West Mesa of the Yuha Desert. The relic shoreline or 40-foot contour of the ancient Lake Cahuilla runs south and west of the project footprint. Lake Cahuilla was a freshwater lake that was filled

by the Colorado River between 25,000 and 45,000 years ago during the late Pleistocene and then again during the late Holocene. There were numerous Lake Cahuilla filling and desiccation cycles during the late Holocene; however, the number of lakestands and their dates remain problematic (Schaefer 1994a; Waters 1980, 1983; Wilke 1978). These lakestands were significant water sources for prehistoric peoples. The Lake Cahuilla shoreline has been associated with extensive prehistoric use and occupation.

The prehistory of Imperial County, California, may be divided into four major temporal periods: Pre-projectile, Paleoamerican, Archaic, and Late Prehistoric, which again, are described in detail in the Imperial Solar Energy Center South Project Final EIR/EA Section 3.7. Section 3.7 addresses cultural resources in the context of the Imperial Valley and including the portion of the OTF located within BLM lands. These time periods have regional expression through various regional archaeological complexes or archaeological cultures.

Ethnohistory

The survey area was utilized prehistorically by a variety of Native American groups, including the Kumeyaay (the Kamia is a subset of this group), the Cocopah, and the Quechan. These three groups speak the language of the Yuman family of the Hokan language stock (Kroeber 1920). This ethnohistory is described in detail in the Imperial Solar Energy Center South Project Final EIR/EA Section 3.7. Section 3.7 addresses cultural resources in the context of the Imperial Valley and including the portion of the OTF located within BLM lands.

Historic Period

The historic period is described as including the Spanish Period (1769-1821) in the Colorado Desert which begins with the Alarcon exploration up the Colorado River in 1540 and the land expedition to the Colorado River by Melchior Diaz in the same year, and the Mexican Period (1822-1848), in which the mission system was secularized by the Mexican government and these lands allowed for the dramatic expansion of the rancho system. The Mexican Period ended, when Mexico signed the Treaty of Guadalupe Hidalgo on February 2, 1848, concluding the Mexican-American War (1846-1848; Rolle 1998). California became a state in 1850 (Rolle 1998).

A great influx of Americans and Europeans followed the discovery of gold in northern California in 1848. The gold seekers and homesteaders traveled through the Colorado Desert using the same route as Kearny and the Mormon Battalion, then known as the Southern Emigrant Trail in the early 1900s. In 1853, the route was used by the Birch Overland Mail and later in 1858 by the Butterfield Southern Overland Mail Line. After 1861, when the mail route stopped service, the route was used mostly for cattle drives from Mason and Vallecitos valleys to Carrizo Valley and the Fish Creek area in the desert (Cook and Fulmer 1980). In 1890, prospectors in search of minerals in the Anza-Borrego Desert began using the route (Cook and Fulmer 1980). Today this old Indian and pioneer route is called County Route S2, or the Great Southern Overland Stage Route of 1849, which connects Ocotillo at Interstate 8 with Warner Springs to the north.

The segment of the Southern Pacific Railroad that runs northeast of the study area was constructed in the 1870s (Pourade 1964). Around the turn of the century, the Imperial Valley experienced considerable population growth after the construction of irrigation projects, and agriculture became a prime focus of economic activity. By the turn of the 20th Century Dr. O. M. Wozencraft's vision of a vast irrigated agricultural land in Imperial County was coming to fruition with the first delivery of Colorado River water released through a newly constructed canal system in 1901 (Dowd 1956:7, 21-22). Part of that early canal system included what is now known as the West Side Main (CA-IMP-7834), but in the early 1900s went by the name of Encina Canal. This canal was constructed in Baja California at Sharp's Heading, crossed the New River—at that time a small channel—via a flume, then turned west and north, crossing the international border at a point approximately 10 miles west of Calexico (Dowd 1956:23).

Very early into the development of the canal system it was recognized that an all American system needed to be built in order to maintain control of the water supply entering the network. Ironically perhaps, the illegally built head gate on the Colorado River in Mexican territory failed to hold back the record seasonal flow of 1905-1907, resulting in the destruction of thousands of feet of flume, miles of canals, and thousands of acres of land. Improvements to the system followed and the West Side Main Canal was enlarged and improved, and by 1940 was tied in to the All-American Canal, just in time for it to continue service to the western agricultural fields when much of the network was shuttered following that year's earthquake (Dowd 1956:43, 45, 103-104). The construction of the All-American Canal to transport water from the Colorado River to Imperial Valley between 1934 and 1940 transformed agricultural development and settlement of the Imperial and Coachella valleys. The areas served by the canal have become one of the richest and most important agricultural areas in the U.S. since the completion of the canal in 1938 (Queen 1999). This history is described in more detail in Imperial Solar Energy Center South Project Final EIR/EA Section 3.7.

Paleontological Resources

MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private Land

The project study areas are located in the Imperial Valley portion of the Salton Trough physiographic province of southern California. The Imperial Valley is directly underlain by geologic units comprised of quaternary lake deposits of the ancient Lake Cahuilla. Lakebed deposits of ancient Lake Cahuilla have yielded fossil remains from numerous localities in Imperial Valley. These include extensive freshwater shell beds, fish, seeds, pollen, diatoms, foraminifera, sponges, and wood. Lake Cahuilla deposits have also yielded vertebrate fossils, including teeth and bones of birds, horses, bighorn sheep, and reptiles. Therefore, the paleontological sensitivity of these lakebed deposits within the project study areas is considered to be high (Imperial Solar Energy Center South Final EIR/EA, Section 3.13, page 3.13-2). It is noted that the solar farm projects and OTF– Private Land are located within highly disturbed farmland. Therefore, any surface or near-surface level paleontological resources are likely to have been disturbed already.

OTF-BLM Land

As discussed above, the OTF–BLM Land is underlain by geologic units comprised of quaternary lake deposits of the ancient Lake Cahuilla. Therefore, the paleontological sensitivity of these lakebed deposits within the corridor of the OTF–BLM land is considered to be high (Imperial Solar Energy Center South Final EIR/EA, Section 3.13, page 3.13-2). Section 3.13 addresses the potential impacts and mitigation measures for paleontological resources associated with the OTF located within BLM lands.

In addition, with respect to the OTF–BLM Land, the BLM uses a Potential Fossil Yield Classification (PFYC) System that classifies the paleontological resource sensitivity for geologic units and assists in determining proper mitigation approaches for surface disturbing activities. The PFYC uses five classes, with Class 1 being Very Low Potential and Class 5 being Very High Potential. According to the BLM's PFYC System, the lakebed deposits of ancient Lake Cahuilla located within the BLM land portion of the OTF is identified as Class 4b. Class 4b is defined by the BLM as an area underlain by geologic units with high potential to yield fossils but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to alluvial material, or other conditions that may lessen or prevent potential impacts to the bedrock resulting from the activity. Management concern for paleontological resources in Class 4 is moderate to high, depending on the proposed action. For the OTF within BLM lands, the management concern for paleontological resources is considered to be high (Imperial Solar Energy Center South Final EIR/EA, Section 3.13, page 3.13-2).

Records Search/Previously Recorded Resources

MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private Land

Cultural resources records searches were conducted for the project study areas (excluding the OTF within BLM lands) through the South Coast Information Center (SCIC) at San Diego State University (SDSU). The information obtained from these record searches was used to determine if previous surveys had been conducted in the area of potential effect for the solar farm projects and OTF-Private Land, what resources might be expected, and whether any cultural resources have been recorded. According to the results from SCIC, no prehistoric sites such as temporary camps, lithic scatters, ceramic and lithic scatters, trail segments, hearths, sleeping circles, and cremations were identified. Historic sites were identified within a one-mile radius of the study areas, which include historic mesquite thicket, the Westside Main Canal, and the All American Canal (see Table 4.5-2). No cultural resources have been previously recorded within the project sites or OTF-Private Land.

TABLE 4.5-2. PREVIOUSLY RECORDED HISTORIC SITES WITHIN A 1-MILE RADIUS OF THE PROJECT STUDY AREAS

Primary Number (P-13-)	Permanent Trinomial (CA-IMP-)	Site Description	Date Recorded	Location	Nearest Project Area
007130	7130	Segments of the All-American Canal	1994	Within 1 mile of the proposed project areas	CSF1(B), CSF2(A), MSSF1
008334	7834	Segment of the Westside Main Canal	1999	Within 1 mile of the proposed project areas	MSSF1
003325	3325	Historic mesquite thicket	1880	Within 1 mile of the proposed project areas	CSF2(B)

Source: AECOM 2011

OTF-BLM Land

A cultural resources records search was conducted for the portion of the OTF within BLM land, the results of which are presented in the Imperial Solar Energy Center South Final EIR/EA, Section 3.7. According to the results from SCIC, several prehistoric sites including temporary camps, lithic scatters, ceramic and lithic scatters, trail segments, hearths, sleeping circles, and cremations were identified. Historic sites were identified which include trash scatters, the Westside Main Canal, and the All American Canal (see Imperial Solar Energy Center South Final EIR/EA, Table 3.7-1). 29 prehistoric sites, one historic site, and eight isolates were reported as being located within the proposed area of potential effect (APE) of the transmission corridor associated with the Solar South project. These resources are located within the APE of the OTF-BLM Land.

Field Inventory Results

MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private Land

A cultural resources (e.g., archaeological and historical) pedestrian survey was conducted of the project study areas (ESA 2011). Three cultural resources, a historic-period debris scatter (temporarily designated ESA-CAL-1), the landscape remnants of a historic-period farmstead (temporarily designated ESA-CAL-2), and a historic-period residence (temporarily designated ESA-CAL-3) were recorded in the project areas as a result of the field survey. These resources are discussed below.

Historic-Period Debris Scatter (Temporary Designation ESA-CAL-1)

This resource is a sparse historic artifact scatter, measuring 200 feet north-south by 23 feet east to west, located within an elevated roadbed between a concrete-lined irrigation canal and an agricultural field. No features were recorded. Artifacts included: One small complete glass jar; 75+ fragments of colorless glass; opaque white glass with an embossed floral design; a colorless glass milk bottle rim; amethyst-colored solarized glass; aqua, green, and brown glass; a colorless glass bottle neck fragment, with a double ring finish; white-glazed whiteware ceramic unglazed orange ceramic fragments; a glass base with the makers mark “333” within a diamond; and a large colorless glass base with the maker’s mark “Bishop’s California.” The site’s condition was poor, as the road in which it is located appears to be frequently used by vehicles and agricultural machinery. Moreover, as the road is elevated several feet above the surrounding fields, it is likely that the artifacts are in a disturbed context and were possibly imported to this location when the road was constructed.

Resource ESA-CAL-1 is recommended not eligible for listing in the CRHR and does not otherwise meet CEQA’s definitions for a historical resource or unique archaeological resource. The underrepresentation of diagnostic materials limits the resource’s potential to yield information important in history (CRHR Criterion 4). While the resource can be broadly dated to the early 20th century and is likely associated with human activity related to irrigation construction and/or agricultural activities, the resource cannot be tied to specific historically-significant events or persons (CRHR Criteria 1 and 2). Likewise, the resource does not contain features or artifacts that represent a distinctive type, style, or manufacture technology (CRHR Criterion 3). Furthermore, ESA-CAL-1 does not qualify as a unique archaeological resource as it does not contain information of scientific importance, is not the oldest or best example of its type, and is not directly associated with scientifically recognized prehistoric or historic events or persons. For these reasons, resource ESA-CAL-1 is recommended not eligible for listing in the CRHR and is not a unique archaeological resource or otherwise significant under CEQA. No further work is recommended for this resource.

Historic-Period Farmstead (Temporary Designation ESA-CAL-2)

This resource appears to be the landscape remnants of an early- to mid-20th Century residential or agriculture-related site. The resource measures 375 by 200 feet and is bounded on all sides by agricultural canals and ditches. On the south side, a cement-lined canal runs parallel to and just north of Anza Road. The canal is approximately 5 feet wide and trapezoidal in section. On the east, the site is bounded by Woodbine Canal, which is approximately 10 feet wide and was filled with water at the time of recording. On the north and west, the site is bounded by dirt ditches. Several landscaping features are apparent. Three chinaberry trees are located in the southern portion of the site. A fallen palm tree is located in the middle of the dense brush that characterizes the northern portion of the site.

The site consists of a sparse scatter of historic artifacts and modern debris, including : a crushed metal box; cushion springs; a small ceramic horse head figurine; clear glass; a metal pipe; fragments of ceramic sewer pipe; pieces of metal agricultural implements and machinery; 50+ brown, cobalt, colorless, aqua, and green glass fragments; amethyst-colored solarized glass fragments; a leather shoe; copper and iron scrap metal; windowpane glass fragments; saw-cut bone; a fragment of a handmade blue and red-glazed orange fabric coarseware vessel; a tiny (1-in.) colorless glass bottle with the number “4” embossed on the base; a colorless glass, oval shaped bottle base with embossed mark “LOC CA”; and a colorless glass base with the mark “...ESIGN PAID/FEB 23” and the makers mark for the Hazel Atlas company. Numerous modern cultural constituents were also observed: a fallen wood structural frame; a cushion; two life vests; a plastic ammunition shell; PVC; and a pull-tab.

Three features were recorded:

- *Feature 1:* Two cement wells/cisterns. One well has a cement cap and measures approximately 6 feet in diameter, with an approximately 3-foot diameter opening. The other well is cylindrical and

measures approximately 3 feet in diameter. The wells are located under the easternmost chinaberry tree.

- *Feature 2:* Wood bridge across a cement-lined canal, connecting Anza Road and the home site. The bridge measures 16 feet east-west by 7 feet north-south and is comprised of 10-inch wide wooden planks laid across large wooden beams.
- *Feature 3:* Push-pile with soil, concrete fragments, floor tile, and wood fragments, some burnt. The feature is located in the middle of the dense brush.

A structure is depicted on the 1957 Heber USGS topographic map at the location of the site. Few of the artifacts were temporally diagnostic; however, the Hazel Atlas maker's mark can be dated to between 1920-1964 (Toulouse 1971). Therefore, it appears that this site can be tentatively dated to the early to mid-20th century.

Resource ESA-CAL-2 is recommended not eligible for listing in the CRHR and does not otherwise meet CEQA's definitions for a historical resource. While the resource can be broadly dated to the first half of the 20th century and is likely associated with human activity related to irrigation construction and/or agricultural activities, the resource cannot be tied to specific historically-significant events or persons (CRHR Criteria 1 and 2). Aside from three elements, the bridge, wells, and row of trees, no other buildings or structures are present. These elements do not represent a distinctive type, style, or manufacture technology, either individually or in combination as a landscape (CRHR Criterion 3). The underrepresentation of diagnostic materials limits the resource's potential to yield information important in history. The resource lacks archaeological materials or architectural features that would have the potential to yield information important in history (CRHR Criterion 4). For these reasons, resource ESACAL-2 is recommended not eligible for listing in the CRHR and is not a unique archaeological resource.

Historic-Period Residence (Temporary Designation ESA-CAL-3)

This resource consists of an historic-period residence located at 504 Anza Road, in the City of Calexico (APN 059-130-002). The residence is minimal traditional rural in style; typically dating to the pre-WWII period (generally 1930s). The residence first appears on the 1945 Heber War Department 30-minute topographic map. The residence is a single-story, wood-frame structure with a rectangular footprint and side gable composite roof. The building has a shed-style addition on the eastern facade, and a metal porch covers the primary entrance and extends the width of the southern facade. The exterior walls are covered with horizontal siding and the windows appear to have been replaced since the original construction. Mature trees and landscaping hindered surveyor views of the residence from the public right-of-way.

Resource ESA-CAL-3 is recommended not eligible for listing in the CRHR and does not otherwise meet CEQA's definitions for a historical resource. Archival research did not indicate any association between the residence and known historical events or persons (CRHR Criteria 1 and 2). The residence appears to reflect typical pre- and post-WWII rural residential uses in the region. The building does not appear to embody the distinctive characteristics of a type, period, or method of construction and possesses no distinguishing design or artistic values (CRHR Criterion 3). The residence does not appear to have the potential to yield information important in history (CRHR Criterion 4). For these reasons, resource ESA-CAL-3 is recommended not eligible for listing in the CRHR is not recommended significant under CEQA. No further work is recommended for this resource.

OTF – BLM Land

Fieldwork for the Imperial Solar Energy South project proceeded under BLM Cultural Resource Use Permit CA-08-16 and a fieldwork authorization CA-670-10-109FA02 from the El Centro Field Office. RECON archaeologists conducted an intensive pedestrian survey of the of transmission corridors as the APE between April 14 and June 11, 2010. The proposed OTF within BLM lands follows the same cultural

resources survey corridor and boundaries as was studied for the Imperial Solar Energy Center South project. Table 4.5-3 below depicts the results of those surveys as they relate to the OTF-BLM Land corridor.

TABLE 4.5-3. CULTURAL RESOURCES SITES WITHIN PORTION OF OTF – BLM LAND

Trinomial or Temporary #	Type
IMP-3999	Temporary camp
IMP-4959	Ceramic and lithic scatter
IMP-4961	Ceramic and lithic scatter
IMP-4962	Temporary camp
IMP-4963	Ceramic and lithic scatter
IMP-5593	Sparse lithic scatter (isolate)
IMP-7874	Ceramic and lithic scatter
IMP-7875	Lithic scatter
S-5	Ceramic and lithic scatter
S-38	Ceramic and lithic scatter
IMP-115-S-2	Ceramic and lithic scatter
IMP-115-S-3	Sparse lithic scatter
IMP-115-S-4	Lithic scatter
IMP-115-S-5	Lithic scatter
IMP-115-S-6	Sparse lithic scatter
IMP-115-S-7	Sparse lithic scatter
IMP-115-S-8	Ceramic and lithic scatter

Source: RECON 2010. Imperial Solar Energy Center South Final EIR/EA, Table 3.7-2.

4.5.2 Impacts and Mitigation Measures

This section presents the significance criteria used for considering project-related land used compatibility impacts and consistency with applicable planning documents, the methodology employed for the evaluation, and mitigation requirements, if necessary.

4.5.2.1 Thresholds of Significance

Based on CEQA Guidelines Appendix G, project impacts related to cultural resources are considered significant if any of the following occur:

- Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geological feature; and
- Disturb any human remains, including those interred outside of formal cemeteries.

4.5.2.2 Methodology

This analysis evaluates the potential for the projects, as described in Chapter 3, Project Description, to interact with cultural resources in the study areas. Based on the extent of these interactions, this analysis considers whether these conditions would result in an exceedance of one or more of the applied significance criteria as identified above.

As indicated in the environmental setting, three separate literature reviews and a cultural resources pedestrian field survey have been prepared which cover the Mount Signal Solar Farm 1 (MSSF1) (West and East), Calexico Solar Farm 1 Phase A (CSF1(A)) and Phase B (B), and Calexico Solar Farm 2 Phase A and B (CSF2(A) and (B)) site locations. These reports are included as Appendix F of this EIR. The information obtained from these sources was reviewed and summarized to present the existing conditions and to identify potential environmental impacts, based on the significance criteria presented in this section. Furthermore, a pedestrian field survey and analysis was conducted for the project sites, including the OTF within private land (ESA 2011). Impacts associated with cultural resources that could result from project construction and operational activities were evaluated qualitatively based on site conditions; expected construction practices; materials, locations, and duration of project construction and related activities; and a field visit. Conceptual site plans for the projects were also used to evaluate potential impacts. These conceptual exhibits are provided in Figures 3.0-4 through 3.0-6 and Figures 3.0-9 through 3.0-13.

Impacts to the OTF located within BLM land are based on the Imperial Solar Energy Center South Final EIR/EA.

4.5.2.3 Impact Analysis

IMPACT 4.5-1	Impact to Historical Resources. The proposed projects would not cause a substantial adverse change in the significance of a historical resource.
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private Land

To be considered historically significant, a resource must meet one of four criteria for listing outlined in the California Register of Historical Resources (CRHR) (CEQA Guidelines 15064.3 (a)(3)). In addition to meeting one of the criteria outlined in the CRHR, a resource must retain enough intact and undisturbed deposits to make a meaningful data contribution to regional research issues (CCR Title 14, Chapter 11.5 Section 4852 [c]). Further, based on CEQA Guidelines Section 15064.5(b), substantial adverse change would include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource is materially impaired. This can occur when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR, National Register of Historic Resources, a local register, or historic resources.
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its identification in an historical resources survey meeting the requirements of PRC §5024.1(g), unless the public agency establishes by a preponderance of the evidence that the resource is not historically or culturally significant.

Literature review and subsequent cultural resources pedestrian survey of the portion of the study areas located within private lands (the solar fields and a portion of the OTF) indicates there are three historical resources that have been recorded within a 1-mile radius of the proposed projects (Table 4.5-1). The

pedestrian field survey revealed a total of three new historical resources within the project sites (ESA-CAL-1, ESA-CAL-2, ESA-CAL-3). However, none of these sites are identified as significant resources under CEQA.

Therefore, no significant historical resources sites have been identified within the project study areas, and as such, **no impact** is anticipated.

OTF-BLM Land

No historic resources were identified within the OTF portion of the project study areas located within BLM land and, therefore, **no impact** is anticipated.

Mitigation Measure(s)

No mitigation measures are required.

<p>IMPACT 4.5-2</p>	<p>Impact to Archaeological Resources. The proposed projects could cause a substantial adverse change in the significance of an archaeological resource.</p>
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private Land

Pursuant to CEQA Guidelines §15064.5(c)(1) and (2), an archaeological resource includes an archaeological site that qualifies as a significant historical resource as described for impact 4.5-1. If an archaeological site does not meet any of the criteria outlined in Impact 4.5-1, but meets the definition of a “unique archaeological resource” in PRC 21083.2, the site shall be treated in accordance with the provisions of PRC 21083.2, unless the applicant and public agency elect to comply with all other applicable provisions of CEQA with regards to archaeological resources. “Unique archaeological resource” means an archaeological artifact, object or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

CEQA Guidelines 15064.5(c)(4) confirms that if an archaeological resource is neither a unique archaeological nor an historic resource, the effects of the projects on those resources shall not be considered a significant effect on the environment.

Literature review of the study areas indicates there are no archaeological resources that have been recorded within a 1-mile radius of the proposed projects (Table 4.5-1). The pedestrian field survey did not identify any significant archaeological resources within the project areas (ESA 2011). Additionally, based on a Cultural Resources Sensitivity Assessment, the potential for cultural resources within the proposed project areas is low. This result indicates that there are few or no previously recorded resources within the project sites and the surrounding areas. Resources would not be expected to be complex in nature, with little to no site structure and little artifact diversity. Further, the potential for the identification of newly identified resources at such project sites would be low. However, because the project areas are located within the ancient Lake Cahuilla prehistoric use area, there remains the possibility that buried archaeological resources could be encountered during construction. This is considered a **significant**

impact. Implementation of proposed mitigation (4.5-2c, 4.5-2d) would reduce the potential impact to a level **less than significant**.

OTF-BLM Land

There are a total of 17 archaeological resources located within the OTF-BLM land corridor. These cultural resources are listed in Table 4.5-3. Without mitigation measures, the construction of the OTF-BLM land would result in significant impacts to one previously recorded cultural resource (IMP-3999, temporary camp). IMP-3999 is the only cultural resource that would be directly adversely affected by the OTF-BLM Land. However, Mitigation Measure 4.5-2a would ensure that the impacts associated with the construction of OTF-BLM Land do not rise to the level of significance pursuant to CEQA.

There is a potential for indirect effects to sites adjacent to the impact areas within the OTF due to increased traffic during construction. It is also possible that grading within the construction area could increase the amount of sheet flow and water runoff during heavy rainfall events that could cause damage to archaeological sites outside the construction area. There are nine sites (IMP-4485/4495, -4959, -4962, -4963, IMP-7875, S-5, S-38, IMP-115-S-7, and IMP-115-S-8) that are adjacent to the construction corridor for the OTF-BLM Land; therefore, these sites may be indirectly impacted by the construction of the OTF within BLM lands. However, Mitigation Measure 4.5-2b would ensure that impacts for the above nine sites do not rise to the level of significance pursuant to CEQA. The OTF has been designed to avoid the remaining nine sites within the APE.

During construction and operational repair periods of the OTF, grading, excavation, and trenching will be required, to install or repair buried utilities or other buried infrastructure, as well as construction and repair of the solar fields, transmission lines and accessories. Subsurface excavation activities always have some potential to impact previously unknown archaeological subsurface resources. This is considered a **potentially significant impact**. However, Mitigation Measure 4.5-2c would ensure that the impacts do not rise to the level of significance pursuant to CEQA. Therefore, with implementation of Mitigation Measure 4.5-2c, the impact will be reduced to a level **less than significant**.

Mitigation Measure(s)

The following mitigation measures apply to the OTF-BLM Land:

4.5-2a Archaeological Resource Evaluation. For those sites subject to the preliminary surveys and which would be directly impacted due to the construction of access roads, towers, pull sites, or solar fields, a formal testing and evaluation program is required. The evaluation program for such sites shall document the presence or absence of subsurface deposits and the specific research potential for each site. In addition, the evaluation program shall be consistent with the *Secretary of Interior Standards for the Treatment of Historic Properties and the Secretary of Interior Standards and Guidelines for Archaeology and Historic Preservation*. Should these sites be determined eligible for listing on the NRHP, CRHR, and/or local register, best management practices consistent with the *Secretary of Interior Standards for the Treatment of Historic Properties and the Secretary of Interior Standards and Guidelines for Archaeology and Historic Preservation* shall be required including:

a) Preservation in Place:

- (1) Avoidance of the resource through project redesign in a manner that is technically possible, operationally possible, does not cause a new significant environmental impact or increase the severity of a significant environmental impact.

(2) Covering the archaeological sites with a layer of chemically stable soil before constructing facilities on site so long as covering can be done in a manner that is technically possible, does not cause a new significant environmental impact or increase the severity of a significant environmental impact.

b) Minimizing impacts by limiting the degree of impacts or reducing the impact through best management practices identified in a data recovery, excavation and/or construction monitoring plan. The content of this plan must be consistent with the Secretary of Interior's Standards for the Treatment of Historic Properties and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation and include a description of areas to be monitored during construction, a discovery plan that will address unanticipated cultural resources, and provisions for the education of construction workers.

4.5-2b Construction Measures to Avoid Archaeological Sites. There are additional sites which may be impacted due to their proximity to construction areas. Because these sites are located near areas being impacted by project construction, temporary fencing around their perimeters will be required to ensure that project impacts remain within the proposed impact area and that cultural resources are avoided by project personnel. In addition, grading within the construction area shall be performed in a manner that incorporates sheet flow and water runoff diversion techniques to prevent surface water from damaging off-site cultural sites.

The following mitigation measures apply to MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), and OTF-Private Land and OTF-BLM Land:

4.5-2c Accidental Discovery of Unknown Archaeological Resources. Pursuant to CEQA Guidelines §15064.5(f), in the event that unknown historic or unique archaeological resources are encountered during construction or operational repairs, archaeological monitors will be authorized to temporarily divert construction work within 100 feet of the area of discovery until the significance and the appropriate mitigation measures are determined by a Registered Professional Archaeologist familiar with the resources of the region.

Applicant shall notify the County within 24 hours. Applicant shall provide contingency funding sufficient to allow for implementation of avoidance measures or appropriate mitigation.

4.5-2d Discovery of Archaeological Materials. In the event of the discovery of historical and archaeological materials, the contractor shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery. Prehistoric archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. After cessation of excavation, the contractor shall immediately contact the Imperial County Department of Planning and Development Services. The contractor shall not resume work until authorization is received from the County.

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.

Significance After Mitigation

Implementation of Mitigation Measure 4.5-2a would reduce potentially significant direct impacts to IMP-3999 from construction of the OTF-BLM Land by formally evaluating the resource for significance. If determined to be significant, Mitigation Measure 4.5-2a requires preservation and avoidance of the resource and minimization of impacts to a **less than significant** level. Implementation of Mitigation Measure 4.5-2b would reduce indirect impacts to adjacent sites during construction of OTF-BLM Land to a **less than significant** level by requiring installation of temporary fencing and best management practices during grading to avoid surface runoff water from damaging off-site cultural resources. Implementation of Mitigation Measures 4.5-2c and 4.5-2d would reduce potentially significant impacts to unknown historic or unique archaeological materials during construction of the project sites and OTF-Private Land and OTF-BLM Land to **less than significant**.

<p>IMPACT 4.5-3</p>	<p>Impact to Paleontological Resources. The proposed projects could directly or indirectly destroy a unique paleontological resource or site or unique geological feature.</p>
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Many paleontological fossil sites are recorded in Imperial County and have been discovered during construction activities. Paleontological resources are typically impacted when earthwork activities such as mass excavation cut into geological deposits (formations) with buried fossils. One area in which prehistoric cultural materials appear to be concentrated in this region is the shoreline of ancient Lake Cahuilla, which would have encompassed the present-day Salton Sea. The lake covered much of the Imperial Valley and created an extensive lacustrine environment. Lake Cahuilla experienced several fill-recession episodes before it finally dried up about 300 years ago. In 1905, the Colorado River overflowed into the Salton Basin creating the present-day Salton Sea. Because lacustrine environments typically provide the appropriate conditions for fossil preservation, there is a potential for paleontological resources to be uncovered during the construction phase of the projects as discussed in more detail below.

MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B) and OTF-Private Land

The solar farm projects and OTF within Private Land are located within highly disturbed farmland. Impacts to paleontological resources are not anticipated due to the extensive grading and disturbance that has occurred from historical farming activities, and that implementation of the projects will not require mass grading or deep cuts or excavations. Therefore, **no impact** is anticipated.

OTF-BLM Land

For the portion of OTF within BLM land, the management concern for paleontological resources is considered to be high (Imperial Solar Energy Center Final EIR/EA, Section 4.13). Lakebed deposits of ancient Lake Cahuilla have yielded fossil remains from numerous localities in Imperial Valley. These include extensive freshwater shell beds, fish, seeds, pollen, diatoms, foraminifera, sponges, and wood. Lake Cahuilla deposits have also yielded vertebrate fossils, including teeth and bones of birds, horses, bighorn sheep, and reptiles. According to the BLM’s Potential Fossil Yield Classification (PFYC) System, the lakebed deposits of ancient Lake Cahuilla located within the OTF within BLM Land is identified as Class 4b. Class 4b is defined by the BLM as an area underlain by geologic units with high potential to yield fossils but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to alluvial material, or other conditions that may lessen or prevent potential impacts to the bedrock resulting from the activity. Management concern for paleontological resources in Class 4 is

moderate to high, depending on the proposed action. Because the management concern for the OTF-BLM Land is high, paleontological resources potentially located within the transmission line corridor could be adversely affected during construction of the OTF-BLM Land as a result of disturbance by grading or construction activities; unauthorized, unmonitored excavations; unauthorized collection of fossil materials; dislodging of fossils from their preserved environment (fossils out of context); and/or physical damage of fossil specimens. This is considered a **significant impact**. However, with the implementation of Mitigation Measures 4.5-3a through 4.5-3e, provided below, paleontological resource impacts during construction of the OTF within BLM Land would be **less than significant** under CEQA.

Mitigation Measure(s)

The following mitigation measures apply to the OTF-BLM Land:

4.5-3a Paleontological Resources Surveys. Prior to grading or any ground disturbance, a paleontological field survey shall be conducted for the OTF within BLM Land. The paleontological field survey and subsequent monitoring activities shall be in accordance with the BLM's "Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources."

A. Definition of Field Surveys. Field Surveys are pedestrian surveys to be performed in areas where significant fossils can be expected to occur within the boundary and immediate vicinity of the anticipated disturbance, or where the probability of encountering significant fossils is unknown.

1. Field surveys are performed prior to any surface disturbing activities. Before conducting field surveys, the project location shall be as final as possible and any staking of the location shall be complete.
2. Surveys are conducted by a BLM-permitted consulting paleontologist hired by the project proponent.

(A) Surveys shall be performed by a consulting paleontologist holding a valid BLM Paleontological Resources Use Permit. Submission of reports may be done directly by the paleontologist to the BLM. The project proponent is also responsible for all costs associated with the survey, including the consulting paleontologist's fees and charges, all survey costs, fossil preparation to the basic identification stage, analyses, reports, and curation costs directly related to mitigation of the project's anticipated impacts. Any required monitoring and mitigation costs are also the responsibility of the project proponent. These costs are to be negotiated between the project proponent and the consulting paleontologist prior to beginning any data gathering, analysis, or field work, and these negotiations do not require BLM involvement or approval. Any new, additional, or modified curation agreements between the paleontologist and the official repository must be in place prior to starting field work.

(B) Authorization for an activity to proceed cannot be given by a consulting paleontologist. Performance of the survey, either by a consulting paleontologist or BLM staff, or submission of the report DOES NOT constitute approval for the activity to proceed. The BLM must review the report, including adequacy of the field methods and findings. The Authorized Officer must approve the findings and determine the need for monitoring prior to approval to proceed.

B. Conducting Field Surveys. Field surveys must be performed by the Principal Investigator or an approved Field Agent or Field Monitor (as defined in the following section) as authorized under a Paleontological Resource Use Permit. Field surveys and collections performed as a mitigation measure are not intended to be scientific research studies, but are meant to identify, avoid, or recover paleontological resources to prevent damage or destruction from project activities. However, proper scientific techniques and procedures must be utilized during all mitigation efforts. Safety should be an important consideration; therefore, surveys should not be attempted on cliff faces, in open, non-reinforced trenches deeper than 5 feet, or other unsafe areas.

1. The scope of the survey is dependent upon the scale of the project. Small projects are defined as less than 10 acres, or, if linear, less than 5 miles; large projects exceed those dimensions.
2. At the start of field work, the consulting paleontologist (paleontologist) must contact the Paleontology Coordinator in each affected Field Office who may require a visit to that office.

After an initial visit each year, the paleontologist may contact the Field Office by telephone or email prior to subsequent field trips, at the discretion of the Field Office. Information about the survey schedule, additional personnel, emergency field contact information, and any other pertinent data shall be provided to the Paleontology Coordinator. The Field Office will inform the paleontologist of any conditions that may impact the survey, such as fire danger or restrictions, drought restrictions, wildlife timing restrictions, management restrictions, road restrictions or construction, and any other relevant information.

3. During the field survey, the paleontologist surveys, locates, and documents all paleontological resources within 200 feet of the proposed project location or corridor, or less distance upon approval.
 - (A) Where significant paleontological resources are at risk, data collection alone does not constitute mitigation of damage. All significant fossils that may be damaged or destroyed during project activities must be collected, along with all relevant contextual and locational data. Specimens must be collected during the survey or prior to commencement of any surface-disturbing activities.
 - (B) In many cases, isolated gar scales, chelonid (turtle) carapace or plastron fragments, crocodile and fish teeth, and unidentifiable bone fragments do not need to be collected. The location must be recorded and a description of the fossil material noted in the field notes and on a BLM Locality Form as part of the report. The context of these types of fossils should be considered, as they may represent rare occurrences or unusual faunal associations, and thus may be scientifically important and must be documented and voucher specimens collected where appropriate.
 - (C) Occurrences of plant or invertebrate fossils should be recorded and representative examples or voucher specimens collected where appropriate. Additional mitigation measures may be appropriate in some cases for these types of localities.

- (D) If a large specimen or a concentration of significant fossils is located during the field survey, the available time and/or personnel may not allow for full recovery during the survey. The specimen(s) and locality(ies) should be stabilized as needed, and a determination made as to whether avoidance is necessary or whether full recovery of the specimen is required at a later time prior to disturbance activities. The Authorized Officer and project proponent must be notified, the mitigation alternatives discussed including funding for recovery, and a decision reached as soon as possible. If avoidance or later recovery is selected for mitigation, the find should be stabilized, buried if needed to protect the fossils and context, and appropriate measures implemented to reduce adverse effects from natural or human causes.
4. During the survey, locations or areas that exhibit a lithology suggesting a high probability of subsurface fossil material must be recorded, and a recommendation for the need for on-site monitoring, spot-checking, or testing shall be made in the report. This may include areas where no fossil material was found on the surface during the survey. The recommendation should consider the size and type of planned disturbance, such as the depth of a trenching operation or the acreage of surface disturbance.
 5. Surveys must be performed only during times when the ground is visible. Biological timing restrictions, such as critical nesting or birthing times, may confine or delay field activities.
- C. Report of Survey Findings.** After completion of the field survey, the paleontologist must file a written report with the BLM and the designated repository. This report must summarize the results of the survey as well as appropriate geological and paleontological background information as described below. It should also include any recommendations for on-site monitoring or other mitigation. For small projects (less than 10 acres), the report must be filed within 30 days after completion of the survey unless specific approval for a different time frame has been received from the BLM. The time frame for submission of the report for large projects should be negotiated during project scoping. On a case-by-case basis, approval to begin project activities may be granted for those portions of the project area noted to be less paleontologically sensitive prior to final approval of the report.
1. Reports of the general findings and the background information must be submitted to the BLM project manager or Authorized Officer (if appropriate), the Paleontology Lead or Regional Paleontologist, and each affected Field Office. Reports must include the information and details as specified on page 9 of Attachment 1 of the BLM's "Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources", as applicable.
 2. Exact locations of fossil localities contained in these reports are considered sensitive and must not be included in any public document. The BLM locality form (8270-3) or equivalent, 1:24,000 scale map showing the localities, and any other information containing specific fossil locations may be bound separately or placed in a separate section to allow for preservation of confidential locality data. A copy of this confidential section must be submitted to the Paleontology Lead (in some cases, two copies may be required). A copy for each affected Field Office may be required. Another copy must be submitted to the official repository with the collected materials.

3. BLM GPS recording and data standards must be used to report paleontological locality data. Existing USGS topographic maps are often based on the NAD27 standard, so locality data calculated from a map base must be converted before submission. Data must be recorded and reported with a mean error of +/- 12.5 meters or less, at a 95 percent confidence level. For small localities, data should be reported as point data. Larger polygonal localities should be reported using coordinates of a centroid and a description of the approximate size, or the key coordinate points of a bounding polygon. Linear features, such as roads or surveyed project boundaries, must be reported as line data. The 1:24000 scale map(s) accompanying the locality forms should graphically illustrate the locality, either as a point or an outline of the locality as appropriate, and be clearly labeled with the locality or field number.

D. Report Approval. The Authorized Officer will analyze the Survey Report for adequacy within 30 working days of receipt. Notification accepting the report, or explaining any identified deficiencies, will be sent to the consulting paleontologist and the project proponent with a copy placed in the project file. Any deficiencies must be corrected as soon as possible, usually initiated within five working days, and the report must be resubmitted for approval. Any resubmissions must be prompt, but consideration will be made for the amount of time needed for major corrections. Deficiencies directly affecting the survey, such as inadequate survey procedures or incomplete data, must be corrected before granting approval for the project to proceed. Deficiencies not directly affecting the survey, such as curation issues, will not prevent approval of the project, but must be corrected as soon as possible.

Determination of Further Mitigation Requirements. Based on the field survey, the need for additional mitigation to protect paleontological resources shall be determined. The Authorized Officer, in consultation with Regional Paleontologist or the Paleontology Lead, shall analyze the Survey Report for survey findings and any mitigation recommendations. If no further mitigation is needed, the Authorized Officer will promptly notify the project proponent that there are no additional paleontological surveys or mitigation measures required, and the project may proceed pending any other approvals. The project file must be documented indicating acceptance of the survey report and identifying any additional mitigation requirements. If it is determined that additional mitigation efforts are needed to protect or preserve the paleontological resources, the project proponent will be notified as soon as possible. The Authorized Officer and/or the Paleontology Lead usually develop and approve the mitigation procedures or recommend a project be redesigned in consultation with the project proponent. Factors such as locality or specimen significance, economics, safety, and project urgency will be considered when developing mitigation measures. Additional mitigation measures shall be developed and implemented as timely as possible so as not to delay project actions.

A. Relocation. The preferred mitigation technique is to change the project location based on the results of the field survey. Relocation, however, may necessitate a field survey of the new area, as well as resurveys by other resource specialists. Anticipation of this contingency prior to or during the original survey may allow for survey of an expanded area at the same time.

If relocation will eliminate impacts and is acceptable to all parties, then a report to the file, including a map showing the original and revised locations, must be completed documenting the change. Approval for the project to proceed in the revised location may then be granted by the Authorized Officer to the project proponent. When avoidance is not possible, appropriate mitigation may include

excavation or collection (data recovery), stabilization, monitoring, protective barriers and signs, or other physical and administrative protection measures.

B. Deferred Fossil Collection. In some cases, fossil material may have been identified, but not completely collected during the initial field survey, such as a partial dinosaur or other large fossil assemblage. It may be possible to complete the recovery of this material and all related data prior to beginning construction activities, and thus mitigate the adverse impact. This may require a shift in the project schedule and must be coordinated with the project proponent.

Approval by the Authorized Officer for the project to proceed will only be granted when recovery of the fossil material and field data is completed. A report to the file and the project proponent documenting the recovery and indicating that no further mitigation is required must be completed, and the report signed by the Authorized Officer. If the discovery cannot be fully collected within the available time frame, it may have to be avoided by relocating or redesigning the project.

4.5-3b Paleontological Monitoring Plan. Based on the field survey and reporting results identified in Mitigation Measure 4.5-3a, a Monitoring Plan shall be developed and implemented (if required).

A monitoring plan can be developed by a qualified paleontologist hired by the proponent who holds a current California BLM Paleontology Use Permit. The plan must be appropriately scaled to the size and complexity of the anticipated monitoring. If developed by a third-party, the appropriate Paleontology Lead or Regional Paleontologist shall review the plan for sufficiency prior to acceptance. Monitoring of the project may proceed when the monitoring plan is approved by the Authorized Officer. A monitoring plan indicates the treatments recommended for the area of the proposed disturbance and must minimally address the following:

1. The recommended approach to additional specimen collection, such as total or partial recovery or sampling; and,
2. The specific locations and intensity of monitoring or sampling recommended for each geologic unit, stratigraphic layer, or area impacted.

Monitoring intensity is determined based on the analysis of existing data and/or field surveys and any previous monitoring efforts.

Types of Monitoring. There are two types of monitoring: (1) on-site, performed during ongoing operations; and (2) spot-checks, performed during or after disturbance, or at key times during the progress of the project.

1. **On-site monitoring.** In areas with a high probability for buried fossils, the presence of a monitor at the site of disturbance at all times that disturbance is occurring may be warranted. The need for a full-time monitor is based on the findings of the survey, the local geology, and the proposed actions. Efforts will be made to complete fossil recovery with minimal work stoppage. However, in some cases, an extended period of work stoppage may be required, so coordination with the project proponent or representative is important. Prior to beginning the monitoring work, the monitor, company supervisor, and machinery operators shall agree on procedures for brief work stoppages to allow for examination of finds. It is critical that safety be of utmost concern because of the presence of heavy machinery and open trenches.

The monitor must assess any finds, collect loose fossil material and related data, and take appropriate steps to mitigate any current or potential damage. Consideration of the size of the expected fossils must also be considered; for example, microfossils may not be visible during excavation activities. It may be appropriate to collect samples of matrix for later recovery of microvertebrate fossils or other analyses. Activities planned to occur during night time should be assessed relative to the potential to uncover significant fossils. Fossils may not be visible at night in trenching or grading operations, so construction activities may need to be suspended during night time in sensitive areas.

- 2. Spot-checking.** In areas with a moderate to high probability for unknown fossil material, it may be more appropriate to check only at key times rather than maintain continuous monitoring of operations. Key times for scheduling spot-checking are when the fossil-bearing bedrock is exposed to view or prior to placing spoil material back into the excavation. Examples of these key times may be when a pipeline trenching operation is complete but before pipe is placed and the trench backfilled or prior to redistribution of topsoil. Spot-checking requires close coordination with the project proponent and the paleontologist, and usually requires the paleontologist to be available on short notice. In some instances, it may be advantageous to allow rain and/or wind to erode away loose matrix and concentrate fossil material to increase visibility. The paleontologist will coordinate with the project proponent to allow sufficient time for this action to occur, as appropriate to conditions, expected fossil material, and construction schedules.

The paleontologist should report potentially fossiliferous areas in the final report to allow for future assessment of sites, even if no fossils were located during the project monitoring.

Types of Field Personnel. It may be necessary to employ a number of paleontology field personnel simultaneously. There may be a lack of fully qualified paleontologists to perform all the necessary monitoring during the scheduled times of construction. Use of additional personnel for field work is permissible, but Field Agents and Field Monitors (described below) must be requested by the Permittee and authorized by the BLM prior to field work.

- 1. Principal Investigator.** The person listed as Permittee (Permit Item 1a) on the Paleontological Resources Use Permit is the Principal Investigator (PI) and is responsible for all actions under the permit, for meeting all permit terms and conditions, and for the performance of all other personnel. This person is also the contact person for the project proponent and the BLM.
- 2. Field Agent.** Other qualified paleontologists may perform field work independently of the PI under the conditions of this permit. Resumes must be submitted to BLM and must demonstrate qualifications equivalent to those of Permittees. Field Agents must be listed on the permit under "Name(s) of individual(s) responsible for planning, supervising, and carrying out fieldwork" (Permit item 8) or authorized in a separate letter from BLM. They must follow all the permit terms and conditions applicable to field work and must carry a copy of the permit, included terms and conditions, and separate authorizing letter (if used) while in the field. Field work results must be reported to the PI, who will then submit required reports.
- 3. Field Monitor.** Field Monitors may be utilized for supplemental on-site monitoring of surface-disturbing activities when the PI or a Field Agent is

performing field work elsewhere. Field Monitors must have sufficient field experience to demonstrate acceptable knowledge of fossil identification, collection methods, and paleontological techniques. The PI must supply a summary of each person's experience to the BLM prior to field work. Field Monitors must be approved by the BLM prior to performing field work and must carry a copy of the permit while in the field. The PI or Field Agent must be in communication with the Field Monitor using a portable communication device, such as a cell phone or two-way radio, and are required to be near enough to the Field Monitor to allow for prompt examination of all fossil discoveries (no more than two hours away) by the PI or Field Agent.

4. **Field Assistant.** Additional personnel not meeting the previously cited experience or knowledge levels may be utilized during field work, but must be under direct, on-site supervision of either the PI or a Field Agent as part of a supervised crew. Field assistants must have at least four to eight hours of training or experience received from a qualified paleontologist in identifying paleontological resources prior to performing field work or when first utilized in this capacity. A listing of all Field Assistants (including contact information) must be supplied prior to any field work. All discoveries made by a Field Assistant must be immediately reported to the PI or Field Agent on site. To ensure proper supervision, an appropriate ratio of Field Assistants per PI or Field Agent must be maintained. The complexity of the project, the area to be covered, and the experience of the assistants are some of the factors that should be considered in determining the proper ratio, but commonly five to seven assistants is the maximum number that can be supervised by one PI or Field Agent.

Work Stoppage. If significant fossil material is discovered during construction activities, the PI, Field Agents, and Field Monitors have the authority to temporarily halt surface disturbing actions until an assessment of the find is completed and appropriate protection measures taken. Efforts will be made to complete fossil recovery with minimal work stoppage. However, in some cases, an extended period of work stoppage may be required. If the paleontological resource can be avoided, mitigated, or collected within approximately two hours, work may resume after approval from the PI or Field Agent, and the Authorized Officer must be notified as soon as possible of the discovery and any mitigation efforts that were undertaken. If the find cannot be mitigated within a reasonable time (two hours), the concurrence of the Authorized Officer or official representative for a longer work stoppage must be obtained. Work may not resume until approval is granted from both the PI or Agent and the Authorized Officer.

- 4.5-3c **Reporting.** Upon completion of all field work, including survey and monitoring, the PI must submit within 30 days, a written final report to the Authorized Officer, Paleontology Lead, and the designated repository. A copy of the report may be provided to the project proponent if required, but without the BLM Locality forms. Reports must include the details and information as specified on page 14 of Attachment 1 of the BLM's "Guidelines for Assessment and Mitigation of Potential Impacts to Paleontological Resources," as applicable.

- 4.5-3d **Reporting.** When the final report with the specimen inventory and the signed receipt of confirmation of museum deposition are accepted by the BLM, mitigation for paleontological resources related to the project will be considered completed. The project proponent will be notified in writing as soon as possible by the Authorized Officer after consulting with the Paleontology Lead or Regional Paleontologist and a copy of the notification placed in the project file.

The responsibility of the project proponent ends when appropriate mitigation related directly to the project is completed and final approval is received from the Authorized Officer. Any additional field collection, quarrying, final specimen preparation, etc. will be considered to be research, and will be the responsibility of the consulting paleontologist or another approved party. The project proponent will not be held responsible for completion of any research project. However, the project proponent can choose to sponsor further research. A separate research permit will be required for additional research activities.

4.5-3e Data Collection. Fossil specimens and related data collected from public lands during field surveys and mitigation remain the property of the Federal government. They must be placed in the approved repository(s) identified on the Paleontological Resource Use Permit held by the consulting paleontologist as soon as practical and receipt(s) of collections submitted to the BLM, but no later than 60 days after all field work is completed. Written approval from the Paleontology Lead or Regional Paleontologist is required if additional time is needed for transfer of all specimens and field data.

Significance After Mitigation

Implementation of Mitigation Measures 4.5-3a through 4.5-3e would reduce potentially significant impacts to paleontological resources during construction of the OTF–BLM Land to **less than significant** through requiring field surveys to identify potential paleontological resources, report of survey findings, and implementation of mitigation should sensitive resources be identified. Potential mitigation measures include relocation and deferred fossil collection. Additionally, on-site monitoring would be required to ensure sensitive paleontological resources are not disturbed.

<p>IMPACT 4.5-4</p>	<p>Impact to Human Remains. The proposed projects could disturb and human remains, including those interred outside of formal cemeteries.</p>
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MSSF1, CSF1(A), CSF1(B), CSF2(A), CSF2(B), OTF-Private Land, OTF-BLM Land

During the construction and operational repair period of the proposed projects, grading, excavation and trenching will be required. While no potential human remains have been identified in the project study areas, subsurface activities always have some potential to impact previously unknown remains. This is considered a **potentially significant impact**. Mitigation Measure 4.5-4 will ensure that the potential project impacts to previously unknown human remains do not rise to the level of significance pursuant to CEQA. With implementation of Mitigation Measure 4.5-4, the impact will be **less than significant**.

Mitigation Measure(s)

The following mitigation measures apply to MSSF1, CSF1(A), CSF1(B), CSF2(A), OTF-Private Land and OTF–BLM Land. This mitigation measure was adopted by the County of Imperial and BLM, and contained in the Imperial Solar Energy Center South Final EIR/EA:

4.5-4 Human Remains. If human remains are discovered, work will be halted in that area, and the procedures set forth in the CEQA Guidelines Sections 15064.5 (d) and (e), California PRC Section 5097.98 and State HSC Section 7050.5, and the Native American Graves Protection and Repatriation Act (NAGPRA) shall be followed, as applicable. These procedures require that in the event of accidental discovery of human remains, no further disturbance of the site can occur until the coroner and the Native American Heritage Commission are contacted and appropriate steps are taken to rebury the remains with appropriate dignity on the property in a location not subject to further subsurface disturbance.

Significance After Mitigation

Implementation of Mitigation Measure 4.5-4 would reduce potentially significant impacts to human remains to a **less than significant** level by stopping construction if human remains are discovered during construction. No further disturbance would occur until the remains are assessed and treated.

4.5.3 Decommissioning/ Restoration and Residual Impacts

Decommissioning/Restoration

No impact is anticipated from restoration activities as the ground disturbance and associated impacts to cultural resources will have occurred during the construction phase of the projects.

Residual

Implementation of Mitigation Measures 4.5-2a, 4.5-2b, 4.5-2c and 4.5-2d would reduce impacts to cultural resources (i.e., archaeological resources) to a level less than significant. Implementation of Mitigation Measures 4.5-3a through 4.5-3e, would ensure that the impact to paleontological resources during construction would be mitigated to a level less than significant. Implementation of Mitigation Measure 4.5-4 would reduce potential impacts to human remains to a level less than significant. No unmitigated impacts to cultural resources (i.e., historical resources and archaeological resources) and paleontological resources would occur with implementation of the projects.

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