

3.4 CULTURAL AND PALEONTOLOGICAL RESOURCES

This section evaluates the potential impacts of the proposed project on historical, cultural, and paleontological resources. Cultural resources are defined as prehistoric and historic sites, structures, and districts or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, or religious reasons. Paleontological resources include fossil remains, as well as fossil localities and formations that have produced fossil material.

This section is based on technical reports prepared for the proposed project. CRM TECH prepared a Class III Cultural Resources Survey in 2008 and a Paleontological Resources Assessment Report in 2009 for a 298-acre portion of the project site located on Bureau of Land Management (BLM)-managed federal lands and containing the project's primary access road. In addition, a Class III Cultural Resources Investigation was prepared by Jeanette A. McKenna in 2012 for the 70-acre portion of the project site that is on federal lands managed by BLM and being transferred to Omya ownership through a direct land sale. These documents are included in **EIR Appendix E**.

The County published a Notice of Preparation and Initial Study (NOP/IS) for the proposed project on June 12, 2013. A copy of the NOP/IS, along with comments received during the public review period, is contained in **EIR Appendix A**. The Native American Heritage Commission submitted comments on the NOP, and the agency's comments regarding a records search and reporting were considered during preparation of this section.

3.4.1 EXISTING SETTING

CULTURAL SETTING

Cultural resources contribute to an understanding of past human activities, including Native American history, local and regional European, African, and Asian settlement in North American urban development, historic engineering activities, cross-cultural influences, and human adaptations to the environment. Cultural resources, like many natural resources found on the planet, are nonrenewable. Once these resources have been destroyed, by whatever means, a fragment of history permanently disappears.

The archaeological sites of the Prehistoric period, the period before European arrival in the New World, may include the remains of Native American villages and campsites, food processing locations, areas for exploiting local floral and faunal resources, lithic resource procurement and stone tool production locations, and burial and cremation areas. They may also consist of trails, rock art and ground figures (geoglyphs), isolated artifacts, and sacred locations. Historic archaeological resources, on the other hand, derive from various periods after initial European contact, during which written European histories, to varying extents, occurred. Resources from this period include refuse deposits such as can and bottle dumps, filled-in privy pits and cisterns, melted adobe walls and foundations, collapsed structures and associated features, and roads and trails. They may be related to mission activities, travel and exploration, early settlement, homestead activities, cattle herding, lumbering, and mining, among other themes. In San Bernardino County, historic, archaeological resources date from the earliest Spanish mission activities (1770) to the mid twentieth century (1950). This class of resources, often related to a historic archaeological resource, includes structures of any type that are 50 years or more in age. This resource category, often referred to as the "built environment," comprises houses or other structures, irrigation works, bridges, dams, and other "built" historic engineering features (San Bernardino County 2006, p. IV-57).

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Prehistoric Context

In order to understand Native American cultures prior to European contact, archaeologists have devised chronological frameworks on the basis of artifacts and site types that go back some 12,000 years. Currently, the chronology most frequently applied in the Mojave Desert divides the region's prehistory into five periods marked by changes in archaeological remains, reflecting different ways in which native peoples adapted to their surroundings. The five periods are as follows: the Lake Mohave Period, 12,000 years to 7,000 years ago; the Pinto Period, 7,000 years to 4,000 years ago; the Gypsum Period, 4,000 years to 1,500 years ago; the Saratoga Springs Period, 1,500 years to 800 years ago; and the Protohistoric Period, 800 years ago to European contact.

This time frame is based on general changes in artifactual remains, from large stone projectile points with few stones for grinding food products to smaller projectile points with an increase in the number of milling stone tools. The scheme also notes increases in population, changes in food procurement and resource exploitation, and more cultural complexity over time. During the Protohistoric Period, there is evidence of contact with the Colorado River tribes and the introduction of pottery across the Mojave Desert (EIR Appendix E, CRM TECH 2008, p. 4).

Ethnohistoric Context

The project site is located on the northern edge of the homeland of the Serrano Indians, whose traditional territory is centered at the San Bernardino Mountains but also includes the southern rim of the Mojave Desert, extending from Victorville eastward to Twentynine Palms. The name "Serrano" was derived from a Spanish term meaning "mountaineer" or "highlander." The basic written sources on Serrano culture are Kroeber, Strong, and Bean and Smith. The following ethnographic discussion of the Serrano people is based on these sources.

Prior to European contact, the Serranos were primarily gatherers and hunters, and occasional fishers, who settled mostly where flowing water emerged from the mountains. They were loosely organized into exogamous clans, led by hereditary heads, and the clans, in turn, were affiliated with one of two exogamous moieties. The exact nature of the clans, their structure, function, and number are not known, except that each clan was the largest autonomous political and landholding unit, the core of which was the patrilineage. There was no pan-tribal political union among the clans.

Although contact with Europeans may have occurred as early as 1771 or 1772, Spanish influence on Serrano lifeways was negligible until 1819, when a mission *asistencia* was established on the southern edge of Serrano territory. Between then and the end of the mission era in 1834, most of the Serranos in the San Bernardino Mountains were removed to the nearby missions. At present, most Serrano descendants are found on the San Manuel and the Morongo Indian reservations, where they participate in ceremonial and political affairs with other Native American groups on an inter-reservation basis (EIR Appendix E, CRM TECH 2008, p. 4).

Historic Context

Situated far from the coastline and any of the major desert trails, the Lucerne Valley area saw little change during the Spanish and Mexican periods, although sporadic mining activities reportedly took place in the vicinity. After the American annexation of Alta California in 1848, mining and prospecting in the area began in earnest, especially in the aftermath of gold discoveries in the San Bernardino Mountains in the early 1860s. As in the rest of the vast Mojave Desert, mining remained for a long time the dominant economic pursuit in the Lucerne Valley area. It has continued to the present time, yielding a diverse variety of mineral products ranging from gold to clay.

The mid-nineteenth century mining boom in the vicinity brought to the Lucerne Valley area its earliest Euro-American settlers. During the 1870s, "Uncle Pete" Davidson, a former prospector in the San Bernardino Mountains, established a homestead near Rabbit Springs and became the first permanent resident in the valley. In the meantime, the miniature gold rush in the San Bernardino Mountains and later the construction of the Big Bear dam in 1883–1884 brought a steady flow of traffic along a wagon road through the valley, so much so that Davidson's ranch came to be known as Davidson's Stage and Way Station. In 1897, James "Dad" Goulding, a silver miner from Colorado, acquired the Box S Ranch, which had been established in 1886 but later abandoned. In the late nineteenth and early twentieth century's, Goulding played a pivotal role in the growth of the small community that he named Lucerne Valley, after a type of alfalfa grown by the Mormons.

Around the turn of the century, more homesteaders started to filter into the valley, especially after Goulding's discovery of artesian water in 1905. Over the next few decades, the settlers attempted a number of money-making schemes, such as cultivating deciduous fruits and alfalfa, raising chickens, turkeys, and rabbits, and even luring Hollywood movie-makers, in most cases with only short-lived success. After World War II, guest ranches sprouted up throughout the valley, offering city dwellers a brief respite from the pressures of urban life. Throughout these various "fevers," however, growth remained relatively slow for the remote desert area, which has allowed it to retain much of its rural character to the present day (EIR Appendix E, CRM TECH 2008, p. 5).

CULTURAL RESOURCES RESEARCH METHODS AND RESULTS

Archaeological Records Search

On September 30, 2008, CRM TECH completed the records search at the Archaeological Information Center (AIC), San Bernardino County Museum, Redlands. During the records search, CRM TECH checked the AIC's electronic database for previously identified historical/archaeological resources in or near the area of potential effect (APE) and existing cultural resources reports pertaining to the vicinity. Previously identified historical/archaeological resources include properties designated as California Historical Landmarks, Points of Historical Interest, or San Bernardino County Historical Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory (EIR Appendix E, CRM TECH 2008, p. 8).

According to AIC records, portions of the APE for the haul road were previously surveyed between 1985 and 1992, but no cultural resources had been recorded on or adjacent to the property. Outside the APE boundaries but within a 1-mile radius, AIC records show at least four other previous studies on various tracts of land and linear features. As a result of these and other similar studies in the vicinity, three archaeological sites were recorded within the scope of the records search, as listed in **Table 3.4-1**. One of these sites (36-005556) was found in the buffer area of the APE, and thus requires further consideration related to the proposed project (EIR Appendix E, McKenna 2012, p. v).

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**TABLE 3.4-1
PREVIOUSLY RECORDED CULTURAL RESOURCES**

Site No.	Recorded by/Date	Description
36-005319	Lerch 1985	Prehistoric roasting pit/hearth
36-005556	Lerch 1986; McCarthy 1988	Scatter of lithic flakes
36-006142	McCarthy 1988	Bedrock milling feature (metate)
36-024514	Fife Mining Claim Road	Historic period resource

Source: EIR Appendix E, CRM TECH 2008, p. 9; EIR Appendix E, McKenna 2012, p. v

Historical Background Research

CRM TECH conducted the historical background research on the basis of published literature in local history and historic maps of the Lucerne Valley area. Among maps consulted for this study were the U.S. General Land Office's (GLO) land survey plat map dated 1896 and the U.S. Geological Survey's (USGS) topographic maps dated 1902, 1947, and 1956. These maps are collected at the Science Library of the University of California, Riverside, and the California Desert District of the U.S. Bureau of Land Management, located in Moreno Valley (EIR Appendix E, CRM TECH 2008, p. 8).

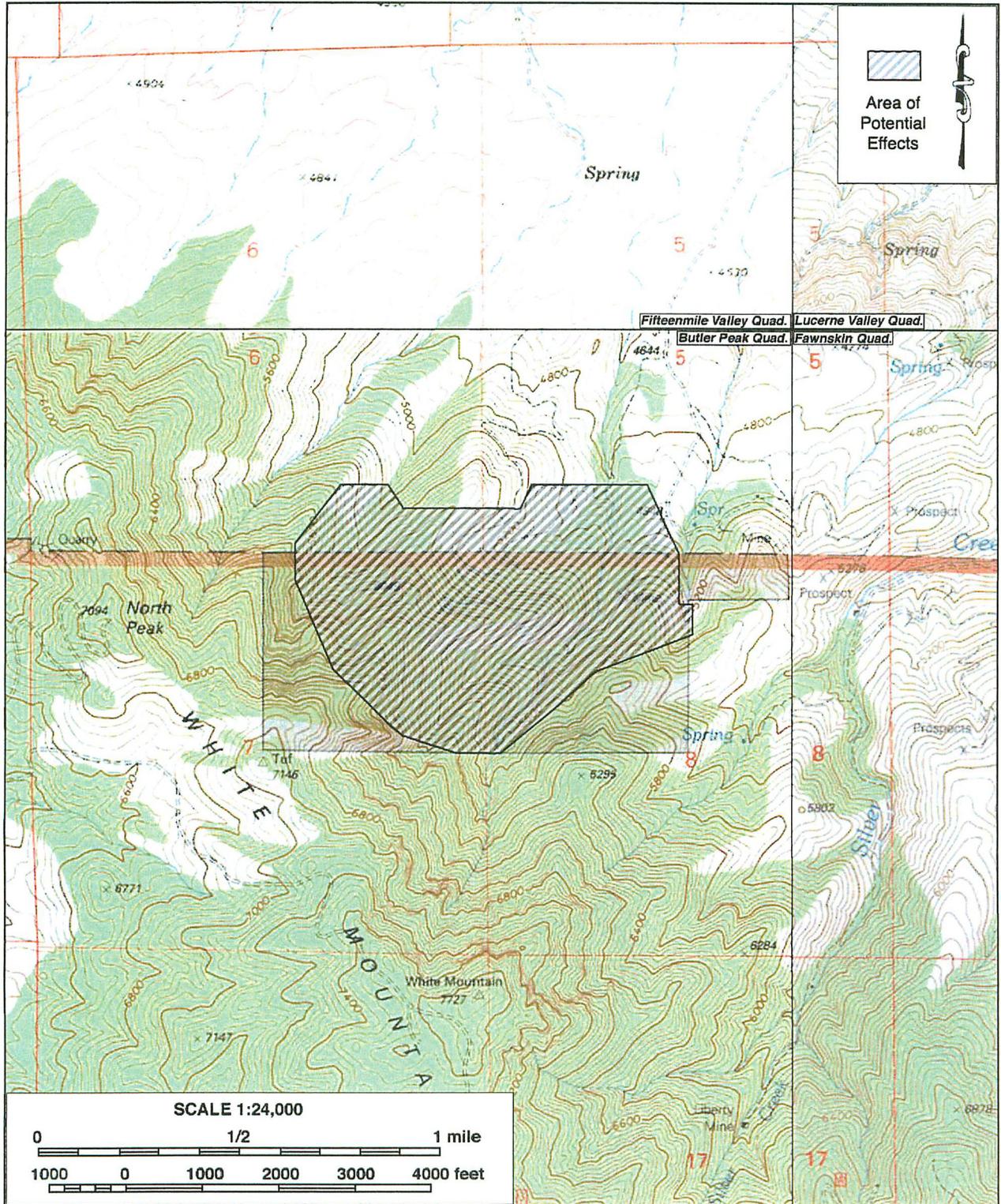
Situated in the foothills on the edge of the sparsely populated Mojave Desert country, the APE was determined by CRM TECH to have no evidence of any settlement or development activities throughout the historic period. Between the 1850s and the 1950s, the only man-made features noted in the vicinity of the APE were a few dirt roads across the barren landscape. Based on these historic maps, the APE appears to be relatively low in sensitivity for cultural resources from the historic period (EIR Appendix E, CRM TECH 2008, p. 9).

Native American Participation

As part of the research procedures, CRM TECH contacted the California Native American Heritage Commission (NAHC) on September 22, 2008, to request a records search in the commission's sacred lands file. Following NAHC's recommendations, CRM TECH further contacted a total of 11 Native American representatives in the region, both by mail and by telephone, between September 23 and October 29 to solicit local Native American input regarding any possible cultural resource concerns over the proposed undertaking. The correspondence between CRM TECH and the Native American representatives is located in Appendix 2 of the Class III Cultural Resources Survey, White Knob Quarry Revision Project.

In response to CRM TECH's inquiry, the NAHC reports that the sacred lands record search identified no Native American cultural resources in the immediate area of the project site. However, noting that "the absence of specific site information in the Sacred Lands File does not guarantee the absence of cultural resources in any project area," the NAHC recommends that local Native American representatives be contacted for further information and provided a list of potential contacts in the region.

Upon receiving the NAHC's response, CRM TECH initiated correspondence with all nine individuals on the referral list and the organizations they represent. In addition, John Gomez Jr., Cultural Resources Coordinator for the Ramona Band of Cahuilla Indians, and John Tommy Rosas, Tribal Administrator of the Tongva Ancestral Territorial Tribal Nation, were also contacted.



Source: CRM TECH

Figure 3.4-1
Area of Potential Effect

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In a letter dated September 27, 2008, Charles Wood, Chairman of the Chemehuevi Indian Tribe, states that the area in and around the APE is sensitive for Native American cultural resources. The tribe is specifically concerned with any areas around Chimney Rock, which is approximately 6 miles to the north of the APE. The presence of village sites, petroglyphs, and geoglyphs in the area is also among the tribe's concerns. Primarily, the tribe is concerned with Native American artifacts, village sites, and human remains being discovered in the APE during the undertaking. In addition to requesting notification of any discovery of cultural resources in the APE, Mr. Wood requests that an aerial survey be conducted to identify any geoglyphs that may be present in the APE.

In e-mails dated October 1 and 24, 2008, John Tommy Rosas of the Tongva Ancestral Territorial Tribal Nation states that the APE is an old/current sacred site, in an area that is also sensitive for known Native American surface and below ground cultural items. He requested the area be studied and that there be tribal consultation under Section 106 of NHPA and Section 7 of NEPA. Michael Contreras, Cultural Heritage Program Manager for the Morongo Band of Mission Indians, replied by e-mail on October 15, 2008, stating that the tribe has no concerns at this time but wishes to be contacted regarding any archaeological discoveries. John Gomez Jr. of the Ramona Band responded by telephone on October 28 and expressed the tribe's intention to defer to other Native American groups located closer to the APE (EIR Appendix E, CRM TECH 2008, pp. 9–12).

Field Survey

On October 2 and 3, 2008, CRM TECH carried out the pedestrian field survey of the area. The relatively level areas of the APE were surveyed intensively by walking parallel north–south transects spaced 15 meters (approximately 50 feet) apart. Since such regular transects were impracticable on the steep slopes, the more rugged terrain in the APE was surveyed by inspecting all areas accessible or demonstrating the potential archaeological remains, such as the drainages and bedrock outcrops. Previously surveyed portions of the APE, where mining operations are currently ongoing, were given a cursory survey. In this way, the entire APE was examined systematically for any evidence of human activities dating to the prehistoric or historic periods (i.e., 50 years ago or older). Ground visibility ranged from poor (25 percent) to fair (70 percent), depending on the density of the vegetation (EIR Appendix E, CRM TECH 2008, pp. 8–9).

The intensive-level field survey produced negative results for potential cultural resources. The entire APE was closely inspected for any evidence of human activities dating to the prehistoric or historic periods, but none was found. Much of the APE has been disturbed by the ongoing mining activities and the construction of access roads, and large piles of quartz mining refuse are scattered throughout the area. No buildings, structures, objects, sites, features, or artifacts more than 50 years of age were encountered during the survey (EIR Appendix E, CRM TECH 2008, p. 12).

Expanded Mine Area

The following discussion pertains to the 70-acre portion of the project site that is located on BLM-managed federal lands and is in the process of being transferred to Omya ownership through a direct land purchase. This area is a part of the Amended Reclamation Plan. The APE includes this area and a surrounding buffer for a total area of 110 acres.

The Class III Cultural Resources Investigation for this portion of the project site consists of a records search and field investigation. The records search identified one prehistoric archaeological site and one historic period resource within the project area. The prehistoric archaeological site (36-005556), a lithic scatter, is located outside of the APE but within the buffer

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area. This site was previously impacted by the development of the White Knob Haul Road, and little evidence of the site remains. It is not a significant resource but has a potential to yield additional data that may change this conclusion and is considered an area sensitive for additional cultural resources.

The historic period resource (36-024514; CA-SBR-15565H; the Fife Mining Claim Road) is not a significant resource. It has been impacted by prior construction, and no artifacts or other features were found in association with the segment of the road running through the APE (EIR Appendix E, McKenna 2012, p. vi).

PALEONTOLOGICAL SETTING

The following information was provided by the CRM TECH study Paleontological Resources Assessment Report, White Knob Quarry Revision Project. This study is located in **EIR Appendix E** of this DEIR.

Paleontological Resources Definition

Paleontological resources represent the remains of prehistoric life, exclusive of any human remains, and include the localities where fossils were collected as well as the sedimentary rock formations in which they were found. The defining character of fossils or fossil deposits is their geologic age, which is typically regarded as older than 10,000 years, the generally accepted temporal boundary marking the end of the last late Pleistocene glaciation and the beginning of the current Holocene epoch.

Common fossil remains include marine shells; the bones and teeth of fish, reptiles, and mammals; leaf assemblages; and petrified wood. Fossil traces, another type of paleontological resources, include internal and external molds (impressions) and casts created by these organisms. These items can serve as important guides to the age of the rocks and sediments in which they are contained, and may provide useful in determining the temporal relationships between rock deposits from one area and those from another as well as the timing of geologic events.

Fossil resources generally occur only in areas of sedimentary rock (e.g., sandstone, siltstone, mudstone, claystone, or shale). Because of the infrequency of fossil preservation, fossils, particularly vertebrate fossils, are considered to be nonrenewable paleontological resources. Occasionally fossils may be exposed at the surface through the process of natural erosion or as a result of human disturbances; however, they generally lay buried beneath the surficial soils. Thus, the absence of surface fossils does not preclude the possibility of their being present within subsurface deposits, while the presence of fossils at the surface is often a good indication that more remains may be found in the subsurface (CRM TECH 2009, p. 3).

Paleontological Sensitivity

The fossil record is unpredictable and the preservation of organic remains is rare, requiring a particular sequence of events involving physical and biological factors. Skeletal tissue with a high percentage of mineral matter is the most readily preserved within the fossil record; soft tissues not intimately connected with the skeletal parts, however, are the least likely to be preserved. For this reason, the fossil record contains a biased selection not only of the types of organisms preserved but also of certain parts of the organisms themselves. As a consequence, paleontologists are unable to know with certainty the quantity of fossils or the quality of their preservation that might be present within any given geologic unit.

Sedimentary units, which are paleontologically sensitive, are those geologic units (mappable rock formations) with a high potential to contain significant nonrenewable paleontological resources. More specifically, these are geologic units within which vertebrate fossils or significant invertebrate fossils have been determined by previous studies to be present or are likely to be present. These units include, but are not limited to, sedimentary formations that contain significant paleontological resources anywhere within their geographical extent as well as sedimentary rock units temporally or lithologically amenable to the preservation of fossils.

A geologic formation is defined as a stratigraphic unit identified by its lithic characteristics (e.g., grain size, texture, color, and mineral content) and stratigraphic position. There is a direct relationship between fossils and the geologic formations within which they are enclosed. With sufficient knowledge of the geology and stratigraphy of a particular area, it is possible for paleontologists to reasonably determine its potential to contain significant nonrenewable vertebrate, invertebrate, marine, or plant fossil remains.

The paleontological sensitivity for a geologic formation is determined by the potential for that formation to produce significant nonrenewable fossils. This determination is based on what fossil resources the particular geologic formation has produced in the past at other nearby locations. Determinations of paleontologic sensitivity must consider not only the potential for yielding vertebrate fossils but also the potential for a few significant fossils that may provide new and significant taxonomic, phylogenetic, and/or stratigraphic data.

The Society of Vertebrate Paleontology issued a set of standard guidelines intended to assist paleontologists to assess and mitigate any adverse effects/impacts on nonrenewable paleontological resources. The society defined three potential categories of paleontological sensitivity for geologic units that might be impacted by a proposed project. These categories are described below, along with the criteria used to establish their sensitivity.

- **High sensitivity:** Geologic units assigned to this category are considered to have a high potential for significant nonrenewable vertebrate, invertebrate, marine, or plant fossils. Sedimentary rock units in this category contain a relatively high density of recorded fossil localities, have produced fossil remains in the vicinity, and are very likely to yield additional fossil remains.
- **Low sensitivity:** Geologic units are assigned to this category when they have produced no or few recorded fossil localities and are not likely to yield any significant nonrenewable fossil remains.
- **Undetermined sensitivity:** Geologic units are assigned to this category when there is limited exposure of the rock units in the area and/or the rock units have been poorly studied (CRM TECH 2009, p. 5).

PALEONTOLOGICAL RESOURCES RESEARCH METHODS AND RESULTS

Records Search

CRM TECH utilized the records search service available through the Regional Paleontologic Locality Inventory located at the San Bernardino County Museum in Redlands and the Natural History Museum of Los Angeles County (NHMLAC) in Los Angeles. These institutions maintain files of regional paleontological localities, as well as supporting maps and documents for paleontological research.

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The NHMLAC found no known paleontological localities within the area of potential effect or nearby from similar sediment lithologies to that occurring within the APE. A review of the Regional Paleontologic Locality Inventory by the San Bernardino County Museum (SBCM) indicates that no paleontological localities are recorded in the APE and no localities are recorded within several miles of the APE in any direction (CRM TECH 2009, p. 7).

According to the NHMLAC, in the lowest portion of the APE and along many of the drainages, there are surficial deposits of older Quaternary alluvium. These deposits, which are primarily fan deposits from the surrounding elevated terrain, will typically not contain significant vertebrate fossils, at least not in the uppermost layers. Geologic mapping indicates there are exposures of the Mississippian Furnace Limestone in the central portion of the APE. Despite this limestone being somewhat metamorphosed, it does contain recognizable invertebrate fossils and could potentially contain the remains of vertebrate fossils. The remainder of the APE contains Paleozoic metamorphic rocks and Mesozoic plutonic igneous rocks, both of which are considered to be devoid of fossils (CRM TECH 2009, p. 7).

The NHMLAC has determined that excavations that will penetrate into the Paleozoic metamorphic and Mesozoic igneous bedrock found throughout the majority of the APE will not encounter any vertebrate fossils. In addition, surface grading or shallow excavations into the older Quaternary alluvium found in the northeastern portion of the APE are also unlikely to uncover significant vertebrate fossils since this older alluvium is shallow and underlain by igneous bedrock exposed in the surrounding terrain (CRM TECH 2009, p. 8). Because of the APE's lithology, it is unlikely to yield any significant vertebrate fossils. However, the CRM TECH study notes that excavations within the Furnace Limestone Formation in the central portion of the APE have the potential to yield highly significant vertebrate fossils of late Paleozoic age which are otherwise poorly known in California.

The results of the records search conducted by the SBCM indicate that none of the geologic formations have the potential to contain significant nonrenewable fossil resources (CRM TECH 2009, p. 8). As a result, the SBCM has assigned all the geologic formations present within the APE a low sensitivity for yielding significant nonrenewable paleontological resources (CRM TECH 2009, p. 8).

Field Survey

The field survey conducted for the CRM TECH study did not produce any surface indications of paleontological resources within or adjacent to the APE. Surface soils were confirmed in the field as representing a gravelly, sandy loam matrix. Much of the APE has been disturbed by the ongoing mining activities and the construction of access roads, and large piles of quartz mining refuse are scattered throughout the area.

Omya California's geologist Howard Brown, who is intimately familiar with the White Knob Quarry, was interviewed as part of the CRM TECH study. He notes that "although rocks correlative with the Monte Cristo Limestone Formation are present in the APE, they have been metamorphosed by repeated regional and contact metamorphism to upper amphibolites grade and granulite grade (high temperature high pressure) and all of the limestone has been metamorphosed to marble, there is no remaining limestone that has not been metamorphosed. Based on 20 years of mining, it can be stated with certainty the potential for virtually any paleontological resources in igneous and metamorphosed rocks at the APE is nil." Brown also notes that rocks at the quarry are highly metamorphosed, coarse-grained calcite marble and—based on detailed field observations, sampling, drilling, and 20 years of mining—are not known to contain any fossils. He states that the possibility of finding non-metamorphosed fossiliferous limestones at the quarry is nonexistent.

However, according to CRM TECH, because there are pockets of non-metamorphosed limestone at the quarry, it is possible that some of these limestone pockets might contain remnant fossils, since fossils have been recovered from such limestone deposits in other portions of the metamorphic belt along the north flank of the San Bernardino Mountains (CRM TECH 2009, p. 12).

The primary ore being quarried at this location is a very coarse crystalline marble, with portions containing some very large calcite crystals. The Furnace Limestone, as mapped in the project area and now referred to as the Monte Cristo Limestone Formation, contains a significant amount of marble, which has a low potential for containing any paleontological resources. However, scattered small pockets of moderate to slightly metamorphosed limestone have been found within these large deposits of marble, and it is possible that this limestone may contain fossil remains, given that fossils have been recovered from limestone deposits found elsewhere in the area. These limestone pockets, though, appear to constitute a small percentage of the Monte Cristo Limestone.

The presence of the relatively small and infrequent pockets of potentially fossil-bearing limestone may account for the discrepancy in the sensitivity assessments between the SBCM and the NHMLAC. While the SBCM has assigned a low paleontological sensitivity for the Monte Cristo Limestone because "the Paleozoic and Mesozoic metamorphic and granitic rocks...do not preserve fossils," the NHMLAC notes that "excavations in the Furnace Limestone exposed in the central portion of the proposed project area could potentially recover highly significant vertebrate fossils of late Paleozoic age." The NHMLAC is presumably referring to the moderate to slightly metamorphosed limestone that appears to constitute a very small percentage of the Monte Cristo Limestone Formation (CRM TECH 2009, p. 12).

3.4.2 REGULATORY FRAMEWORK

FEDERAL

National Register of Historic Places

The National Register of Historic Places was established to recognize resources associated with the accomplishments of all peoples who have contributed to the country's history and heritage. Guidelines were designed for federal and state agencies in nominating cultural resources to the National Register. These guidelines are based on the integrity and significance of the resource. Quality of significance in American history, architecture, archaeology, engineering, and culture is present in resources that possess integrity of location, design, setting, materials, workmanship, feeling, and association.

The National Historic Preservation Act (NHPA) includes provisions that specifically address federal agencies' responsibilities when their activities involve National Historic Landmark (NHL) properties. Section 106 and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800), address federal agency responsibilities when an undertaking will affect properties eligible for or listed in the National Register of Historic Places.

Section 106 requires agencies, prior to approval of an undertaking, to "take into account" effects of an undertaking on historic properties. NHLs designated by the Secretary of Interior are included in this group. Section 110(f) of the act also outlines the specific actions that an agency must take when NHLs may be directly and adversely affected by an undertaking. Agencies must "to the maximum extent possible...minimize harm" to national Historic Landmarks affected by undertakings. Both Sections 106 and 110(f) also require agencies to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.

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STATE

California Register of Historical Resources

The State Historical Resources Commission has designed the California Register of Historical Resources (CRHR) for use by state and local agencies, private groups, and citizens to identify, evaluate, register, and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archeological resources. This program encourages public recognition and protection of resources of architectural, historical, archeological, and cultural significance, identifies historical resources for state and local planning purposes, determines eligibility for state historic preservation grant funding, and affords certain protections under the California Environmental Quality Act (CEQA).

California Environmental Quality Act

Under CEQA, public agencies must consider the effects of their actions on both historical resources and unique archaeological resources. Pursuant to Public Resources Code (PRC) Section 21084.1, 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." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

Historical resource is a term with a defined statutory meaning (PRC Section 21084.1; determining significant impacts on historical and archaeological resources is described in CEQA Guidelines Section 15064.5 [a], [b]). Under CEQA Guidelines Section 15064.5(a), historical resources include the following:

A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (PRC Section 5024.1).

A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources (PRC Section 5024.1), including the following:

- 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 the lives of persons important in our past;

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- 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 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 (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1(g)) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Historic resources are usually 45 years old or older and must meet at least one of the criteria for listing in the California Register of Historical Resources, described above (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC Section 5024.1 and California Code of Regulations (CCR), Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

For historic structures, CEQA Guidelines Section 15064.5(b)(3) indicates that a project which follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995) will be considered as mitigating impacts to a less than significant level.

As noted above, CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. Public Resources Code Section 21083.2(g) states:

"Unique archaeological resource" means an 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 important prehistoric or historic event or person.*

Treatment options under Section 21083.2 include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include

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excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

Section 7050.5(b) of the California Health and Safety Code specifies protocol when human remains are discovered, as follows:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

CEQA Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the Native American Heritage Commission. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

In addition to the mitigation provisions pertaining to accidental discovery of human remains, the CEQA Guidelines also require that a lead agency make provisions for the accidental discovery of historical or archaeological resources, generally. Pursuant to Section 15064.5(f), these provisions should include "an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."

Paleontological resources are classified as nonrenewable scientific resources. California Public Resources Code Section 5097.5 et seq. makes it a misdemeanor for anyone to knowingly disturb any archaeological, paleontological, or historical features situated on public lands. No state or local agencies have specific jurisdiction over paleontological resources. No state or local agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth-moving on state or private land in a project site.

LOCAL

San Bernardino County General Plan

The General Plan includes policies and programs that are intended to protect cultural and paleontological resources. The General Plan has identified Cultural Resource Overlay areas and requires new development proposed in these areas to perform a cultural resources field survey and evaluation. Furthermore, the General Plan requires that mitigation of impacts on important

3.4 CULTURAL AND PALEONTOLOGICAL RESOURCES

cultural resources follow the standards established in Appendix G of the California Environmental Quality Act Guidelines.

The General Plan policies and programs that assist in the protection of cultural resources are listed below.

Policy CO 3.1 Identify and protect important archaeological and historic cultural resources in areas of the County that have been determined to have known cultural resource sensitivity.

Programs

1. Require a cultural resources field survey and evaluation prepared by a qualified professional for projects located within the mapped Cultural Resource Overlay area.
2. Mitigation of impacts to important cultural resources will follow the standards established in Appendix G of the California Environmental Quality Act Guidelines, as amended to date.

Policy CO 3.2 Identify and protect important archaeological and historic cultural resources in all lands that involves disturbance of previously undisturbed ground.

Programs

1. Require the Archaeological Information Center at the San Bernardino County Museum to conduct a preliminary cultural resource review prior to the County's application acceptance for all land use applications in planning regions lacking Cultural Resource Overlays and in lands located outside of planning regions.
2. Should the County's preliminary review indicate the presence of known cultural resources or moderate to high sensitivity for the potential presence of cultural resources, a field survey and evaluation prepared by a qualified professional will be required with project submittal. The format of the report and standards for evaluation will follow the "Guidelines for Cultural Resource Management Reports" on file with the San Bernardino County Land Use Services Department.

Policy CO 3.3 Establish programs to preserve the information and heritage value of cultural and historical resources.

Policy CO 3.5 Ensure that important cultural resources are avoided or minimized to protect Native American beliefs and traditions.

Programs

1. Consistent with SB 18, as well as possible mitigation measures identified through the CEQA process, the County will work and consult with local tribes to identify, protect and preserve "traditional cultural properties" (TCPs). TCPs include both manmade sites and resources as well as natural landscapes that contribute to the cultural significance of areas.

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2. The County will protect confidential information concerning Native American cultural resources with internal procedures, per the requirements of SB 922, an addendum to SB 18. The purpose of SB 922 is to exempt cultural site information from public review as provided for in the Public Records Act. Information provided by tribes to the County shall be considered confidential or sacred.
3. The County will work in good faith with the local tribes, developers/applicants and other parties if the local affected tribes request the return of certain Native American artifacts from private development projects. The developer is expected to act in good faith when considering the local tribe's request for artifacts. Artifacts not desired by the local tribe will be placed in a qualified repository as established by the California State Historical Resources Commission. If no facility is available, then all artifacts will be donated to the local tribe.
4. *[Program 4 is not included in this list as it does not pertain to projects of this type]*
5. Because contemporary Native Americans have expressed concern over the handling of the remains of their ancestors, particularly with respect to archaeological sites containing human burials or cremations, artifacts of ceremonial or spiritual significance, and rock art, the following actions will be taken when decisions are made regarding the disposition of archaeological sites that are the result of prehistoric or historic Native American cultural activity:
 - a. The Native American Heritage Commission and local reservation, museum, and other concerned Native American leaders will be notified in writing of any proposed evaluation or mitigation activities that involve excavation of Native American archaeological sites, and their comments and concerns solicited.
 - b. The concerns of the Native American community will be fully considered in the planning process.
 - c. If human remains are encountered during grading and other construction excavation, work in the immediate vicinity will cease and the County Coroner will be contacted pursuant to the state Health and Safety Code.
 - d. In the event that Native American cultural resources are discovered during project development and/or construction, all work in the immediate vicinity of the find will cease and a qualified archaeologist meeting U.S. Secretary of Interior standards will be hired to assess the find. Work on the overall project may continue during this assessment period.
 - e. If Native American cultural resources are discovered, the County will contact the local tribe. If requested by the tribe, the County will, in good faith, consult on the discovery and its disposition with the tribe.

San Bernardino Development Code

Division 2, Land Use Zoning Districts and Allowed Land Uses

Chapter 82.12 (Cultural Resource Preservation Overlay) of the Development Code is intended to provide for the identification and preservation of important archaeological and historical resources in the county. The application for a new development project proposed within a Cultural Resource Overlay is required to include a report prepared by a qualified professional that determines through appropriate investigation the presence or absence of archaeological and/or historical resources on the project site and within the project area, and recommends appropriate data recovery or protection measures. Currently, the County's Cultural Resources Sensitivity Overlay Map only covers the Oak Hills, Phelan, and Pinon Hills areas of the county. Therefore, the project site is not within a Cultural Resource Overlay.

Chapter 82.20 (Paleontological Resource Overlay) of the Development Code is intended to provide for the identification and preservation of important paleontological resources in the county. When a land use is proposed within a Paleontological Resource Overlay, the project is evaluated for compliance with the intent of the overlay. The overlay is applied to those areas where paleontologic resources are known to occur or are likely to be present. Specific identification of known fossil occurrences or potential paleontologic sensitivity is indicated by listing in the locality files of one or more of the following institutions: San Bernardino County Museum, University of California, and Los Angeles County Museum.

As described previously, the paleontological resources records search conducted for the proposed project utilized the records search services available through the San Bernardino County Museum and the Natural History Museum of Los Angeles County. According to these sources, no known paleontological localities occur within the APE or in the nearby area.

3.4.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, a cultural or paleontological resources impact is considered significant if project implementation would result in any of the following:

1. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
2. Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.
3. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.
4. Disturb any human remains, including those interred outside of formal cemeteries.

The Notice of Preparation/Initial Study prepared for the proposed project (see **EIR Appendix A**) concluded that, based on the findings of cultural and paleontological resource assessments previously prepared for the project site, the presence of cultural and paleontological resources within the study area is highly unlikely, and no significant impacts are expected to occur. However, these previous assessments provided recommendations to address the discovery of previously unknown resources on the site that may be discovered during mining and

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reclamation activities. Therefore, all of the significance thresholds listed above are addressed in the following impact analysis.

METHODOLOGY

The following impact analysis is based on the findings and conclusions of the cultural and paleontological technical studies prepared for the proposed project.

PROJECT IMPACTS AND MITIGATION MEASURES

Substantial Adverse Impact on an Archaeological or Historical Resource (Standards of Significance 1 and 2)

Impact 3.4.1 While no evidence of significant historical or archaeological resources has been identified for the project site, the proposed project through earth-moving activities may uncover a previously unknown historical or archaeological resource. This impact would be **potentially significant**.

As described previously, the archaeological records search, historical background research, and intensive-level field survey of the project site did not identify any significant archaeological or historical resources within the area of potential effect. However, archaeological resources were found in the buffer zone of the White Knob haul road APE. This resource was determined to not be of significance but has the potential to yield additional data that may change this conclusion. Additionally, consultation with concerned Native American tribes indicated that certain areas around the APE are highly sensitive for Native American cultural resources and that the APE lies within or in close proximity to a sacred site. Processing of the quarries may result in the unearthing of unknown historical or archaeological resources. This impact would be **potentially significant**.

Mitigation Measures

MM 3.4.1 It shall be required in the final Amended Mine and Reclamation Plan, that if, during the course of construction, mining, or reclamation activities previously unknown cultural resources (i.e., prehistoric or historic sites) are discovered, work shall be halted immediately within 50 feet of the discovery, the San Bernardino County Land Use Services Department shall be notified, and a professional archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to determine the significance of the discovery. Determination of impacts, significance, and mitigation that protects the discovered resource shall be made by a qualified archaeologist in consultation with recognized local Native American groups, if appropriate. The San Bernardino County Museum shall also be contacted for review of the archaeological find(s). In addition, prior to the commencement of project excavations, all construction and mining personnel shall be informed of the potential to inadvertently uncover cultural resources and the procedures to follow subsequent to an inadvertent discovery of cultural resources.

Timing/Implementation: Required to be placed in the final version of the Amended Plan and implemented during mining and reclamation activities

Enforcement/Monitoring: County of San Bernardino Planning Department

Implementation of mitigation measure **MM 3.4.1** would ensure that any significant cultural resources inadvertently discovered during project implementation are protected and would reduce this impact to a level that is **less than significant**.

Disturb Human Remains (Standard of Significance 4)

Impact 3.4.2 No evidence of human remains has been identified for the project site. However, human remains could be encountered during construction, mining, or reclamation activities. This would be a **less than significant** impact.

Archaeological investigations completed for the project site did not identify any significant prehistoric or historic archaeological sites or human remains on those portions of the project site that were surveyed. The remainder of the project site has been heavily disturbed as a result of ongoing mining operations and is not likely to contain any human remains. However, construction, mining, and reclamation activities associated with the proposed project could result in the disturbance of previously unknown human remains.

Should human remains be discovered during any phase of the proposed project, the measures contained in Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5 would be followed, as required by state law. These measures include halting all work within a 200-foot radius of the discovery and notifying the County Coroner. If the remains are determined to be Native American, the coroner would notify the Native American Heritage Commission and the procedures outlined in CEQA Section 15064.5(d) and (e) would be followed. Compliance with these existing regulations would ensure that any human remains encountered during project implementation would be handled appropriately and no significant impacts would occur. Therefore, this impact would be **less than significant**.

Mitigation Measures

None required.

Destroy a Unique Paleontological Resource or Geologic Feature (Standard of Significance 3)

Impact 3.4.3 Implementation of the proposed project could result in the destruction of previously unknown unique paleontological resources or geologic features. This impact would be **potentially significant**.

Based on the research and field survey results of the paleontological resources assessment, the proposed project's potential to impact significant nonrenewable paleontological resources appears to range from low to indeterminate, depending on the type of rock encountered during mining operations. The surficial deposits of older Quaternary alluvium found within the drainages and in the lowest portion of the APE are unlikely to contain significant fossils, at least in the uppermost layers, and are considered to have a low potential. The Paleozoic metamorphic rocks and Mesozoic plutonic igneous rocks in the balance of the APE are also considered to have a low potential for significant fossil remains. Therefore, no paleontological monitoring of earth-moving activities is considered necessary within the alluvial soils, the highly metamorphosed rock, or the igneous rock.

However, there is the possibility that pockets of lesser metamorphosed limestones could be encountered in the areas of marble. Fossils have been found in similar formations in the area. Therefore, this limestone has to be assigned an undetermined potential for containing significant

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nonrenewable paleontological remains, primarily invertebrate fossils. This impact would be **potentially significant**.

Mitigation Measures

MM 3.4.3

If non-metamorphosed fossiliferous limestones are encountered during mining activities, they shall be removed and retained for examination by a qualified paleontologist. If any fossil-bearing materials are encountered, a program to protect and preserve such resources that might be exposed or unearthed shall be developed in cooperation with the project applicant and San Bernardino County. The program shall be developed in accordance with the proposed guidelines of the Society of Vertebrate Paleontology and shall include, but not be limited to, the following:

- All non-metamorphosed fossiliferous limestones that are encountered during mining shall be stockpiled for examination by a qualified paleontologist. The monitor shall be prepared to quickly salvage any fossils that might be present. The monitor should also remove samples of sediments that are likely to contain the remains of small fossil vertebrates and invertebrates.
- Collected samples of sediments shall be processed to recover small invertebrate and vertebrate fossils. Recovered specimens shall be prepared so that they can be identified and permanently preserved.
- Any specimens shall be identified, curated, and placed into a repository with permanent retrievable storage.
- A report of findings, including an itemized inventory of recovered specimens, shall be prepared on completion of the steps outlined above. The report shall include a discussion of the significance of all recovered specimens. The report and inventory, when submitted to San Bernardino County, will signify completion of the program to mitigate impacts on paleontological resources.

Timing/Implementation: *Required to be placed in the final version of the Amended Plan and implemented during mining and reclamation activities*

Enforcement/Monitoring: *County of San Bernardino Planning Department*

Implementation of mitigation measure **MM 3.4.3** would ensure that any previously unknown unique paleontological resources or geologic features resources inadvertently discovered during project implementation are protected and would reduce this impact to a level that is **less than significant**.