5.8 Paleontological Resources

This section addresses the requirements of the California Energy Commission (CEC) for an assessment of potential impacts to paleontological resources (fossils) from the construction and operation of the proposed Energy Chula Vista Energy Upgrade Project (CVEUP).

The project will be sited within the boundaries of MMC's Chula Vista Power Plant property, and will replace the existing 44.5-megawatt simple-cycle peaking power plant currently on site. The change in combustion turbine units will improve efficiency and provide additional peak electric generation capacity for the Chula Vista and San Diego region.

Section 5.8.1 describes the existing environment that could be affected and the potential for sediments containing significant fossil remains to be within the area of potential effect from earth moving associated with construction of the CVEUP. In the case of the CVEUP project, there are essentially no offsite laterals that may expand the impact zone to areas of differing geology and paleontological potential. Operation of the CVEUP will not involve further ground disturbing activities, and therefore no impacts to paleontological resources would occur during the operational phase of this project.

Section 5.8.2 identifies potential environmental effects, if any, from project development. Section 5.6.3 discusses potential cumulative effects. Section 5.6.4 discusses possible mitigation measures to adverse impacts from earth moving on paleontological resources at the project site. Section 5.6.5 presents the laws, ordinances, regulations, and standards (LORS) applicable to paleontological resources. Section 5.6.6 lists the state and local agencies involved with paleontological resources. Section 5.6.7 discusses required permits and Section 5.6.8 provides the references used to develop this section.

This paleontological resources assessment meets all requirements of the CEC (2000, 2007) and conforms with the recommendations of the Society of Vertebrate Paleontology (1991, 1995, 1996) that address mitigating impacts to paleontological resources resulting from earth moving activities.

This paleontological resources inventory and impact assessment was conducted by W. Geoffrey Spaulding, Ph.D. a senior paleontologist with CH2M HILL. Dr. Spaulding has advanced degrees in geology with emphases in paleobiology, and is a recognized expert of the glacial-age environments of the American West. He previously has completed paleontological resource surveys and prepared paleontological resource impact assessments in support of energy generation and other large construction projects in southern California, including a number of projects in San Diego County.

Paleontological resources (fossils) are the remains or traces of prehistoric plants and animals. They may range from the actual bones and shells of ancient organisms, to mineral replacements of a once-living organism, to simple impressions of plants or animals in soft sediments later transformed to rock. They range in size and abundance from many thousands per cubic centimeter for microfossils such as pollen, diatoms, and radiolaria, to very rare large-mammal bones exceeding a meter in length. Fossils are important scientific and educational resources because of their use in (1) documenting the presence and evolutionary history of particular groups of now-extinct organisms, (2) reconstructing the environments in which these organisms lived, and (3) in determining the relative ages of the

strata in which they occur and the geologic events that resulted in the deposition of the sediments that formed these strata. In this project area, the fossils of marine organisms as well as those of terrestrial animals and plants are important in the paleontological record. They have helped define the age and sequences of deposition and uplift along San Diego County's prominent shoreline, which in many areas consists of cliffs of fossiliferous marine sedimentary rock.

5.8.1 Affected Environment

5.8.1.1 Physiographic Setting

The proposed project site lies on the north side of the arroyo cut by the Otay River, about 1.7 miles east of the Interstate-5 corridor and 2.75 miles east of the east shoreline of southern San Diego Bay, within Chula Vista, San Diego County, California. As noted previously, all construction associated with this project will be restricted to the project site, which is currently devoted to electrical generation.

Fenneman (1931) originally termed this region the Lower Californian Physiographic Province and described its salient large-scale features as the north-south trending Peninsular Ranges to the east, the eroded granitic upland flanking it to the west, and a terraced lowland 12 to 18 miles wide bordering the Pacific Ocean. This area is often referred to as the Peninsular Ranges Geomorphic Province (e.g., Sweetwater Authority, 2003), an area that is physiographically distinct from the great rift occupied by the Salton Trough and Gulf of California immediately east of the Peninsular Ranges.

Approaching the San Diego County coast from the ocean, however, the mountains in the distance are often obscured and the most prominent topographic feature seen is the slightly elevated and deeply dissected coastal plain, formed by a series of broad mesas rising immediately behind the shoreline. The plain ascends to the east as a series of terraces as much as 3 miles wide (LaJoie et al., 1991). These terraces are ancient sea-level strandlines, each with at least one large beach ridge, and each marking a separate period of high sea level in the geologically recent past (ibid.). Their height, often hundreds of feet above current sea level, reflects the tectonic uplift that is a dominant influence on geomorphic processes in San Diego County. South of La Jolla, these marine terraces descend toward San Diego Bay and, in the vicinity of San Diego Bay, the coastal plain is displaced downward to the west along the La Nación Fault Zone. This local tectonic displacement creates a lowland occupied currently by San Diego Bay on the west and by the "Coastal Terraces Region" between the shore and Interstate 805 (City of Chula Vista, 2005), including the project site. Because of its low-lying topography, exposures of ancient marine sediment are less common in the Chula Vista area than most other areas of San Diego County, where geochronological data suggest an absence of uplift in the last 200,000 to 500,000 years (Deméré, 1981 cited in Lajoie et al., 1991). Therefore, fewer paleontological sites are known in the lowland area including San Diego Bay and most of Chula Vista (City of Chula Vista, 2005).

5.8.1.2 Resource Inventory Methods

To develop a baseline paleontological resource inventory of the project area and surrounding lands, and to assess the potential paleontological productivity of the stratigraphic units that may be present, the published as well as available unpublished geological and paleontological literature was reviewed. Sources included geological maps,

satellite and aerial photography, technical and scientific reports, and assessments of existing conditions in relevant environmental documents. In particular, this section includes the information provided by a Paleontological Resources Assessment of the project site, including the results of a records search at the San Diego Natural History Museum (SDNHM), prepared by LSA Associates, Inc. (LSA) (Smith, 2006). The project area was also subject to a reconnaissance-level paleontological survey by personnel from LSA on October 10, 2006 (Smith, 2006; Appendix 5.8A). These tasks were conducted in compliance with CEC (2000, 2007) and Society of Vertebrate Paleontology (SVP, 1991, 1995) guidelines for assessing the importance of paleontological resources in areas potentially impacted by construction-related excavations.

Recent geotechnical borings conducted to better define the subsurface of the CVEUP project area show that at least 20 feet of artificial fill underlies the project site (Ninyo & Moore, 2006).

5.8.1.3 Resource Inventory Results

The history of sedimentation along the coastal San Diego region during the Cenozoic (the last 64 million years) has been governed by local tectonism as well as fluctuations in the global sea level. At times when the relative position of the land surface was below sea level, deposition of fossil-bearing marine sediments occurred. Erosion occurred at other times when the land surface was above sea level, and these periods are usually represented by gaps in the rock stratigraphic record, and less often by terrestrial sediments. The fossil-bearing rock units of coastal San Diego County date back to the beginning of the Eocene Epoch and represent major portions of the Tertiary and Quaternary geological records. Most of the exposed rock units were deposited in marine or estuarine environments. These rock units include, from oldest to youngest, the following:

- Mission Valley Formation—Continental shelf, middle-Eocene in age
- Otay Formation—Near-shore and estuarine environments of the late Oligocene (27 to 28 million years old)
- San Mateo Formation—Near-shore marine, spanning the Miocene and Pliocene transition
- San Diego Formation—Open marine embayment, late Pliocene
- Lindavista Formation—Fluvial and shallow near-shore marine sediments, early to middle Pleistocene
- Bay Point Formation—Near-shore marine sediments as well as terrestrial facies, middle to late Pleistocene in age
- Unnamed beach terrace deposits (near-shore marine, littoral, and terrestrial), middle to late Pleistocene in age (700,000 to 10,000 years B.P.; Lajoie et al., 1991)
- Unnamed terrestrial sediments representing fluvial, colluvial, and eolian environments of Late Quaternary age.

5.8.1.4 Paleontological Sensitivity of Sediments Potentially Present In the Project Area

The rock stratigraphic record potentially present in the project area includes the following units, with their relative level of paleontological sensitivity assigned based on their known fossil record. The sensitivity ratings follow the criteria established for this region where fossil-bearing sediments are common (Table 5.8-1).

TABLE 5.8-1
Paleontological Sensitivity Ratings Employed

Sensitivity	Definition
High	Assigned to geological formations known to contain paleontological resources that include rare, well-preserved, and/or fossil materials important to on-going scientific studies. They have the potential to produce, or have produced, vertebrate remains that are the particular research focus of many paleontologists, and can represent important educational resources as well.
Moderate	Stratigraphic units that have yielded fossils that are but moderately well-preserved, are common elsewhere, and/or that are stratigraphically long-ranging would be assigned a moderate rating. This evaluation can also be applied to strata that have an unproven but strong potential to yield fossil remains based on its stratigraphy and/or geomorphologic setting.
Low	These include units that are relatively recent, or that represent a high-energy subaerial depositional environment where fossils are unlikely to be preserved. A low abundance of invertebrate fossil remains, or reworked marine shell from other units, can occur but the paleontological sensitivity would remain low due to their lack of potential to serve significant scientific or educational purposes.
Marginal and Zero	Stratigraphic units with marginal potential include pyroclastic flows and soils that might preserve traces or casts of plants or animals. Most igneous rocks, however, have zero paleontological potential. Other stratigraphic units deposited subaerially in a high energy environment (such as alluvium) may also be assigned a marginal or zero sensitivity rating. Manmade fill is also considered to possess zero (no) paleontological potential.

Source: adopted from Sweetwater Authority, 2003

The paleontological sensitivity of the stratigraphic units in the area has been well described in a number of recent planning documents (e.g., City of Chula Vista, 2005; Sweetwater Authority, 2003; San Diego County, 2007). Additional information comes from the results of a records search for this project carried out by the SDNHM, the results of the assessment of Smith (2006), and the geology of the immediate area (see Section 5.4). The paleontological record of San Diego County is rich and varied by virtue of the fact that there are so many marine sedimentary sequences exposed. However, within one mile of the project area there is a limited suite of geological units. These are briefly described below by decreasing age:

The **Otay Formation** in the southern portion provides the oldest well-preserved fossils in the southern Coastal Plain Region. Unique to the southern Coastal Plain Region are outcrops of Oligocene sedimentary rocks of the Otay Formation, such as those exposed by development of the East Lake community in eastern Chula Vista. Here significant skeletal remains of terrestrial reptiles (tortoise and lizards), birds (bathornihids, cranes, and quail), and mammals (e.g., insectivores, gophers, mice, beavers, dogs, nimravids, rhinoceros, camels, oreodonts, and chevrotains) have been collected along with sparse fossil impressions of freshwater plants (e.g., rushes).

The **Mission Valley Formation** was deposited in shallow marine and estuarine environments, as well as terrestrial (fluvial) environments. The fine-grained (clays to fine sand) clastic sediment comprising this formation was brought down by rivers draining the land to the east. The soft sediment was deposited in a relatively shallow, still-water environment creating a habitat suitable for oysters, clams, worms, and other marine invertebrates such as decapod crustaceans. Vertebrate fossils from the marine facies of the Mission Valley Formation include sharks, rays, and the otoliths of bony fish. The fossil record of the terrestrial (riverine) facies include reptiles, land mammals (insectivores, bats, primates, rodents, larger grazing mammals), and occasional petrified wood. Based on its productive and significant fossil record, the Mission Valley Formation possesses high paleontological sensitivity.

The **San Diego Formation** is yellowish-gray, fine-grained, friable sandstone and it is an important source of the fossils of Pliocene marine organisms, allowing detailed understanding of the paleoenvironments at that time. The fossils found in this formation include an array of marine clams, scallops (Hertlein and Grant, 1972), crabs, barnacles, sand dollars (Hertlein and Grant, 1960), sharks (Deméré and Cerutti, 1981), rays, bony fish, sea birds (Chandler, 1990), walrus (Deméré, 1994), fur seal (Berta and Deméré, 1986), sea cow (Domning and Deméré, 1984), dolphins (Barnes, 1973), and baleen whales (Deméré, 1986). In addition, rare remains of terrestrial mammals including cat, wolf, skunk, peccary, camel, antelope, deer, horse, and gomphothere have also been recovered from the formation. Fossil wood has also been found including remains from pine, oak, laurel, cottonwood, and native avocado (Axelrod and Deméré, 1984).

Unnamed terrace deposits (Quaternary) consisting of geologically young, unconsolidated fine-grained to course-grained terrestrial and marine facies representing the sediments of beach ridges and terraces, and a range of environments from surf zone to coastal dunes (Deméré, n.d.; Lajoie et al., 1991). These are assigned a moderate sensitivity level, while later Quaternary deposits that have accumulated in topographic lows, alluvial deposits, and colluvium of hillslopes are assigned a low sensitivity. This ranking of low sensitivity also applies to Holocene-age alluvium.

5.8.1.5 Results of the Records Search

The records search conducted to identify previously recorded paleontological sites within one mile of the project site was conducted by the SDNHM, and the results returned on November 3, 2006 (Appendix 5.8A). No paleontological sites were recorded within that one-mile radius. Two sites are recorded more distant but still in the area, from sandstone of the San Diego Formation. These sites have produced marine mollusks including scaphopods as well as bivalves and gastropods.

5.8.1.6 Results of Site Survey and Subsurface Investigations

A reconnaissance-level survey conducted by LSA personnel identified no fossil material in portions of the site where earth was exposed (Smith, 2006). The subsequent geotechnical survey (Ninyo & Moore, 2006) determined that the entire site is upon artificial fill possessing no paleontological sensitivity. Therefore, no fossils or fossil-bearing sediment are identified in the project area, nor are any to be expected to a depth of at least 20 feet at the

project site. Below that depth, based on local geological mapping artificial fill can be expected to give way to Quaternary alluvium of low paleontological potential.

5.8.2 Environmental Effects

The environmental impacts on paleontological resources from both construction and operation of the CVEUP project are presented in the following subsections.

5.8.2.1 Paleontological Resources Significance Criteria

In its standard guidelines for assessment and mitigation of adverse impacts to paleontological resources, the SVP (1995) notes that an individual fossil specimen is considered scientifically important and significant if it is: (1) identifiable, (2) complete, (3) well preserved, (4) age-diagnostic, (5) useful in paleoenvironmental reconstruction, (6) a type or topotypic specimen, (7) a member of a rare species, (8) a species that is part of a diverse assemblage, or (9) a skeletal element different from, or a specimen more complete than, those now available for that species. For example, identifiable land mammal fossils are considered scientifically important because of their potential use in determining the age and providing input to paleoenvironmental reconstructions for the sediments in which they occur. Moreover, vertebrate remains are comparatively rare in the fossil record. Fossil plants are also important in this regard and, as sedentary organisms, are actually more sensitive indicators of their paleoenvironment and, thus, more important than mobile mammals for paleoenvironmental reconstructions. For marine sediments, invertebrate fossils, including marine microfossils, are scientifically important for the same reasons that land mammal and/or land plant fossils are valuable in terrestrial deposits. The value or importance of different fossil groups varies depending on the age and depositional environment of the stratigraphic unit that contains the fossils, their abundance in the record, and their degree of preservation.

To establish the paleontological sensitivity of each stratigraphic unit likely to be present in or near the project site, the recorded paleontological productivity of those formations was assessed, based on the abundance of fossil remains in that unit elsewhere in southern San Diego County, including previously recorded localities near the project site (see discussion in Section 5.8.1). According to SVP (1995) standard guidelines and San Diego County (2007) specific guidelines, sensitivity comprises both (a) the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant fossils, large or small, vertebrate, invertebrate, or botanical, and (b) the importance of recovered evidence for new and significant taxonomic, phylogenetic, ecologic, or stratigraphic data.

Using the criteria of the SVP (1995) and San Diego County (San Diego County, 2007) and the sensitivity ratings provided in Table 5.8-1., the significance of potentially adverse impacts of earth moving on the paleontological resources was assessed. This assessment reflects the paleontological importance (sensitivity) of the stratigraphic unit, which, in turn, reflects the potential for fossil remains and fossil sites being encountered during earth moving. Any unmitigated impact on a fossil site or a fossil-bearing rock unit during construction/demolition activities would be considered significant, regardless of the previously determined paleontological importance of the rock unit in which the site or fossiliferous layer occurs.

5.8.2.2 Paleontological Resource Impact Assessment

The significance of potential adverse impacts of project-related activities on the paleontological resources of each stratigraphic unit anticipated to be present at the project site is presented in this section. This assessment includes the entirety of the CVEUP area.

- **Artificial fill**—Construction-related excavations within artificial fill will not result in any adverse impacts to paleontological resources. Reworked and disturbed fossil material may be present in the artificial fill, but lack of stratigraphic context and likely mechanical damage would compromise all scientific values. This would apply to all excavations within 20 feet of current ground surface.
- **Quaternary alluvial sediment of the Otay River Canyon**—Excavations including drilling and trenching extending to depths below 20 feet are likely to affect Quaternary-age alluvium. This unit has low paleontological sensitivity, but nevertheless it is sedimentary and fine-grained facies could yield rare fossil resources. Uncontrolled excavation affecting identifiable and in situ fossils potentially present at depth in this unit would be an adverse impact. Nevertheless, because of the sparse record of paleontological resources from Quaternary alluvium, the probability of this occurring is remote.

No impacts to paleontological resources are expected to occur from the operation of the CVEUP or any of its ancillary facilities. Furthermore, because of the great depth of artificial fill at the site and the low sensitivity of Quaternary alluvium that is expected to be present below that fill based on geological mapping and subsurface excavations, no significant impacts to paleontological resources are expected from construction of the CVEUP.

5.8.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Pub. Resources Code § 21083; California Code of Regulations, tit. 14, §§ 15064(h), 15065(c), 15130, and 15355).

Applications for 26 proposed projects have been filed in the City of Chula Vista. These are mostly residential development projects, with some commercial developments, and one warehouse development and one manufacturing development. One of these projects, a proposed sewing manufacturing and wholesale sales business, is located within 1,000 feet of the CVEUP.

Widespread recent development in San Diego County has resulted in extensive impacts to paleontological resources, and this is anticipated to continue (San Diego County, 2007). The extensive nature of these cumulative impacts is in part due to the widespread presence of a number of fossiliferous sedimentary units (ibid.). There are, however, measures implemented pursuant to State, County and City statutes (See Section 5.8.5, below) to realize the scientific and educational potential of these resources and therefore mitigate the cumulative as well as direct impacts of continued development.

Because the project will be constructed on file, the potential contribution to cumulative impacts to paleontological resources from project-related ground disturbance would be negligible given the exceedingly low probability of encountering these resources. Thus, the

proposed project would not cause or contribute substantively to cumulative impacts to paleontological resources.

5.8.4 Mitigation Measures

Guidelines for the Implementation of the California Environmental Quality Act (CEQA) (Public Resources Code Sections 15000 et seq.) include among the questions to be answered in the Environmental Checklist (Section 15023, Appendix G) the following: "Would the project directly or indirectly destroy a unique paleontological resource or site?" and "Does the project have the potential to . . . eliminate important examples of the major periods of California . . . pre-history?" These questions are answered in the negative based on the data and considerations provided above. Because construction of the CVEUP has very low potential for adverse impacts to significant paleontological resources, mitigation measures are not necessary. However, should paleontological resources be encountered during project-related earth-moving activities, the find should be immediately cordoned off, and a qualified paleontologist retained to examine the find, assess its significance, and propose appropriate recovery measures.

5.8.5 Laws, Ordinances, Regulations, and Standards

Paleontological resources are non-renewable scientific resources and are protected by several federal and state statutes (California Office of Historic Preservation 1983; see also Marshall 1976, Fisk and Spencer 1994), most notably by the 1906 Federal Antiquities Act and other subsequent federal legislation and policies, and by the State of California's environmental regulations (CEQA, Section 15064.5). Professional standards for assessment and mitigation of adverse impacts to paleontological resources have been established by the SVP (1991, 1995, 1996). Design, construction, and operation of the CVEUP will be conducted in accordance with all LORS applicable to paleontological resources in the context of this project. Federal, state, and local LORS applicable to paleontological resources are summarized in Table 5.8-2 and discussed briefly below, along with professional standards for paleontological resources assessment and impact mitigation.

TABLE 5.8-2
LORS Regarding Paleontological Resources

LORS	Applicability	AFC Reference	Project Conformity
Antiquities Act of 1906	Not applicable – No federal land involved, or federal entitlement required	—	—
CEQA, Appendix G	Applicable – Fossil remains may be encountered by earth-moving activities	Sections 5.8.4, 5.8.6	Yes
Public Resources Code, Sections 5097.5/5097.9	Not applicable – Applies to state-owned land	—	—
San Diego County General Plan, Part X "Conservation Element"	Applicable – Calls for the identification and protection of unique geological features including fossil localities	Sections 5.8.2, 5.8.6	Yes
San Diego County (2007) Guidelines for Determining Significance	Applicable – Calls for a resource inventory and paleontological resources assessment of ground disturbing projects	Sections 5.8.2, 5.8.6	Yes

TABLE 5.8-2
LORS Regarding Paleontological Resources

LORS	Applicability	AFC Reference	Project Conformity
City of Chula Vista General Plan	Applicable – Policy EE.10.1 calls for the assessment and mitigation of impacts to paleontological resources.	Section 5.8.6	Yes

5.8.5.1 Federal LORS

Federal protection for significant paleontological resources would apply to the CVEUP only if any construction or other related project impacts occur on federally owned or managed lands, or if a federal entitlement or other permit were required. Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 et seq.; 34 Stat. 225), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. In addition, the National Environmental Policy Act of 1969 (United States Code, section 4321 et seq.; 40 Code of Federal Regulations, section 1502.25), as amended, requires analysis of potential environmental impacts to important historic, cultural, and natural aspects of our national heritage.

5.8.5.2 California LORS

The CEC environmental review process under the Warren-Alquist Act is considered functionally equivalent to that of CEQA (Public Resources Code Sections 21000 et seq.). CEQA requires that public agencies and private interests identify the environmental consequences of their proposed projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code: 5020.1 [b]). *Guidelines for the Implementation of CEQA* (Public Resources Code Sections 15000 et seq.) defines procedures, types of activities, persons, and public agencies required to comply with CEQA. Appendix G in Section 15023 provides an Environmental Checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts. One of the questions to be answered in the Environmental Checklist (Section 15023, Appendix G, Section V, part c) is the following: "Would the project directly or indirectly destroy a unique paleontological resource or site…?"

Although CEQA does not define what is "a unique paleontological resource or site", Section 21083.2 defines "unique archaeological resources" as "…any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.

- Is directly associated with a scientifically recognized import prehistoric or historic event."

With only slight modification, this definition is equally applicable to recognizing "a unique paleontological resource or site." Additional guidance is provided in CEQA Section 15064.5 (a)(3)(D), which indicates "generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history."

Section XVII, part a, of the CEQA Environmental Checklist asks a second question equally applicable to paleontological resources: "Does the project have the potential to . . . eliminate important examples of the major periods of California history or pre-history?" To be in compliance with CEQA, impact assessments must answer both these questions in the Environmental Checklist. If the answer to either question is yes or possibly, a mitigation and monitoring plan must be designed and implemented to protect significant paleontological resources.

The CEQA lead agency having jurisdiction over a project is responsible to ensure that paleontological resources are protected in compliance with CEQA and other applicable statutes. The lead agency with the responsibility to ensure that fossils are protected during construction of the proposed CVEUP is the CEC. California Public Resources Code Section 21081.6, entitled Mitigation Monitoring Compliance and Reporting, requires that the CEQA lead agency demonstrate project compliance with mitigation measures developed during the environmental impact review process.

Other state requirements for paleontological resource management are in California Public Resources Code Chapter 1.7, Section 5097.5 (Stats. 1965, c. 1136, p. 2792), entitled Archaeological, Paleontological, and Historical Sites. This statute defines any unauthorized disturbance or removal of a fossil site or remains on public land as a misdemeanor and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources. This statute would apply to the CVEUP only if any construction or other related project impacts occur on state owned or managed lands or if the state or a state agency were to obtain ownership of project lands during the term of the project license.

5.8.5.3 Local LORS

The San Diego County General Plan (San Diego County, n.d.) addresses paleontological resources in the course of noting that paleontological localities are types of "unique geological features," and that the Natural Resource Inventory of the County includes a number of fossil localities. Action Program 8.1 under the County's Policies and Action Programs (ibid.) calls for a program to identify geologic formations and fossil localities. Recently (March 2007), the County approved a final set of guidelines for determining the significance of paleontological resources to be used by County staff when conducting project review (San Diego County, 2007).

As described in the Final Environmental Impact Report for The City of Chula Vista General Plan Update (City of Chula Vista, 2005), for a number of years the City has required construction-phase paleontological resources monitoring and mitigation as a condition of permitting residential development and larger commercial projects. The City of Chula Vista

Draft General Plan (City of Chula Vista, 2004) has mitigation requirements that specifically address potential adverse impacts to paleontological resources.

5.8.5.4 Professional Standards

The SVP, an international organization of professional paleontologists, has established standard guidelines (SVP 1991, 1995, 1996) that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most practicing paleontologists in the nation adhere to the SVP's guidelines, and extend those to address other types of fossils of scientific significance, such as invertebrate fossils and paleobotanical specimens. Many federal and state regulatory agencies, including the CEC, have informally adopted the SVP standard guidelines.

5.8.6 Involved Agencies and Agency Contacts

There are no agencies having blanket jurisdiction over paleontological resources. The CEC has jurisdiction over paleontological resources for this project. In light of San Diego County's (2007) emphasis on paleontological resources significance and documentation, copies of this final paleontological resource documentation of no effect should be provided to the contacts listed in Table 5.8-3.

TABLE 5.8-3
Agency Contacts for Paleontological Resources

Issue	Agency	Contact
Paleontological Resources Documentation	County of San Diego 5201 Ruffin Road Suite B San Diego, CA 92123	Gary Pryor Director of Planning and Land Use (858) 694-2960 gary.pryor@sdcounty,ca.gov
Paleontological Resources Documentation	San Diego Natural History Museum 1788 El Prado Balboa Park San Diego, CA 92101	Dr. Thomas Deméré Department of PaleoServices (619) 255-0232 paleoservices@sdnhm.org

5.8.7 Permits Required

No state, county, or city agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth moving on this project site.

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