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4.6 CULTURAL AND PALEONTOLOGICAL RESOURCES

4.6.1 INTRODUCTION

This section provides a discussion of the existing cultural, scientific, historic, archaeological, and paleontological resources on the site and an analysis of potential impacts from implementation of the proposed project. The cultural, historic, and archaeological resource sections include the results of (1) two archival reviews to identify previously recorded cultural resource sites and areas sensitive for potentially important cultural resources, as well as (2) a field survey of the parcel to identify previously unrecorded cultural resources. The entire proposed project area (55.5 acres) has been surveyed, and the results are included in this report. Two historic properties (determined eligible for the National Register of Historic Places [National Register] per letter dated November 7, 1989, from the State Historic Preservation officer) were recorded on Orange Avenue (LSA 1999, 2003). The paleontological section is based on a paleontology locality search conducted within a one-half mile radius of the project site prepared by LSA. The paleontological locality search included a review of area geology and any known paleontological resources recovered from the surrounding area and from the geologic formations that will likely be encountered during excavation activities. The purpose of the locality search was to establish the status and extent of previously recorded paleontological resources within and adjacent to the project area. With this knowledge, LSA could make an informed assessment of the potential effects of the proposed project on paleontological resources and evaluate the kinds of resources that might be expected to be encountered during ground-disturbing activities. Much of the geological information presented, including all of the subsurface data, was obtained from the geotechnical report prepared by AMEC Earth and Environmental, Inc. (AMEC 2003).

4.6.2 EXISTING ENVIRONMENTAL SETTING

Geologic Setting

The proposed project site is located at the northern end of the Peninsular Range geomorphic province, a 900-mile (1,450 km) northwest-southeast trending structural block that extends from the tip of Baja California to the Transverse Ranges and includes the Los Angeles Basin (Norris and Webb 1976). The total width of the province is approximately 225 miles (362 km), with a maximum landbound width of 65 miles (105 km) (Sharp 1976). It contains extensive pre-Cretaceous (> 65 million years ago) igneous and metamorphic rock covered by limited exposures of post-Cretaceous sedimentary deposits. Within Orange County, these post-Cretaceous sedimentary deposits are believed to be one of the most important Tertiary marine fossil producing areas in the world due to the completeness of the geologic record and general abundance of the fossils (Raschke 1984). Belyea and Minch (1994) report that the Santa Ana Mountains contain exposures of the most complete section of Late Mesozoic and Cenozoic (approximately 150 million years ago to the present) stratigraphy in the entire Peninsular Ranges.

Specifically, the project site is located within the Los Angeles coastal plain at the northwest extremity of a ridge-like topographic high that extends for approximately three miles across the Cities of Signal Hill and Long Beach. This topographic high reaches a maximum elevation of 340 feet at the crest of

Signal Hill to the southeast. It is part of a larger northwesterly trending alignment of low hills and mesas that extend across the Los Angeles coastal plain between Newport Beach and Beverly Hills. These hills were formed by tectonic forces associated with the Newport-Inglewood structural/fault zone that caused these sediments to be uplifted. A branch of the Newport-Inglewood structural/fault zone, known as the Cherry Hill Fault, crosses the project's southwest corner (AMEC 2003).

On the northeast side of the Newport-Inglewood structural/fault zone, the Los Angeles coastal plain is underlain by Recent or Holocene age alluvial sediment. These sediments were deposited less than 10,000 years ago and have a typical thickness of about 100 to 200 feet. These alluvial sediments consist of sand, gravel, silt, and clay that were deposited in layers, lenses, and/or channels by the Los Angeles, San Gabriel, and Santa Ana Rivers. This Recent alluvium is in turn underlain by a much thicker succession of sedimentary strata and unconsolidated sediments of Pleistocene age (1.8 million to 10,000 years ago), locally up to 3,000 feet thick (Poland and Piper 1956).

Within the project area, tectonically uplifted Pleistocene age deposits are now exposed at the surface (AMEC 2003). These Pleistocene deposits extend to depths on the order of 200 to 500 feet beneath the project site (Poland and Piper 1956). A thin mantle of Recent or Holocene age deposits, typically less than 5 to 10 feet thick, is also present covering the Pleistocene sediments in some areas. These Recent to Holocene deposits generally occur as a thin mantle of slope wash on the project's slopes or as a narrow band of sediment beneath the now mostly buried natural drainages (AMEC 2003). In addition, AMEC (2003) reports that man-made fills, from less than 1 foot up to 70 feet thick, occur throughout the project area. All of the geologic units that occur within the project boundaries are described in more detail below. However, only the two Pleistocene units that AMEC (2003) reports as occurring within the project area, the San Pedro Formation and undifferentiated terrace deposits, are old enough to potentially contain fossils.

San Pedro Formation. The San Pedro Formation (also known as the San Pedro Sand) was deposited during the Lower to Middle Pleistocene, approximately 1.8 million to 700,000 years ago. It consists of generally unconsolidated to semiconsolidated mixtures of silt and sand, with minor local clay and gravel that were deposited in a nearshore marine, lagoonal, and/or fluvial environment. It is usually massive to crudely stratified; however, thinly interbedded siltstones and sandstones are known to exist (AMEC 2003). Vertebrate and invertebrate fossils are well known from this and related formations (Conkling 1988, Miller 1971, Grant and Gale 1931, Arnold 1903).

The San Pedro Formation will be exposed by almost all earthwork within the project area. AMEC (2003) reports that most finished ground surfaces will consist of the San Pedro Formation, either within the bedrock unit itself or contained in sediments derived from the Formation that will be used as engineered fill. In addition, the San Pedro Formation will be the foundation for all engineered fill once any unsuitable material has been removed.

Undifferentiated Terrace Deposits. The undifferentiated terrace deposits (also known locally as the Lakewood Formation) were deposited during the Middle to Upper Pleistocene, approximately 700,000 to 10,000 years ago. Like the San Pedro Formation, this Formation consists of massive to crudely stratified sediments containing unconsolidated to semiconsolidated mixtures of silt and sand, with minor local clay and gravel. However, exposures tend to have a slightly higher clay content than

the San Pedro Formation. This Formation was deposited on an ancient coastal plain and/or wave cut platform within a marine environment (Poland and Perry 1956). Vertebrate and invertebrate fossils are well known from this unit, especially at the contact between the undifferentiated terrace deposits and the underlying San Pedro Formation (Poland and Perry 1956, Grant and Gale 1931, Arnold 1903). Fossils are also known from similar contemporaneous geologic units (Conkling 1988, Miller 1971).

The contact between the San Pedro Formation and the undifferentiated terrace deposits, within the project area, is not very well defined because of similarities in composition and lack of distinguishing characteristics between the two Formations. In addition, the fossil-rich, marine terrace sand that is common at the base of this geologic unit was not observed on the project site (AMEC 2003). AMEC (2003) believes that this unit is mainly exposed on the upper portion of the prominent hill on the southeastern side of the project between the elevations of 105 to 115 feet. However, because of the lack of distinguishing characteristics between this unit and the San Pedro Formation, within the project, it may be present elsewhere as a cap on top of the underlying San Pedro Formation. Proposed grading involves removal of the prominent hill where AMEC (2003) has mapped the undifferentiated terrace deposits below an elevation of 105 feet; thus, this Formation will be entirely removed during grading activities and will be used as fill.

Alluvium and Colluvium. Alluvium and/or colluvium are nearsurface soils that have been deposited or have accumulated due to local fluvial processes or from erosion and downslope movement of soils from adjacent highlands. Residual soils that have developed in situ from deep weathering of the underlying bedrock units are also included as alluvium/colluvium. The alluvium/colluvium on the project site consists of massive to thinly interfingering layers and lenses of fine silty and clayey sand with local intervals of clay and silt that contain abundant decaying plant material (i.e., peat). These alluvial/colluvial soils were deposited during Recent or Holocene time (i.e., extending from the present to approximately 10,000 years ago). Scattered traces of decaying wood fragments and other decomposed plant material are characteristic of this unit (AMEC 2003). Dry density and moisture content testing of several peat rich samples from the project site suggest that more than half of the sample consisted of organic debris. The peat rich areas on the project site are believed to be associated with former marshlands that previously existed along the now mostly buried drainage course that meanders across the central portion of the project site. Because of the young age of these sediments (< 10,000 years), not enough time has passed to fossilize any remains that might be present. Therefore, they are not considered sensitive for paleontological resources.

The major surface exposure of colluvium is in the slopes around the prominent hill in the southeast corner of the project. Exposures of alluvium/colluvium were also encountered buried beneath artificial fill in many of the geotechnical borings done by AMEC (2003), including what AMEC interprets as an old marsh in the central portion of the project. Thickness of the alluvial/colluvial sediments ranged from less than 1 foot to a maximum of 28 feet.

Prehistoric Resources/Archaeological Survey

The official records search conducted July 23, 1999 (with a four-page update dated April 8, 2003) at the Archaeological Information Center of the California Historic Resource Information System shows two previously recorded sites within one-half mile of the proposed Long Beach Sports Park. The

records search indicates that the entire area of the proposed Sports Park was located within an area that was previously surveyed in the early 1970s. This original survey recorded the two off-site prehistoric sites described below. However, no prehistoric sites were found in the current project area. A re-survey of the current project site by LSA archaeologist Ivan Strudwick also resulted in negative findings.

The first site, LAN-838, is located just east of the current project area. It was recorded in 1971 and was described as a small shell midden of Pismo clam (*Tivela stultorum*), Mussel (*Mytilus* spp.), Venus clam (*Chione* spp.), and Scallop (Pecten) located in a 30x30 m (98x98 ft) area under a covering of crude asphaltum or natural tar. A note on the site record form states that it was destroyed in 1976. No artifacts or other prehistoric material were identified at the site.

The second site, LAN-839, was recorded in 1971 in an area approximately 0.4 km (0.25 mile) WNW of the NW corner of the current project area. It was also described as a shell midden with Pismo clam (*Tivela stultorum*), Mussel (*Mytilus* spp.), Venus clam (*Chione* spp.), and Scallop (Pecten) under a covering of crude asphaltum or natural tar. It is slightly larger than the first site, and measures 40x40 m (131x131 ft) in size. Artifacts and features were not found at this site.

Both sites are located well outside the current project area, with the closest site being located approximately 328 feet (100 meters) from Orange Avenue. These sites can be distinguished from the shell observed on the project site because the off-site archaeological sites had whole shell that was located in discrete areas. The shell observed on the project site was very small, highly fragmented, and scattered. If the shell had been associated with a Native American site, the archaeological site has not survived the decades of activity on the project site.

The records search also failed to identify historic sites, properties listed on the National Register of Historic Places, California Historic Landmarks, properties listed on the California Points of Historic Interest, or landmarks listed with the City of Los Angeles Historic-Cultural Monuments within 0.4 km (0.25 mile) of the project area.

On July 22, 1999, LSA archaeologist Ivan Strudwick surveyed the project site for prehistoric cultural resources. The survey of open, relatively flat space was conducted by walking a series of parallel east-west transects separated by 10-12 meters (m) (33-39 feet [ft]). On steeper slopes, transects were surveyed following topographic contours. The Lomita gas processing plant near the corner of Spring Street and Orange Avenue, a concrete and asphalt recycling business along California Avenue, a sandblasting business along Orange Avenue, a body shop in the northwestern corner of the parcel at the corner of Spring Street and California Avenue, and a junk yard in the center of the parcel near the concrete and asphalt recycling business all obscure the majority of ground surface within their respective areas. Except for portions of the Lomita gas processing plant, the survey did not include any of these businesses.

The archaeologist found a very high level of ground disturbance to the site. Ground disturbance included oil wells and oil storage tanks, buried oil lines, slope reinforcement, bulldozed roads, and other oil drilling related ground disturbances throughout the site. Although no prehistoric artifacts were found during the current survey, marine shell was observed in several locations. These areas are generally near the center of the parcel, on either side of the natural drainage, just north of the detention basin. The most visible shell exists on the northwest side of the detention basin. Here,

fragments of *Chione* spp. (venus) and *Argopecten* sp. (pecten) shell exist on the bulldozed basin slope. Additional small shell fragments and *Mytilus* spp. (mussel) shell fragments are present on the artificially leveled dirt road west of the basin.

A second area containing shell is west of the detention basin near California Street, between a small ponding area south of the concrete and asphalt recycling plant. This shell, consisting primarily of *Chione* spp., *Ostrea lurida* (native California oyster), *Argopecten* sp., *Tagelus californianus* (Pacific jackknife clam), *Cerithidea californica* (California horn shell), *Crepidula* spp. (slipper shell), *Macoma nasuta* (bent nosed clam), and *Donax gouldii* (bean clam), is found in mounded mud sediment containing a greenish tint. The mud appears to have been deposited while wet. The shell exists only in the upper, mounded mud sediment, and is not present in the lower silt-based sediment. Other than *Donax gouldii*, all the shell species principally inhabit bays and estuaries (Morris 1966). Therefore, the existence of the shell within recently dried mud sediment suggests that the shell was deposited with the wet sediment as a result of recent dredging. The same shell species were observed in dredging residual from nearby Alamitos Bay (Strudwick et al. 1996:36), thus suggesting that shell from south of the concrete and asphalt recycling plant originates from recently dredged bay sediment.

A third area with only a minor quantity of shell is located just northeast of the detention basin, on an open, level area, approximately 46-122 m (150-400 ft) west of Orange Avenue. This shell is *Donax gouldii*, *Ostrea lurida*, and *Neverita (Polinices) reclusianus* (moon shell), all species that were observed in previously described dredging residual from nearby Alamitos Bay (Strudwick et al. 1996:36). It is thought that this shell is also the result of recently dredged bay sediment.

In summary, the amount of disturbance to the proposed Long Beach Sports Park parcel is extensive. Current businesses and oil drilling activities dating from the 1920s have acted to alter nearly the entire parcel. No prehistoric cultural resources were identified during a survey of the parcel, although scattered marine shell was found in the central region of the project area. The shell appears to be the result of recent Bay Sediment Dredging.

Regional History

The study area is within the ethnographically recorded territory of the Gabrielino, a Shoshonean speaking group of American Indians who inhabited the area beginning approximately 500 BC and who were present in 1769 when the first Spanish land expedition passed through the area.

The historic period begins in 1769, when the first Spanish land expedition, led by Gaspar de Portolá, left San Diego in an attempt to establish a trail to the Port of Monterey. Portolá's party entered Los Angeles County on July 30, 1769.

The Spanish Mission Period is that portion of the historic period beginning with the first Spanish presence in the area (1769) until 1821, when Mexico gained independence from Spain. In California, only about 25 Spanish Mission Period land grants were made, and the project area is located within the *Rancho los Nietos* grant, one of the few grants made during this period. The *Rancho los Nietos* grant, the single largest Spanish or Mexican Period grant, was made in November 1784 by Governor Pedro Fages to Manuel Nieto for 68 square leagues, or over 300,000 square acres.

The period from 1821–1848 is known as the Mexican Rancho Period. During the Mexican Rancho Period, the original Spanish Mission Period *Rancho los Nietos* grant was divided among Nieto's five heirs by Governor Figueroa in May 1834 to become five separate ranchos: Santa Gertrudes, Los Cerritos, Los Coyotes, Las Bolsas, and Alamitos. The current Long Beach Sports Park project area is within the five-square-league (27,054.36-acre) *Rancho los Cerritos* grant made to Manuela Nieto de Cota. *Cerritos* is Spanish for the little or small hills (Hanna 1951:60; Gudde 1959:15).

The City of Long Beach was initially settled as part of the Spanish land grant to Manuel Nieto. In 1880, William Erwin Willmore, president of the American Colony, initiated plans for a new town subdivided from *Rancho los Cerritos*, and named it Willmore City. By 1884, the settlement had failed by Willmore's standards, and he moved to Arizona after selling the property to the Long Beach Land and Water Company (Hartman 1981:178), after which the City was named. New settlers continued to arrive, largely due to the advent of the Santa Fe and Southern Pacific Railroads. By 1889, the community was incorporated as the City of Long Beach. The Southern Pacific trolley, introduced in 1902, promoted expansion of the City as both a commercial hub and resort community. Between 1902 and 1910, Long Beach was the fastest growing city in the United States. The following year, the Port of Long Beach was established, spurring further economic and population growth.

In 1921, oil was discovered on Signal Hill, resulting in intense development and industrial growth in the area. Signal Hill became dotted with pumps, towers, tanks, and industrial structures. The Lomita Gasoline Company (later Lomita-Petrolane) was incorporated in 1923 by the Jergen Family, only two years after the discovery of oil, to process by-products, including natural gas, butane, and propane. Long Beach's economy flourished, and the downtown witnessed a million dollars per month in new construction. Additional oil was discovered in 1936 and, in response, the Port was expanded, and its facilities were upgraded to allow for improved oil transportation. During the 1920s and 1930s, Signal Hill was the world's richest oil field in terms of production per acre. Signal Hill was an important historic industrial area of the City of Long Beach. It, together with its associated petroleum industries, contributed to the economic growth and prosperity of the City. The industry continues its operations after nearly 80 years.

Project Area History

The history of the project site reflects the role of water, oil, and the railroads in the development of Long Beach. The 1944 City of Long Beach Water Department Annual Report includes a chapter titled "Historical Sketch" that provides a comprehensive history of the development of water resources in the City. The "General Site History and Geologic Conditions" chapter of the Geotechnical Evaluation (available for review at the City of Long Beach) was prepared by AMEC Earth and Environmental, Inc. based on a study of historic air photos and topographic maps, and was also used to prepare this description of the historic activities on the site.

The Water Department document describes "a perennial stream, fed by the live springs in the gulch or *ciénega* north of 27th Street and west of Orange Avenue." This stream appears to be the historic watercourse that transected the site, and as is further documented in the Geotechnical Evaluation. A well was drilled on this site in the 1880s that resulted in "an abundance of artesian water," which was piped into town through the City's first pipe distribution system. Increasing demand from the local groundwater basins after the turn of the century dramatically lowered the water levels and pressure heads that fed the artesian wells/springs along the Newport-Inglewood structural zone. Although no

specific information is available on the ultimate status or disposition of the wells/springs that were present on the site, literature suggests that, “by 1928, the head on the principal water-bearing bodies [in the greater Long Beach area,] almost universally had declined below the land surface and nearly all wells had ceased to flow” (Poland 1959).

In 1891, the Los Angeles Terminal Railway, later a part of the Union Pacific system, constructed a line from Los Angeles to East San Pedro, which involved the construction of a narrow fill embankment on the project site near California Avenue. During the same time period (the early and mid 1890s), a steel pipe line was constructed in California Avenue by the Bouton Water Company. Several years later, in 1898, Bouton Water Company secured a franchise to lay mains in the streets of Long Beach; in exchange for the privilege of laying some of the pipe lines in railroad rights-of-way, the Water Company agreed to supply the Terminal Railway Company with free water for its locomotives and cars for a period of 25 years.

In 1898, a water reservoir with a capacity of 1.28 million gallons was constructed on the project site by the Long Beach Development Company. The Development Company was a water purveyor and a competitor of the Bouton Water Company. The new water reservoir, located on the project site west of Orange Avenue between the alignments of 27th and 28th Streets, at an elevation of 144 feet, provided the Development Company an advantage in the area of water pressure. The reservoir appears to have still been in use in the mid-1920s, when it served as a collecting reservoir for an electric pumping plant a short distance southwest, but by 1945 the reservoir/tank was no longer being used for water storage.

A second reservoir was constructed on the project site in 1909 at the site of wells that supplied the “Long Beach” townsite in the 1880s. The reservoir, constructed in the bottom of the drainage, or “cienega,” that crossed the central portion of the site, was built by the Long Beach Water Company and had a capacity of 4.28 million gallons. The reservoir reportedly remained in service for about 20 years and was essentially abandoned by the City Water Department around 1928. Prior to 1944, the reservoir was converted to a detention basin that is currently part of the regional stormwater drainage facilities. Substantial improvements to the detention basin/reservoir structure were constructed in the early 1970s.

When oil was discovered on Signal Hill in 1921, the City Water Department found itself in possession of several oil-producing sites, including portions of the current project site. The Water Department granted oil leases for some of its prime oil-producing properties, including one to the Jergens Trust for the area north of Sunnyside Cemetery on what is currently the proposed project site. Oil production activities led to grading and construction of roads, drill pads, building pads, sumps, and the installation of numerous pipelines across the site. By 1923, there were 183 producing wells in the area. There are 46 existing oil wells recorded on the project site (and 2 adjacent off-site wells).

Historic Sites in the Project Vicinity

The Long Beach Municipal Cemetery and Sunnyside Cemetery border the proposed project site to the south. The Municipal Cemetery, established in 1887, is the oldest cemetery in the City of Long Beach. William E. Willmore, founder of Willmore City (later incorporated as Long Beach), was buried in the cemetery in 1901. There are no additional burial plots available in the cemetery;

however, one to three burials take place each year. The City of Long Beach Parks, Recreation, and Marine Department maintains the Municipal Cemetery.

To the west of the Municipal Cemetery is Sunnyside Cemetery, established in 1906. The first burials in the cemetery date back to 1907. The cemetery, designated a Historic Landmark by the City of Long

Figure 4.6.1: Angel of Sorrows



Source: Ansel Adams, 1939, The Halsted Gallery

Beach in 2000, is a 13-acre site containing gravestones and monuments, a circular drive, large trees, and two small stucco-clad buildings near the entry. Sunnyside Cemetery is considered historically significant because it is the only Civil War veterans cemetery in Long Beach. It contains approximately 220 graves of former Union soldiers who belonged to the Grand Army of the Republic during the United States Civil War. A Civil War Monument, which consists of a bronze tablet and a 65-foot flagpole, was dedicated in 1935 and can be found in the Civil War section of the cemetery. The graves of several prominent individuals in Long Beach's history can also be found in the cemetery, including C.J. Walker, founder and president of F&M Bank and former mayor; Gus Walker, president of F&M Bank and civic leader; Rufus A. Eno, mayor from 1905 to 1906; Jane Elizabeth Harnett, pioneer educator, historian, and author, who died in the 1918 influenza epidemic; and many others. The grave of Dr. Albert Rhea, a physician and early land speculator who

died in 1907, was made famous by photographer Ansel Adams with his 1939 photograph of the Angel of Sorrow. Sunnyside Cemetery is privately maintained.

The Signal Hill Petroleum, Incorporated (SHPI) office building at 2901 Orange Avenue, currently referred to as the Lomita-Petrolane office building and formerly known as the Lomita Gasoline Company office building, was designed by William Horace Austin, one of the leading architects of Long Beach. Completed in 1938, the building is in the Art Moderne (Streamlined Modern) style. According to numerous obituaries that appeared in 1942, Austin was the "Dean of Architects" and "outstanding among architects in Southern California." The Lomita-Petrolane office building retains exceptional integrity, although a sensitive addition was introduced at the rear facade in the 1940s. The office building was identified as being eligible for the National Register under Criterion A for the significant role of the oil fields during the 1920s and 1930s. Additionally, it was found eligible under Criterion C for being the work of a local master, William Horace Austin, representing one of his last commissions, and as a good local example of the Art Moderne (Streamlined Modern). This building is excluded from the proposed project.

Previous Evaluation

In 1989, the Community Development Commission of the County of Los Angeles evaluated the project site in conjunction with a Section 106 environmental review for a previously considered project. Judy Triem, a historical consultant for the County, identified two resources located at 2901 Orange Avenue as eligible for listing in the National Register. Ms. Triem prepared a determination of eligibility for listing in the National Register as a follow-up to a survey undertaken two years earlier for a City of Long Beach Department of Public Works road widening. On November 7, 1989, the

California State Historic Preservation Officer concurred with the National Register eligibility of these two buildings. The SHPI office building at 2901 Orange Avenue, formerly known as the Lomita Gasoline Company office building and currently known as the Lomita-Petrolane office building, is no longer a part of the project site. Information regarding this building is provided (Historic Sites in Project Vicinity) as part of the off-site environmental setting. The second building, the Lomita-Petrolane compressor building, is also addressed at 2901 Orange Avenue, and is located on the project site.

The original 1923 Lomita-Petrolane compressor building was determined eligible for listing in the National Register. The wood-clad cooling towers were constructed in 1946. The building is located north of the Lomita-Petrolane office building (discussed above) and is the last remaining compressor house and plant on Signal Hill. During the oil boom era, most petroleum companies located on Signal Hill had such facilities to process natural gas.

Triem identified this building as eligible under Criterion A for the significant role of the major oil fields during the 1920s and 1930s. An additional case can be made for its eligibility under Criterion C as the last remaining compressor, the only local example of this building type and associated technology. This building is not a locally listed historic landmark.

4.6.3 METHODOLOGY

The cultural, historic, and archaeological resource sections include the results of two archival reviews or records searches at the Archaeological Information Center of the California Historic Resource Information System (records search conducted July 23, 1999 and updated April 8, 2003). The records search is conducted to identify previously recorded cultural resource sites and areas sensitive for potentially important cultural resource. A field survey of the parcel to identify previously unrecorded cultural resources (July 1999) is described above. The Historic Preservation Officer for the City was contacted in September 2003 and City Ordinance No. C-7693 designating the Sunnyside Cemetery as a historic landmark was reviewed. The previous evaluation of historic resources on the site, described above, is incorporated by reference. In addition, several publications were consulted including "Historical Sketch" (Long Beach Water Department, 1944), "California's Gabrielino Indians" (Bernice Eastman Johnston, Southwest Museum, Los Angeles, CA, 1962, reprinted 1964), and "The First Angelinos, The Gabrielino Indians of Los Angeles" (William McCawley, 1996).

4.6.4 THRESHOLD OF SIGNIFICANCE CRITERIA

According to the State CEQA Guidelines, a cultural resource shall generally be considered historically significant if it meets the criteria for listing on the California Register of Historic Resources (Pub. Res. Code Section 5024.1, Title 14 CCR, Section 4852), including the following:

- is associated with events or patterns of events that have made a significant contribution to the broad patterns of the historic and cultural heritage of California and the United States;
- is associated with the lives of persons important to the nation or to California's past.
- it 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; and

- it has yielded, or may be likely to yield, information important to the prehistory or history of the State and the Nation.

The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historic Resources, is not included in a local register of historic resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in a historic resource survey (meeting criteria in Section 5034.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be a historic resource as defined in Public Resources Code section 5020.1(j) or 5024.1.

Pursuant to Section 15064.5 of CEQA, a project may have a significant effect on the environment if the project may cause substantial adverse change to a historic, archaeological, or paleontological resource. An impact is considered significant if it can be reasonably argued that the project would:

- cause a substantial adverse change in the significance of a historic resource as defined in §15064.5;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5;
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- disturb any human remains, including those found outside of formal cemeteries.

4.6.5 IMPACTS AND MITIGATION MEASURES

Potentially Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and considered potentially significant, where feasible mitigation measures are provided.

Known Archaeological, Historical, or Paleontological Resources. Based on an archaeological survey in the 1970s, and a project site survey conducted in 1999, it is concluded that there are no known prehistoric resources on the site. There is one historic building on site and one adjacent off site. Both have been previously identified as eligible for listing on the National Register. There is also a historic landmark cemetery adjacent to the project site. There are no known paleontological localities within the project area.

The original 1923 Compressor Building is located on the project site. The wood-clad cooling towers were constructed in 1946. The building is located north of the SHPI administration building (discussed above) and is the last remaining compressor house and plant on Signal Hill. During the oil boom era, most petroleum companies located on Signal Hill had such facilities to process natural gas. This structure was previously determined eligible for listing on the National Register under Criterion A for the significant role of the major oil fields during the 1920s and 1930s. An additional case can be made for its eligibility under Criterion C as the last remaining compressor, the only local example of this building type and associated technology. The building has not been designated a historic landmark by the City of Long Beach.

The proposed project will result in direct impacts to this building. In order to accommodate the necessary site grading and the proposed recreation facilities, the building will be demolished.

The Lomita Gasoline Company Office Building is excluded from the proposed project. The building and parking areas comprise an "out parcel" that will be created through a lot line adjustment. As an important record of the role of the local petroleum industry and as the work of a local master, the building was previously identified as eligible for listing on the National Register. The current owner of property, SHPI, is using the building for its original intent, an office building that serves the Long Beach oil industry. It is anticipated that the building will continue to be used for this purpose after the proposed Sports Park is constructed.

The historic Lomita Gasoline Company Office Building ("the Building") is located adjacent to the proposed project on an "out-parcel" created to allow preservation of the historic resource. The Building is considered eligible for the National Register for its role in the development of the local petroleum industry (Criterion A) and as the architectural work of a local master (Criterion C). While the eligibility of the Building for listing on the California Register of Historical Resources has not been formally assessed, it is logical that the Building would be eligible under the parallel criteria for listing on the California Register (i.e., Criteria 1 and 3, respectively). The adaptive reuse of the Building will be as an office building, consistent with its original design. Use of the Building in this role is anticipated to continue throughout the construction and operation of the Sports Park.

The Long Beach Sports Park project site is the primary setting for the Building. Currently the property contains the Compressor Building, 15 operating oil wells, and numerous inactive and abandoned wells, consistent with the historic use of the property. Following project implementation, an additional four wells are planned to be reactivated. Seventeen on-site and two adjacent off-site wells will remain in operation around the Building and within the Sports Park. The development of the Sports Park, and demolition of the Compressor Building, will alter the setting of the Building, although the operational wells will retain some of the ambiance of the area. The development will change the visual setting of the area from one characterized by oil exploration and production to one of active recreation and office uses. Construction of a perimeter wall around the baseball/softball fields will further alter the backdrop of the remaining historical resource and may result in shadow effects to the Building. In addition, noise and traffic will increase as a result of the development of the Sports Park.

Short-term impacts from construction activities, including vibration and visual and noise impacts, will not materially impair the eligibility of the Building. Long-term, permanent impacts will be from alteration of the visual setting of the Building through demolition of the Compressor Building and construction of the perimeter wall and an increased/altered noise profile (although the perimeter wall will attenuate the auditory impacts).

Although the proposed project will alter the setting of the historical resource, the operational oil wells will be visible from the Building and will preserve some of the feeling and association of the property, maintaining a physical and visual link to the area's historic oil industry. Therefore the Criterion 1 eligibility (association with important events in local history), while impacted by the proposed project, will be preserved in a limited manner. The proposed development and the potential indirect effects of that development have no impact on the Criterion 3 eligibility of the Building

(examples of the work of a master). Therefore, the proposed Sports Park project is considered to have a significant indirect impact on the Building's setting. Incorporation of mitigation measures will reduce these impacts to the extent feasible.

Unknown Archaeological, Historical, or Paleontological Resources. Highly disturbed and scattered marine shell is present within the project area. It may represent a prehistoric archaeological resource, but more likely, it was introduced for the import of fill soil. Previously recorded archaeological shell deposits are located within 0.4 km (0.25 mile) east and northwest of the project area, suggesting that prehistoric cultural resources may also exist within the project area. As such, it is possible that unknown buried prehistoric archaeological resources will be encountered during ground disturbing activities. Potentially unique unknown archaeological resources on the project site, if any, could be significantly impacted by the project if monitoring and mitigation are not provided.

Pleistocene fossils are known from research and construction-related excavations in the Los Angeles Basin in deposits similar to those that occur within the project (Arnold 1903, Grant and Gale 1931, Poland and Perry 1956, Miller 1971, Conkling 1988). Remains of invertebrates such as bivalves, gastropods, sand dollars, barnacles, and crabs are common. Less common, but more significant, are the remains of marine vertebrates such as bony fish, sharks, whales, dolphins, and seals. In addition, RanchoLabrean-type terrestrial animals such as elephants, horses, bison, camels, saber tooth cats, deer, and sloths are known from these sediments. The potential exists to encounter similar fossils during ground-disturbing activities whenever these sediments are encountered.

Comments Received During the Scoping Process

The Notice of Preparation/Initial Study (NOP) for the proposed project was released on January 13, 2004, and a public scoping meeting was held on February 8, 2004. Both oral and written comments regarding cultural resources were received from the public. No comments on cultural resources were received from public agencies. No written comments on the NOP were received from Native American groups either before or after the NOP comment period. The oral and written comments generally referred to: (1) the possibility of Native American activity and/or settlement on the project site; (2) the possibility that the project site is near or part of a Gabrieleno village known as 'Ahwaanga; (3) the presence of a known and previously recorded archaeological site on the project site; (4) the possibility that burials would be found on site; (5) the site and/or plant materials were identified as sacred in oral comments; and (6) the possibility of the physical remains of a historic "zanja" on the project site.

Comments received from the public on the NOP prepared for the project EIR note the possibility of prehistoric activity on site, since the presence of a naturally-occurring water source may have been an attraction to Native American activities and/or settlements. Specifically, a speaker at the public scoping meeting (Gonzalez) identified the site as a Native American Tongva site, based largely on the presence of freshwater and shells on site. Tongva is the name that Native Americans have chosen, and it refers to the ancestral people identified by the Spanish at the time of European contact as the Gabrielenos.¹ The Gabrielenos/Tongva occupied the area from Topanga Canyon on the north to the San Joaquin Hills/Aliso Creek in Laguna Beach on the south.

¹ There are two accepted spellings: Gabrielinos and Gabrielenos.

As noted above, there is a historically reported location of springs near the center of the project site in the vicinity of the existing storm water detention basin. Also, a well was drilled in the vicinity of the springs in the 1880s and a six-inch pipeline installed that was the beginning of the Long Beach water system. The project site is located within the broad boundaries of the area occupied by the Gabrieleno/Tongva, and there are known Gabrieleno sites in Long Beach, particularly along the Los Angeles and San Gabriel Rivers. The presence of surface water may have been an attraction to Native American activity and/or habitation; however, there is no historical or physical evidence to indicate Native American activity or habitation at the project site.

There is no evidence that the shell present on the project site is archaeological in nature. Evidence exists that the shell represents Pleistocene or Holocene shell that is present on the site through one of three vectors: excavation into underlying Pleistocene marine sediments exposing marine shell, drilling debris left during oil exploitation on the property, or sediments transported to the site as fill. Evidence supporting the non-archaeological origin for these sediments includes the presence of very small non-food gastropods and pelecypods that would not have been gathered or eaten by Native American inhabitants of the area. Therefore, there does not appear to be an actual archaeological site within the project area.

The official records search conducted July 23, 1999 (with an update dated April 8, 2003) at the Archaeological Information Center of the California Historic Resource Information System shows two previously recorded sites with shell scatters within one-half mile of the proposed Long Beach Sports Park. These two sites had no artifacts or features present. The records search indicates that the entire area of the proposed Sports Park was located within an area that was previously surveyed in the early 1970s. Several comments were received on the NOP that site Number 351 was located on or near the project site. This number designation appears to be associated with the 1970s survey; it is not an archaeological site designation. The findings of the 1970s survey were negative for the project site; no previously recorded archaeological sites were found.

A letter received in response to the NOP (Ruyle) indicates that the site may be in the vicinity of a prehistoric village known as 'Ahwaanga.¹ The historical records of Native American archaeological sites and active settlements at the time of European contact indicate several locations for the 'Ahwaanga village; however, none of the records support the theory that it was located near Signal Hill in the vicinity of the project site. For example, the book "California's Gabrielino Indians" (Johnston 1962) was based on ethnographic data collected by anthropologist John Harington during the first half of the 20th century and the location of known archaeological sites and includes a map that documents locations of the Gabrielino Indians at the time of the Portola expedition in the 1760s. It identifies a possible location for the 'Ahwaanga settlement in the vicinity of Twentieth Street and Henderson Avenue in Long Beach near the Los Angeles River, approximately two miles from the Sports Park project site. Similarly, a map included on page 56 of "The First Angelenos, The Gabrielino of Los Angeles" (McCawley 1996) identifies a possible location of the 'Ahwaanga community near the west bank of the Los Angeles River in Long Beach. The text (McCawley, p. 69) notes that 'Ahwaanga was at the Los Alamitos and Los Cerritos Ranchos. These historic ranchos

¹ Multiple spellings are included in the literature for 'Ahwaanga, including Ahaungna and Ahwaanga (without the apostrophe).

comprise what is now most of the City of Long Beach; therefore, the text does not support a specific location within the City, such as a location on or near the proposed Sports Park project site.

Oral comments also indicated that there may be burials on the project site. The comment is understood as referring to Native American burials, although it may also refer to burials of people of European descent (“Anglos”) that could have occurred on the project site prior to the construction of a fence to delineate the cemeteries’ boundaries. However, there are no facts to support these ideas as there is no physical evidence on the surface of the site or known historical records to indicate that either occurred. In the unlikely event that human remains are discovered, standard procedures for the respectful handling of human remains during the earthmoving activities would be adhered to as described in the mitigation measures below. There is a major pipeline corridor along the southern boundary of the project site adjacent to the existing cemeteries; therefore, it is assumed that if any burials occurred outside the cemetery boundaries, these would have been previously disturbed when the pipeline corridor was created. The Sports Park project proposes to leave the existing pipeline corridor undisturbed except for the planting of native vegetation; therefore, the proposed project would not result in disturbance of human remains in this area of the project site if any are present. Archaeologists will be present on site to monitor grading activity.

Ms. Gonzalez (oral comments, Scoping Meeting) identified existing vegetation on site as sacred to the Tvonga, including black willows, reeds, and cattails, and indicated that the site itself may be considered sacred. The importance or significance of cultural resources under CEQA is addressed by the potential eligibility of a particular cultural resource for listing on the California Register of Historical Resources. As described above, eligibility is assessed under four criteria: (1) association with important events in State history; (2) association with important people in the State's history; (3) possession of significant characteristics of a particular type or the work of a master; and (4) the data potential of the site. Within the CEQA guidelines, there is no definition of a "sacred" site; however, there is a parallel type of resource identified at the federal level called a Traditional Cultural Property (TCP). In order to qualify as a TCP, a site must be a physical place and must retain continuing ties to the ethnic group or community ascribing significance to the resource.

In the absence of an actual archaeological site and without evidence of continuing use of the area as a TCP it is difficult to address the contention that a Native American sacred site is located within the project area. However, the information provided by the local Native American groups may be considered by the project decision makers.

The large and constantly increasing demand for withdrawal of water from the local groundwater basin after the turn of the century dramatically lowered the water levels and pressure heads that fed the artesian wells/springs along the Newport-Inglewood Fault. There is no evidence that the artesian spring that existed on the site in the past still exists; in fact, the evidence indicates the contrary (Geotechnical Report, AMEC 2004). The existing wetlands on site are the result of inadequate maintenance of the flood control basin, which has allowed for the presence of standing water and the growth of species such as cattail and black willow (please see Section 4.5, Biological Resources, for more information). There is no physical or temporal connection between the existing wetlands created by a flood control basin and the former presence of artesian springs on site.

A written comment on the NOP (May, D.) identified a “zanja,” defined by the author as an early aqueduct, buried on site. No source was provided by the author. Zanja is a term usually applied to

drainage ditches during the Spanish/Rancho period, and given the very disturbed nature of the site there is no surface evidence of drainage ditches that date from the 1800s. It is assumed that the author is referring to a six-inch pipeline installed in the 1880s at the time a well was drilled in the vicinity of the springs, as described above. There is no known evidence that remnants of the historic water system remain on site; however, archaeological monitors on site will be alert to the possibility when monitoring during grading activity.

In addition to the previous loss of the artesian well as a result of falling water tables, there have been other substantial changes to the physical characteristics of the site since the time of European settlement. The Geotechnical Report (AMEC 2004) documents the episodic placement of fill over the decades. For example, a fill embankment was constructed in 1891 in conjunction with the construction of a railway. Between 1922 and 1964 intense oil operations on site were responsible for construction of fills associated with roads, drill pads, sumps, building pads, and pipelines on the project site. The activities related to oil operations, and the construction of water supply, storm drain, and sewer facilities on the property have contributed to redistribution of on-site materials. Since 1964 imported fill of excess soil from off-site Water Department construction projects has been placed on the project site. As shown in Figure 4.3.2, fill ranging in depth from 1 to 70 feet covers essentially the entire site, including significant areas of imported fill. The shell on the project area was very small, highly fragmented, and scattered. If prehistoric artifacts or features had been present on site, there is a strong likelihood that they would have been disturbed or destroyed by previous ground disturbance.

In summary, given the absence of historical records that indicate Native American activity or habitation at the project site, the negative findings of the site survey, and the decades of fill and soil disturbance on the site, there is little expectation that artifacts or human remains will be found in the course of grading for and development of the proposed project. Protection of cultural resources afforded by CEQA is of physical prehistoric and historic resources. There are no known physical prehistoric resources on the project site. Given the large quantity of earth movement required to implement the proposed project, however, it is recommended that cultural resource monitors be present on site during grading. Please see mitigation measures below.

Mitigation Measures

The proposed project may cause potentially significant impacts before mitigation to the on-site historic Compressor Building proposed to be demolished, the off-site Lomita Gasoline Company Office Building due to changes in the visual context of the historic resource, and unknown cultural and paleontological resources that may be discovered through site grading.

Known Resources. The following mitigation measures are recommended for the Compressor Building, located at 2901 Orange Avenue, which has been previously determined eligible for listing in the National Register.

- 4.6.1 The Compressor Building and ancillary facilities shall be thoroughly documented through HABS/HAER-like (Historic American Building Survey/Historical American Engineering Record) Level 1 prior to the beginning of any demolition activity at this site. The documentation shall be submitted to the City's Historical Preservation Officer for review and approval prior to issuance of demolition permits.

- 4.6.2 Prior to issuance of demolition permits, detailed plans/programs shall be submitted for review and approval by the City's Historic Preservation Officer, addressing the following:
- The salvage of significant machinery and engineering components associated with the Compressor House, and the donation and curation of those items at a designated museum facility, shall be considered.
 - Development of an interpretive program for schools in the Long Beach area shall be considered. This program could discuss the petroleum industry, associated technology, and the role the petroleum industry played in the historic development of the City of Long Beach.
 - Utilizing new technologies, consideration shall be given to developing a virtual tour of the facility prior to its alteration.
 - The history of Lomita-Petrolane and/or its interpretation shall be integrated into the design of the proposed Long Beach Sports Park.
- 4.6.3 Prior to issuance of building permits, detailed plans addressing the visual impact of the proposed development on the Lomita Gasoline Company Office Building shall be submitted for review and approval by the City's Historic Preservation Officer. Visual impacts to the office building shall be minimized through the use of decorative landscaping, choice of appropriate construction materials, and design of surrounding improvements.

Unknown Resources. Mitigation measures recommended below shall be conducted in compliance with the City of Long Beach, CEQA, and SVP Guidelines.

Paleontological Resources.

- 4.6.4 In conjunction with the submittal of applications for rough grading permits for the proposed project, the Director of Planning and Building shall verify that a paleontologist who is listed on the County of Los Angeles list of certified paleontologists has been retained and will be on site during all rough grading and other significant ground disturbing activities in paleontologically sensitive sediments. The sensitive sediments that have been identified within the project include the Lower to Middle Pleistocene San Pedro Formation and the Middle to Upper Pleistocene undifferentiated terrace deposits. A paleontologist will not be required on site for excavation in Quaternary colluvial/alluvial sediments unless it is determined that these sediments do in fact contain paleontological resources. A paleontologist will not be required on site if excavation is only occurring in artificial fill.

The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program (PRIMP) consistent with the Guidelines of the Society of Vertebrate Paleontology (SVP 1995). This program should include, but not be limited to, the following:

- A preconstruction field assessment to locate fossils at surface exposures prior to the commencement of grading. Salvage of any fossils located during this assessment, including processing standard samples of matrix for the recovery of small vertebrate fossils.
- Attendance at the pregrade conference.
- Monitoring of excavation by a qualified paleontological monitor in areas identified as likely to contain paleontological resources. The monitor should be equipped to salvage fossils as they are unearthed in order to avoid construction delays and to remove samples of sediments that have been determined likely to contain remains of small fossil invertebrates and vertebrates. The monitor must be empowered to temporarily halt or divert equipment in order to allow removal of abundant or large specimens. If major paleontological resources that require long-term halting or redirecting of grading are discovered, the paleontologist shall report such findings to the Director of Planning and Building.
- Because the underlying marine sediments may contain abundant fossil remains that can only be recovered by a screening and picking matrix, it is recommended that these sediments occasionally be spot-screened through one-eighth to one-twentieth mesh screens to determine whether microfossils exist. If microfossils are encountered, additional sediment samples, up to 6,000 pounds, shall be collected and processed through one-twentieth mesh screens to recover additional fossils.
- Preparation of recovered specimens to a point of identification and permanent preservation. This includes the washing and picking of mass samples to recover small invertebrate and vertebrate fossils.
- Identification and curation of specimens into a museum repository with permanent retrievable storage.
- Preparation of a report of findings with an appended itemized inventory of specimens. The report and inventory, when submitted to the Department of Planning and Building, would signify completion of the program to mitigate impacts to paleontological resources.

Archaeological/Historical Resources.

- 4.6.5 In conjunction with the submittal of applications for rough grading permits, the Director, Department of Planning and Building, shall verify that a Los Angeles County certified archaeologist has been retained, shall be present at the pregrading conference, and shall establish procedures for temporarily halting or redirecting work if unrecorded archaeological resources are discovered during grading to permit the sampling, identification, and evaluation of archaeological materials as appropriate. The cultural resource management program will include resource monitoring during project grading of archaeologically sensitive sediments to ensure that unidentified cultural resources are not

affected by the proposed undertaking. If archaeological materials are identified during construction, standard professional archaeological practices shall be initiated to characterize the resources and mitigate any impacts to those resources. Included within this program will be the development of a curation agreement for the permanent care of materials collected from the project. This agreement would be negotiated with a suitable repository.

- 4.6.6 In the event human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the descendant may inspect the site of the discovery. The descendant shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

4.6.6 CUMULATIVE IMPACTS

The cumulative impact area for cultural and paleontological resources is the City of Long Beach and the Southern California region. The loss of the existing compressor structure on the site will contribute to the cumulative loss of historical resources in the region, particularly resources associated with the oil industry. Mitigation Measures 4.6.1 through 4.6.3 will reduce the contribution to project and cumulative effects by documenting the structure and incorporating information and/or machinery into interpretive programs. These measures also reduce the project's cumulative effect on historical resources. The continued oil and traction operations on the site and continued use of the historic SHPI office building adjacent to the site also lessen the project's cumulative effect on the historic oil industry context of the site. While the loss of the compressor building is considered a significant adverse effect even after mitigation, the cumulative effects are reduced to below the level of significance with the implementation of mitigation and the maintenance of the active oil operations on site. The proposed project in conjunction with other past, present, or reasonably foreseeable future projects has the potential to result in a cumulative impact due to the loss of undiscovered archaeological and paleontological resources during grading and construction activities. With implementation of Mitigation Measures 4.6.4 through 4.6.6, the proposed project's incremental contribution to impacts to unknown archaeological and paleontological resources will be reduced to a level below significance.

4.6.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Incorporation of Mitigation Measures 4.6.4 through 4.6.6 will reduce impacts to unknown archaeological and paleontological resources on the project site to a less than significant level. Project impacts on the Lomita Gasoline Company Office building and the existing Compressor House will remain significant after implementation of Mitigation Measures 4.6.1 through 4.6.3.