# 4.13 CULTURAL AND PALEONTOLOGICAL RESOURCES

## 4.13.1 INTRODUCTION

This section of the environmental impact report (EIR) describes the cultural (prehistoric and historic) resources known to be located on the Project site. The extent to which development of the proposed Project could impact existing historic or prehistoric resources and paleontologic resources is evaluated. Potential cumulative impacts are addressed in Section 5.0 of the EIR.

The findings of the following three studies are summarized in this section and are included in their entirety in Appendix J of this EIR: (1) *Archaeological Resources Assessment: Newport Banning Ranch, Newport Beach, California* (BonTerra Consulting 2009a); (2) *Paleontological Resources Assessment: Newport Banning Ranch, Newport Beach, California* (BonTerra Consulting 2009b); and (3) *Historic Resources Assessment Report of West Newport Oil Company Banning Ranch, 1080 17th Street, Newport Beach, CA* (Daly 2009).

## 4.13.2 REGULATORY SETTING

This section contains a discussion of the applicable laws, ordinances, regulations, and standards that govern cultural resources and that must be followed prior to and during construction of the proposed Project.

### Federal

Pursuant to the National Historic Preservation Act (NHPA), the federal government, acting through the U.S. Department of the Interior's National Park Service, maintains an inventory of properties and structures that have been determined to meet certain criteria as significant historic resources commonly referred to as the "National Register of Historic Places" (NRHP). Eligibility for the NRHP is determined by the U.S. Department of the Interior in a formal review process in which a resource is proposed for listing. For purposes of Section 106 of the NHPA, any property listed on or deemed eligible for listing on the NRHP is considered historic. While ordinarily the NHPA does not apply to projects sponsored by private parties on private land, Section 106 of the NHPA may apply if the project is on federal land, is using federal money, or requires a federal permit (e.g., a Section 404 permit under the Clean Water Act from the U.S. Army Corps of Engineers [USACE]).

### State

Similar to the federal NRHP, the State of California also maintains a list of historic properties called the California Register of Historical Resources (CRHR). Eligibility for the CRHR is determined by the California Office of Historic Preservation (OHP) in a formal review process in which a resource is proposed for listing. A resource deemed eligible for the NRHP is typically deemed eligible for the CRHR. The CRHR is an authoritative guide to California's significant historical and archaeological resources to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change. The CRHR is maintained by the OHP's State Historic Preservation Officer (SHPO).

This cultural resources analysis—including that pertaining to the built environment and archaeological and paleontological resources—has been prepared to meet the requirements of the California Environmental Quality Act (CEQA) (*California Public Resources Code* [PRC] §21083.2 and §21084.1) for inclusion in this EIR. According to the State CEQA Guidelines, "[a]

project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment" (14 *California Code of Regulations* [CCR] §15064.5[b]). Substantial adverse change is defined as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (14 CCR §15064.5[b][1]). CEQA has established statutory requirements for the formal review and analysis of projects that fall under its jurisdiction. CEQA maintains that any property listed in, determined, or found eligible for listing in the CRHR is considered to be a "historical resource" and shall be considered historically significant. In addition, CEQA has additional provisions regarding "unique" resources as they pertain to archaeological resources. The criteria below are used to determine eligibility and significance.

### *Senate Bill 18*

Senate Bill (SB) 18 (*California Government Code* §65352.3) incorporates the protection of or mitigation of impacts to California traditional tribal cultural places into land use planning for cities, counties, and agencies. It establishes responsibilities for local governments to contact, refer plans to, and consult with California Native American tribes as part of the adoption or amendment of any general or specific plan proposed on or after March 1, 2005. SB 18 requires public notice to be sent to tribes listed on the Native American Heritage Commission's (NAHC's) SB 18 Tribal Consultation List within the geographical areas affected by the proposed changes. Tribes must respond to a local government notice within 90 days (unless a shorter time frame has been agreed upon by the tribe), indicating whether or not they want to consult with the local government. Consultations are for the purpose of preserving or mitigating impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the *California Public Resources Code* that may be affected by the proposed adoption of or amendment to a general or specific plan.

The proposed Project requires consultation under SB 18. The City notified tribes and individuals listed on the NAHC contacts list (refer to Section 4.13.3, Methodology).

### *Prehistoric Archaeological and Historic Resources*

CEQA requires a Lead Agency to determine whether a project may have a significant effect on one or more historical resources. A "historical resource" is defined as a resource listed in or determined to be eligible for listing in the CRHR (PRC §21084.1); a resource included in a local register of historical resources (14 CCR §15064.5[a][2]); or any object, building, structure, site, area, place, record, or manuscript that a Lead Agency determines to be historically significant (14 CCR §15064.5[a][3]).

Section 5024.1 of the *Public Resources Code,* Section 15064.5 of the State CEQA Guidelines, and Sections 21083.2 and 21084.1 of the CEQA Statutes were used as the basic guidelines for the EIR analysis. Section 5024.1 of the *Public Resources Code* requires evaluation of historical resources to determine their eligibility for listing in the CRHR. The purposes of the register are to maintain listings of the State's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing on the NRHP.

Section 15064.5(a)(3) of the State CEQA Guidelines states that "[g]enerally, a resource shall be considered by the Lead Agency to be 'historically significant' if the resource meets the criteria

for listing on the California Register of Historical Resources" (PRC §5024.1; 14 CCR §4852), including if the resource:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

B. Is associated with lives of persons important in our past;

C. 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

D. Has yielded, or may be likely to yield, information important in prehistory or history.

The Lead Agency shall concurrently determine whether a project will cause damage to a unique archaeological resource (as defined in PRC §21083.2[b]) and, if so, must make reasonable efforts to permit the resources to be preserved in place or left undisturbed. Section 21083.2(g) of CEQA defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be demonstrated that without merely adding to the existing body of archaeological 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 that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

To the extent that unique archaeological resources are not preserved in place, mitigation measures shall be required (PRC §21083.2[c]).

Using the information outlined above, the first level of evaluation is to determine whether a resource on a site is a historical resource and/or a unique archaeological resource that would be considered eligible for the CRHR and, therefore, significant.

Impacts to significant cultural resources that affect those characteristics of the resource that qualify it for the CRHR or adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to cultural resources are considered significant if a project (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource that contributes to its significance; and/or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

### *Historic Resources*

"Historical" resources are defined in Section 21084.1 of CEQA and the State CEQA Guidelines (14 CCR §15064.5). CEQA Section 21084.1 states:

> A project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. For purposes of this section, an historical resource is a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources. Historical resources included in a local register of historical resources, as defined in subdivision (k) of Section 5020.1, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant for purposes of this section, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the California Register of Historical Resources, not included in a local register of historical resources, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1 shall not preclude a lead agency from determining whether the resource may be an historical resource for purposes of this section.

The State CEQA Guidelines (14 CCR §15064.5[b]) state:

> A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.
>
> (1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
>
> (2) The significance of an historical resource is materially impaired when a project:
>
> (A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
>
> (B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources...unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
>
> (C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

An archaeological resource must be determined to be "unique" or "historic" for an impact to the resource to be considered significant. A "unique archaeological resource" is defined in Section 21083.2(g) of CEQA and is discussed above under "prehistoric archaeological resources".

### *Paleontological Resources*

Paleontological resources are nonrenewable scientific and educational resources. The CEQA regulatory framework for impacts on paleontological resources is contained in Appendix G (Environmental Checklist Form) of the State CEQA Guidelines and includes paleontological resources under the general heading "Cultural Resources". Projects subject to CEQA must determine whether the project would "directly or indirectly destroy a unique paleontological resource".

An impact to paleontological resources would be considered a significant impact if a project results in the direct or indirect destruction of a unique or important paleontological resource or site. A project site is deemed paleontologically sensitive if (1) it has fossils that have previously been recovered from a particular geologic unit; (2) there are recorded fossil localities within the same geologic units as occur within the project area; and (3) the types of fossil materials that have been recovered from the geologic unit are unique or important.

### *California Coastal Act*

The California Coastal Act of 1976 (*California Public Resources Code* §§30000 et seq.) establishes policies guiding development and conservation along the California coast. Consistent with Section 30001 and the basic goals of Section 30001.5, and except as may be otherwise specifically noted in the California Coastal Act (Coastal Act), the policies of Section 30200 of the Coastal Act constitute the standards by which the adequacy of local coastal programs and the permissibility of proposed developments subject to the requirement to obtain a coastal development permit are determined. The consistency of the Project with applicable Coastal Act policies is provided in later in this EIR section.[1]

## City of Newport Beach

### *City Council Policy Manual Guidelines*

The City of Newport Beach (City) has adopted archaeological and paleontological guidelines that govern the identification and evaluation of these resources and are used to guide the development or redevelopment of lands within the City. The City Council Policy Manual Guidelines are summarized in Appendix J to this EIR.

With respect to paleontological resources, City Policy K-4 (adopted on August 26, 1974, amended on January 24, 1994, and corrected on March 22, 1999) requires that impacts to paleontological resources caused by development be mitigated in accordance with CEQA. Procedures to be used to assess paleontological resources are a walk-over site survey; review of publications and reports on the geology or paleontology of the area; analysis of all available soils information; and examination of the relationship of the proposed development site to known or potential fossil-producing areas identified in available records, as applicable.

With respect to archaeological resources, City Policy K-5 (adopted on January 13, 1975, amended on January 24, 1994, and corrected on March 22, 1999) requires that an impact to significant archaeological resources caused by any development be mitigated in accordance

[1] For ease of reading, the policy tables are located at the end of this EIR section.

with CEQA. If deemed necessary by the City, the City requires a site survey and report that identifies potential impacts, alternatives, and recommendations for impact mitigation.

### *General Plan*

Natural Resources Element

The primary objective of the Natural Resources Element is to provide direction regarding the conservation, development, and utilization of natural resources. It identifies the City's natural resources and policies for their preservation, development, and wise use. This Element addresses water supply (as a resource) and water quality (including bay and ocean quality, and potable drinking water), air quality, terrestrial and marine biological resources, open space, archaeological and paleontological resources, mineral resources, visual resources, and energy. The Project's consistency with applicable General Plan goals and policies is provided later in this EIR section.

Historical Resources Element

The Historical Resources Element addresses the protection and sustainability of Newport Beach's historic and paleontological resources. Goals and policies are intended to recognize, maintain, and protect the community's unique historical, cultural, and archeological sites and structures. Preserving and maintaining these resources helps to create an awareness and appreciation of the City's rich history. The Element identifies resources in the City that are on the NRHP or CRHR, as well as locally recognized resources; these resources are identified on Figure HR1 of the Historical Resources Element.

Four properties in the City are listed on the NRHP and four other properties are listed as California Historical Landmarks. Properties that are not listed on the NRHP or CRHR may also be considered historical resources. The City has established the Newport Beach Register of Historical Properties to recognize structures or properties of local historical or architectural significance. The City has listed seven properties in the City Register in recognition of their local historical or architectural significance. Additionally, the City has a Historic Resource Inventory of 61 properties that are surveyed in 5 hierarchical "classes" of significance: Class 1, Major Historic Landmark; Class 2, Historic Landmark; Class 3, Local Historic Site; Class 4, Structure of Historic Interest; and Class 5, Point of Historic Interest. Under this system, properties considered Class 1, Class 2, or Class 3 would be eligible to use the State Historic Building Code; Class 4 and Class 5 properties would be listed for recognition purposes only. The Historic Resource Inventory was never adopted by the City, and the properties were never placed on the City's Register of Historical Places. The Inventory is used as a guide for potentially historic properties that may have historic or cultural significance to the City. The Project site is not listed on the Newport Beach Register of Historical Properties, and there are no properties or structures located on the City's Historic Resource Inventory in the immediate vicinity of the Project site. The Project's consistency with applicable General Plan Historical Resources Element goals and policies is provided later in this EIR section.

## 4.13.3 METHODOLOGY

### Archaeological Resources

Five prior archaeological investigations have resulted in the examination of the entire Project site and identification of all exposed cultural resources. As recently as 2008, the Project area was surveyed by qualified archaeologists and all previously recorded archeological sites were examined. As a result of these prior investigations, eight prehistoric and three historic resources are recorded on the Project site. Therefore, the archaeological investigation conducted as a part of this EIR focused on testing previously recorded sites. The purpose of the Newport Banning Ranch test investigations is to determine whether any of the 11 archaeological sites present on the property are eligible for listing in the CRHR or the NRHP, and if they would thus warrant further consideration in the planning process. To achieve this goal, the data collected through survey, controlled excavation, and archival research is analyzed and used to evaluate the significance of each site. Therefore, the primary goal of site testing was to establish the dimensions, chronology, density, diversity, and integrity of the archaeological sites and to compare them to other local and regional sites in order to determine whether any meet the statutory requirements of the CRHR or the NRHP.

BonTerra Consulting Archaeologists Patrick Maxon and Christopher Drover, Ph.D., both Registered Professional Archaeologists (RPA), completed an initial site walk to formulate excavation plans on May 13, 2009. Site excavations were conducted under the direct supervision and direction of Dr. Drover from May 27 through June 26, 2009.

BonTerra Consulting completed a Phase II test excavation and evaluation of archaeological sites CA-ORA-148, CA-ORA-839, CA-ORA-843, CA-ORA-844, CA-ORA-845, CA-ORA-906, CA-ORA-1599, CA-ORA-1600, CA-ORA-1601H, CA-ORA-1602H, and CA-ORA-1610H, although CA-ORA-148 was not subjected to excavation. All work was completed under the cultural resources provisions of CEQA and to federal level standards (Section 106 of the NHPA) because of the possibility of a future federal nexus. The fieldwork consisted of site relocation; site boundary delineation; brush clearing; construction of a data sampling grid at each site; excavation of postholes and/or one square-meter units; matrix screening and washing; surface collections; unit profiles; and site photographs.

#### *Site Boundaries*

The boundaries for several sites were difficult to delineate based on the observable surface distribution of cultural materials and topographic limitations. The most salient materials at the sites were shellfish remains. While site boundaries were identified primarily from the surface distribution of shellfish remains, all other possible cultural materials such as bone, debitage, and fire-affected rocks were also considered when the boundaries were identified. Pin flags were used to demark the farthest extent of the surface artifacts and initial unit locations (shovel test pits or control units).

#### *Data Sampling and Excavation*

Some archaeological sites received only shovel test pits (STPs). STPs were primarily used to determine the presence or absence of subsurface cultural material in locations where archaeological sites were previously mapped; however, few cultural remains were observed. Archaeological investigations had been unable to relocate several archaeological sites on the property subsequent to Van Horn's work in 1974. Such sites (e.g., CA-ORA-843 and CA-ORA-906) had been subsequently recommended for STPs to determine whether the site

still existed and, if warranted, to dig control pits to evaluate the deposit. Because of the extended effort and access to Van Horn's original research document (cf. 1982), the present effort was able to relocate all original site locations. While original site locations could be verified through photographs and accurate descriptions, several sites, such as those noted above, had been heavily impacted by ongoing oilfield operations. On such sites, STPs alone were sufficient to determine insignificance.

STPs were excavated with a circumference of 40 centimeters (cm) in 20-cm increments. Next, the matrix from each level was dry screened through ¼-inch mesh for specific classes of material, including stone tools; debitage; groundstone tools; miscellaneous lithics (e.g., ochre, asphaltum); non-fish and fish bone; bone tools; charcoal; fire-affected rock; or historic material. Shell hinges and apices were collected, counted, weighed, and speciated.

Aside from the historic sites, historic materials in STPs provide evidence of recent disruptive activities (such as pot hunting) and contribute to the general understanding of bioturbation processes at the sites. Based on the results of the STPs, sub-surface control units were implemented to recover comparative quantified data.

Archaeological sites where surface manifestation may have appeared to be sparse but where STPs showed significant subsurface data warranted the excavation of control units for purposes of eligibility determination (cf. CA-ORA-844 Locus B). Easily definable archaeological sites, such as CA-ORA-839, were subject only to control test units to determine eligibility. Control units 1 meter (m) by 1 meter (1m x 1m) in size were used to generate cubic density data and were excavated in 10-cm increments. Each level was wet screened and sorted through ⅛-inch mesh for specific classes of materials, including flaked stone tools; debitage; groundstone tools; miscellaneous lithics (e.g., ochre, asphaltum); bone tools; otoliths; shell; shell beads and ornaments; charcoal; fire-affected rock; historic material; and non-fish and fish bone. The shellfish sample from each 1m x 1m unit was sorted from the matrix and identified by the lab technicians. Shellfish identification consisted of determining the genus (and species, where possible) of all non-repetitive shell elements (hinges and apices). Non-repetitive elements were then counted. If non-repetitive elements for a particular taxon were not found, the sample was referred to as "sp.", but not given a count. The shellfish from the postholes were speciated, and the count of fragments was taken.

All stone tools, groundstone tools, miscellaneous lithics (e.g., ochre, asphaltum), bone tools, otoliths, and beads/ornaments were separated from the matrix and weighed, bagged, and labeled individually. The weight and count of fire-affected rocks was collectively recorded for each unit level by material type and discarded. Charcoal was collectively weighed, bagged, and labeled for each unit level.

### *Screening, Washing, and Laboratory Methods and Procedures*

After the matrix that was recovered from each level of each posthole was water-screened through ⅛-inch mesh in the field, the washed matrix remaining in the screen was dried, bagged, labeled, and brought to the laboratory to be sorted and identified. In the lab, each unit level was screened through ¼-inch mesh screen to effectively separate the larger matrix fraction that was greater than ¼ inch in size from the smaller matrix fraction that was less than ¼ inch in size. The ¼-inch mesh was used only to separate the larger items from the smaller items to facilitate the sorting process. Laboratory sorters then sorted all cultural materials from the screened matrices by separating items by class. The remaining non-cultural material was discarded.

### *Cataloging*

All artifacts (chipped-stone tools, groundstone tools, shell artifacts, bone tools, obsidian, otoliths, beads, and ornaments) were identified in the laboratory and assigned individual catalog numbers. The remaining cultural materials were separated into classes consisting of fish bone, non-fish bone, speciated shell elements (shell was not speciated for the postholes), fire-affected rock by material type, lithic debitage by material type, and charcoal.

Catalog entries for tools included provenience, identification of artifact type, material, weight, and count. Catalog entries for fish bone, non-fish bone, and speciated non-repetitive shell elements include provenience, weight, and number of specimens by unit level. Entries for debitage included material type and type of break. All bags of catalogued material contain this coded information on paper labels. All fish bone and non-fish bone was identified and cataloged. All bone was identified by species, bone element, and symmetry.

## Native American Consultation

Because the proposed Project requires a General Plan Amendment[2], it is subject to the statutory requirements of SB 18 Tribal Consultation Guidelines (*California Government Code* §65352.3), which require the offering of government-to-government consultation with interested tribes identified by the NAHC. Native American groups may have knowledge about cultural resources in the area and may have concerns about adverse effects from development on cultural resources. These resources may be sacred lands, traditional cultural places and resources, and archaeological sites.

The City contacted the NAHC and informational letters were sent to each tribe identified on the NAHC's list. Three requests for consultation were received from the tribes listed below:

- Juaneño Band of Mission Indians, Acjachemen Nation (Anthony Rivera);
- Juaneño Band of Mission Indians, Acjachemen Nation (David Belardes, Joyce Perry); and
- Juaneño Band of Mission Indians (Sonia Johnston, Alfred Cruz).

The City undertook consultation with each of the three tribes. The results are contained in a letter in Appendix J of this EIR.

A representative of the Juaneño Band of Mission Indians, Acjachemen Nation, Anthony Rivera, was present on site during all archaeological excavations and was afforded the opportunity to examine excavation units and artifact discoveries.

## Historic Resources

Daly & Associates conducted the historic resource assessment and evaluation for this EIR (Daly 2009). In order to identify and evaluate the subject property as a potential historic resource, a multi-step methodology was used. A review of accessible archival sources for the Project site was conducted and an inspection of the Project site's existing buildings and structures was performed to document existing conditions and to assist with assessing and evaluating the property for significance. Photographs were taken of all buildings and structures, including

[2] An amendment is proposed to the City of Newport Beach General Plan Circulation Element Master Plan of Streets and Highways. An amendment to the General Plan Land Use Element is not required.

photographs of architectural details or other points of interest, during the pedestrian-level survey.

The NRHP and the CRHR criteria were used to evaluate the significance of the Project site. The City does not have specific regulations in its Municipal Code for the preservation, alteration, or demolition of historic resources. As such, built-environment resources in the City use CRHR criteria to evaluate the significance of resources over 50 years old. The following additional tasks were performed for the historic resource assessment and evaluation:

- The NRHP and the CHRR Inventory were searched;
- Site-specific research was conducted on the Project site using maps, City directories, newspaper articles, historical photographs, and other published sources;
- Background research was performed at local historic archives and through internet resources;
- Ordinances, statutes, regulations, bulletins, and technical materials relating to federal, State, and local historic preservation designation assessment processes, and related programs were reviewed and analyzed; and
- A site visit and pedestrian-level inspection of the on-site buildings and structures was performed on June 29, 2009.

**Paleontological Resources**

BonTerra Consulting conducted a Phase II paleontological study, which consisted of a records search, literature review, and limited field reconnaissance in order to evaluate the sensitivity of the substrate underlying the proposed development for the presence of fossil resources and to make recommendations to mitigate the effects of the Project on those resources.

Record searches of the paleontological collections of regional museums were conducted to evaluate whether previous records of formal fossil locality exist on or within a one-mile radius of the Project. Record and literature searches of the paleontological collections and archives of vertebrate and invertebrate departments of the Natural History Museum of Los Angeles County (LACM) were conducted to determine if any previously recorded fossil localities were in the study area of this Project. Geologic and paleontological literature was reviewed including reports, papers, and maps that cover the limits of the Project. A limited paleontological field reconnaissance of the Project area was conducted by Mark A. Roeder and David A. Alexander.

## 4.13.4 EXISTING CONDITIONS

**Natural Setting**

The Project site is located on the northern end of the Peninsular Range Geomorphic Province. These rocks are composed of pre-Cretaceous (more than 65-million-year-old) igneous and metamorphic rock with limited exposures of post-Cretaceous sedimentary deposits. However, these sedimentary deposits in coastal Orange County are considered to be some of the most important fossil-producing formations in the world.

The Project site has been heavily disturbed by oil and natural gas extraction operations since the 1940s, which continue today. As addressed in Section 4.3, Geology and Soils, the mesas that surround the Project site were more extensive than they are today. For example, several mesas that previously extended nearly to West Coast Highway have been largely removed,

leaving evidence of eroded bluffs and remnants of the Newport Mesa (Upland) on the site. It is unknown if these removals were solely a result of oil operations.

## Prehistoric Setting

Archaeologists and ethnologists have long contemplated the cultural sequences that occurred before Spanish contact. The two most currently accepted schemes are those proposed by Wallace (1955), who interpreted the prehistory of coastal Southern California through temporal horizons, and Warren (1968), who viewed cultural differences not as temporal distinctions but as local traditions. Wallace (1955) saw four temporal horizons along the Southern California coast: Early Man, Milling Stone, Intermediate, and Late Prehistoric.

### *Early Man Horizon*

Spanning the period from the end of the Pleistocene to approximately 8,000 years before present (YBP),[3] archaeological assemblages attributed to this horizon are characterized by large projectile points and scrapers. The limited data available suggests that prehistoric populations focused on hunting and gathering and moved about the region in small nomadic groups.

### *Milling Stone Horizon*

Characterized by the appearance of handstones and millingstones, this horizon tentatively dates to between 8,000 YBP and 3,000 YBP. Assemblages in the early Milling Stone Horizon reflect an emphasis on plant foods and foraging subsistence systems. For inland locales, it has been assumed that grass seed exploitation formed a primary subsistence activity. Artifact assemblages include choppers and scraper planes, but generally lack projectile points. The appearance of large projectile points in the latter portion of the Milling Stone Horizon suggests a more diverse economy. The distribution of Milling Stone sites reflects the theory that aboriginal groups may have followed a modified, centrally based wandering settlement pattern. In this semi-sedentary pattern, a base camp would have been occupied for a portion of the year, but a small population group seasonally occupied subsidiary camps in order to exploit resources not generally available near the base camp. Sedentism apparently increased in areas possessing an abundance of resources available for longer time periods. More arid inland regions would have provided a seasonally dispersed resource base, restricting sedentary occupation.

### *Intermediate Horizon*

Dated to between 3,000 YBP and 1,350 YBP, the Intermediate Horizon represents a transitional period. Little is known about the people of this period, especially those of inland Southern California. Site assemblages retain many attributes of the Milling Stone Horizon. Additionally, Intermediate Horizon sites contain large stemmed or notched projectile points and portable mortars and pestles. The mortars and pestles suggest that the aboriginal populations may have harvested, processed, and consumed acorns. Neither the settlement-subsistence system nor the cultural evolution of this period has been well understood due to a general lack of data. It has been proposed that sedentism increased with the exploitation of storable food resources (acorns), and that the duration and intensity of base camp occupation increased, especially toward the latter part of this horizon.

[3] "Years Before Present" assumes that 1950 is "present", so in this case, 8,000 YBP would be 6,050 BCE (Before Common Era).

### *Late Prehistoric Horizon*

Extending from the year 750 to Spanish contact in 1763, the Late Prehistoric Horizon reflects an increased sophistication and diversity in technology. This is characterized by the presence of small projectile points that simplified the use of the bow and arrow. In addition, assemblages include steatite bowls, asphaltum, grave goods, and elaborate shell ornaments. Use of bedrock milling stations was widespread during this horizon. Increased hunting efficiency and widespread acorn exploitation provided reliable and storable food resources. These innovations apparently promoted greater sedentism.

By contrast, Warren's (1968) cultural traditions were more restricted spatially. Warren's scheme accounted for the cultural variability particularly evident within Wallace's late Prehistoric Horizon. Warren's traditions include the San Dieguito, Encinitas, Campbell, Chumash, Shoshonean, and Yuman.

Koerper (1981) and Koerper and Drover (1983) have taken the horizon system proposed by Wallace and have applied it more specifically to the prehistory of Orange County. Koerper (1981) and Koerper and Drover (1983) adapted Wallace's four horizons using artifacts and associated radiocarbon dates from two Orange County sites: CA-ORA-64 and CA-ORA-119-A. The authors argue that the transition between the Milling Stone and Intermediate Horizons was marked by the appearance of the mortar and pestle. The primary projectile point type changed from the Milling Stone "Pinto Basin" to the stemmed and side-notched forms. The beginning of the Late Prehistoric Period occurred roughly with (1) the appearance of the smaller "Cottonwood" points, suggesting the introduction of the bow and arrow; (2) the abundance of shell beads and ornaments; (3) use of steatite for pipes, bowls, and ornaments; and (4) appearance of arrow shaft straighteners. Pottery may or may not appear at the end of the late Prehistoric Period or the Historic period.

## Ethnographic Setting

At the time of European contact in 1769, the Santa Ana plain was occupied by the Gabrielino Native Americans, so called by the Spanish after the nearby Mission San Gabriel Archangel. According to Bean and Smith, the Gabrielino are, in many ways, one of the least known groups of California native inhabitants. In addition to much of the Los Angeles Basin, they occupied the offshore islands of Santa Catalina, San Nicolas, and San Clemente. Gabrielino populations are difficult to reconstruct; however, at any one time, as many as 50 to 100 villages were simultaneously occupied. Like the prehistoric culture before them, the Gabrielino were a hunter/gatherer group who lived in small sedentary or semi-sedentary groups, termed Rancherias, of 50 to 100 persons. These Rancherias were occupied by at least some people all of the time. Location of the encampment was determined by water availability. Within each village, houses were circular in form and constructed of sticks covered with thatch or mats. Each village had a sweat lodge and a sacred enclosure. Their subsistence relied heavily on plant foods, but was supplemented with a variety of meat, especially from marine resources. Food procurement consisted of hunting and fishing carried out by men, and gathering of plant foods and shellfish by women. Hunting technology included bow and arrow use for deer and smaller game, in addition to stick-throwing, snares, traps, and slings. Fishing was conducted with the use of shell fishhooks, bone harpoons, and nets. Seeds were gathered with beaters and baskets. Food was stored in baskets. It was prepared with manos and metates, and mortars and pestles. Food was cooked in baskets coated with asphaltum, in stone pots, on steatite frying pans, and by roasting in earthen ovens.

Although the earliest description of the Gabrielino dates back to the Cabrillo expedition of 1542, the most important and extensive accounts were those written by Father Geronimo Boscana circa 1822 and Hugo Reid in 1852. Major Gabrielino villages south of the City of Long Beach apparently included Lukpa and Kengaa, also known as Gengara. Moyoonga is another location name cited by Kroeber (1907), but it is unclear if this was a community or a geographical designation. According to Merriam's mission records, Kengaa may have been occupied as late as 1828 or 1829. The place name was still used as late as 1853, identifying Newport Bay as "bolsa de gengara". Archaeological evidence suggests that CA-ORA-119A or CA-ORA-111 may be the remains of this important village. The other village, Lukpa, was, according to one of Kroeber's Native American informants, located in the City of Huntington Beach. One possibility is the Newland site excavated by Winterbourne in the 1930s and more recently by other investigators.

During the early 1900s, important ethnographic studies were conducted by several researchers including A.L. Kroeber, J.P. Harrington, C.H. Merriam, W.D. Strong, and J.W. Hudson. Each of these men was able to interview members of the Gabrielino who had living experience with the Mission period when the group was in transition. Central Orange County was shared by both the Juaneño (another Native American tribal group so named because of its association with Mission San Juan Capistrano) and the Gabrielino. The three place names associated with central Orange County are Genga, Pasbengna, and Hutuknga. Genga was located at CA-ORA-58 in what today is Fairview Park in the City of Costa Mesa. Pasbengna was located along the Santa Ana River approximately where the City of Santa Ana is today, and appears on the 1846 map drafted by Alexander Taylor. The third site, Hutuknga, is located where the City of Yorba Linda exists today.

The Gabrielino are frequently thought to have been the dominant ethnohistoric group in Orange County (e.g., Kroeber 1925). Earle and O'Neil have determined that sites along the Santa Ana River provided pivotal political exchange and social interaction between the Gabrielino and Juaneño. Based on Earle and O'Neil's research of Mission marriage records, the villages along the Santa Ana River apparently consisted of multi-ethnic populations. Among the more significant sites along the northern coast of Orange County was the complex of sites surrounding Bolsa Chica, including CA-ORA-83, known as the "Cog Stone" site or the "Griset Site". As with Bolsa Chica, Newport Bay also is surrounded by a number of prehistoric sites. The sites along the southern Orange County coast in the San Joaquin Hills include the multi-component complexes at Bonita Mesa, Pelican Hill, and Shady Canyon.

## Historic Setting

### *Rancho Santiago de Santa Ana*

In 1801, Juan Pablo Grijalva and his son-in-law, Jose Antonio Yorba, requested title to all the land that lay east of the Santa Ana River, from the Pacific Ocean and inland for 25 miles to the mountains. Grijalva was not given title to the land, but he was allowed grazing rights on over 62,500 acres. Grijalva died in 1806, four years before the land was granted to his son-in law and Yorba's cousin Juan Pablo Peralta. When the U.S. Government formally passed title to the lands in 1883, in accordance with the Spanish-Mexican Grant Act of 1851, they defined Rancho Santiago de Santa Ana as having 81,855 acres, and being legally owned by Juan Pablo Peralta, Jose Antonio Yorba, Bernardo Antonio Yorba (the third son of Jose Antonio Yorba), and the heirs of Bernardo Yorba. Through marriages and offspring between the Yorba, Peralta and Grijalva families, Rancho Santiago de Santa Ana became one of the largest ranchos in California (Daly 2009).

Andrew Glassell, an attorney from Los Angeles specializing in land issues, and founder of the City of Orange, was paid for legal services rendered to the Peralta Family heirs with 4,077 acres of land in the Rancho Santiago de Santa Ana. Glassell sold the land in 1872 to Gabe Allen of Los Angeles who had earlier purchased acreage in the Rancho de Santa Ana from Don Sepulveda's holdings located on the northern border of the Glassell parcel. Due to financial problems, Allen had to sell the land back to Glassell in 1874 just two years after the sale. Glassell subsequently sold the land again to Mary Hollister Banning for $17,500 in 1874 (Daly 2009).

When Mary Hollister's father died in the early 1870s, he had directly willed to his daughter a share of a 60,000-acre ranch he owned in Santa Barbara County that was worth $500,000. With her share of the ranch, she bought what became known as the Banning Ranch in what had been the Rancho Santiago Santa Ana from Andrew Glassell.

Over the years, Mary Banning leased portions of the property for various endeavors and to farmers in the local area of what is now the City of Costa Mesa. She leased 3,000 acres of her parcel to Henry D. Meyer in the 1890s; he farmed the land for over 35 years growing wheat, oats, and barley. Gregory and Will Harper and Walter and Will Griffith also leased acreage from Mary Banning for the raising of grain. In 1891, William Im Hof bought 150 acres for $5,500 (Daly 2009). In 1913, Mary Banning Norris (the daughter of Mary Hollister Banning) sold an additional 1,020 acres of the Banning Ranch.

Exploratory oil wells were drilled in the West Newport region in the mid-1920s with mixed results. In 1939, 1,750 acres of the Banning Ranch, of which the current Project site is a part, were leased for drilling operations by the Thompson Company, an independent operator. After her death in 1956, the estate of Mary Banning Norris sold the oilfields to Beeco, Ltd. The property has gone through subsequent ownership, reducing the size of the parcel to approximately 401.1 acres.

### *Military Use of Banning Ranch*

In 1941, the U.S. Army Air Corps considered opening a flying base on 1,400 acres of the Banning Ranch. The land was offered for purchase at $250 per acre. Major C.C. Mosely, the head of Cal-Aero Corporation (a private firm that trained many pilots for later military service) also looked at 750 acres of the Banning Ranch in order to establish a flying school. Both Mosely and the U.S. Government rejected the site as an airfield.

The U.S. Army Air Corps did consider the site a good place to locate a gun emplacement as part of a line of defense against a potential attack from Japan on the west coast of the United States. In 1941 and 1942, temporary field mounts were used for the installation of three 155-millimeter (mm) guns in the southernmost part of the property, near West Coast Highway. In 1943, three permanent Panama gun mounts were constructed on Banning Ranch. A "Panama" gun mount consists of a large circular concrete platform (approximately 38 feet in diameter) where the end of the gun was fixed in the center of the concrete pad and the front of the gun could be pushed along a circular metal rail, rotating the mouth of the gun into firing position. The 3 mounts were placed about 200 feet apart with a system of 6-foot-deep trenches and ammunition storage areas running between them.

After the end of World War II, the guns were removed and the trenches backfilled with the demolished concrete pads and other related and unrelated refuse. Previous archaeological investigations on the Project site have tentatively identified the location of an area of buried debris, at least one element of which (a concrete anchor) is related to the gun emplacement.

## Prehistoric Archaeological and Historic Resources

Eight prehistoric and three historic resources are recorded on the Project site, and five cultural resources studies have been conducted on the site. There have been 17 cultural resources investigations within a 1-mile radius of the site, and 17 cultural resources have been recorded. Table 4.13-1 identifies, briefly describes, and provides eligibility recommendations for the on-site cultural resources.

**TABLE 4.13-1**
**ON-SITE CULTURAL RESOURCES**

| Site CA-[a] | Description | Condition | Prior Testing | Current Testing | CEQA/Section 106 Eligibility Recommendation |
|---|---|---|---|---|---|
| ORA-148 | Shell scatter | Destroyed | Van Horn (1982) | None | Not eligible |
| ORA-839 | Minor residential base | Good | Van Horn (1980) | 8 Control Units | **Eligible** |
| ORA-843 | Shell scatter | Poor | Van Horn (1982) | 8 STPs[b] | Not eligible |
| ORA-844 | Minor residential base | Locus A: Satisfactory Locus B: Poor | No | 1 Control Unit; 10 STPs | **Eligible (Locus B)** |
| ORA-845 | Shell scatter | Poor | Van Horn (1982) | 10 STPs[b] | Not eligible |
| ORA-906 | Major residential base | Good | No | 1 Control Unit | **Eligible** |
| ORA- 1599 | Lithic scatter | Poor | No | 6 STPs[b] | Not eligible |
| ORA-1600 | Lithic scatter | Poor | No | 7 STPs[b] | Not eligible |
| ORA-1601H | Trash scatter | Poor | No | 2 STPs[b] | Not eligible |
| ORA-1602H | Trash scatter | Poor | No | 1 STP[b] | Not eligible |
| ORA-1610H | Gun emplacement | Destroyed | No | None | Not eligible |

[a] CA-ORA-___: California-Orange County-site number
[b] STP: Shovel Test Pit. An approximately 40-cm by 40-cm hand-excavated unit used to detect presence/absence of resources.

Mr. Maxon visited the Project site on May 13, 2009, to evaluate existing conditions. BonTerra Consulting completed a Phase II archaeological test excavation and evaluation of the following archaeological sites on the Project site from May 27 through June 26, 2009: CA-ORA-148, CA-ORA-839, CA-ORA-843, CA-ORA-844, CA-ORA-845, CA-ORA-906, CA-ORA-1599, CA-ORA-1600, CA-ORA-1601H, CA-ORA-1602H, and CA-ORA-1610H.

A brief description of each site and a determination of eligibility for the NRHP are provided. As previously addressed, most resources deemed eligible for the NRHP would be considered eligible for the CRHR. Final determinations are made by the SHPO.

***CA-ORA-148:*** The site was first recorded in the South Central Coastal Information System (SCCIC) at the California State University, Fullerton in 1964 by McKinney; however, Van Horn notes the site was claimed to have been first noted or recorded by Strand in 1935. Hall revisited the site in 1979 and did not find any evidence of a midden or subsurface deposits. Van Horn tested the site in 1982 and excavated 19 postholes between 15 and 100 cm deep, which were analyzed for artifacts, pH tested (a measure of the soil's acidity or basicity), and examined for soil color. While pH testing suggested a one-time midden deposit, the results of the LSA study warranted neither avoidance nor further mitigation. Drover and Smith (1999) found no evidence of shellfish or midden and believed the site had been severely impacted both by oil pads and later by closure of the pads and cleaning of the area. Drover and Smith further contended that

the surface topsoil consisted of exposed bedrock formations and recommended no further work at the site.

The site was visited during the current study, and conditions are the same as reported by LSA (2008) and Drover and Smith (1999). No work was undertaken by BonTerra Consulting because the site was destroyed by earlier oilfield operation activities. The site does not possess the integrity or distinction to warrant listing in the NRHP or CRHR as a historical resource, nor does it meet the criteria for a unique archaeological resource.

***CA-ORA-839:*** One of the earliest archaeological sites recorded for the property, CA-ORA-839, has been subject to the most archaeological investigations (see BonTerra Consulting 2009a for detailed references). This site, originally recorded by Hall (1975), was considered in 1980 because a new well location was planned. The proposed well site coincided with Locus B of CA-ORA-839, requiring investigation by Van Horn. Van Horn's investigations were not an archaeological test of the entire site (CA-ORA-839), but of a single "locus" of the site resulting from prior oilfield operation activities. In spite of apparent surface disturbances, Van Horn's efforts included approximately 23 square meters of excavation. These excavations included 1-m x 1-m units, and expanded units were used to expose larger cultural features. Van Horn's work not only verified subsurface materials but resulted in the discovery of multiple stratigraphic components to the site (discussed below). These observations warranted recommendation for further evaluation as well as the avoidance of Locus B and the other site loci by fencing each location.

BonTerra Consulting excavated two 1-m x 1-m control excavation units each for Loci A, B, and C, while Loci D and E were limited to one 1-m x 1-m control unit each (due to topographical constraints). Locus E had not been mentioned in Van Horn's work (1980), nor was it relocated by Drover and Smith (1999) or LSA (2008). Van Horn noted Locus E in his 1982 document, which indicates it was recorded as a result of his later survey work. A map received from Archaeological Associates indicated the location of Locus E at the base of the mesa upon which CA-ORA-839 exists. This locus was not tested, and its relationship to CA-ORA-839 (other than proximity) was not clear.

The present test results agree with Van Horn's general findings of 1980. A feature was encountered in the 30- to 40-cm level of Unit 1, Locus C of CA-ORA-839. The feature contained well-associated shell with a Carbon 14 ($^{14}$C) date of 3960 +/- 80 YBP (Beta-261339 MS3-late Millingstone Horizon/Early Intermediate), from a unit which extended to a depth of 70 to 80 cm. Based on observations made at CA-ORA-839 and based on topography, soil color and $^{14}$C dates, the site may have multiple chronological components (vertical and spatial). The existing $^{14}$C date from the site indicates the likelihood for an Intermediate Period and Milling Stone Period occupation. While the existence of a "Pre-Milling Stone Period" is unknown, the likelihood of an upper, Late Prehistoric occupation is possible. Local sites with two or three occupation components are relatively rare and are significant.

Mason and Peterson believe that CA-ORA-839 appears to be a Minor Residential Base. To a limited degree, male and female activities, food procurement, and food-processing activities all seem to have occurred at the site. While trade items (obsidian) and socio-ideological items (beads) are represented at the site, their limited quantities may reflect a limited duration of occupation. Given the limited regional knowledge of the occupation and habitat of the area, CA-ORA-839 can provide unique chronological and subsistence information and change about two or possibly three prehistoric cultural periods. The site does possess the integrity and distinction to warrant listing in the NRHP or CRHR as a historical and/or unique resource.

***CA-ORA-843:*** This was once likely a large site (approximately three acres) on a prominent point on the bluff overlooking what is now the referred to as Newport Shores. Due to the degree to which the site has been impacted by oilfield operations, the exact location and integrity of the site has been difficult to ascertain. The site was first recorded by Hall (1975), independently by Murray in 1979, and updated by Drover and Smith in 1999. The lack of specific records information regarding the location of the prior testing by Van Horn (1982) at the SCCIC combined with a scarcity of observable midden or artifacts hampered the understanding of the site's status. Van Horn tested CA-ORA-843 with postholes and found the site to be significant.

The only cultural data recovered by BonTerra Consulting from the 8 STPs excavated during the current effort were 15 pieces of shell: 7 from 0 to 20 cm, 5 from 20 to 40 cm, and 3 from 40 to 60 cm. Shell species include 1 *Chione californiensis,* 2 *Chione undatella,* 9 *Chione* spp., 2 *Argopecten,* and 1 *Astrea undosa.* The small area that produced these few specimens was highly disturbed by oilfield operations, intrusive phone poles, trash, and erosion. CA-ORA-843 lacks any vertical or horizontal integrity and has no representative data to address relevant research questions. The site does not possess the integrity or distinction to warrant listing in the NRHP or CRHR as a historical resource, nor does it meet the criteria for a unique archaeological resource.

***CA-ORA-844:*** This site was originally identified by Hall (1975), but formally recorded in the SCCIC by Murray in 1979. CA-ORA-844 was not tested by Van Horn in 1982, but was determined to be worthy of testing. Locus A, described as being 40 feet by 60 feet in size, was completely covered by ice plant and had undulating topography suggestive of disturbance. The site was noted to have a locus on either side of a road (the main road from the bluff top to the oilfields), but subsequent archaeological surveys did not mention nor relocate Locus B. However, with consideration primarily for Locus A, both Drover and Smith (1999) and LSA (2008) recommended testing.

Initial testing undertaken at both loci for the current study consisted of STPs. Those excavated at Locus A consisted of seven units laid out on the compass axes, three oriented north-south and four oriented on the longer east-west axis. Only three STPs were laid out on a north-south axis at Locus B due to the limited amount of undisturbed (not eroded) terrain. Locus B is located approximately 80 meters north of Locus A on a slightly elevated hillside with severe erosional cuts. While Van Horn speculated that the two loci may have at one time been connected or contemporary components of one another, no evidence of this was observed.

Locus A produced a limited amount of shell (primarily from STPs 3, 4, 5, and 6) in the western half of the grid nearest the road intersection. Of the 4 STPs noted above, all produced limited shell in the 40- to 60-cm level; however, STPs 5 and 6 produced shell in the 60- to 80-cm level. The total shell count from all STPs was 36. The shell recovery was sparse, and no other prehistoric cultural materials were recovered with the exception of a single, fire-cracked rock. Given the undulating surface of this portion of the site (+/- 3 to 4 feet), the recovery of historic material, the size of the deposit, and sparsity of the shell, the ability of Locus A to yield information important in prehistory is highly doubtful. Since it is recommended that Locus B qualifies in its ability to yield important prehistoric data, a control unit excavated at Locus A may provide an adequate radiocarbon sample to determine the contemporaneity of Loci A and B.

Of the 3 STPs excavated at Locus B, STP 1 produced cultural materials and soil integrity to a depth of 60 cm, suggesting the need for the excavation of a Control Unit. The control produced three data classes: shell, lithics and bone, with shell being the largest. Shell represented from Control Unit 1 consisted of a non-repeating element (NRE) count of 443, which is very dense given the unit was only excavated to the depth of 60 cm. (The cubic meter density for shellfish

NRE is 404 cubic meters.) The diversity of Taxa, or "richness", in such a small sample is promising in the reconstruction of the habitat and food procurement strategies. The lithic material in the unit amounted to seven specimens of lithic debitage (flakes). Faunal material from the unit included six small mammal bones and one shark centrum. Radiocarbon dating was not conducted.

Based on the data retrieved it is not possible to reconstruct the site type; however, the shell density and species frequency suggest the site was a Minor Residential Base. The remaining portion of the site has the capability to at least address the temporal setting of the site and its subsistence patterns. It is possible that other recovered data classes may contribute to other important questions. Given the limited regional knowledge of the occupation and habitat of the area, CA-ORA-844, Locus B may yet yield information important in prehistory. Therefore, the site does possess the integrity and distinction to warrant listing in the NRHP or CRHR as a historical resource. It does not meet the standards of a unique archaeological resource.

***CA-ORA-845:*** This site was originally identified by Hall (1975), but was formally first recorded in the SCCIC by Murray in 1979. Hall originally described the site as consisting of dark soil, fire-cracked rock, and shellfish that covered an area of 50m x 150m; Hall noted that only 20 percent of the site remained intact. Van Horn conducted an archaeological test at this site in 1981 that consisted of four Control Units and a series of postholes on the compass axis. Van Horn's results stated that "…no significant deposit is present at this site". Van Horn also noted that the site area had been heavily impacted. No subsequent archaeological survey has been able to relocate the site.

Because occasional shell appeared on the surface of one of the two loci shown on the site record, ten STPs were distributed and excavated in areas where either soil color or topography indicated non-sterile (less disturbed) soil conditions. It appeared topographically that the once "top" of the site may have, as in many other areas, been graded and soil removed.

Of the ten STPs (eight on the lower, larger mapped locus and two on the upper, smaller locus), the only material recovered was shell from the lower locus. The deepest STP went to 60 cm. The total NRE for shell recovered from all of the 8 lower STPs was 25 (8 *Chione californiensis;* 12 *Ostrea lurida;* and 5 *Chione* spp.). No other cultural material was recovered. Due to the impact to this area, findings are in agreement with Van Horn (1982) that the site no longer exists and lacks any physical integrity. Therefore, the site does not possess the integrity or distinction to warrant listing in the NRHP or CRHR as a historical resource, nor does it meet the criteria for a unique archaeological resource.

***CA-ORA-906:*** This archaeological site is located at the base of the bluff below CA-ORA-839 Locus D. It was recorded by Van Horn and Murray in 1980. This site could not be relocated by Drover and Smith (1999) or LSA (2008). Drover and Smith recommended that the site be relocated (1999), and LSA (2008) recommended that the site undergo STP/Unit testing. The site was located in dense foliage under a slump in the road at the base of the bluff below CA-ORA-839. A 1-m x 1-m control unit was opened into the profile. Excavated in 10-cm levels, the first 80 to 90 cm (above the present road level) were sterile. At approximately 100 cm deep (from the present road level or standing surface), dense shell began to appear and continued to a depth of approximately 200 cm. It cannot be estimated at this time how much of the site remains intact because (1) the site has been heavily disturbed by oilfield roads; (2) has been partially buried by slumping from the hill above; and (3) is obscured by dense vegetation.

Radiocarbon samples were submitted for the upper level (100–110 cm) and the lowest level (180–200 cm) of the dense deposit. The dates respectively are 1330 +/- 70 YBP (Beta

261340-LP1 Late Prehistoric), with a basal date of 2340+/- 80 YBP (Beta 261341-LP1 Late Prehistoric).

A sample projection for shellfish density is a cubic meter with an NRE of 4,470 cubic meters. Such a density is ten times that of CA-ORA-839. Given the density of the shell and the size of shell specimens in the midden, the focus on two primary species, *Ostrea* sp. and *Argopecten* sp., is potentially significant. Only three artifacts recovered from the midden indicate Native American presence. A small shell fragment (possibly Haliotis) caked with asphaltum was recovered (#906-84), as was a small, circular shell bead (#906-29) and a utilized mammalian bone (possibly a shellfish pry) (#906-48).

The site represents a third chronological period on the property, the Late Prehistoric. Little is known about the prehistoric use of the mouth of the Santa Ana River and its estuary; therefore, the data from this site could easily contribute to research questions regarding chronology and subsistence and settlement patterns. The site does possess the integrity and distinction to warrant listing in the NRHP or CRHR as a historical resource but does not meet the criteria for a unique archaeological resource.

***CA-ORA-1599:*** This site was recorded in 1990 as part of the fieldwork associated with Phase I survey activities associated with the Project. The site was recorded as a widely scattered, sparse lithic scatter with two pieces of quartz shatter, one quartz flake, one quartz thinning flake, four chert thinning flakes, and one retouched/utilized chert scraper or core within an area measuring 50 m x 10 m. The site was located along a north-south oiled road (leading to pump No. 340), and was parallel to the western side of the old road cut at the southern end of Banning Ranch. Upon revisiting the site, LSA found no prehistoric lithics but identified some historic glass and transfer ware porcelain (2008:60). The present test efforts did also observe the historic glass and several shell fragments in the area intended for STPs; however, no lithic specimens were observed. The area has been impacted by oilfield operations. It is difficult to determine the depth of any original cultural deposit.

Very limited cultural material was derived from the three STPs at CA-ORA-1599, and included several species of shell mixed with modern materials. Therefore, the lack of cultural material, evidence of mixing with historic material, and obvious topographic disturbance leaves little to no value in these specimens.

The poor physical integrity of this site and resulting lack of cultural data available renders it impossible to provide any of the data requirements to address important regional research questions. The site, therefore, does not possess the integrity or distinction to warrant listing in the NRHP or CRHR as a historical resource, nor does it meet the criteria for a unique archaeological resource.

***CA-ORA-1600:*** This site was recorded in 1990 by Smith et al. as part of the fieldwork associated with the Project's Phase I survey activities. The site consisted of diffuse lithic scatter containing two pieces of quartz shatter, one quartz flake, two quartz thinning flakes, three chert flakes, and one retouched utilized chert core/scraper within an area of 25 m x 10 m. LSA's revisit to the site in 2008 noted one small milky quartz flake and one large (four- to five-cm-thick) secondary core reduction flake made of a brownish quartzite. Some shell was also observed in small quantities.

All seven of the STPs excavated in the mapped location of this site returned negative cultural material. The lack of cultural material, evidence of surface historic material, and obvious appearance of topographic disturbance leaves little to no value in these specimens. The site,

therefore, does not possess the integrity or distinction to warrant listing in the NRHP or CRHR as a historical resource, nor does it meet the criteria for a unique archaeological resource.

***CA-ORA-1601H:*** This site was previously recorded as "partially buried trash scatter eroding out of the roadway entering the pad from the south". Strudwick and Goodwin (2008) report the site in much the same condition as originally recorded by Drover and Smith (1999). The site was relocated during the current field check, and a few fragments of historic material, chiefly bottle glass, were noted.

BonTerra Consulting's field check revealed that the site was in much the same condition as reported by Strudwick and Goodwin (2008). BonTerra Consulting Archaeologists note that the site lies on the edge of a highly eroded, graded Upland flat which, upon surface inspection, has four artifacts associated with the early 20th Century. In addition to surface inspection, STPs were excavated at the site at three-meter intervals, resulting in no positive tests or evidence of subsurface deposits within an area measuring approximately ten meters in diameter. No intact cultural lenses or structural remains were present. Material recovered included one milk glass cold cream jar, two amethyst glass bottle finishes, and one aqua glass bottle base. The site does not possess the integrity or distinction to warrant listing in the NRHP or CRHR as a historical resource, nor does it meet the criteria for a unique archaeological resource.

***CA-ORA-1602H:*** This site was previously recorded as a "partially buried historic trash dump eroding out of the southwest facing wall of a moderately wide steep-walled drainage". This deposit was relocated and appeared in the same manner to BonTerra Consulting Archaeologists.

As recorded by BonTerra Consulting, the site lies on the slope of a highly eroded, graded Upland mesa which, upon surface inspection, yielded 49 artifacts associated with the late 19th and 20th Centuries. In addition to surface inspection, one STP was dug, resulting in one positive test. Subsurface artifacts were encountered at 0 to 80 cm below the surface. Two dark amber ("black glass") bottle bases with pontil scars represent the middle to late 19th Century, while the remainder of the assemblage is dominated by ceramic and glass bottle fragments from the early 20th Century. Building material, including nails, brick fragments and window glass, were recovered. Charcoal, ash, and fire-affected artifacts were present at 60 to 80 cm, representing a discrete cultural lens within the site. No other area proved to be culturally intact.

Materials recovered include 11 amethyst glass shards; 14 aqua glass shards; 21 amber glass shards; 66 clear glass shards; 2 milk glass shards; 1 cobalt glass shard; 2 green glass shards; 8 olive glass shards; 35 white ware/ironstone sherds (pottery fragments); 10 porcelain sherds; 6 salt glazed stoneware sherds; 1 earthenware sherd; 10 mammal bones; 31 miscellaneous building materials; 55 miscellaneous metals; and 1 glass faux pearl hatpin mount. The site does not possess the integrity or distinction to warrant listing in the NRHP or CRHR as a historical resource, nor does it meet the criteria for a unique archaeological resource.

***CA-ORA-1610H:*** This site was previously recorded as the location of a World War II gun emplacement. This site's recorded location is on the mesa top directly above sites CA-ORA-1601H and CA-ORA-1602H, which are included in the site record as separate loci of the overall site. It was previously assumed to be entirely destroyed.

Field reconnaissance of the site by BonTerra Consulting strongly suggests that this was indeed the location of the World War II gun emplacement. Found in a small arroyo adjacent to the site are the remnants of an omega-shaped concrete anchor used to hold the gun in place and still embedded in a larger concrete slab. However, a comparison of current and historic maps and

photographs shows that up to 20 feet of the top of the mesa that supported the gun, as well as the entire northern and southern portions of the mesa itself, have been removed. This likely occurred during oil extraction operations. Therefore, there is little chance that any of the gun emplacement and associated trenches and ammunition storage spaces remain at the site. The site does not possess the integrity or distinction to warrant listing in the NRHP or CRHR as a historical resource, nor does it meet the criteria for a unique archaeological resource.

**Historic Resources**

A site visit and pedestrian-level inspection of the historic resources on the Project site was performed on June 29, 2009 (Daly 2009). Rick Swearingen, the Field Supervisor for the West Newport Oil Company and 30-year employee at the site, accompanied the investigator describing the various buildings and structures spread over the 400 acres. Mr. Swearingen was also able to assist in dating the various buildings which he said were constructed from the 1960s and later. Mr. Swearingen stated that all early pumping machinery and equipment has been removed from the site and that the current pumps began arriving at the site in the 1970s. He also stated that the only structures that may date from before 1960 are the temporary field structures known as "dog houses". These small, metal, multi-purpose structures can be easily moved and have served a number of purposes on the oilfield over the years.

Eight structures were evaluated and are described below.

***Building 1:*** The Crew Quarters building is used to provide field staff with changing rooms, showers, lockers, and room for meetings and taking meals.

***Building 2:*** A "dog house" is a small, movable structure used for any purpose from small field offices to supplies and equipment storage.

***Building 3:*** The Air Compressor Plant was used from the 1960s to the mid-1980s to house the air compressor operations.

***Building 4:*** The electrical substation was used to step-down the electrical power for the West Newport Oil Company operations. There is a small shed built on skids and a "dog house" located in close vicinity to the electrical substation.

***Building 5:*** A ranch-style house currently used for the offices of the West Newport Oil Company.

***Building 6:*** The Tank Farm and associated oil recovery equipment used by the West Newport Oil Company.

***Building 7:*** The Vehicle Maintenance shed, a large metal-clad building, was used for repair and maintenance of the various motor vehicles used on the site.

***Building 8:*** A pole-framed structure was used to cover the equipment that supports the booster air system.

Under NRHP Criterion (a) or CRHR Criterion (A) relating to the Project site's association with significant historical events that exemplify broad patterns of our history, the subject property does not qualify as a significant resource. There is no evidence of the activities of the early rancho period, or of the period when the land had been used for agricultural purposes and owned by Mary Hollister Banning and her heirs. The development of the Project site acreage of

Mary Hollister Banning's original 4,077 acres of the Rancho Santiago de Santa Ana as an area of oil exploration and pumping operations occurred on a large scale starting in the 1960s. There have been no significant events relating to the oil industry on a regional or national level at this site.

Under NRHP Criterion (b) or CRHR Criterion (B) relating to the Project site's association with persons of historic importance, the Project site and its collection of buildings do not qualify as significant resources. Research has not revealed any direct association between the Project site and persons important either regionally or nationally. The land has been used for grazing, the growing of crops, and oil exploration. There are no buildings or structures on the site that appear to date from before 1960.

Under NRHP Criterion (c) or CRHR Criterion (C) relating to the distinctive characteristics of a type, period, region or method of construction, the buildings, structures, and related oil industry features are not significant as they do not embody any distinctive style, high artistic design, or method of construction. The house that now holds the West Newport Oil Company's office operations was not constructed by a known architect, nor was it designed in an exceptional architectural style. The buildings, structures, and equipment used by the oil pumping operations are purely functional in design and do not have any architectural or engineering merit.

In summation, the Project site and buildings and structures on the site are not eligible for listing on the NRHP or the CRHR as significant historic resources since they do not meet any of the criteria necessary for listing in the registries.

## Paleontological Resources

BonTerra Consulting conducted a Phase II paleontological study, which consisted of a records search, literature review, and limited field reconnaissance in order to evaluate the sensitivity of the substrate underlying the proposed development for the presence of fossil resources and to make recommendations to mitigate the effects of the Project on those resources.

The Phase II study established that three lithologic units underlying the proposed development have been mapped. These units are all relatively young (i.e., late Pleistocene to Holocene in age) and consist of Quaternary San Pedro Sand, Quaternary Palos Verdes Sand (Qpv), and Quaternary younger alluvium (Qa). The records search of the paleontological collections of the LACM, Departments of Vertebrate Paleontology and Invertebrate Paleontology revealed the presence of previously recorded fossil sites in two mapped units underlying the Project site. As identified on Table 4.13-2, the San Pedro Sand and Palos Verdes Sand are considered to have high paleontological sensitivity, while the younger alluvium is of low paleontological sensitivity.

**TABLE 4.13-2**
**PALEONTOLOGICAL SENSITIVITY OF THE LITHOLOGIC UNITS UNDERLYING THE PROJECT SITE**

| Lithologic Unit | Sensitivity |
|---|---|
| Quaternary younger alluvium | Low |
| Quaternary Marine Terrace Deposits (includes "Palos Verdes Sand") | High |
| Quaternary San Pedro Sand | High |

## 4.13.5 PROJECT DESIGN FEATURES AND STANDARD CONDITIONS

### Project Design Features

No project design features have been identified by the Applicant.

### Standard Conditions and Requirements

**SC 4.13-1** In accordance with Section 7050.5 of the *California Health and Safety Code*, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are or are believed to be Native American, s/he shall notify the Native American Heritage Commission (NAHC) in Sacramento within 24 hours. In accordance with Section 5097.98 of the *California Public Resources Code*, the NAHC must immediately notify those persons it believes to be the most likely descended from the deceased Native American. The descendents shall complete their inspection within 48 hours of being granted access to the site. The designated Native American representative would then determine, in consultation with the property owner(s), the disposition of the human remains.

## 4.13.6 THRESHOLDS OF SIGNIFICANCE

The following significance criteria are derived from the City's Environmental Checklist. The Project would result in a significant impact related to cultural resources if it would:

**Threshold 4.13-1** Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5.

**Threshold 4.13-2** Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

**Threshold 4.13-3** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

**Threshold 4.13-4** Disturb any human remains, including those interred outside of formal cemeteries.

**Threshold 4.13-5** Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.

## 4.13.7 ENVIRONMENTAL IMPACTS

### *Threshold 4.13-1 Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?*

Section 15064.5(c)(1) of the State CEQA Guidelines provides criteria for the determination of significance of impacts to both archaeological and historical resources. The following analysis

addresses potential significant impacts to built-environment historical resources. Potential impacts to archaeological resources, including archeological resources that meet the CEQA definition of an historical resource, are addressed under Threshold 4.13-2. The historical resources (eight buildings and their adjacent elements) of the Newport Banning Ranch site were formally evaluated as part of this proposed Project. None were found to be eligible for listing in the CRHR or the NRHP. The Project would not impact any known significant historical resources. Although no impacts are anticipated to historical resources, Mitigation Measure (MM) 4.13-1 requires that an archaeologist monitor grading and excavation activities. The archaeologist would have the ability to temporarily halt or redirect work to permit the sampling, identification, and evaluation of the artifacts and resources, as appropriate. If resources are found to be significant, the archaeologist would determine appropriate actions, in cooperation with the City and Applicant/Contractor.

***Impact Summary:*** ***Less Than Significant With Mitigation.*** The Project would not impact any known historical resources. However, grading and excavation could impact unknown historical resources. This impact would be mitigated to a level considered less than significant with implementation of Mitigation Measure (MM) 4.13-1.

***Threshold 4.13-2 Would the project cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?***

Evaluation of 11 archaeological sites on the Newport Banning Ranch property resulted in a finding that 3 of the sites (CA-ORA-839, CA-ORA-844B, and CA-ORA-906) are deemed eligible for listing in CRHR and the NRHP as historical resources. Only one (CA-ORA-839) qualifies as a unique archaeological resource.

The proposed construction of North Bluff Road would extend north into the vicinity of CA-ORA-839. North Bluff Road would be constructed along the bottom of and to the west of the bluffs, while the site lies on the bluff top to the east. Therefore, CA-ORA-839 would not be directly impacted as a result of the proposed Project. In the event that North Bluff Road is not constructed north of 17$^{th}$ Street, no direct impacts to CA-ORA-839 are anticipated. However, the planned removal of oilfield-related infrastructure prior to grading would adversely impact portions of the site. The extent of impacts is unclear at this time. All reasonable efforts would be made to ensure minimal impact to the archaeological site during Project grading through the implementation of appropriate mitigation measures. MMs 4.13-1 and 4.13-2 require that data recovery excavations, designed to recover the scientifically consequential information from sites, be focused in those areas that would be disturbed through the removal of oilfield infrastructure. Indirect impacts from increased population on the site as a result of the future development could cause further damage to the site over time. Capping the site with chemically stable soils would help to protect the site in perpetuity.

CA-ORA-844B is located on a hillside transected by two recent erosional cuts that exceed six feet in depth. The western side of the site is absent due to oil pad construction. These factors have left little midden from the original site intact at this location, but a large sample was recovered through the test excavation in 2009. CA-ORA-844B would not be directly impacted as a result of the proposed development; the construction of North Bluff Road would be approximately 400 feet east of the archaeological site. However, oil infrastructure removal activities prior to grading could adversely impact portions of the site; indirect impacts from additional erosion of the unstable surface and the increased population on the site as a result of the future development could cause further damage over time. Mitigation of the Project's adverse effects is required.

CA-ORA-906 would be directly impacted as a result of the proposed development as well as by oilfield infrastructure removal. The construction of North Bluff Road would impact the site as the road travels along the bottom and to the west of the bluffs. Road construction would likely completely destroy the site. Therefore, mitigation of the Project's adverse effects is required. MM 4.13-1 requires that an archaeologist monitor grading and excavation activities. The archaeologist would have the ability to temporarily halt or redirect work to permit the sampling, identification, and evaluation of the artifacts and resources, as appropriate. If resources are found to be significant, the archaeologist would determine appropriate actions, in cooperation with the City and Applicant/Contractor. MM 4.13-2 is applicable for the three sites deemed eligible for listing on the CRHR or the NRHP as historical resources. Only CA-ORA-839 is also considered a unique archaeological resource. Mitigation is the same for both types of resources. Mitigation options are provided to avoid, preserve in place, and/or recover data. Impacts to these resources can be mitigated to a less than significant level.

***Impact Summary:*** ***Less Than Significant With Mitigation.*** The Project would impact known archaeological resources. Three archaeological sites (CA-ORA-839, CA-ORA-844B, and CA-ORA-906) are deemed eligible for listing on CRHR and NRHP. Disturbance activities could also impact unknown resources. This impact would be mitigated to a level considered less than significant with implementation of MMs 4.13-1 and 4.13-2.

***Threshold 4.13-3 Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?***

A paleontological study of the Project site established that there are three mapped lithologic units that underlie the proposed development. These units consist of Quaternary San Pedro Sand, Quaternary Palos Verdes Sand (Qpv), and Quaternary younger alluvium (Qa). Fossil sites have been recorded in two mapped units that underlie the site. San Pedro Sand and Palos Verdes Sand are considered to have high paleontological sensitivity, while the Quaternary younger alluvium is of low paleontological sensitivity.

Most properties do not have paleontological resources exposed at the surface, and fossils are usually found during the earth-moving activities as grading exposes the geologic formations. Newport Banning Ranch in many ways is unique; paleontological resources are exposed in natural outcrops, borrow areas, and drainages over most of the site. The first fossils were found in the San Pedro Sand in Orange County. Several shell-bearing horizons were found during the limited field survey. Most of the site had a prominent two-foot-thick shell-bearing horizon in the Quaternary marine terrace deposits (elsewhere called the Palos Verdes Sand), which can be traced from the northern to the southern end of the site. Additionally, there are several shell-bearing horizons below the main shell bed. MM 4.13-3 requires that a qualified paleontologist monitor the grading and excavation activities and conduct salvage excavation as necessary. If any scientifically important large fossil remains are uncovered, the paleontologist would have the authority to divert heavy equipment away from the fossil site. MM 4.13-4 requires a paleontological survey be conducted to record all paleontological resources present at the surface for those portions of the Project site where grading would occur that would affect Quaternary San Pedro Sand and Quaternary Palos Verdes Sand. Significant impacts can be mitigated to a less than significant level.

***Impact Summary:*** ***Less Than Significant With Mitigation.*** Grading activities could impact significant paleontological resources. This impact would be reduced to a level considered less than significant with implementation of MMs 4.13-3 and 4.13-4.

***Threshold 4.13-4*** ***Would the project disturb any human remains, including those interred outside of formal cemeteries?***

There is no indication that there are burials present on the Project site. Native American tribes note that ancestors were often buried in coastal locations and much evidence exists to support this supposition. In the event that human remains are discovered during grading activities, SC 4.13-1, which addresses procedures to follow in the event of a discovery of suspected human remains, would reduce proposed Project impacts to human remains to a less than significant level.

***Impact Summary:*** ***Less Than Significant With Mitigation.*** Grading activities could impact unknown human remains, including those interred outside formal cemeteries. This impact would be less than significant with implementation of SC 4.13-1.

***Threshold 4.13-5*** ***Would the project conflict with any applicable plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?***

Tables 4.13-3 and 4.13-4[4] evaluate the consistency of the proposed Project with the applicable goals and policies of the City's General Plan and the Coastal Act, respectively.

***Impact Summary:*** ***No Impact.*** As identified in Tables 4.13-3 and 4.13-4, the proposed Project would not conflict with any goals or policies of the *City of Newport Beach General Plan* or the Coastal Act related to historic, archaeological, and paleontological resources.

## 4.13.8 MITIGATION PROGRAM

### Project Design Features

No project design features have been identified by the Applicant.

### Standard Conditions and Requirements

SC 4.13-1 which requires that the County Coroner be notified if human remains are found is applicable to the Project.

### Mitigation Measures

#### *Historical Resources*

No mitigation is required for historical resources.

#### *Archaeological Resources*

**MM 4.13-1** Prior to the issuance of the first grading permit and/or action that would permit Project site disturbance, the Applicant/Contractor shall provide written evidence to the City of Newport Beach Community Development Department that the

[4] For ease of reading, the policy tables are located at the end of this EIR section.

Applicant/Contractor has retained a qualified Archaeologist to observe grading activities and to salvage and catalogue archaeological resources, as necessary. The Archaeologist shall be present at the pre-grade conference; shall establish procedures for archaeological resource surveillance; and shall establish, in cooperation with the Applicant/Contractor, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts, as appropriate. If archaeological resources are found to be significant, the Archaeologist shall determine appropriate actions, in cooperation with the City and Applicant/Contractor, for exploration and/or salvage. These actions, as well as final mitigation and disposition of the resources, shall be subject to the approval of the Community Development Director.

Based on their interest and concern about the discovery of cultural resources and human remains during Project grading, a qualified Native American Monitor(s) shall be retained to observe some or all grading activities.

Nothing in this mitigation measure precludes the retention of a single cross-trained observer who is qualified to monitor for both archaeological and paleontological resources.

**MM 4.13-2** The State CEQA Guidelines (14 CCR §15126.4[b][3]) direct public agencies, wherever feasible, to avoid damaging historical resources of an archaeological nature, preferably by preserving the resource(s) in place. Several possibilities suggested by the State CEQA Guidelines include (1) planning construction to avoid the site; (2) incorporating the site into open space; (3) capping the site with a chemically stable soil; and/or (4) deeding the site into a permanent conservation easement.

The following is applicable for the three sites deemed eligible for listing on the CRHR or the NRHP as historical resources. Only CA-ORA-839 is also considered a unique archaeological resource. In this instance, mitigation is the same for both types of resources.

<u>CA-ORA-839</u>

It should be possible to preserve the vast majority of the site in place in perpetuity to avoid further disturbance to it. However, it appears that the planned removal of oilfield infrastructure may impact portions of the site. In that event, the site shall undergo a data recovery excavation of those areas that would be impacted.

*Research Design/Treatment and Mitigation Plan*

A Research Design/Treatment and Mitigation Plan (data recovery plan) shall be prepared by a qualified Archaeologist and approved by the City of Newport Beach Community Development Director prior to any excavation being undertaken. The Plan shall explicitly lay out the methods to be used in the excavation and the scientifically consequential questions that the study will hope to answer;

*Data Recovery*

Data recovery excavation shall be completed prior to Project grading and shall be designed to recover the consequential data present on the site. Data recovery shall be sufficient to collect a representative sample of site constituents, including organic materials, to permit additional absolute dating of the deposit. The study shall include:

a. Excavation of a sufficient number of Control Units and shovel test pits (STPs) to recover a representative sample of site constituents;

b. Laboratory analysis of all recovered materials and creation of a computerized database of artifacts recovered;

c. Completion of a Data Recovery Excavation/Mitigation Report detailing the results of the study; and

d. Curation of excavated cultural material in a museum or other scientifically accredited institution that would make the collections available to future researchers.

*Capping*

In addition, secondary impacts (e.g., increased foot traffic, erosion) could occur at the site after the Project has been constructed; therefore, the site shall be capped with chemically stable soil to preserve it in perpetuity. During grading operations, excess dirt shall be placed on the site to a sufficient depth to protect the deposit, but not cause unintended damage to it. Shallow-rooted vegetation (such as native coastal sage scrub) may be planted on the new surface. To ensure the integrity of the archaeological deposit, the current ground surface shall initially be covered with some form of horizon marker (e.g., by *Mirafi,* a polypropylene geotextile) to prevent the deposit from mixing with the covering material and to serve as a marker of the site if the covering is ever removed. The following relies on guidance provided by the National Park Service's Brief #5 *Intentional Site Burial: A Technique to Protect Against Natural or Mechanical Loss* (NPS 1989, revised 1991).

The capping program must include submittal to the Community Development Department of a Site Capping Plan that includes:

a. An evaluation by a qualified Archaeologist of the classes of archaeological components to be preserved and their suitability for preservation;

b. An analysis by a qualified Soils Scientist of the pH levels, compression strength, and permeability of the horizon marker and capping material to be used to ensure they fit the preservation needs of the site's constituents;

c. Formulation of a plan by a qualified Civil/Structural Engineer that details how the cap would be physically constructed to ensure that (1) hydraulic changes over time, (2) erosion, and (3) the physical placement of the cap itself do not adversely impact the deposit;

d. Archaeological monitoring during placement of the capping material;

e. A Revegetation Plan, prepared by a qualified Biologist/Restoration Specialist, that is designed to help stabilize the new land surface and to prevent future erosion at the cap surface;

f. A plan of future monitoring of the site to ensure the long-term success of the capping program; and

g. A report detailing the results of the capping effort.

CA-ORA-844 Locus B

CA-ORA-844B is not expected to be directly impacted by development. Oil infrastructure removal activities that would occur prior to grading are expected to adversely impact portions of the site. Indirect impacts from additional erosion of the unstable surface and increased population in the vicinity of the site as a result of the future development could cause further damage over time.

Both capping and data recovery excavation are viable options for treating the site; however, because it has been disturbed by erosion and oil extraction activities, capping the deposit would be difficult and possibly more expensive and time consuming and may produce less desirable results than data recovery excavation. Considering these circumstances, two options are provided: (1) successful capping of the site, while likely difficult to accomplish, would be designed to protect the site in perpetuity or, preferably, (2) data recovery shall be undertaken prior to grading to collect the scientifically consequential data that is present in the site since it appears that only a small, yet important, portion of the site remains. Because of the limited size of this site, this option would enable the removal and analysis of the site in its entirety.

Capping the deposit or data recovery would result in temporary impacts to approximately 0.92 acre of coastal sage scrub (0.29 acre of encelia scrub and 0.63 acre of cactus scrub). The Mitigation Program set forth in Section 4.6, Biological Resources, addresses this impact.

*Capping*

If option 1 is chosen, the site shall be capped with chemically stable soil to preserve it in perpetuity. During grading operations, excess dirt shall be placed on the site to a sufficient depth to protect the deposit, but not cause unintended damage to it. Shallow-rooted vegetation (such as native coastal sage scrub) may be planted on the new surface. To ensure the integrity of the archaeological deposit, the current ground surface shall initially be covered with some form of horizon marker (e.g., by *Mirafi,* a polypropylene geotextile) to prevent the deposit from mixing with the covering material and to serve as a marker of the site if the covering is ever removed. The following relies on guidance provided by the National Park Service's Brief #5 *Intentional Site Burial: A Technique to Protect Against Natural or Mechanical Loss* (NPS 1989, revised 1991).

The capping program must include submittal to the Community Development Department of a Site Capping Plan that includes:

a. An evaluation by a qualified Archaeologist of the classes of archaeological components to be preserved and their suitability for preservation;

b. An analysis by a qualified Soils Scientist of the pH levels, compression strength, and permeability of the horizon marker and capping material to be used to ensure they fit the preservation needs of the site's constituents;

c. Formulation of a plan by a qualified Civil/Structural Engineer that details how the cap would be physically constructed to ensure that (1) hydraulic changes over time, (2) erosion, and (3) the physical placement of the cap itself do not adversely impact the deposit;

d. Archaeological monitoring during placement of the capping material;

e. A Revegetation Plan, prepared by a qualified Biologist/Restoration Specialist, that is designed to help stabilize the new land surface and to prevent future erosion at the cap surface;

f. A plan of future monitoring of the site to ensure the long-term success of the capping program; and

g. A report detailing the results of the capping effort.

*Data Recovery*

If option 2 is selected, data recovery excavation at CA-ORA-844B shall be completed prior to Project grading and shall be designed to recover the consequential data present in the site and to remove site constituents. The study shall include:

a. Development of a Research Design/Treatment and Mitigation Plan to explicitly lay out the methods to be used in the excavation and the scientifically consequential questions that the study will hope to answer.

b. Excavation of a sufficient number of Control Units and STPs to recover a representative sample of site constituents.

c. Controlled demolition/removal of the site by a small scraper under the direction of a qualified Archaeologist to ensure the removal of all midden and other cultural constituents of the site. Controlled demolition permits the discovery and recovery of larger features not typically found during hand excavation and reduces the number of hand-excavated control units necessary.

d. Laboratory analysis of all recovered materials and creation of a computerized database of artifacts recovered.

e. Completion of a Data Recovery Excavation/Mitigation Report detailing the results of the study.

f. Curation of excavated cultural material in a museum or other scientifically accredited institution that would make the collections available to future researchers.

CA-ORA-906

CA-ORA-906 would be directly impacted as a result of development as well as oil infrastructure removal. Data recovery excavation at the site shall be completed prior to Project grading and shall be designed to recover the consequential data present in the site and to remove the site constituents. Mitigation shall be in the form of data recovery excavation to collect the scientifically consequential data that the site retains prior to its destruction by Project grading. The study shall include:

a. Development of a Research Design/Treatment and Mitigation Plan to explicitly lay out the methods to be used in the excavation and the scientifically consequential questions that the study will hope to answer.

b. Excavation of a sufficient number of Control Units and STPs to recover a representative sample of site constituents.

c. Controlled demolition/removal of the site by a small scraper under the direction of a qualified Archaeologist to ensure the removal of all midden and other cultural constituents of the site. Controlled demolition permits the discovery and recovery of larger features not typically found during hand excavation and reduces the number of hand-excavated control units necessary.

d. Laboratory analysis of all recovered materials and creation of a computerized database of artifacts recovered.

e. Completion of a data recovery excavation/mitigation report detailing the results of the study.

f. Curation of excavated cultural material in a museum or other scientifically accredited institution that would make the collections available to future researchers.

***Paleontological Resources***

**MM 4.13-3** Prior to the issuance of the first grading permit and/or action that would permit Project site disturbance, the Applicant/Contractor shall provide written evidence to the City of Newport Beach Community Development Department that the Applicant/Contractor has retained a qualified Paleontologist to observe grading activities and to conduct salvage excavation of paleontological resources as necessary. The Paleontologist shall be present at the pre-grading conference; shall establish procedures for paleontological resources surveillance; and shall establish, in cooperation with the City, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the fossils as appropriate.

Any earth-moving activity associated with development, slope modification, or slope stabilization that requires moving large volumes of earth shall be monitored according to the paleontological sensitivity of the rock units that underlie the affected area. All vertebrate fossils and representative samples of megainvertebrates and plant fossils shall be collected. Productive sites that yield

vertebrates should be excavated, and approximately 2,000 pounds (lbs) of rock samples should be collected to be processed for microvertebrate fossil remains.

If any scientifically important large fossil remains are uncovered during earth-moving activities, the Paleontologist shall divert heavy equipment away from the fossil site until s/he has had an opportunity to examine the remains. If warranted, a rock sample shall be collected for processing. The Paleontologist shall be equipped to rapidly remove fossil remains and/or matrix (earth), and thus reduce the potential for any construction delays.

If scientifically important fossil remains are observed and if safety restrictions permit, the Construction Contractor shall allow the Paleontologist to safely salvage the discovery. At the Paleontologist's discretion, the Grading Contractor may assist in the removal of the fossil remains and rock sample to reduce any construction delays.

All fossils shall be documented in a detailed Paleontological Resource Impact Mitigation Report. Fossils recovered from the field or by processing shall be prepared; identified; and, along with accompanying field notes, maps and photographs, accessioned into the collections of a designated, accredited museum such as the Natural History Museum of Los Angeles County (LACM) or the San Diego Natural History Museum.

Because of slope modification, fossil-bearing exposures of the Quaternary marine deposits may be destroyed. If feasible, a few stratigraphic sections with fossil-bearing horizons shall be preserved for educational and scientific purposes.

**MM 4.13-4** Prior to the issuance of the first grading permit and/or action that would allow for Project site disturbance, a paleontological survey shall be conducted to record all paleontological resources present at the surface for those portions of the Project site where grading would occur that would affect Quaternary San Pedro Sand and Quaternary Palos Verdes Sand. A qualified Paleontologist shall make collections of exposed fossils from lithologic units of high paleontologic significance, especially in areas where access to fossil sites is not permitted because of slope modification. All vertebrate and representative samples of megainvertebrates and plant fossils shall be collected. Productive sites yielding vertebrates should be excavated, and approximately 2,000 lbs of rock samples shall be collected to process for microvertebrate fossil remains. Dry screening of fossil marine shell horizons in the Quaternary terrace deposits and San Pedro Sand with ⅛-inch archaeological field screens shall be conducted to recover rare types of fossil marine mollusks, bony fish, sharks, reptiles, birds, and marine and terrestrial mammals. All fossil sites shall be tied to detailed measured sections showing sedimentary structures and relationships with over- and underlying rock units.

a. For San Pedro Sand, prior to the issuance of the first grading permit and/or action that would permit Project site disturbance, a qualified Paleontologist shall prepare a detailed mitigation plan to sample the existing paleontological sites that would be affected by slope modification. The plan shall be developed in consultation with a local museum (e.g., the LACM or the San Diego Natural History Museum) in order to describe the size of the sample,

methods of collection and processing, stratigraphic information, and other pertinent information. A bulk sample of at least 100 lbs per fossil site shall be processed through fine screens, and all identifiable fossils shall be sorted from the concentrate. Detailed measured geologic sections placing the fossil sites in a stratigraphic sequence must be made. Bulk sampling that is collected from matrix or sediment to recover rare invertebrates, marine vertebrates, and terrestrial vertebrates must also be part of the mitigation plan.

b. For Quaternary marine terrace deposits (Palos Verdes Sand), prior to the issuance of the first grading permit and/or action that would permit Project site disturbance, a detailed mitigation plan must be developed to sample the existing paleontological sites that would be affected by slope modification. This shall be conducted in consultation with a local museum (e.g., the LACM or the San Diego Natural History Museum) to describe the size of the sample, methods of collection and processing, stratigraphic information, and other pertinent information. A bulk sample of at least 100 lbs per fossil site shall be processed through fine screens, and all identifiable fossils shall be sorted from the concentrate. Detailed measured geologic sections placing the fossil sites in a stratigraphic sequence shall be made. Bulk sampling, collecting, water screening, or dry screening of sediments that contain rare invertebrates, marine vertebrates, and terrestrial vertebrates shall be part of the mitigation plan.

c. A qualified Paleontologist shall be notified and retained when earth-moving activities are anticipated to impact undisturbed deposits in the San Pedro Sand and Palos Verdes Sand. The designated Paleontologist shall be present during construction activities on a full-time basis to assess whether scientifically important fossils are exposed. Part-time monitoring is recommended in Younger Alluvium. If any scientifically important, large fossil remains are uncovered during earth-moving activities, the Paleontological Monitor shall divert heavy equipment away from the fossil site until s/he has had an opportunity to examine the remains. If warranted, a rock sample shall be collected for processing. The Monitor shall be equipped to allow for the rapid removal of fossil remains and/or matrix (earth), and thus reduce the potential for any construction delays. At the Monitor's discretion, the Grading Contractor may assist in the removal of the fossil remains and rock sample to reduce any delay in construction.

d. All fossils shall be documented in a detailed Paleontological Resources Impact Mitigation Report. Fossils recovered from the field or by processing shall be prepared; identified; and, along with accompanying field notes, maps and photographs, accessioned into the collections of a designated, accredited museum such as the LACM or the San Diego Natural History Museum.

e. Because of slope modification and restoration of the bluff area, most, if not all, the fossil-bearing exposures of the San Pedro Sand and Quaternary marine terrace deposits would be destroyed. If feasible, a few stratigraphic sections with fossil-bearing horizons shall be preserved in perpetuity for educational and scientific purposes.

Nothing in this mitigation measure precludes the retention of a single cross-trained observer qualified to monitor for both archaeological and paleontological resources.

## 4.13.9 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the Mitigation Program set forth in this section and Section 4.6, Biological Resources, potential impacts to archaeological, historical, and paleontological resources would be reduced to a level considered less than significant.

## TABLE 4.13-3
## CITY OF NEWPORT BEACH GENERAL PLAN CONSISTENCY ANALYSIS

| City of Newport Beach General Plan Relevant Goals, Policies, and Programs | Consistency Analysis |
|---|---|
| **Historical Resources Element** | |
| **Historical Resources Element Goal HR 1** | |
| Recognize and protect historically significant landmarks, sites, and structures. | The Project is consistent with this goal. There are no historically significant landmarks, sites, or structures on the Project site. |
| **Policies** | |
| **HR Policy 1.3: Historical Landmarks**<br>Encourage the placement of historical landmarks, photographs, markers, or plaques at areas of historical interest or value. Create a Landmark Plan that will recognize and designate culturally important heritage sites that are eligible for the placement of historical landmarks or plaques. The Plan will also identify funding opportunities to support the program such as development fees, corporate or civic sponsorships, donations, or utilizing General Funds. | The Project is consistent with this policy. There are no historically significant landmarks, sites, or structures on the Project site. |
| **HR Policy 1.5: Historical Elements within New Projects**<br>Require that proposed development that is located on a historical site or structure incorporate a physical link to the past within the site or structural design, if preservation or adaptive reuse is not a feasible option. For example, incorporate historical photographs or artifacts within the proposed project or preserve the location and structures of existing pathways, gathering places, seating areas, rail lines, roadways, or viewing vantage points within the proposed site design. | The Project is consistent with this policy. There are no historically significant landmarks, sites, or structures on the Project site. |
| **HR Policy 1.6: Documentation**<br>Require that, prior to the issuance of a demolition or grading permit, developers of a property that contains an historic structure as defined by CEQA retain a qualified consultant to record the structure in accordance with U.S. Secretary of Interior guidelines (which includes drawings, photographs, and written data) and submit this information to the Newport Beach Historical Society, Orange County Public Library, and City Planning Department. | The Project is consistent with this policy. An Architectural Historian was retained as a part of the preparation of the EIR to evaluate the potential significance of structures on the Project site. All findings were recorded using California Department of Parks and Recreation (DPR) Series 523 forms for the recordation of cultural resources. There are no historically significant landmarks, sites, or structures on the Project site; no historic resources are eligible for the NRHP or the CRHR. |
| **Historical Resources General Plan Goal HR 2** | |
| Identification and protection of important archeological and paleontological resources within the City. | The Project is consistent with this goal. As a part of the EIR, a prehistoric and historical archaeological resources assessment and paleontological resources assessment were prepared. The findings of these reports are presented in this section of the EIR. The Project would not significantly impact any know significant historic resources. A Mitigation Program is provided to mitigate significant impacts to archaeological and paleontological resources. Impacts can be mitigated to a less than significant level. |

## TABLE 4.13-3 (Continued)
## CITY OF NEWPORT BEACH GENERAL PLAN CONSISTENCY ANALYSIS

| City of Newport Beach General Plan Relevant Goals, Policies, and Programs | Consistency Analysis |
|---|---|
| **Policies** | |
| **HR Policy 2.1: New Development Activities**<br>Require that, in accordance with CEQA, new development protect and preserve paleontological and archaeological resources from destruction, and avoid and mitigate impacts to such resources. Through planning policies and permit conditions, ensure the preservation of significant archeological and paleontological resources and require that the impact caused by any development be mitigated in accordance with CEQA. | The Project is consistent with this policy. The historic, archaeological, and paleontological investigations prepared for the Project as a part of this EIR have been prepared in accordance with CEQA and the City of Newport Beach City Council Policy Manual Guidelines City Policy K-4 (with respect to paleontological resources) and City Policy K-5 (with respect to archeological resources). The investigations identify potential impacts, alternatives, and recommendations for impact mitigation. To the degree feasible, the Project Mitigation Program prioritizes the avoidance of impacts to these resources; mitigation is provided where significant resources would be impacted by the proposed Project. |
| **HR Policy 2.2: Grading and Excavation Activities**<br>Maintain sources of information regarding paleontological and archeological sites and the names and addresses of responsible organizations and qualified individuals, who can analyze, classify, record, and preserve paleontological or archeological findings.<br>Require a qualified paleontologist/archeologist to monitor all grading and/or excavation where there is a potential to affect cultural, archeological or paleontological resources. If these resources are found, the applicant shall implement the recommendations of the paleontologist/ archeologist, subject to the approval of the City Planning Department. | The Project is consistent with this policy. Paleontological and archaeological records for this area are retained at the LACM and the SCCIC at California State University, Fullerton, respectively. Results of research for the Project are included in this EIR, and files can be accessed at each repository if desired. The SCCIC maintains listings of qualified archaeologists. The Mitigation Program includes monitoring during grading and excavation activities. |
| **HR Policy 2.3: Cultural Organizations**<br>Notify cultural organizations, including Native American organizations, of proposed developments that have the potential to adversely impact cultural resources. Allow representatives of such groups to monitor grading and/or excavation of development sites. | The Project is consistent with this policy. The State of California NAHC provided the City with a list of tribal affiliations in the area. Consistent with the statutory requirements of Section 65352.2 of the *California Government Code,* the City offered government-to-government consultation with the interested tribes. Tribal representatives were notified by mail of the proposed Project and their comments or questions were invited regarding the Project. The City received three requests for consultation; the City met with each tribal representative. Additionally, a representative of the Juaneño Band of Mission Indians, Acjachemen Nation was present on the Project during the archaeological testing program. Further, the City provides Native American tribes with the opportunity to conduct monitoring. |
| **HR Policy 2.4: Paleontological or Archaeological Materials**<br>Require new development to donate scientifically valuable paleontological or archaeological materials to a responsible public or private institution with a suitable repository, located within Newport Beach, or Orange County, whenever possible. | The Project is consistent with this policy. The Mitigation Program set forth in this EIR includes this requirement. |

## TABLE 4.13-3 (Continued)
## CITY OF NEWPORT BEACH GENERAL PLAN CONSISTENCY ANALYSIS

| City of Newport Beach General Plan Relevant Goals, Policies, and Programs | Consistency Analysis |
|---|---|
| **Natural Resources Element** | |
| **Natural Resources Element Goal NR 18** | |
| Protection and preservation of important paleontological and archaeological resources. | The Project is consistent with this goal. The historic, archaeological, and paleontological investigations prepared for the Project as a part of this EIR have been prepared in accordance with CEQA and the City of Newport Beach City Council Policy Manual Guidelines City Policy K-4 (with respect to paleontological resources) and City Policy K-5 (with respect to archeological resources). The investigations identify potential impacts, alternatives, and recommendations for impact mitigation. To the degree feasible, the Project Mitigation Program would avoid impacts to these resources; mitigation is provided where significant resources would be impacted by the proposed Project. |
| **Policies** | |
| **NR Policy 18.1: New Development**<br>Require new development to protect and preserve paleontological and archaeological resources from destruction, and avoid and minimize impacts to such resources in accordance with the requirements of CEQA. Through planning policies and permit conditions, ensure the preservation of significant archeological and paleontological resources and require that the impact caused by any development be mitigated in accordance with CEQA. | The Project is consistent with this policy. Please refer to the response to Goal NR 18. |
| **NR Policy 18.3: Potential for New Development to Impact Resources**<br>Notify cultural organizations, including Native American organizations, of proposed developments that have the potential to adversely impact cultural resources. Allow qualified representatives of such groups to monitor grading and/or excavation of development sites. | The Project is consistent with this policy. The Project requires a General Plan Amendment; therefore, Section 65352.3 of the *California Government Code* applies. The NAHC was contacted to provide a list of tribal affiliations in the area. Tribal representatives were notified by mail of the proposed Project and their comments or questions were invited regarding the Project. Three tribal representatives were given tours, and one tribe monitored the archaeological evaluation of resources on the Project site. The City provides Native American tribes with the opportunity to conduct monitoring during grading activities. |
| **NR Policy 18.4: Donation of Materials**<br>Require new development, where on site preservation and avoidance are not feasible, to donate scientifically valuable paleontological or archaeological materials to a responsible public or private institution with a suitable repository, located within Newport Beach or Orange County, whenever possible. | The Project is consistent with this policy. The Mitigation Program set forth in this EIR includes this requirement. |

## TABLE 4.13-4
## CALIFORNIA COASTAL ACT CONSISTENCY ANALYSIS

| Relevant California Coastal Act Policies | Consistency Analysis<br>Applicable Sections |
|---|---|
| **Land Resources** | |
| **Section 30244 Archaeological or paleontological resources**<br>Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required. | The Project is consistent with this policy. Prehistoric and historic archaeological and paleontological resource sites have been recorded on the Project site. As a part of the EIR, a Prehistoric and Historical Archaeological Resources Assessment and a Paleontological Resources Assessment were prepared. The findings of these reports are presented in this EIR. To mitigate for potential significant impacts, the Project would be required to comply with the Mitigation Program set forth in this EIR. This Mitigation Program requires compliance with standard practices for the preservation of cultural resources remains and/or the recovery of these remains in a manner that preserves the scientific and historical value of the resource. Mitigation of paleontological resources is also addressed in the Mitigation Program set forth in this EIR. This Mitigation Program is intended to comply with Section 30244 of the Coastal Act. |