3.13 CULTURAL RESOURCES

This section provides a brief overview of the history of human habitation in the project area and the potential for finding important cultural resources during construction of the proposed project. Important cultural resources include buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance. This section also describes the known cultural resources sites near the proposed project and alternatives. CPUC examined the potential for construction activities to disturb known or unidentified cultural resources in the project area.

3.13.1 ENVIRONMENTAL SETTING

The information in this section is derived primarily from three reports prepared for the Applicant:

- *Lodi Gas Storage Project Proponent's Environmental Assessment* (Dames & Moore, 1998);
- *Archaeological Reconnaissance, Sacramento & San Joaquin Counties, California* (Dames & Moore, 1999);
- *Archaeological Reconnaissance, Alternative "B" Pipeline Route* (Dames & Moore, 1999); and
- *Archaeological Reconnaissance, Public Right-of-Way Route* (Dames & Moore, 1999).

PREHISTORY

Although central California may have been inhabited by humans as early as 10,000 years ago, there was little reliable evidence for widespread occupation until about 4,500 years ago. Archaeologically visible patterns can be interpreted as responses to gradual changes in climate, resource availability, and human population growth. This section provides a brief overview of the changing adaptive strategies used by the inhabitants of the Central Valley and the archaeological manifestations of these changes.

The Windmiller Pattern extends from approximately 4,500 to 3,000 B.P. (before present) and is thought to indicate a mixed economy of both game procurement and use of wild plant foods. The archaeological record contains numerous projectile points (arrowheads) with a wide range of animal remains. Hunting was not limited to terrestrial animals; the Windmiller tool kit included fishing hooks and spears found near the remains of sturgeon, salmon, and other fish. Plant resources were also used, as indicated by ground stone artifacts (manos and metates) and clay balls that may have been used in boiling acorn mush. Settlement trends during the Windmiller Pattern reflect a seasonal adaptation. Habitation sites in the valley, and possibly in the project area, were occupied during the winter but populations moved into the foothills during the summer months. (Moratto, 1984.)

The generalized Windmiller Pattern changed to a more specialized adaptation called the Berkeley Pattern from approximately 3,000 to 1,000 years B.P. A reduction in the number of manos and metates (stone tools used for grinding small grains) and an increase in mortars and pestles indicate a shift in resource use toward a greater dependence on acorns. When sites are located near water, large shell mounds are present. Although gathered resources were more important during this period, projectile points indicate that hunting was still an important activity. (Fredrickson, 1973.)

The Berkeley Pattern is superseded by the Augustine Pattern which extended from approximately 1,500 B.P. up to the beginning of the Mission Era. The Augustine Pattern indicates a change in subsistence and land use patterns to those of the ethnographically known peoples (Eastern Miwok) of the historic era. This pattern exhibited a great elaboration of ceremonial and social organization, including the development of social stratification. Exchange became well developed and even greater emphasis was placed on the use of acorns, as evidenced by shaped mortars and pestles and the numerous hopper mortars. Other notable elements of the material culture assemblage of this pattern include flanged tubular smoking pipes (cloud blowers); harpoons; an especially elaborate baked clay industry, which includes figurines and pottery vessels (Cosumnes Brownware); clam shell disk beads; and the use of small projectile point types, referred to as the Gunther Barbed series, which suggests the use of the bow and arrow. Other traits include the introduction of pre-interment burning of offerings in a grave pit during the mortuary ritual, increased village sedentism (i.e., the main population remaining in a permanent location and sending out groups to obtain needed resources in the surrounding area), population growth, and an incipient monetary economy in which beads were used as a standard of exchange. (Moratto, 1984.)

ETHNOGRAPHY

The Eastern Miwok have been divided by anthropologists into five separate groups, two of which (Bay and Plains) occupied the project area. The Bay Miwok inhabited the area of eastern Contra Costa County, from near Walnut Creek to the Sacramento-San Joaquin River Delta (the Delta); the Plains Miwok ranged over the lower Mokelumne and Cosumnes Rivers and the Sacramento River from Rio Vista to Freeport (Levy, 1978). The Miwok languages belong to the Miwokan subfamily of the Utian family or Penutian stock (Shipley, 1978). Each of the primary Miwok divisions used several dialects.

No Miwok tribal organization encompassed all the peoples speaking Miwokan languages, or even an entire primary division such as Plains Miwok. These are merely linguistic and geographic designations developed by anthropologists. The largest political entity recognized by the Miwok themselves was the tribelet. A headman was the most important political figure within the tribelet. This position was passed from father to son, unless the headman did not have a son. In that case, the headman's daughter or wife could succeed him. The headman resided in a central village, and his authority encompassed several satellite villages. A roundhouse, a large public structure used in civil and ceremonial activities, was located at the tribelet's central village.

In general, the Miwok were seasonally mobile hunter-gatherers with semipermanent villages. Acorns were the staple food resource among all the groups. Other important food sources were buckeyes, seeds, bulbs, pine nuts, deer, elk, rabbits, squirrels, fowl, salmon and other fish, and insects.

Early contact between Miwok of inland areas and Spanish explorers occurred in the late 1700s. By 1776, Mission San Francisco was forcefully taking Miwok converts, and this practice was soon adopted by other nearby missions. In the middle to late 1800s with the arrival of settlers, ranchers, and miners, the Miwok were forced from their land, and many of them were killed by the new inhabitants or fell victim to various epidemics. These events greatly reduced Miwok populations.

HISTORIC BACKGROUND

Euroamerican Expeditions

The Delta was visited frequently by early explorers (Hoover et al., 1990; Thompson, 1957). The Pedro Fages-Fr. Crespi expedition, while exploring San Francisco Bay in 1772, came as far east as the San Joaquin River. In 1776, Colonel Juan Bautista de Anza explored territory previously visited by Fages and Crespi in 1772. In 1793, Francisco Eliza sailed to the Sacramento River. Between 1806 and 1817, several mission-site reconnaissance expeditions were conducted. The explorers who led these expeditions were Gabriel Moraga (1806, 1808), Fr. Ramon Abella (1811), Jose Antonio Sanchez (1811), and Fr. Narciso Duran (1817). Additionally, Sanchez conducted an attack on the native inhabitants, called the "Mugelemes," in 1819 in retribution for horse stealing. This group would later be known as the Mokelumne. The Mokelumne village of Plains Miwok was believed to be located near Lockeford or Lodi (Gudde, 1969). The modern spelling of the name comes from John C. Frémont's mapping of the Mokelumne River during his 1845-1846 expedition.

Jedediah Smith, possibly the first American to traverse this region, opened the Sacramento Trail in 1820. Smith reported to the Hudson's Bay Company on the quantity and quality of furs available in California. In 1828, the company sent its first trapping expeditions to California. At first, trapping in the Sacramento and San Joaquin Valleys was very profitable, but as the practice increased in intensity, the yields became less spectacular. By 1834, trapping in this area was poor. The Hudson's Bay Company continued to send trapping brigades until 1842, when it terminated its California operations (Thompson, 1957).

Reclamation

The Delta was sparsely settled until land reclamation began. The Swamp and Overflow Land Act of 1850 transferred a large amount of Delta land from federal to state ownership and opened the region to settlement (Thompson and West, 1879). American settlers moved onto the drier, more accessible areas along the rivers but did not begin to purchase large amounts of land until the second half of the decade (Chu, 1970). In 1855, the California State Legislature enacted a law allowing the purchase of swamplands by individuals in lots of 320 acres (Paterson et al., 1978).

In 1863, the Arkansas Act provided a mandate for the state legislature to aid in the reclamation of the Delta lands by organizing districts and appropriating swampland funds for levee and dam construction (Maniery and Fryman, 1993). After this time, prospective landowners were able to acquire unrestricted acreage of swampland. Investment in such land began to draw the interest of corporate land speculators and wealthy entrepreneurs, who began an organized effort at reclamation for ranching and farming in the 1860s (Paterson et al., 1978).

Agriculture

The Delta region became a prime agricultural area between 1850 and 1870. Initially, farmers raised potatoes, onions, beans and other food crops to market in urban centers and the gold mining districts. By the 1870s, the agricultural economy had become more diversified with the addition of fruits, wheat, and small grain crops. From the 1880s through the 1920s, agriculture thrived as the American frontier became modernized. Improved agricultural technology and food processing techniques and the availability of cheap labor enabled California farmers to compete in the national and global markets for the first time (Owens, 1991).

During the 1920s, farming techniques were changing in the Delta region. After 1920, horses and manual labor were slowly replaced by mechanized equipment, and many farmers began using contract day laborers rather than sharecroppers. In addition, the use of fertilizer eliminated manual-labor methods of turning soil and nurturing plants (Maniery and Fryman, 1993). Many large landholdings were subdivided and sold as small farms. The transport of goods was improved locally in 1929, when the Southern Pacific Railroad extended a track from Sacramento to be met at Terminous by the Western Pacific track from Stockton (Waugh, 1986).

During World War II, many of the agricultural fields remained fallow and others were planted only on a limited basis (Maniery and Fryman, 1993). When the troops returned home following the end of the war, agriculture in California escalated once again. By the mid-1950s, widespread use of herbicides, the practice of bulk handling of grain, and the use of grain elevators all contributed to greater efficiency and increased agricultural production in the region (Thompson, 1957).

LOCAL SETTING

Proposed Project

Although no cultural resources have been identified within areas directly affected by the proposed project facilities, six archaeological sites are located within 0.5 mile of the proposed project. These resources, all prehistoric (Native American) sites, were recorded more than 40 years ago and may have been degraded by agricultural activities.

CA-SJo-31

This archaeological site is described as a temporary camp site. It was recorded by E. Schenck and E. Dawson in 1929 on the Littlehale Ranch. It is reported as being located in an open field 2.5 miles west of the Mokelumne River.

CA-SJo-38

CA-SJo-38 is reported as a habitation (village) site. It is located on the east bank of the Mokelumne River, on a natural ridge. It was recorded in 1929 by E. Schenk and E. Dawson. At that time, this property was part of the Farrell Ranch.

CA-SJo-39

CA-SJo-39 is reported as a burial and occupation (village) site. It is located on the east bank of the Mokelumne River, on a natural ridge. It was recorded in 1929 by E. Schenk and E. Dawson. At that time, this property was part of the Perley Ranch.

CA-SJo-73

This site was also recorded by E. Schenk and E. Dawson in 1929. CA-SJo-73 is described as a burial and occupation (village) site. It is located near Hog Slough on the Brack Ranch.

CA-Sac-45

This archaeological site is described as a burial and occupation (village) site located on a sand dune. The site was recorded in 1946 by F. Fenenga. It was located on the McCormick property.

CA-Sac-162

CA-Sac-162 is located on a sand dune knoll. Shell beads, obsidian flakes, baked clay objects, and dietary remains were identified at CA-Sac-162. This site is near the Mokelumne River and was recorded by J. Bennyhoff and A. Pilling.

Public Right-of-Way Route Alternative

Because this alternative shares a portion of its alignment with the proposed project, some of the local setting information is identical. This alternative alignment is also located within 0.5 mile of sites CA-SJo-31, CA-SJo-38, and CA-SJo-39, which are described above. In addition, two sites are recorded on GLO Plats as being crossed by the alignment, and three additional sites are within approximately one-quarter mile of the alignment. These sites are briefly described below.

P-39-000033

This historic site consists of the Hickmott Cannery concrete pad, recorded as an “isolate” and located approximately 350 feet from the center of the alignment right-of-way.

P-39-000039, CA-SJo-0225

This site is referred to as the Potato Slough Mound Archeological Site and is located approximately 550 from the center of the alignment right-of-way.

Additionally, GLO Plats refer to features along what is now Lower Sacramento Road. In the project area, this road has been developed into a major roadway and recently widened and repaved. The GLO Plats also refer to some residential features. However, these features are all approximately one-quarter mile from the alternative alignment and it is not clear whether there are any remains of these buildings.

Existing Pipeline Corridor Alternative

Because this alternative also shares a portion of its alignment with the proposed project, some of the local setting information is identical. This alternative alignment is also located within 0.5 mile of sites CA-SJo-31, CA-SJo-38, and CA-SJo-39, which are described above. One additional site is known to occur near the alignment. This site is described below.

The route of the Walnut Grove Branch Line Railroad is located near the pipeline alignment within the City of Isleton. This site is classified as a property eligible for the National Register of Historic Places.

Composite Route Alternative

Because this alternative shares the eastern portion of its alignment with the proposed project, local setting information at the eastern end of the alignment is identical. The rest of the route is shared with either the Public Right-of-Way Route Alternative or the Existing Pipeline Corridor Alternative. The Composite Route Alternative alignment is also located within 0.5 mile of sites CA-SJo-31 and CA-SJo-38, which are described above for the proposed project; near the sites along Lower Sacramento Road referred to in GLO Plats, as described for the Public Right-of-Way Route Alternative; and near the route of the Walnut Grove Branch Line Railroad, as described for the Existing Pipeline Corridor Alternative.

3.13.2 REGULATORY SETTING

The cultural resources investigation was conducted in compliance with CEQA regarding the requirements for identification and treatment of historic and prehistoric cultural resources. The State CEQA Guidelines, which govern the implementation of CEQA, are codified in Section 15000 et seq. of the California Administrative Code and are binding on state and local governments. Projects with potential to affect cultural resources are routinely reviewed by state and local governments as a part of the environmental review process mandated by CEQA.

3.13.3 SIGNIFICANCE CRITERIA

As the designated lead agency under the California Environmental Quality Act (CEQA) for approval of this action, the California Public Utilities Commission (CPUC) is responsible for complying with CEQA's requirements regarding the identification and treatment of historic and prehistoric cultural resources. The State CEQA Guidelines (Pub. Res. Code Section 5097) also specify the procedure to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burials falls within the jurisdiction of the Native American Heritage Commission.
CEQA requires public or private projects financed or approved by public agencies to assess the effects of the project on cultural resources (i.e., buildings, sites, structures, or objects that may have historical, architectural, archaeological, cultural, or scientific importance). CEQA states that if a project would result in significant effects on important cultural resources, then alternative plans or mitigation measures must be considered; however, only important cultural resources need to be addressed. Therefore, before mitigation measures can be developed, the importance of cultural resources must be determined.

The State CEQA Guidelines define a significant historical resource as "a resource listed or eligible for listing on the California Register of Historical Resources" (Pub. Res. Code Section 5024.1). A historical resource may be eligible for inclusion in the California Register of Historical Resources if it:

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

3.13.4 IMPACTS OF THE PROPOSED PROJECT AND MITIGATION MEASURES

METHODOLOGY

Pre-Field Research

A qualified archaeologist conducted a cultural resources investigation for the project. The investigation included a records search for previously recorded cultural resources and previously conducted cultural resources investigations, contact with community representatives who may have knowledge of cultural resources, and a field investigation.

The records search was conducted at the North Central Information Center, California State University (CSU) Sacramento, and the Central California Information Center, CSU Stanislaus, both of the California Historical Resources Information System. The records search was conducted for the project area and the sites of project alternatives that were eliminated from consideration before fieldwork began. No cultural resources were reported within the project sites.

The Native American Heritage Commission (NAHC), Sacramento County Historical Society, San Joaquin County Historical Society, Antioch Historical Society, and Lodi Historical Society were contacted to obtain information about cultural resources in the project area or referrals to representatives who may have such information. Eight contacts were identified by the NAHC, all of whom were contacted. Two representatives responded: Kenneth McKean of the Miwok Indian Community of the Wilton Rancheria and Randy Yonemura of the Ione Band of Miwok Indians. They recommended caution because of the sensitivity of the region for cultural resources, but they did not identify any specific significant cultural resources within the pipeline corridor or near the field facilities. Both representatives wish to be notified about the start of construction, contacted if Native American archaeological sites are discovered during project activities, and considered as Native American monitors. None of the historical societies responded to the request for information.

Unless otherwise noted, the pre-field research approach was identical for each of the project alternatives considered.

Field Reconnaissance

The field survey was a pedestrian survey of the field facilities and a 75-foot-wide path following the pipeline corridor of the original alignment, except for approximately 1.5 miles of pipeline on the west side of Interstate 5. This portion of the project was not investigated because the landowner denied access to the site. Archaeologists maintained transects not wider than 20 meters for the pedestrian survey, and where the survey corridor crosses levees, the levees were subjected to more intense investigation. This procedure was followed because, in the Delta region, prehistoric villages were usually located on high ground, which was often later

incorporated into the levee system. When vegetation was thick (excluding agricultural plantings), the archaeologists regularly cleared small patches to view the surface. No cultural resources, either previously recorded or newly identified, were located in the project area.

Since these surveys were conducted, minor revisions to the alignment have occurred. However, much of the current alignment was surveyed and the findings of the reconnaissance surveys are considered valid.

IMPACTS

Impact 3.13.1: Potential Disturbance to Previously Unidentified Cultural Resources during Project Construction

Although no known cultural resources were identified in research or field work completed to date, there is some potential that buried cultural resources could be inadvertently unearthed during ground-disturbing activities associated with project construction. This impact is potentially significant. However, the Applicant has incorporated measures into the proposed project that would ensure that appropriate actions are taken should such resources be encountered. These measures include conducting complete surveys of the area to be affected by pipeline construction before grading activities begin; monitoring construction activities, stopping all project activities in the area should suspected cultural resource be encountered until a qualified archeologist has reviewed the materials, coordinated with the appropriate agencies and groups, and developed and implemented any necessary treatment, should such activities be required. The CPUC will monitor construction activities to ensure compliance with these measures. With implementation of these measures, this impact is less than significant.

Mitigation Measures

None required.

3.13.5 IMPACTS OF THE PUBLIC RIGHT-OF-WAY ROUTE ALTERNATIVE AND MITIGATION MEASURES

METHODOLOGY

The pre-field methodology described for the proposed project was also used in the analysis of the Public Right-of-Way Route Alternative. In addition, a reconnaissance survey of the alignment was undertaken between June 25 and July 6, 1999, using approximately 20-meter parallel transects. In areas where nonagricultural vegetation obscured the ground surface, small patches were occasionally cleared to increase ground visibility. Unpaved roadways, furrows, drainage banks, and rodent burrows were also examined for evidence of past human activity.

All portions of the alignment were surveyed with the exception of an approximately 4-mile segment south and west of Highway 12 between Jackson Slough and Tomato Slough where access was limited because of crop production.

IMPACTS

Impacts under the Public Right-of-Way Route Alternative are identical to those described for the proposed project. No known cultural resources would be affected by this alignment. As with any construction project, there is some potential that previously unknown cultural resources would be encountered during ground-disturbing activities. As discussed for the proposed project, the mitigation measures committed to by the Applicant would be sufficient to ensure that any such resources encountered are treated appropriately and no significant impacts would result.

3.13.6 IMPACTS OF THE EXISTING PIPELINE CORRIDOR ALTERNATIVE AND MITIGATION MEASURES

METHODOLOGY

The pre-field methodology described for the proposed project was also used in the analysis of the Existing Pipeline Corridor Alternative. In addition, a reconnaissance survey of the alignment was undertaken June 11-15, 1999, using approximately 20-meter parallel transects. In areas where nonagricultural vegetation obscured the ground surface, small patches were occasionally cleared to increase ground visibility. Unpaved roadways, furrows, drainage banks, and rodent burrows were also examined for evidence of past human activity.

Most portions of the alignment were surveyed, although access was not available in a few areas, including the approximately 4,000-foot segment from the separation facility to Dustin Road, Staten Island, an approximately 4,000-foot segment east of Georgiana Slough, and an approximately 8,000-foot segment southwest of Isleton.

IMPACTS

Impacts under the Existing Pipeline Corridor Alternative are identical to those described for the proposed project. No known cultural resources would be affected by this alignment. As with any construction project, there is some potential that previously unknown cultural resources would be encountered during ground-disturbing activities. As discussed for the proposed project, the mitigation measures committed to by the Applicant would be sufficient to ensure that any such resources encountered are treated appropriately and no significant impacts would result.

3.13.7 IMPACTS OF THE COMPOSITE ROUTE ALTERNATIVE AND MITIGATION MEASURES

METHODOLOGY

Because the Composite Route Alternative combines portions of each of the other three routes, the surveys conducted for those routes apply to this route as well. The pre-field research and reconnaissance surveys were conducted as described above. The surveys were conducted using approximately 20-meter parallel transects. In areas where nonagricultural vegetation obscured the ground surface, small patches were occasionally cleared to increase ground visibility. Unpaved roadways, furrows, drainage banks, and rodent burrows were also examined for evidence of past human activity.

Most portions of the alignment were surveyed, although access was not available in a few areas, including the approximately 4,000-foot segment from the separation facility to Dustin Road, Staten Island, an approximately 4,000-foot segment east of Georgiana Slough, and an approximately 8,000-foot segment southwest of Isleton.

IMPACTS

Impacts under the Composite Route Alternative are identical to those described for the proposed project. No known cultural resources would be affected by this alignment. As with any construction project, there is some potential that previously unknown cultural resources would be encountered during ground-disturbing activities. As discussed for the proposed project, the mitigation measures committed to by the Applicant would be sufficient to ensure that any such resources encountered are treated appropriately and no significant impacts would result.

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