

5.3 Cultural Resources

This section discusses the potential effects of the Contra Costa Generation Station (CCGS) on cultural resources. Section 5.3.1 describes the cultural resources environment that might be affected by the CCGS. Section 5.3.2 presents an environmental analysis of construction and operation of the proposed project. Section 5.3.3 discusses whether there will be any cumulative effects from the project. Section 5.3.4 presents mitigation measures that will be implemented to avoid construction impacts. CCGS is not anticipated to require mitigation measures for cultural resources once it is operational. Section 5.3.5 discusses the laws, ordinances, regulations, and standards (LORS) applicable to the protection of cultural resources. Section 5.3.6 lists the agencies involved and agency contacts, and Section 5.3.7 discusses permits. Section 5.3.8 lists reference materials used in preparing this section.

This section is consistent with state regulatory requirements for cultural resources pursuant to the California Environmental Quality Act (CEQA). Cultural resources include prehistoric and historic archaeological sites;¹ districts and objects; standing historic structures, buildings, districts, and objects; locations of important historic events, and sites of traditional/cultural importance to various groups.² The study scope was developed according to the California Energy Commission's (CEC) cultural resources guidelines and complies with *Instructions to the California Energy Commission Staff for the Review of and Information Requirements for an Application for Certification* (CEC, 1992) and *Rules of Practice and Procedure & Power Plant Site Certification Regulations* (CEC, 2007). This study was conducted by Natalie Lawson, M.A., RPA and Clint Helton, M.A., RPA, Cultural Resource Specialists (CRS) who meet the qualifications for Principal Investigator stated in the Secretary of the Interior's standards and guidelines for archaeology and historic preservation (U.S. National Park Service [NPS], 1983). Jessica B. Feldman, Secretary of Interior-qualified Architectural Historian, conducted all studies related to historic architecture for this project.

Per CEC Data Adequacy requirements, Appendix 5.3A provides copies of agency consultation letters. Appendix 5.3B provides the technical report, including California Department of Parks and Recreation (DPR) 523 forms for newly recorded resources. Appendix 5.3C provides

¹ Site is defined as "The location of a significant event, a prehistoric or historic occupation or activity, or a building or structure...where the location itself possesses historic, cultural, or archeological value." (NPS-, 1998: 5).

² The federal definitions of cultural resource, historic property or historic resource, traditional use area, and sacred resources are reviewed below and are typically applied to non-federal projects.

A cultural resource may be defined as a phenomenon associated with prehistory, historical events, or individuals or extant cultural systems. These include archaeological sites, districts, and objects; standing historic structures, districts, and objects; locations of important historic events; and places, objects, and living or non-living things that are important to the practice and continuity of traditional cultures. Cultural resources may involve historic properties, traditional use areas, and sacred resource areas.

Historic property or historic resource means any prehistoric district, site building, structure, or object included in, or eligible for, inclusion in the National Register of Historic Places (NRHP). The definition also includes artifacts, records and remains that are related to such a district, site, building, structure or object.

Traditional use area refers to an area or landscape identified by a cultural group to be necessary for the perpetuation of the traditional culture. The concept can include areas for the collection of food and non-food resources, occupation sites and ceremonial and/or sacred areas.

Sacred resources applies to traditional sites, places or objects that Native American tribes or groups, or their members, perceive as having religious significance.

archival research material, including copies of historic maps and aerial photographs of the project and a complete copy of the California Historical Resources Information System (CHRIS) literature search results, which include copies of previous technical reports occurring within 0.25 mile of the project and DPR 523 forms for previously recorded resources occurring within 1 mile of the project and 0.5 mile of linear facilities. (Appendix 5.3B and 5.3C will be submitted separately to the CEC under a request for confidentiality.) Appendix 5.3D provides names and qualifications of personnel who contributed to this study.

The CCGS area of potential effects (APE) referred to in this section includes the survey areas for both archaeological and architectural resources. The archaeological survey area includes the plant site, the proposed laydown area, the proposed stock pile areas, and the transmission line corridor, as well as the following buffer areas: 200 feet around the plant site, the laydown area, and the stock pile areas, and 50 feet on either side of all project linears. The architectural survey area includes the plant site, the proposed laydown area, and the transmission line, as well as a buffer around all of these locations consisting of one additional parcel on all sides.

5.3.1 Affected Environment

In central California, cultural resources extend back in time for at least 11,500 years. Written historical sources tell the story of the past 200 years. Archaeologists have reconstructed general trends of prehistory in central California.

The CCGS is located in the Sacramento-San Joaquin River Delta, in the western portion of the Central Valley, and prehistoric resources uncovered in this area exhibit traits of the Central Valley cultures and those of the San Francisco Bay Area. Generally, the proposed chronologies of the Central Valley, as well as of the Bay Area, are variations based on the general California chronology, which consists of an Early Horizon, a Middle Horizon, and a Late Horizon (Fredrickson, 1974; Elsasser, 1978). However, wide regional differences in central California, as well as significant temporal overlap between site types classified into these three horizons, prevented clear distinctions between horizons. Eventually, a model was proposed for central California that primarily emphasized the patterns of cultural identity and deemphasized associated occupation dates (Moratto, 1984).

5.3.1.1 Regional Setting

The CCGS is located in Contra Costa County near the junction of Highway 4 and Highway 160 in Oakley, California. The project site is located in the southwest corner of the DuPont property which is bordered by the San Joaquin River to the north and east, vineyards and the Burlington Northern Santa Fe Railway (BNSF) railroad corridor to the south, and industrial facilities and the Highway 160 corridor to the west.

5.3.1.1.1 Paleo-Indian Period (12,000 to 5,000 years ago)

The general trend throughout California prehistory has been an increase in population density over time, coupled with greater sedentism and the use of a greater diversity of food resources. There is abundant evidence that humans were present in the New World for at least the past 11,500 years. There is also fragmentary, but growing, evidence that humans were present long before that date. Linguistic and genetic studies suggest that a date of 20,000 to 40,000 years ago for the human colonization of the New World may be possible. The evidence of this earlier occupation is not yet conclusive, but it is beginning to be

accepted by archaeologists. The Meadowcroft Rockshelter in Pennsylvania and Monte Verde in Chile, for instance, are two early sites that have produced apparently reliable dates as early as 12,500 years before present. These earliest known remains indicate very small, mobile populations, apparently dependent on hunting of large game animals as the primary subsistence strategy.

Early sites in the region are Fluted Point Tradition and Western Pluvial Lakes Tradition sites found at Tracy, Tulare, and Buena Vista lakes. These sites are few in number and remain undated by scientific means but the assemblage types indicate probable ages of 11,500 to 7,500 years old (Moratto, 1984).

5.3.1.1.2 Windmill Pattern (5,000 to 3,000 years ago)

The Windmill Pattern generally coincides with Fredrickson's Early Horizon (1974) and the majority of the known Windmill Pattern sites date to approximately 5,000 to 2,250 years ago. A small number of Windmill sites date as late as 1,250 to 750 years ago. Windmill populations moved seasonally between the valleys in the winter and the Sierra Nevada foothills in the summer. Windmill groups within the Delta region acquired obsidian from the Coast Ranges, shells from the coast, and quartz and alabaster from the Sierra foothills. Windmill burials within the Delta are found in the settled villages and in cemeteries separate from habitation areas. Fishing and hunting were the primary subsistence strategies, and Windmill sites are characterized by tools related to hunting, fishing, and milling, and include mortars, baked clay balls, trident fish spears, two types of angling hooks, pecan-sized baked clay that appears to have been used as fish line sinkers, bone awls and needles, polished charmstones, shell working and shell appliqué, and flaked tools, including projectile points (Moratto, 1984).

5.3.1.1.3 Berkeley Pattern (3,000 to 1,250 years ago)

The Berkeley Pattern coincides roughly with the Middle Horizon and most known Berkeley Pattern sites date to approximately 2,500 to 1,250 years ago. A small number of Berkeley sites extend outside this time frame and date as early as 3,200 years ago and as late as 500 years ago. The Berkeley Pattern appears to be a Bay region development that spread to the Delta region and the Valley beyond. In response to environmental and technological factors, economies became more diversified, and sedentism developed further while population growth and expansion occurred. The Berkeley Pattern subsistence relied less on hunting and fishing than the Windmill Pattern; rather the focus appears to have been on acorns. Mortars and pestles are present in far greater numbers at Berkeley sites. Other artifacts characterizing Berkeley sites include greater numbers of bone tools of superior manufacture, distinctive diagonal flaking of large concave base points, shell beads, and ornaments.

5.3.1.1.4 Augustine Pattern (1,250 to 250 years ago)

The Augustine Pattern coincides approximately with the Late Horizon and generally dates from 1,250 to 250 years ago. Augustine Pattern sites are much more widespread than Berkeley Pattern sites and are characterized by intensive fishing, hunting, and acorn gathering. Population densities are much higher; exchange systems are more sophisticated and include the advent of using clamshell disk beads for exchange of goods. High variability in funerary artifacts seems to indicate more social stratification. Cremations and flexed burials are common. Artifacts associated with the Augustine Pattern include the bow and arrow, shaped mortars and pestles, and pottery in some parts of central California (Moratto, 1984).

5.3.1.2 Ethnographic Setting

The CCGS project area lies within the ethnographic territory of the Bay Miwok. The Miwok is from the Penutian family of languages and includes the Wintun, the Maidu, the Costanoan, and the Yokuts. The Penutian language family occupied nearly half of California and most of central California. The Bay Miwok occupied the areas from the inner Coast Ranges near Mount Diablo and into the Delta region (Levy, 1978). Ethnographic information about the Bay Miwok is scarce as large numbers of Bay Miwok were moved from their traditional lands onto mission lands fairly early (Kroeber, 1925). The Bay Miwok were the first of the Eastern Miwok to be missionized and the first converts among the Bay Miwok came from the Saclan tribelet to the Mission San Francisco in 1794 (Levy, 1978). Many more Bay Miwok were moved to the Mission San Jose.

Similarly to other groups in California, the Bay Miwok practiced a hunting and gathering economy. Bay Miwok villages were generally situated on rises along major rivers and, thus, they also utilized water resources and fished. Bay Miwok lived in tribelets, which was the primary political unit. Tribelets controlled an area that included several permanent settlements, seasonally occupied campsites, and resource procurement sites. Permanent settlements could include brush shelters, sweat houses, acorn granaries, a dance house, and several earth-covered houses (Kroeber, 1925: 447). Bay Miwok also recognized lineage as a political unit. Permanent settlements were occupied by different lineage groups and were often named for a specific geographic locality (Levy, 1978).

Bay Miwok subsistence was based primarily on hunting, gathering, and fishing. Only tobacco was occasionally planted and cultivated. Hunted animals included deer, antelope, tule elk, and rabbit. Quail, pigeons, jays, and flickers were trapped. Duck and other water fowl were caught in nets. Bay Miwok fished with nets, harpoons, and hooks, depending upon the fish. A wide variety of plant foods were gathered, but the acorn was the most important and the Bay Miwok gathered several different varieties of acorn. Nuts, seeds, and roots were also gathered and many different types of plants were eaten as greens (Levy, 1978).

On April 3, 1776, a European exploratory expedition visited a Bay Miwok village of approximately 400 persons near Antioch, California. The settlement appears to have been the village of Chupcan (Levy, 1978), which would have been the nearest permanent Bay Miwok settlement to the CCGS project area.

5.3.1.3 Historic Setting

In 1542, Juan Rodriguez Cabrillo explored the California coast by ship. Much of the early exploration of California was conducted this way and the interior of California, including the Delta region of the Central Valley, remained unexplored by Europeans until the beginning of the Spanish Period.

The Spanish period spans the years from 1769 to 1822 in California, beginning with the founding of the first mission, the Mission San Diego de Alcalá in 1769. It was not until March 1772 that the first formal European expedition, led by Pedro Fages, explored the interior Delta region. Three missions were built by the friars in Bay area: the Old Mission San Francisco, the New Mission San Francisco, and the Mission San Jose. Many of the Native Americans who originally lived in and around the CCGS were moved from their homes to one of these three missions. The Mission San Francisco was founded in 1776.

A measles epidemic swept through the mission in 1806, and many of the neophytes at the mission succumbed to the disease. Because of the high toll from the disease, the padres decided to move the mission to the Sonoma Valley. However, the old mission, the Old Mission San Francisco, remained standing and the newly constructed mission was referred to as the New Mission San Francisco. The Mission San José was situated approximately 15 miles north of the town of San José in 1797. This mission supplied Russian settlements with grain, had a good vineyard and fruit trees, cattle, horses, sheep, and mules, as well as approximately 3,000 Indian neophytes (Bancroft, 1888). Once constructed, missions were fairly self sufficient with a large labor force and in most cases were quite profitable.

In 1821, Mexico gained independence from Spain, and the United States formally obtained California in 1848 (Cleland, 1941: xiii). The period from 1821-1848 is referred to as the Mexican Rancho Period. It was during this period that large tracts of land, called ranchos, were granted by the various Mexican Governors of Alta California, usually to individuals who had worked in the service of the Mexican government. The *Rancho de Los Medanos*, which included approximately 9,000 acres, was located along the San Joaquin River and the Suisun Bay and is the closest rancho to the CCGS. This rancho encompasses much of present day Antioch, California. The rancho was originally granted to Jose Antonio Mesa and Juan Miguez Garcia in 1839. Some sources show Jose Noriega as the original grantee in 1836 (Hulaniski, 1917: 12). The grant was passed from either Noriega in 1837 or from Mesa and Garcia in 1839 to an American explorer and settler, Dr. John Marsh, who occupied the rancho until he was murdered in 1856 (Hulaniski, 1917; Hoover et al., 1990). Dr. Marsh was one of the first American settlers in the area and, at the end of the Mexican War, wrote a series of letters to Congress and various newspapers describing the landscape of California in a favorable manner. His writings are credited with helping to achieve California statehood and dispelling ideas held by many Easterners that thought the entirety of the West was arid, barren, and hot (Hulaniski, 1917).

In 1833, 11 years after gaining independence from Spain, the Mexican government's Secularization Act changed missions into civil parishes, and those natives who had inhabited regions adjacent to a Spanish Period mission were to obtain half of all mission possessions, including land. However, in most instances, this did not occur, and the Secularization Act resulted in the transfer of large mission tracts to politically prominent individuals.

On June 14, 1846, a small number of Californians, mostly of American rather than Mexican origin and aided by John C. Fremont, an agent of the United States Government, seized control of the citadel of Sonoma from Mexican officials and hoisted a flag with a grizzly bear that read "Republic of California," declaring California a free and independent republic. The short Bear Flag Revolt resulted in a republic which lasted for less than a month (Hulaniski, 1917). Following the end of hostilities between Mexico and the United States in January 1847, the United States officially obtained California from Mexico through the Treaty of Guadalupe Hidalgo on February 2, 1848 (Cleland, 1941: xiii). In 1850, California was accepted into the Union of the United States primarily because of the population increase created by the Gold Rush of 1849.

The Sacramento-San Joaquin Delta region developed into an important agricultural region within the new state of California between 1850 and 1870. Initially, crops grown in the region included potatoes, beans, and onions. After 1870, Delta farmers diversified and

began growing wheat, oats, barley, and fruit trees. By the 1910s, the region was producing approximately two-thirds of California's potatoes, asparagus, bean, onion, and celery crops (Hulaniski, 1917). Agriculture remains an important industry in the Delta. Railroads crossed through the area in the late 1800s, including the Atchison, Topeka, and Santa Fe (ATSF) Railroad and the Southern Pacific Railroad (SPRR).

5.3.1.3.1 City of Antioch

Joseph H. and William W. Smith, who were brothers, are considered the original settlers of Antioch. The Smith brothers came to the area in 1849 and originally worked as carpenters. The lands the brothers settled were a part of the original *Los Medanos Rancho* owned at the time of sale by Dr. Marsh and, after the sale, the two quarter-sections of land were referred to locally as Smith's Landing. In 1850, Reverend W. W. Smith encouraged a shipload of settlers from Maine to settle in Smith's Landing, granting each family one lot on which to build their homes. The name was changed to Antioch around the same time. Antioch was named by the residents of the town at a July 4 picnic held at W. W. Smith's house (Hulaniski, 1917).

In 1859, coal was discovered in the hills south of Antioch and, in 1876, the Empire Coal Company was formed to mine it. In 1863, copper was discovered near Antioch. Other early industries that contributed to the growth of Antioch included lumber companies and paper mills. The town's early growth depended in part on its prime location on the river, providing ready freight access to San Francisco and other points in the Bay Area and also upstream to Stockton and Sacramento (Hoover et al., 1990).

The ATSF Railroad was completed through the area by 1878, and the SPRR San Francisco and New Orleans Line was completed through the area in 1899. Several short-line railroads ran south from the town toward Mt. Diablo and the nearby coal mines; one railroad line ran from a landing on the river toward Somerville to the south. Having access to both water and rail-related transportation facilities provided the community with the means to move goods and services to and from the area. Several industries, in addition to local farmers and ranchers, were important to the growth of the town and its hinterlands: coal mining, paper milling, and later, utilities.

5.3.1.3.2 City of Oakley

Oakley was originally situated within an ATSF Railroad grant land. In 1897, James O'Hara began selling the grant land to private individuals for 50 dollars an acre. O'Hara also convinced the railroad to build an additional 0.5 mile of side track and a shelter for waiting for trains, and eventually a station when business increased in Oakley. All available land available for sale in Oakley was sold in 2 years. One of the purchasers, R.C. Marsh, purchased 2 acres of land situated within the present day boundaries of the City of Oakley. A year later, Marsh was confirmed as the postmaster of Oakley, California. The Santa Fe Company finished the line through the area in 1899, and the first passenger train ran from Oakley to Stockton in July 1900. The station that was eventually built proved to be invaluable to the fruit and almond industry that flourished in the area (Hulaniski, 1917). The City of Oakley was finally incorporated in 1999.

5.3.1.4 Resources Inventory

A cultural resources inventory, which included archival research, architectural reconnaissance, and a surface pedestrian survey, was conducted for the project. The APE for the project was determined in accordance with the latest CEC *Rules of Practice and Procedure & Power Plant Site Certification Regulations* (CEC, 2007) for assessing potential impacts on archaeological and architectural resources. The results of the resource inventory are presented in the following sections. Figures 5.3-1 and 5.3-2 show the CCGS plant site, the construction laydown area, the stockpile areas, and the transmission line corridor, as well as the archaeological survey area and the architectural survey area. The archaeological survey area includes the CCGS plant site, the construction laydown area, the stockpile areas, the transmission line corridor, a 200-foot buffer around the plant site and laydown area, and a 50-foot buffer around all project linears. The architectural survey area includes the plant site, the construction laydown area, the transmission line corridor, and a 0.5-mile buffer.

5.3.1.4.1 Archival Research

CH2M HILL commissioned a literature search for the CCGS from CHRIS staff, Central California Information Center, searching within a 1-mile buffer zone around the CCGS plant site, associated laydown area, the stockpile areas, and a 0.5 mile buffer zone around the transmission line corridors. This search radius encompasses the entire research area required by the CEC for archaeological and architectural resources.

The CHRIS literature and records review included a review of all recorded archaeological sites and all known cultural resource survey and excavation reports. Other sources examined included the National Register of Historic Places (NHRP); the California Register of Historical Resources (CRHR); California Historical Landmarks; and California Points of Historical Interest. Historical maps consulted included a General Land Office plat map for T2N, R2E (1867 and 1872); the 1910 Jersey, California 30' U.S. Geological Survey (USGS) topographical quadrangle map; and the 1918 Collinsville, California 30' USGS topographical quadrangle map. State and local listings were consulted for the presence of historic buildings, structures, landmarks, points of historical interest, and other cultural resources.

Historical maps and aerials, provided by Environmental Data Resources, Inc. (EDR) (2009a and 2009b), also were examined. Historical aerials were compared with current aerials to determine whether any remaining footings or buildings located within the DuPont facility are more than 45 years old. Aerials examined included the following years: 1939, 1952, 1958, 1965, 1971, 1984, 1993, 1998, and 2005. Additional topographic maps examined included the following:

- 1908 Antioch, California quadrangle 7.5' USGS topographic map
- 1910 Jersey Island, California quadrangle 7.5' USGS topographic map
- 1912 Mt. Diablo, California quadrangle 15' USGS topographic map
- 1914 Brentwood, California quadrangle 7.5' USGS topographic map
- 1916 Byron, California quadrangle 15' USGS topographic map
- 1916 Lone Tree Valley, California quadrangle 7.5' USGS topographic map
- 1918 Collinsville, California quadrangle 7.5' USGS topographic map
- 1947 Mt. Diablo, California quadrangle 15' USGS topographic map
- 1952 Jersey Island, California quadrangle 7.5' USGS topographic map
- 1952 Rio Vista, California quadrangle 15' USGS topographic map

- 1953 Antioch North, California quadrangle 7.5' USGS topographic map
- 1953 Antioch South, California quadrangle 7.5' USGS topographic map
- 1953 Pittsburgh, California quadrangle 15' USGS topographic map
- 1954 Brentwood, California quadrangle 7.5' USGS topographic map
- 1968 Antioch North, California quadrangle 7.5' USGS topographic map
- 1968 Antioch South, California quadrangle 7.5' USGS topographic map
- 1968 Brentwood, California quadrangle 7.5' USGS topographic map
- 1968 Jersey Island, California quadrangle 7.5' USGS topographic map

According to information available in the CHRIS files, eight previous cultural resource studies, primarily cultural resource survey reports, have been prepared within the CCGS plant site, laydown area, and linears and an additional 30 studies have been prepared within 1 mile of the CCGS plant site and laydown area and within 0.5 mile of the CCGS linears (Table 5.3-1). Copies of all reports are provided in Appendix 5.3C. Reports S-23674, 33821, 31375, 34865, and 34867 contain several volumes, and only relevant portions are provided.

TABLE 5.3-1
Cultural Resources Reports within 1 Mile of the CCGS

Report Authors and Date	CHRIS Catalogue NADB Numbers
Survey conducted within the CCGS power plant, laydown yard, or transmission line ROW boundary:	
Baker and Smith (1990)	S-011385
Dougherty (1991)	S-012434
Bramlette et. al. (1991)	S-013256
West and Welch (1996)	S-018440
Moratto et al. (1995)	S-023674
Tang et. al (2005)	S-030387
Carper and Tremaine (2005)	S-031171
Jones and Stokes (2007)	S-033821
Survey outside the CCGS boundaries:	
Melandry (1978)	S-001091
Chavez (1979)	S-001451
Amaroli (1979)	S-001485
Chavez (1982)	S-003004
Werner (1986)	S-008832
McW.Quick (1987)	S-009054
Chavez and Woodbridge (1988)	S-010268
Price (1992)	S-016205
Jaffke (1995)	S-017951
Holman (1999)	S-021708
Baker (1999)	S-022307
Jones and Stokes Associates, Inc. (1999)	S-022464
Busby (1997)	S-022812
Billat (2000)	S-022831
JBR Environmental Consultants, Inc. (2000)	S-023475
Quivik (2000)	S-023665

TABLE 5.3-1
Cultural Resources Reports within 1 Mile of the CCGS

Report Authors and Date	CHRIS Catalogue NADB Numbers
Losee (2001)	S-024383
Guedon and Busby (2001)	S-025542
St. Clair and Holson (2003)	S-027049
Popetz and Self (2003)	S-028811
Busby (2004)	S-030579
Lewis et. al (2004)	S-031375
Dalldorf (2004)	S-029311
Billat (2005)	S-029690
Billat (2007)	S-034083
Wohlgemuth (2005)	S-034412
Farley (2007)	S-034660
Baker and Shoup (2007)	S-034865
Shoup (2007)	S-034866
Hill et. al (2007)	S-034867

Source: CHRIS Northwest Information Center. See Appendix 5.3C for full bibliographic references.

As a result of the previous 38 studies, a single previously recorded site has been noted within the CCGS. This combination prehistoric and historic site is located within 200 feet of and to the south of the power plant site. This site, P-07-2614, is described in additional detail below. A total of eight resources are located within the 1-mile radius of the CCGS APE. Most of these resources are historic built structures. None of the previously recorded sites discussed above has yet been evaluated for the NRHP or CRHR. There are no historic districts, cultural landscapes, or NRHP- or CRHR-listed or eligible properties within the search radius, according to the results of the records and literature search.

The BNSF, historically the ATSF, runs adjacent to the plant site and is visible on historical maps, beginning with the 1908 Antioch, California 7.5' USGS topographical quadrangle map. A spur line is visible on historical aerials and topographic maps, beginning with the 1958 aerial photographs and the 1968 Jersey Island, California 7.5' USGS topographical quadrangle map. The ATSF was chartered in 1859; broke ground in Topeka, Kansas, in 1868; and by 1899 the ATSF ran through the CCGS APE. In 1996, the ATSF merged with the Burlington Northern Railroad to create the BNSF (BNSF Railway Company, 2006). This railroad is recorded elsewhere in Contra Costa County as CA-CCO-732 and that previously recorded segment was determined ineligible for listing on the NRHP (Atchley and Roark, 1999).

Site P-07-2614. This site contains prehistoric and historic components. The prehistoric portion consists of a sparse scatter of prehistoric artifacts, including two cores and one flake tool. The historic portion consists of a light scatter of bottle glass fragments, including an aqua colored insulator fragment; an aqua bottle top with a hand-laid ring, double bead finish, and possible tooling marks; a machined light green aqua pickle sauce container base; and shards of white ceramic dishware, including two fragments of earthenware with an irregular matte

finish and a fragment of blue-on-blue stoneware. The historic refuse is scattered over a fairly large area throughout a vineyard and into the dirt road that runs along the BNSF line.

The site is fairly disturbed by agricultural activity and the spread of the artifacts appears to be related to this activity. Modern trash observed includes a brown beer bottle fragment, melted chunks of aluminum, a pipe clamp, and a rusted manifold gasket. Nearly all items recorded are fragmented from the disking of the area. No historic structures are known to have existed in the immediate area that could be related to agricultural activities or the nearby railroad (Brown, 2003).

5.3.1.4.2 Archaeological Field Survey

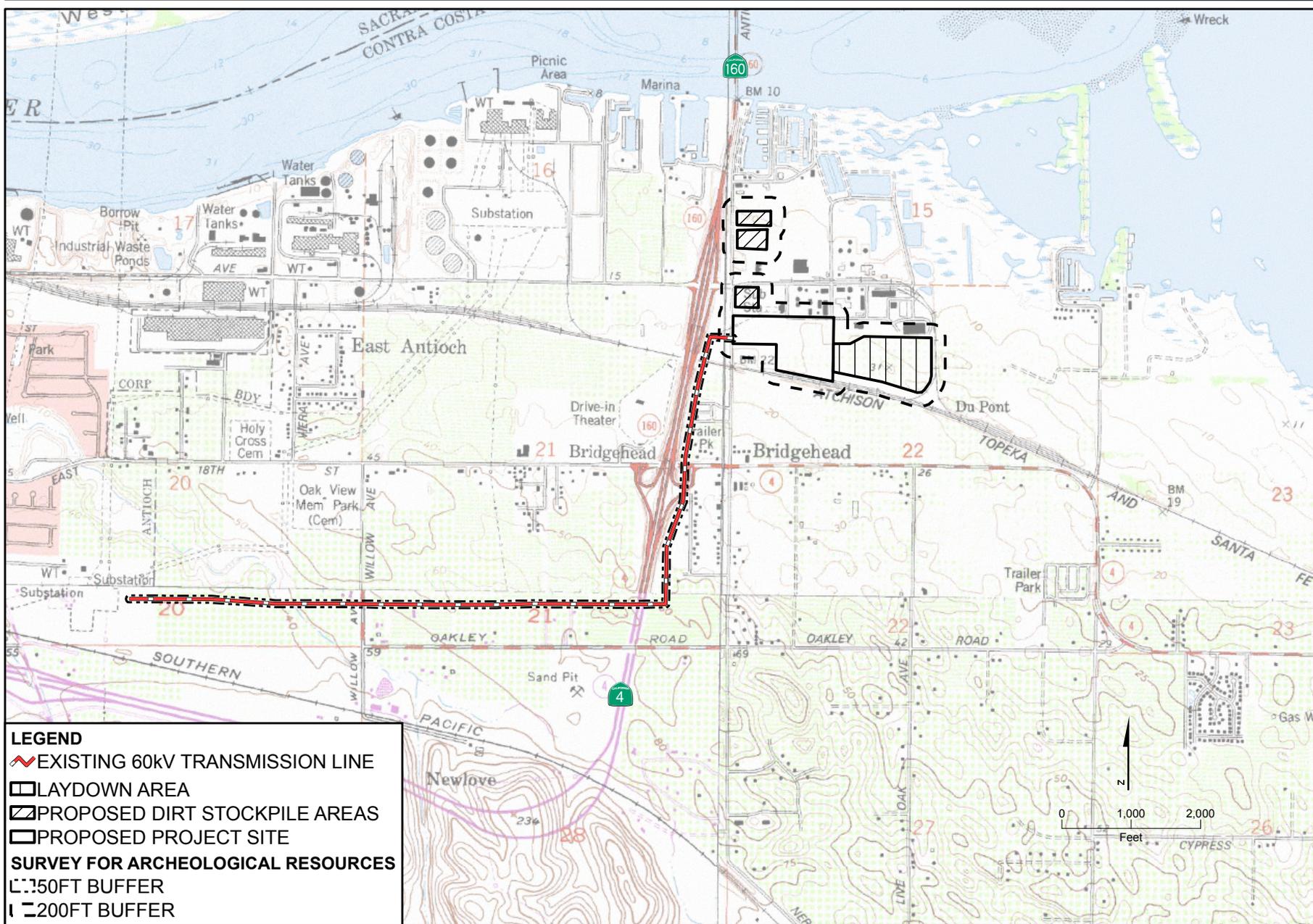
A cultural resources survey of the proposed CCGS APE was conducted on April 20, 2009, by Natalie Lawson, M.A., RPA, a CRS who meets the qualifications for Principal Investigator stated in the Secretary of the Interior's standards and guidelines for archaeology and historic preservation (NPS, 1983). This field survey included the plant site, temporary laydown area, stockpile areas, and the transmission line corridor.

As per the latest *CEC Rules of Practice and Procedure & Power Plant Site Certification Regulations* (CEC, 2007), in addition to the plant site and the construction laydown and/or parking area, a 200-foot minimum buffer was surveyed for cultural resources around these facilities. In addition to the survey of the transmission line corridor, a 50-foot minimum buffer was surveyed around the corridor.

The survey used linear pedestrian transects spaced at 10 meters and opportunistic examination of exposed soils to examine the survey areas to determine whether archaeological deposits might be present. Exposed soils, consisting mainly of previously disturbed agricultural sediments and road bed material, were inspected carefully, and no evidence of cultural materials was noted at any location with the area surveyed for the power plant site, laydown area, soil stockpile areas, or transmission line right-of-way.

Visibility within most of the proposed CCGS plant site was generally excellent. Most of the proposed plant site is in actively cultivated vineyards, and visibility throughout the vineyards was approximately 80 percent or better. On the western end of the area, there is a portion of the proposed plant site that has very limited visibility, less than 30 percent. A large motor had been dumped in this area. Visibility within the wetland area, which is in the buffer area, is almost zero.

The ATSF Railroad is located just south of the proposed plant site, within the 200-foot buffer. One previously recorded prehistoric and historic site (Site P-07-2614, discussed above) is also located just inside the 200-foot buffer; and a single prehistoric core was noted in this area, along the dirt road just south of the railroad and within the recorded site boundary. The proposed plant site is disturbed by agricultural activities, one dirt road, and a telephone line. Three of the poles in this line have been cut down and the line, a modern one, is now defunct. The buffer area is further disturbed by a paved road, several dirt roads, the railroad, and fencing that encircles the DuPont facility. A pile of discarded rail ties, lines, and other rail debris was observed in the southern buffer area.



This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

FIGURE 5.3-1
AREAS SURVEYED FOR
CULTURAL RESOURCES
 CONTRA COSTA GENERATING STATION
 OAKLEY, CALIFORNIA



LEGEND

-  EXISTING 60KV TRANSMISSION LINE
-  LAYDOWN AREA
-  PROJECT SITE
-  1/2MI BUFFER
-  HISTORICAL BUILT RESOURCES

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

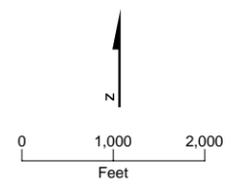


FIGURE 5.3-2
AREAS SURVEYED FOR
HISTORICAL BUILT RESOURCES
 CONTRA COSTA GENERATING STATION
 OAKLEY, CALIFORNIA

The laydown area is located east of the proposed plant site. Visibility in the laydown area was also excellent at approximately 70 percent. Sediment consists of well-drained sand. The laydown area is heavily disturbed. A dirt road runs along the southern edge. A portion of the laydown area has been used for dumping of titanium dioxide byproducts of paint manufacturing by DuPont and the soil is a gray-white color and appears almost spongy. This area looks to have been leveled or graded at some point. A spur from the railroad runs north through the proposed laydown area. Telephone poles and railguards and a small building associated with the spur are also located within the proposed laydown area. The northern half of the laydown area is paved. The concrete is in fair condition. A few of the footings of buildings are still extant in this part of the property. Although most of the debris from the buildings has been removed, there are still some piles of rubble. One of the footings still extant within the laydown area appears to have been one of the circa-1965 buildings constructed within the DuPont facility; the rest of the footings still in place appear more modern. Dumped debris consists of building materials, concrete, and pipe.

The stockpile areas are located north of the proposed plant site. One of these areas, the southernmost proposed stockpile area, is located in an existing parking lot and the entire area, including the buffer, is paved with asphalt. A second area, located farther north, is an open, grassy field. Visibility in this stockpile area is quite poor at less than 40 percent. A modern building and associated landscaping is located in the buffer for this stockpile area. The third stockpile area, located the farthest north, is in an old agricultural field. Visibility was fair at approximately 50 to 60 percent.

Much of the transmission line corridor surveyed runs adjacent to Highway 160, which was constructed in the early 1970s. Visibility within the north-south segment of the line varied from poor along the highway to excellent within the vineyards where the line turns west. The corridor crosses paved roads, freeway entrances and exits, vineyards, residential yards, and parking lots. A large portion of the east-west segment of the corridor runs along a paved recreational path. Parts of this path are landscaped and parts are overgrown. The easternmost part of the east-west segment runs through a vacant parcel along a dirt road before reaching the substation. There is extensive dumping along this path. In general, the transmission line corridor is disturbed by the towers themselves. Along Highway 160, fill appears to have been imported to build the roadway.

All observed soils in the CCGS APE are fairly consistently well-drained medium brown sand. Rarely, fist-sized cobbles were observed and it is likely that these were carried into the APE.

The ATSF Railroad (CA-CCO-732). An approximately 0.5-mile-long segment of the historic ATSF was recorded on DPR 523 forms within the buffer area south of the proposed plant site and laydown area (Appendix 5.3B). This segment extends from the eastern end of the laydown area to the western end of the proposed project and was a part of the ATSF route that was completed in 1899. A spur line that was added in the 1950s runs north from the segment into the DuPont facility. The ATSF officially ceased operations in 1996 when the line merged with the Burlington Northern Railroad and became the BNSF. The newly recorded section of the ATSF is located within the 200-foot buffer south of the proposed plant site and runs along the footprint of the original railroad grade; however, the railroad has implemented modern upgrades to the rail line, including modern rail crossings, and upgraded rail lines and ties. Additionally, the rail grade itself has been modified to allow for

heavier loads to be run on the tracks. This particular segment of the BNSF, or the former ATSF, and the short spur that leads into the DuPont facility do not appear to be eligible for listing on the NRHP as neither retains integrity of materials and workmanship.

P-07-002614. This previously recorded resource consists of prehistoric and historic components. The prehistoric component includes two cores and one flake tool. The historic portion of the site is a small scatter of historic trash, including glass fragments and ceramic dish fragments. One additional core was observed in the road during the CCGS survey. This core had been run over several times. The previously recorded site boundary reaches to the dirt road and, thus, the boundary was not modified as a result of the CCGS survey. As mentioned previously, this site has not yet been evaluated for inclusion on the NRHP; however, this site is located in the 200-foot buffer and project implementation is not expected to impact this site in any way.

Given the local topography, distance to major stream drainages or other archaeologically sensitive features, and the scale and scope of previous ground disturbance in the area, archaeological sensitivity of the surface soils of the CCGS APE is considered low. The sensitivity of the underlying soils is considered moderate to low, given that some possibility exists for intact cultural deposits to be present beneath the heavily disturbed agricultural zone in and along the vineyards where the plant is proposed. Additionally, the CCGS is located adjacent to a historic railroad and one previously recorded prehistoric and historic site is located within the 200-foot buffer south of the proposed plant site. Although the archaeological sensitivity is considered moderate to low, there is an overall low density of previous finds in this general area, despite several previous surveys.

5.3.1.4.3 Architectural Survey

A cultural resource survey of the built environment of the CCGS APE was conducted on April 20, 2009, by Jessica B. Feldman, a CRS who meets the qualifications for Architectural Historian, as stated in the Secretary of the Interior's standards and guidelines for archaeology and historic preservation (NPS, 1983). To assess potential impacts on the historic built environment, CH2M HILL examined the CCGS plant site and the transmission line, and, in accordance with *CEC Rules of Practice and Procedure & Power Plant Site Certification Regulations* (CEC, 2007), one parcel back from the project site.

This survey was conducted to determine whether potentially historic buildings and structures (more than 45 years old) are located within at least one parcel's distance of the project site and aboveground linear facilities, in this case the transmission line. This survey was guided in part by an analysis of historical USGS topographic maps listed previously. Small rectangles on these maps indicate the locations of homes, barns, and other structures that stood when the map was prepared. Examination of the maps showed that development in the project area, east of the downtown area of the City of Antioch, was sparse from 1908 through the early 1970s, with significant industrial development occurring along the southern side of the San Joaquin River. However, this development occurred outside the study area.

In addition to the USGS topographical maps, historical aerial images were consulted. The Contra Costa County Assessor's website (2009) was utilized to determine the dates of construction for buildings that were surveyed. This established that the project area is a mix of early and mid-twentieth century residential properties and late-twentieth century planned

housing development, utility-related uses such as substations and transmission line corridors, industrial properties, general commercial buildings, and two transportation corridors.

The 1908 Antioch quadrangle map shows the ATSF Railroad running near the northeast corner of the current project area, as it does today. East 18th Street, also called Main Street, is shown running east from Antioch toward the area where the community of Oakley is located. There were a few buildings along East 18th Street, and a cemetery at the southeast corner of 18th Street and Willow Avenue. The 1910 Jersey Island quadrangle map shows the ATSF railroad, but very little development in the area where the DuPont plant would be developed. Bridgehead Road appears as an unpaved road between East 18th Street and the river. There were a few homes and a church on each side of East 18th Street east of Bridgehead Road, and buildings along several unpaved roads radiating north and south of East 18th Street. The 1912 Mt. Diablo quadrangle map appears to show Elm Street, with one building at the southeast corner of the intersection of Oakley Road and Elm Street, but this is outside the study area.

Very little had changed in the local built environment by the time the 1952 Jersey Island quadrangle map was prepared, but the 1953 Antioch North quadrangle map shows the development of the Pacific Gas and Electric Company (PG&E) power plant at Marsh's Landing (1949), the Hillcrest Substation and Yard/Contra Costa Substation (owned by PG&E) on Hillcrest Avenue south of East 18th Street, and the transmission lines running between the two facilities. In addition to the Community Cemetery on East 18th Street and Willow Avenue, the Holy Cross Cemetery appeared for the first time on the north side of East 18th Street. However, much of the study area remained undeveloped and occupied by agricultural fields and orchards or vineyards. The Antioch South quadrangle map from the same year shows one house at the northeast corner of Willow Avenue and Oakley Road, and three buildings west of Willow Avenue on the north side of Oakley Road. Willow Road was paved south of Oakley Road and intersection with the SPRR just west of a small neighborhood called "Newlove." Antioch Bridge, built in 1926, carried traffic across the river, and was an extension of Bridgehead Road. It appears on the 1952 Jersey Island quadrangle map. There were just a few buildings at the intersection of Bridgehead Road and East 18th Street. By 1953, three quadrangle maps: Antioch North, Antioch South, and Jersey Island, provide a good perspective of the project area and locations of the associated transmission line just before the development of the DuPont plant site.

By 1968, the study area within the Antioch North quadrangle map shows that development along East 18th Street was increasing, with several previously unpaved roads being paved and more buildings (presumably residences) having been constructed along those roads. A trailer park appears on the west side of Bridgehead Road, north of East 18th Street. This trailer park, part of which is still in existence at 5751 Bridgehead Road, was partially demolished by the construction of State Route 160 in the early 1970s.

Several more properties appear at the corner of Willow Avenue and Oakley Road and on the north side of Oakley Road on the revised 1968 Antioch South quadrangle map, and one property is located on the west side of Willow Avenue north of Oakley. The latter building may be 2212 Willow Avenue. The DuPont plant, located at 6000 Bridgehead Road, is shown on the 1968 Jersey Island quadrangle map, along with one building at the PG&E Antioch Terminal to the south. There is a cluster of buildings at the intersection of Bridgehead Road and East 18th Street.

The transmission line that runs from the DuPont plant site to the Hillcrest Substation and Yard/Contra Costa Substation does not appear on any historical USGS quadrangle map covering the study area. Existing transmission lines would likely have been moved due to the construction of State Route 160 circa 1971. The transmission line has at least one tower on the project site on the east side of Bridgehead Road, and then crosses over this road north of the railroad bridge to travel down the east side of State Route 160, crossing this highway north of the intersection with State Route 4. The transmission line then runs west toward the substation, between East 18th Street and Oakley Road. The immediate surrounding is the Almondridge subdivision, which straddles the transmission line between Phillips Lane and Viera Avenue, and the fields east of the Contra Costa substation. The Almondridge subdivision appears to have developed in the mid-1980s.

The DuPont plant ceased operations in 1998 and all manufacturing facilities at the site have been demolished. Only the administration building, gatehouse, a water storage tank, fire pump house, pipe plant building, RCRA (Resource Conservation and Recovery Act) building, and two other buildings related to Freon storage remain. Only the two first buildings appear to be in use.

Since the early 1950s, the primary developments have been the DuPont plant; commercial development around East 18th Street and Bridgehead Road; introduction of State Routes 4 and 160; construction of a new bridge across the river west of the original 1926 Antioch Bridge; and large-scale residential development between East 18th Street and Oakley Road, between Viera Ave and Phillips Lane (the Almondridge subdivision), and the Meadowbrook subdivision, located north of the Hillcrest Substation and Yard/Contra Costa Substation.

In addition to the DuPont plant, which has been mostly demolished except for approximately six standing buildings; the Antioch Gas Terminal; 2212 Willow Avenue; and the Hillcrest Substation and Yard/Contra Costa Substation, there are six residential properties on Elm Street, two properties on Bridgehead Road, and two residential properties on Oakley Road that date to 1965 or earlier. These fourteen properties were documented during the field survey on April 20, 2009, and DPR primary forms and location maps have been prepared for each of these properties (see Table 5.3-2 and Appendix 5.3B). None of these properties appear to meet the NRHP or the CRHR criteria for listing.

TABLE 5.3-2
Properties Documented during the Architectural Survey

Street Number	Street Name	Type/Style	Year Built
NA	Hillcrest	Utility/ unknown (Contra Costa Substation)	Circa 1953
5751	Bridgehead	Multiple Family Property/ Pre-fabricated	Between 1953 and 1968
5900	Bridgehead	Utility/ concrete block construction (Antioch Gas Terminal)	Circa 1952
6000	Bridgehead	Industrial/varies (former DuPont Plant)	1956
6113	Bridgehead	Commercial/ no style	1961

TABLE 5.3-2
Properties Documented during the Architectural Survey

Street Number	Street Name	Type/Style	Year Built
5301	Elm	Multiple Family Property/ Minimal Traditional	Circa 1950
5346	Elm	Single Family Residence/ Minimal Traditional	1947
5387	Elm	Single Family Residence/ Minimal Traditional	1951
5394	Elm	Single Family Residence/ Minimal Traditional	1946
5406	Elm	Single Family Residence/ Minimal Traditional	1947
5487	Elm	Single Family Residence/ Minimal Traditional	1953
3001	Oakley	Single Family Residence/Minimal Traditional and Pre-fabricated	1915
3401	Oakley	Single Family Residence/ Craftsman	1921
2212	Willow	Single Family Residence/ Ranch	1956

Because the project would have no direct effect on these properties, the properties' distance from the CCGS, the low potential for indirect project effects, and the fact that these properties are relatively ordinary structures lacking architectural distinction and historical integrity, it was deemed unnecessary to conduct background research to establish a context for further evaluation.

5.3.1.4.4 Native American Consultation

CH2M HILL contacted the Native American Heritage Commission (NAHC) by letter on April 7, 2009, to request information about traditional cultural properties such as cemeteries and sacred places in the CCGS APE. The NAHC responded on April 16, 2009, with a list of Native Americans interested in consulting on development projects. Each of these individuals/groups was contacted by letter on April 24, 2009. Letters were also emailed where possible on April 24, 2009. Follow-up phone calls were made on May 5, 2009. Andy Galvan requested access to the literature search results. The results of the literature search were provided as requested, after confirming with Northeast Information Center that this was acceptable. Mr. Galvan also requested the opportunity to view the results of the report prior to completion of the document. A summary of results was provided to Mr. Galvan via email. Mr. Galvan has requested the presence of a Native American monitor whenever an archaeological monitor is onsite during construction of the CCGS. Ramona Garibay has requested to be notified in the event of a prehistoric find during construction of the CCGS.

Appendix 5.3A provides copies of the letters and a detailed summary table of the results of consultations with the individual Native American organizations on the NAHC contact list.

The NAHC record search of the Sacred Lands file did not indicate the presence of Native American cultural resources in the immediate CCGS APE. The record search conducted at the CHRIS Central California Information Center also did not indicate the presence of Native American traditional cultural properties.

5.3.1.4.5 Local Historical Societies

CH2M HILL contacted historical societies in the Oakley area, including the East Contra Costa Historical Society and Museum and the Contra Costa Historical Society. CH2M HILL spoke with staff at the East Contra Costa Historical Society on April 24, 2009. The society was interested in the project and requested further information. A letter and a project map were sent via registered mail to Kathy Leighton at the East Contra Costa Historical Society on April 24, 2009. No additional response has been received. A phone call was made to the Contra Costa Historical Society on April 24, 2009. Per their message service, a project description and project map were sent to the society via email. No response has been received. A summary of these contacts is provided in Appendix 5.3A.

5.3.2 Environmental Analysis

This section describes the environmental impacts of CCGS construction and operation. CH2M HILL conducted a complete cultural survey of the CCGS APE.

5.3.2.1 Significance Criteria

Appendix G, Environmental Checklist Form of the CEQA guidelines, addresses significance criteria with respect to cultural resources (Public Resources Code Sections 21000 et seq.). Appendix G (V)(a, b, d) indicates that an impact would be significant if the project will have the following effects:

- Cause a substantial adverse change in the significance of a historical resource
- Cause a substantial adverse change in the significance of an archaeological resource
- Disturb any human remains, including those interred outside formal cemeteries

Project investigations included archival research; review of all cultural resource investigation reports within the CCGS; contacts with all other interested agencies, Native American groups, and historic societies; and a complete field survey. These studies indicated no significant prehistoric or historic archaeological remains, or traditional cultural properties in the CCGS APE. Therefore, no impacts on cultural resources are expected.

5.3.2.2 Construction Impacts

The literature search and pedestrian inventories did not locate any significant prehistoric or historic sites within the CCGS site and linear facilities.

The literature search and pedestrian inventory have shown no significant prehistoric or historic sites located within the CCGS APE. An approximately 1-mile segment of the ATSF railroad runs adjacent to the proposed plant site and project area. Although this segment was recorded during the archaeological survey for the CCGS APE, this segment is not eligible for the NRHP and is not considered a significant resource. The integrity of the section of the ATSF located in the CCGS APE was compromised by a series of improvements to enable larger locomotives and heavier freight cars running at higher speeds. The improvements included heavier rails, new ties, and improving the rail beds to

permit higher tonnage. This segment no longer retains the essential physical features that made up its character or appearance during its period of importance from the late 1800s to the early 1900s, and although the rail line is located in its original footprint, the original historic materials and workmanship are no longer present or able to convey important associations with local historic events (NPS, 1998). Finally, the segment of the ATSF railroad, which has been recorded, is in use and the proposed project will not interfere with this use and therefore will not impact the railroad segment.

Despite the low number of archaeological resources in the CCGS APE, the project could encounter buried intact cultural resources that have not previously been disturbed or destroyed in sediments near the ground surface due to the short distance of the CCGS from a major river and other archaeologically sensitive features. It is possible that intact cultural deposits are present beneath the agricultural zone in and along the vineyards. With the incorporation of mitigation described in Section 5.3.4, construction impacts on cultural resources will be less than significant.

5.3.2.2 Operation Impacts

No ground disturbance would be required during project operation; therefore, impacts on cultural resources are not anticipated during CCGS operation. Maintenance of project facilities will not cause any effects outside the initial construction area of impact. No significant impacts on cultural resources will result from operations.

5.3.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Pub. Resources Code Section 21083; California Code of Regulations, Title 14, Sections 15064(h), 15065(c), 15130, and 15355). Cumulative projects are described in more detail in Section 5.6.1.5. Although environmental analyses for most of these projects have not been completed at the time this Application for Certification (AFC) was prepared, standard mitigation measures exist to reduce impacts on cultural resources to less-than-significant levels, and it is anticipated that impacts on cultural resources from the cumulative projects, if any, would be mitigated to less-than-significant levels. The project is unlikely, therefore, to have impacts that would combine cumulatively with other closely related past, present, and reasonably foreseeable future projects. With the incorporation of mitigation described in Section 5.3.4, the project will not contribute to a cumulatively considerable impact on cultural resources.

5.3.4 Mitigation Measures

Although significant archaeological and historical sites were not found during the survey for the CCGS plant site, laydown areas and associated linear features, it is possible that subsurface construction could encounter buried archaeological remains. For this reason, the CCGS will include measures to mitigate any potential adverse impacts that could occur if there were an inadvertent discovery of buried cultural resources. These measures include, but are not limited to: (1) designation of a CRS to investigate any cultural resource finds made during construction, (2) implementation of a construction worker training program, (3) monitoring during initial clearing of the power plant site and excavation at the plant site,

(4) procedures for halting construction in the event that there is an inadvertent discovery of archaeological deposits or human remains, (5) procedures for evaluating an inadvertent archaeological discovery, and (6) procedures to mitigate adverse impacts on any inadvertent archaeological discovery determined significant.

Once the CCGS is operational, it is anticipated that no additional disturbance will occur at the CCGS plant site, laydown area, and associated linear features.

5.3.4.1 Designated Cultural Resources Specialist

The Applicant will retain a designated CRS who will be available during the earth-disturbing portion of the CCGS construction periods to inspect and evaluate any finds of buried archaeological resources that might occur during the construction phase. If there is a discovery of archaeological remains during construction, the CRS, in conjunction with the construction superintendent and environmental compliance manager, will make certain that construction activity stops in the immediate vicinity of the find until the find can be evaluated. The CRS will inspect the find and evaluate its potential significance in consultation with CEC staff and the CEC compliance project manager (CPM). The CRS will make a recommendation as to the significance of the find and any measures that would mitigate adverse impacts of construction on a significant find.

The CRS will meet the minimum qualifications for Principal Investigator on federal projects under the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. The CRS will be qualified, in addition to site detection, to evaluate the significance of the deposits, consult with regulatory agencies, and plan site evaluation and mitigation activities.

5.3.4.2 Construction Worker Training

The Applicant will prepare a construction worker sensitivity training program to ensure implementation of procedures to be followed if cultural resources are discovered during construction. This training will be provided to each construction worker as part of their environmental, health, and safety training. The training will include photographs of various types of historic and prehistoric artifacts and will describe the specific steps to be taken in the event of an unanticipated discovery of cultural material, including human remains. It will explain the importance of, and legal basis for, the protection of significant archaeological resources. The training also will be presented in the form of a written brochure.

5.3.4.3 Monitoring

The Applicant will retain a qualified archaeologist to monitor excavations during the project's construction phase, including geotechnical testing activities prior to construction that have the potential to impact previously undisturbed soils that may be sensitive for cultural resources. If archaeological material is observed by the monitoring archaeologist, ground-disturbing activity will be halted in the vicinity of the find so that its significance (CRHR eligibility) can be determined. If evaluated as significant, mitigation measures (avoidance or data recovery) will be developed in consultation with the CEC.

5.3.4.4 Emergency Discovery

If the archaeological monitor, construction staff, or others identify archaeological resources during construction, they will immediately notify the CRS and the site superintendent, who will halt construction in the immediate vicinity of the find, if necessary. The archaeological monitor or CRS will use flagging tape, rope, or other means as necessary to delineate the area of the find within which construction will halt. This area will include the excavation trench from which the archaeological finds came and any piles of dirt or rock spoil from that area. Construction will not occur within the delineated find area until the CRS, in consultation with the CEC staff and CEC CPM, can inspect and evaluate the find.

5.3.4.5 Site Recording and Evaluation

The CRS will follow accepted professional standards in recording any find and will submit the standard Form DPR 523 and location information to the CHRIS Northwest Information Center.

If the CRS determines that the find is not significant and the CEC CPM concurs, construction will proceed without further delay. If the CRS determines that further information is needed to determine whether the find is significant, the designated CRS will, in consultation with the CEC, prepare a plan and a timetable for evaluating the find.

5.3.4.6 Mitigation Planning

If the CRS and CPM determine that the find is significant, the CRS will prepare and conduct a mitigation plan in accordance with state guidelines. This plan will emphasize the avoidance, if possible, of significant archaeological resources. If avoidance is not possible, recovery of a sample of the deposit from which archaeologists can define scientific data to address archaeological research questions will be considered an effective mitigation measure for damage to or destruction of the deposit.

The mitigation program, if necessary, will be carried out as soon as possible to avoid construction delays. Construction will resume at the site as soon as the field data collection phase of any data recovery efforts is completed. The CRS will verify the completion of field data collection by letter to the project owner and the CPM so that they can authorize construction to resume.

5.3.4.7 Curation

The CRS will arrange for curation of archaeological materials collected during an archaeological data recovery mitigation program. Curation will be performed at a qualified curation facility meeting the standards of the California Office of Historic Preservation. The CRS will submit field notes, stratigraphic drawings, and other materials developed as part of the data recovery/mitigation program to the curation facility along with the archaeological collection, in accordance with the mitigation plan.

5.3.4.8 Report of Findings

If a data recovery program is planned and implemented during construction as a mitigation measure, the CRS will prepare a detailed scientific report summarizing results of the excavations to recover data from an archaeological site. This report will describe the site soils and stratigraphy, describe and analyze artifacts and other materials recovered, and

draw scientific conclusions regarding the results of the excavations. This report will be submitted to the curation facility with the collection.

5.3.4.9 Inadvertent Discovery of Human Burials

If human remains are found during construction, project officials are required by the California Health and Safety Code (Section 7050.5) to contact the Contra Costa County Coroner. If the coroner determines that the find is Native American, he or she must contact the NAHC. The NAHC, as required by the Public Resources Code (Section 5097.98), determines and notifies the Most Likely Descendant with a request to inspect the burial and make recommendations for treatment or disposal.

5.3.5 Laws, Ordinances, Regulations, and Standards

Among the local LORS discussed in this section are certain ordinances, plans, or policies of the City of Oakley, Contra Costa County, and the State of California. Federal LORS will likely not be applicable because the project will not require a Prevention of Significant Deterioration (PSD) permit, Clean Water Act permit, or other federal authorization. A summary of applicable LORS is provided in Table 5.3-3.

TABLE 5.3-3
Laws, Ordinances, Regulations, and Standards for Cultural Resources

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
Federal			
Section 106, National Historic Preservation Act	Applies if the project would require a federal permit (such as a PSD permit). The lead federal agency must take into account the effect of issuing the permit on significant cultural resources	California Office of Historic Preservation/ Environmental Protection Agency	Section 5.3.5.1
State			
CEQA Guidelines	Project construction may encounter archaeological and/or historical resources	CEC	Section 5.3.5.2
Health and Safety Code Section 7050.5	Construction may encounter Native American graves; coroner calls the NAHC	State of California	Section 5.3.5.2
Public Resources Code Section 5097.98	Construction may encounter Native American graves; NAHC assigns Most Likely Descendant	State of California	Section 5.3.5.2
Public Resources Code Section 5097.5/5097.9	Would apply only if some project land were acquired by the state (currently no state land)	State of California	Section 5.3.5.2

TABLE 5.3-3
Laws, Ordinances, Regulations, and Standards for Cultural Resources

LORS	Requirements/Applicability	Administering Agency	AFC Section Explaining Conformance
Local			
Contra Costa County General Plan 2005-2020	Sets goals to identify and preserve important archaeological and historic resources within the county	Contra Costa County	Section 5.3.5.2
City of Oakley General Plan	Requires the protection of cultural resources in terms of known and potential archaeological resources, and historic resources that are nationally designated and recognized by the State of California, or locally significant and site evaluation of undeveloped land	City of Oakley	Section 5.3.5.2

5.3.5.1 Federal LORS

Federal protection for significant archaeological resources would apply to the CCGS if any construction or other related project impacts take place on federally managed lands, or if certain federal entitlements were required. Because the project is not likely to require a PSD permit under the federal Clean Air Act or other federal permit, the project would not be considered a federal undertaking.

The National Historic Preservation Act requires federal agencies to take into consideration the effects of their undertakings on historic properties, defined as properties (buildings, districts, sites, structures, objects) that meet the criteria for listing in the NRHP (36 CFR Part 60). The agencies' responsibilities under the NHPA are described in Section 106 of the Act and in federal regulations at 36 CFR Part 800. Federal agencies are enjoined to (1) determine an undertaking's APE on historic properties, (2) inventory potential historic properties within the APE, (3) evaluate properties identified to determine their eligibility for listing in the NRHP, (4) assess the potential effects of the undertaking on properties determined to meet NRHP criteria, and (5) if the effects would be adverse, avoid or mitigate those effects. In this case, the U.S. Environmental Protection Agency (EPA) would likely be the federal agency with Section 106 compliance responsibilities. As the lead federal agency, it is the responsibility of the EPA to conduct the State Historic Preservation Officer consultation regarding the permit undertaking's effects on historic properties.

5.3.5.2 State LORS

CEQA requires review to determine whether a project will have a significant effect on archaeological sites or a property of historic or cultural significance to a community or ethnic group eligible for inclusion in the CRHR (CEQA Guidelines). CEQA equates a substantial adverse change in the significance of a historical resource with a significant

effect on the environment (Section 21084.1 of the Public Resources Code) and defines substantial adverse change as demolition, destruction, relocation, or alteration that would impair historical significance (Section 5020.1). Section 21084.1 stipulates that any resource listed in, or eligible for listing in, the CRHR³ is presumed to be historically or culturally significant.⁴

Resources listed in a local historic register or deemed significant in a historical resource survey (as provided under Section 5024.1g) are presumed historically or culturally significant unless the preponderance of evidence demonstrates they are not.

A resource that is not listed in or determined to be eligible for listing in the CRHR, is not included in a local register of historic resources, or is not deemed significant in a historical resource survey may nonetheless be historically significant (Section 21084.1; see Section 21098.1).

CEQA requires a lead agency to identify and examine environmental effects that may result in significant adverse effects. Where a project may adversely affect a unique archaeological resource,⁵ Section 21083.2 requires the lead agency to treat that effect as a significant environmental effect and prepare an environmental impact report. When an archaeological resource is listed in or is eligible to be listed in the CRHR, Section 21084.1 requires that any substantial adverse effect to that resource be considered a significant environmental effect. Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project's environmental analysis. Either of these benchmarks may indicate that a project may have a potential adverse effect on archaeological resources.

Other state-level requirements for cultural resources management appear in the California Public Resources Code Chapter 1.7, Section 5097.5 (Archaeological, Paleontological, and Historical Sites), and Chapter 1.75, beginning at Section 5097.9 (Native American Historical, Cultural, and Sacred Sites) for lands owned by the state or a state agency.

The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and Sections 5097.94 and 5097.98 of the Public Resources Code, and falls within the jurisdiction of the NAHC.

³ The CRHR is a listing of "...those properties which are to be protected from substantial adverse change." Any resource eligible for listing in the CRHR is also to be considered under CEQA.

⁴ A historical resource may be listed in the CRHR if it meets one or more of the following criteria: "(1) is 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; (2) is associated with the lives of persons important to local, California, or national history; (3) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or (4) has yielded or has the potential to yield information important in prehistory or history (...of the local area, California, or the nation)" (Public Resources Code §5024.1, Title 14 CCR, Section 4852). Automatic CRHR listings include NRHP-listed and determined eligible historic properties (either by the Keeper of the NRHP or through a consensus determination on a project review), State Historical Landmarks from number 770 onward, and Points of Historical Interest nominated from January 1998 onward. Landmarks prior to 770 and Points of Historical Interest may be listed through an action of the State Historical Resources Commission.

⁵ Public Resources Code 21083.2 (g) defines a unique archaeological resource to be: An archaeological artifact, object, or site, about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria: (1) contains information needed to answer important scientific research questions and 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; or (3) is directly associated with a scientifically recognized important prehistoric or historic event or person.

If human remains are discovered, the county coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the coroner determines the remains to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native American so they can inspect the burial site and make recommendations for treatment or disposal. The project will comply with these requirements related to cultural resources through the implementation of the mitigation measures described previously in Section 5.3.4.

5.3.5.3 Local LORS

The Contra Costa County General Plan (2005-2020) includes the goal to identify and preserve important archaeological and historic resources within the County (Contra Costa County, 2005). Contra Costa's historic, archaeological, and cultural resource policies urge:

- Preservation of areas that have identifiable and important archaeological or historic significance, preferably in public ownership
- Protection of buildings or structures that have visual merit and historic value
- Development of surrounding areas of historic significance with compatible and high quality design to protect and enhance the historic quality of the area

Additionally, within the Southeast County area, applicants for subdivision or for land use permits to allow non-residential uses shall provide information to the county on the nature and extent of the archeological resources that exist in the area. The county Planning Agency shall be responsible for determining the balance between the multiple uses of the land with the protection of resources.

Contra Costa's historic, archaeological, and cultural resource policies are implemented by:

- Development of Review Process
 - Develop an archaeological sensitivity map to be used by staff in the environmental review process for discretionary permits to determine potential impact upon cultural resources.
 - As a condition of approval of discretionary permits, include a procedure to be followed in the event that archaeological resources are encountered during development or construction.
- Ordinance Revisions
 - Review existing county ordinances and guidelines and make amendments as necessary to ensure that they provide adequate safeguards for archaeological and historic resources.
 - Develop design guidelines for areas adjacent to or within scenic corridors or historic sites.

- Other Programs
 - Promote the use of the State of California Historic Building Code to protect historic sites in the county.
 - Encourage owners of eligible historic properties to apply for state and federal registration of these sites and to participate in tax incentive programs for historic restoration.
 - Seek coordination and cooperation with federal, state, and local governments, and with private and non-profit organizations, to establish funding sources to preserve, restore, and enhance unique historic sites. Such funding sources may be used to acquire and preserve sites or to acquire easements over sites and building facades
 - Identify funding mechanisms, including funding from the county to the extent possible, to support programs to preserve, restore, and enhance unique historic sites.

The City of Oakley General Plan (2002) includes the following goals regarding archaeological resources and historic resources: encourage preservation of archaeological resources and selected historic structures and features within the community and plan area. Policies regarding these preservation goals include the preservation of areas with identifiable and important archaeological significance; promotion of the compatibility of new development located adjacent to existing historically significant structures; consistency in the character and setting of historic structures during remodeling and renovation; use of the State Historic Building Code for historic buildings and other structures that contribute to the city's historic character; recognition of the value of historic resources as an economic development tool; preservation of historic integrity through the implementation of applicable design, building, and fire codes; and coordination with property owners to preserve historic features within the community. The city employs several programs to achieve these goals and to implement these policies. Programs include the assessment of development proposals for potential impacts on significant archaeological resources pursuant to Section 15064.5 of the CEQA Guidelines; encouragement to the owners of eligible historic properties to apply for state and federal registration of these sites and to participate in tax incentive programs for historic restoration; identification of funding mechanisms to support programs to preserve, restore, and enhance unique historic sites; and assessment of development proposals for potential impacts on significant historic resources pursuant to Section 15064.5 of the CEQA Guidelines.

5.3.6 Agencies and Agency Contacts

Table 5.3-4 lists the state agencies involved in cultural resources management for the project and a contact person at each agency. These agencies include the NAHC and, for federal undertakings, the California Office of Historic Preservation.

TABLE 5.3-4
Agency Contacts for Cultural Resources

Issue	Agency	Contact
Native American traditional cultural properties	Native American Heritage Commission	Debbie Pilas-Treadway Associate Governmental Program Analyst Native American Heritage Commission 915 Capitol Mall, Room 364 Sacramento, CA 95814 (916) 653-4082
Federal agency NHPA Section 106 compliance	California Department of Parks and Recreation Office of Historic Preservation	Milford Wayne Donaldson State Historic Preservation Officer 1416 9th Street, Room 1442 Sacramento, CA 95814 (916) 653-6624

5.3.7 Permits and Permit Schedule

Other than certification by the CEC, no state, federal, or local permits are required by the project for the management of cultural resources. Consultation with the State Historic Preservation Officer would not be required under Section 106 of the National Historic Preservation Act because the project will likely not require a PSD or other federal permit.

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