

D. PALEONTOLOGICAL RESOURCES

This section analyzes the potential for paleontological discovery within the project site. This section was prepared based on information from the following sources:

- *A Paleontological Assessment Report and Mitigation Plan for the Laetitia Agricultural Cluster*, San Luis Obispo County, California prepared by Cogstone Resource Management, Inc. (October 2006);
- Paleontological records search at the Los Angeles Museum County of Natural History in the Vertebrate Paleontology Department and the Department of Invertebrate Paleontology;
- Paleontological records search at the University of California at Berkeley Museum of Paleontology; and,
- *Extended Phase One Archaeological Subsurface Testing for the Laetitia Agricultural Cluster Tract Map and Conditional Use Permit Project, San Luis Obispo County, CA*, Gibson's Archaeological Consulting (April 2007).

1. Existing Conditions

The project site is located within the California Geomorphic Province known as the Coast Ranges, which consist of northwest trending mountains and valleys lying sub-parallel to the San Andreas Fault Zone (Cogstone, 2006). Sediments within this Province are composed of thick Mesozoic and Cenozoic strata, primarily deposited by the Pacific Ocean. The site lies along the southern edge of the Pismo Syncline.

From oldest to youngest, the formations occurring within the project site are the Lower Miocene Obispo Formation, the Middle-Upper Miocene Monterey Formation, and the Plio-Pleistocene Paso Robles Formation (refer to Figure V.A.-1). The area proposed for development is located entirely on native sediments, and most of the underlying formations consist of Obispo Formation overlying Monterey Formation, with a thin veneer of topsoil in the vegetated areas.

a. Obispo Formation

Due to the large quantity of volcanics in the Obispo formation, there are few fossils known, including bivalves, gastropods, and echinoderms (Hall & Corbato, 1967; Hall, 1973).

b. Monterey Formation

The Monterey Formation is known for its rich fossil assemblage of marine fossils ranging from plankton to extinct marine mammals. Few outcrops of Monterey Formation were observed, and were partially diatomaceous and partially cherty. The cherty portion of the Monterey Formation is much less likely to produce fossils than the diatomaceous portion.

c. Paso Robles Formation

In most of the western portion of the project site, the Paso Robles Formation overlies the Obispo Formation. The Paso Robles Formation consists of exposures of unconsolidated sands, gravels,

and conglomerates deposited into lakes, streams, and alluvial fans below the eroding Santa Lucia and La Panza ranges near Paso Robles, California (Galehouse, 1967). Different portions of this formation are known to produce fossils of marine mollusks, barnacles, echinoderms, brachiopods, a large walrus-like pinniped, coastal redwoods, giant tortoises, and various mammals. Observations documented during surveys conducted on the project site by the Morro Group, Inc. subconsultant Cogstone Resource Management, Inc. included cobble conglomerates and fine-grained sediments; the later material has a moderate potential for fossil resources.

2. Regulatory Setting

a. Federal Policies and Regulations

1) 36 CFR §63

Section 106 of the National Historic Preservation Act (NHPA) does not apply to paleontological resources unless the paleontological specimens are found in culturally-related contexts (e.g., fossil shells included as a mortuary offering in a burial or a culturally-related site such as petrified wood locale used as a chipped stone quarry). In such instances, the materials are considered cultural resources and are treated in the manner prescribed for the site in question; mitigation being almost exclusively limited to sites determined eligible for or listed on the National Register of Historic Places (NRHP). It should be emphasized that cooperation between the cultural resource and paleontological disciplines is expected in such instances.

2) Archaeological and Paleontological Salvage (23 USC 305)

Statute 23 USC 305 amends the Antiquities Act of 1906. Specifically, it states:

“Funds authorized to be appropriated to carry out this title to the extent approved as necessary, by the highway department of any State, may be used for archaeological and paleontological salvage in that state in compliance with the Act entitled, “An Act for the preservation of American Antiquities,” approved June 8, 1906 (PL 59-209; 16 USC 431-433), and State laws where applicable.”

This statute allows funding for mitigation of paleontological resources recovered pursuant to Federal aid highway projects, provide that “excavated objects and information are to be used for public purposes without private gain to any individual or organization” (Federal Register [FR] 46(19):9570).

b. State Policies and Regulations

1) California Environmental Quality Act (CEQA)

No state or local agencies have specific jurisdiction over paleontological resources on private lands. CEQA (Public Resources Code 21000 et seq.) requires lead agencies to consider the potential effects of a project on significant historical resources. The CEQA Guidelines definition of “historical resources” includes any object or site, which a lead agency determines to be historically significant or significant in the scientific, educational, or cultural annals of California, and has yielded, or may be likely to yield, information important in prehistory (CEQA Guidelines Section 15064.5). If paleontological resources are identified as being with

the proposed project area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with importance of the resource.

3. Thresholds of Significance

Paleontological resources (i.e., fossils) are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct.
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein.
3. The fossils provide data regarding the development of biological communities or interaction between paleo-botanical and paleo-zoological biotas.
4. The fossils demonstrate unusual or spectacular circumstances in the history of life.
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

This section focuses on identifying potential project-related impacts associated with implementation of the proposed project, and is based on construction methods described in detail within the Project Description (Section III) of this EIR. Potential impacts are expected to occur where proposed construction or development activities such as trenching, boring, grading, excavation, and use of vehicles and equipment on unpaved surfaces would result in the disturbance of a significant paleontological resource. Where potential project-related impacts to sensitive geologic formations have been identified, measures for avoiding or minimizing adverse effects to paleontological resources have been recommended.

4. Impact Assessment and Methodology

The impact assessment focuses on identifying potential project-related impacts to paleontological resources based on information obtained through the archival records search and the paleontological surface survey.

Prior to field inspection, a records search was conducted for the project area (and ten mile radius around it) at the Los Angeles Museum County of Natural History in the Vertebrate Paleontology Department and the Department of Invertebrate Paleontology, as well as the Berkeley Museum of Paleontology. Fifty fossil locations were identified from the Nipomo, Oceano, and Arroyo Grande area, primarily in the Monterey Formation. The Obispo Formation produced significant records of scallops (*Pecten lompocensis*) in the area. One fossil locality within the project area produced fossil echinoderms.

A paleontological reconnaissance of the proposed site was performed by Kim Scott of Cogstone Resource Management, Inc. from August 30, 2006 to September 1, 2006. The survey consisted of driving throughout the project site looking for outcrops of exposed sediments. When outcrops were located, pedestrian inspection of sediment type and presence of fossils was conducted.

5. Project-specific Impacts and Mitigation Measures

a. Project-wide

The Miocene Monterey formation (diatomaceous portion) and the Miocene Obispo formation have a moderate potential to produce fossil resources. Fine-grained sediments of the Obispo and Paso Robles formations also have a moderate potential to produce fossil resources. These formations are located throughout the project site, and depth to bedrock is generally shallow. Implementation of the proposed project would require approximately 300,500 cubic yards of cut, with cuts up to approximately 30 feet in depth. Grading and trenching activities for the construction of roads and structures, and installation of infrastructure and utilities during all phases of development within these geological formations have the potential to result in the destruction of fossils. In addition, these activities may expose fossils, resulting in the illegal possession of significant paleontological resources. Fossils are an important, nonrenewable scientific resource. The destruction or illegal possession of these fossils would represent a significant adverse impact.

Implementation of proper mitigation measures can reduce the impacts to the paleontological resources. The following mitigation measures have been developed to reduce the adverse impacts of project construction on paleontological resources to a less than significant level. The measures are derived from the guidelines of the Society of Vertebrate Paleontologists and the requirements of CEQA. These mitigation measures have been demonstrated to be successful in protecting paleontological resources while allowing timely completion of construction.

PR Impact 1 Earthwork and other ground-disturbing activities associated with all proposed and future phases of development have the potential to impact moderately-sensitive geological formations and significant paleontological resources.

PR/mm-1 Prior to issuance of construction permits, the applicant shall submit for the review and approval of the Environmental Coordinator, a detailed research design for a Paleontological Monitoring & Recovery Plan (PMRP). The PMRP shall be consistent with the *Paleontological Assessment and Mitigation Plan for the Laetitia Agricultural Cluster San Luis Obispo County, California* (Cogstone Resource Management, Inc.; October 2006) and shall be prepared by a qualified paleontologist approved by the Environmental Coordinator. The PMRP program shall include the following at minimum:

- a. List of personnel involved in the monitoring activities;
- b. Clear identification of what portions of the project (e.g. phases, areas of the site, types of activities);

- c. Description of how the monitoring shall occur;
- d. Description of frequency of monitoring (e.g. full-time, part time, spot checking);
- e. Description of what resources are expected to be encountered;
- f. Description of circumstances that would result in the "work diversion" at the project site;
- g. Description of procedures for diverting work on the site and notification procedures;
- h. Description of monitoring reporting procedures.
- i. Disposition of collected materials;
- j. Proposed analysis of results of data recovery and collected materials, including timeline of final analysis results.

PR/mm-2 During ground disturbing construction activities, the applicant shall implement the PMRP measures as delineated in the PMRP.

PR/mm-3 Upon completion of all monitoring/mitigation activities, and prior to occupancy or final inspection, whichever occurs first, the consulting paleontologist shall submit a report to the Environmental Coordinator summarizing all monitoring/mitigation activities and confirming that all recommended mitigation measures have been met and include analysis of all discoveries per the PMRP. If the analysis included in the PMRP program is not complete by the time final inspection or occupancy will occur, the applicant shall provide to the Environmental Coordinator, proof of obligation to complete the required analysis.

Residual Impact Implementation of the measures recommended above will ensure that any significant fossils encountered in the identified section of the excavations will be properly considered for their scientific value. Therefore, this impact is considered *less than significant with mitigation, Class II*.

6. Cumulative Impacts

Implementation of the proposed project would require grading, trenching, and deep cuts into bedrock formations with a moderate potential for producing fossils. Development within the South County area occurs on geological formations with moderate to high potential for producing fossils. Cumulative impacts on paleontological resources result when rock units become unavailable for study and observation by scientists. The destruction of fossils has a significant cumulative impact as it makes biological records of ancient life unavailable for study by scientists. The applicant is required to implement mitigation measures that would ensure protection and documentation of significant fossils, if present. Implementation of this measure would ensure that the project does not contribute to the cumulative loss of paleontological data.

This page intentionally left blank.