PALEONTOLOGICAL RESOURCES ASSESSMENT REPORT

ASSESSOR'S PARCEL NUMBERS 405-230-006 AND 405-230-010

Cherry Valley Area, Riverside County, California
Conditional Use Permit #03629

For Submittal to:

Riverside County Planning Department
County Administrative Center
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Riverside, CA 92501

Prepared for:

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CRM TECH

December 7, 2009

CRM TECH Contract #2401P
Approximately 17.5 Acres
USGS Beaumont, Calif., 7.5' (1:24,000) Quadrangle
Section 28, T2S R1W, San Bernardino Base Meridian

MANAGEMENT SUMMARY

In November and December 2009, at the request of the AMS Group, LLC, CRM TECH performed a paleontological resource assessment on two parcels of partially developed rural land in the unincorporated community of Cherry Valley, Riverside County, California. The subject property of the study consists of Assessor's Parcel Numbers 405-230-006 and 405-230-010, located in the southwest quarter of Section 28, T2S R1W, San Bernardino Base Meridian. The study is part of the environmental review process for the construction of the proposed Brookside Mini-Storage on the property. The County of Riverside, as Lead Agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA).

The purpose of the study is to provide the County of Riverside with the necessary information and analysis to determine whether the proposed project would potentially disrupt or adversely affect any significant paleontological resources, as mandated by CEQA, and to design a paleontological salvage program for the project, if necessary. In order to identify any paleontological resource localities that may exist in or around the project area and to assess the possibility for such resources to be encountered in future excavation and construction activities, CRM TECH initiated records searches at the appropriate repositories, conducted a literature search to identify geologic units and soil types present in the vicinity, and carried out a systematic field survey in accordance with the guidelines of the Society of Vertebrate Paleontology.

Based on the findings from these research procedures, the proposed project's potential to impact paleontological resources appears to range from low to high, depending upon the type of sediments disturbed. The shallow surface soils consist of Recent alluvium, which has a low potential to contain significant nonrenewable paleontological resources, while the undisturbed older Pleistocene-age alluvium underneath has a high potential. Due to the variable thickness of the Recent alluvium, CRM TECH recommends that periodic, "spot-check" monitoring be implemented at the start of any earth-moving operations associated with the project. Once excavations reach approximately three feet below the existing surface, or if older, potentially fossiliferous sediments are encountered at shallower depths, continuous monitoring will become necessary.

Since monitoring of earth-moving activities is recommended, a plan to mitigate impacts to the paleontological resources that might be unearthed should be developed prior to the commencement of the project, in accordance with the provisions of CEQA, the regulations currently implemented by the County of Riverside, and the proposed guidelines of the Society of Vertebrate Paleontology. Under these conditions, the proposed project may be cleared to proceed in compliance with CEQA provisions on paleontological resources.

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INTRODUCTION

In November and December 2009, at the request of the AMS Group, LLC, CRM TECH performed a paleontological resource assessment on two parcels of partially developed rural land in the unincorporated community of Cherry Valley, Riverside County, California (Fig. 1). The subject property of the study consists of Assessor's Parcel Numbers 405-230-006 and 405-230-010, located in the southwest quarter of Section 28, T2S R1W, San Bernardino Base Meridian (Fig. 2). The study is part of the environmental review process for the construction of the proposed Brookside Mini-Storage on the property. The County of Riverside, as Lead Agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.).

The purpose of the study is to provide the County of Riverside with the necessary information and analysis to determine whether the proposed project would potentially disrupt or adversely affect any significant paleontological resources, as mandated by CEQA, and to design a paleontological salvage program for the project, if necessary. In order to identify any paleontological resource localities that may exist in or around the project area and to assess the possibility for such resources to be encountered in future excavation and construction activities, CRM TECH initiated records searches at the appropriate repositories, conducted a literature search to identify geologic units and soil types present in the vicinity, and carried out a systematic field survey in accordance with the guidelines of the Society of Vertebrate Paleontology. The following report is a complete account of the methods, results, and final conclusion of this study.

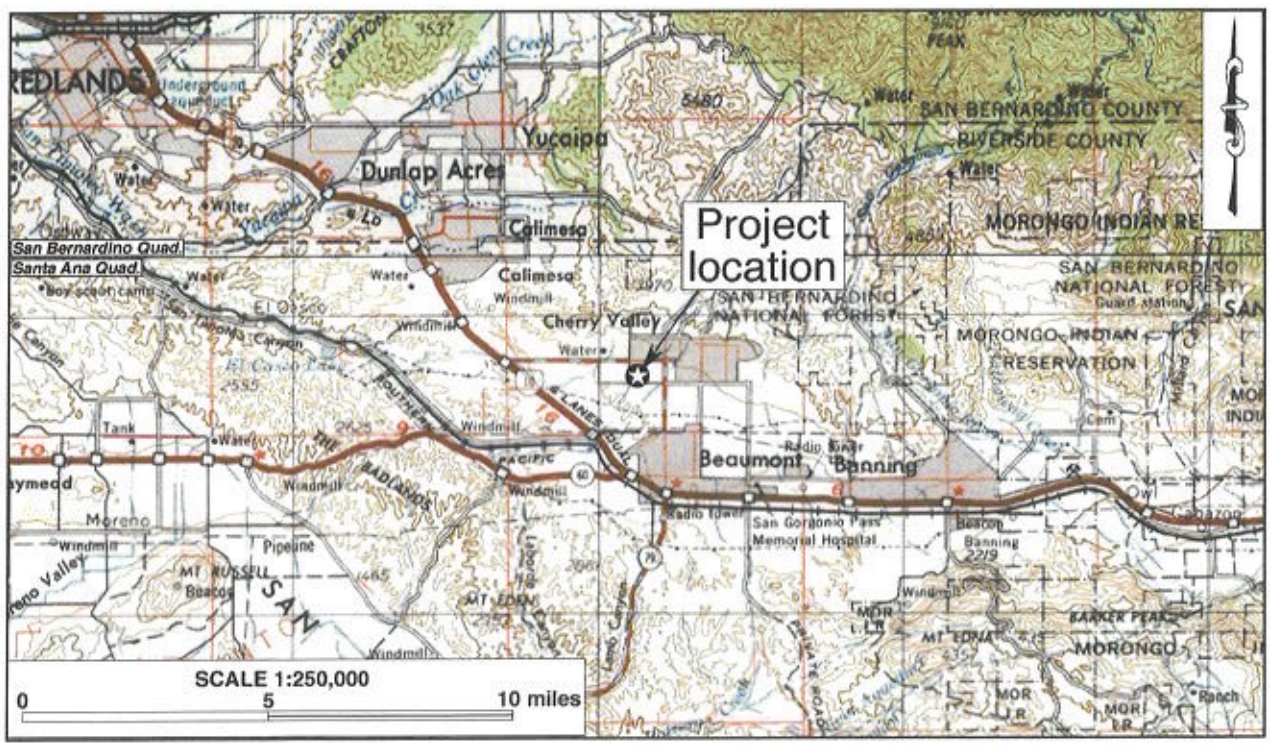

Figure 1. Project vicinity. (Based on USGS San Bernardino and Santa Ana, Calif., 1:250,000 quadrangles)

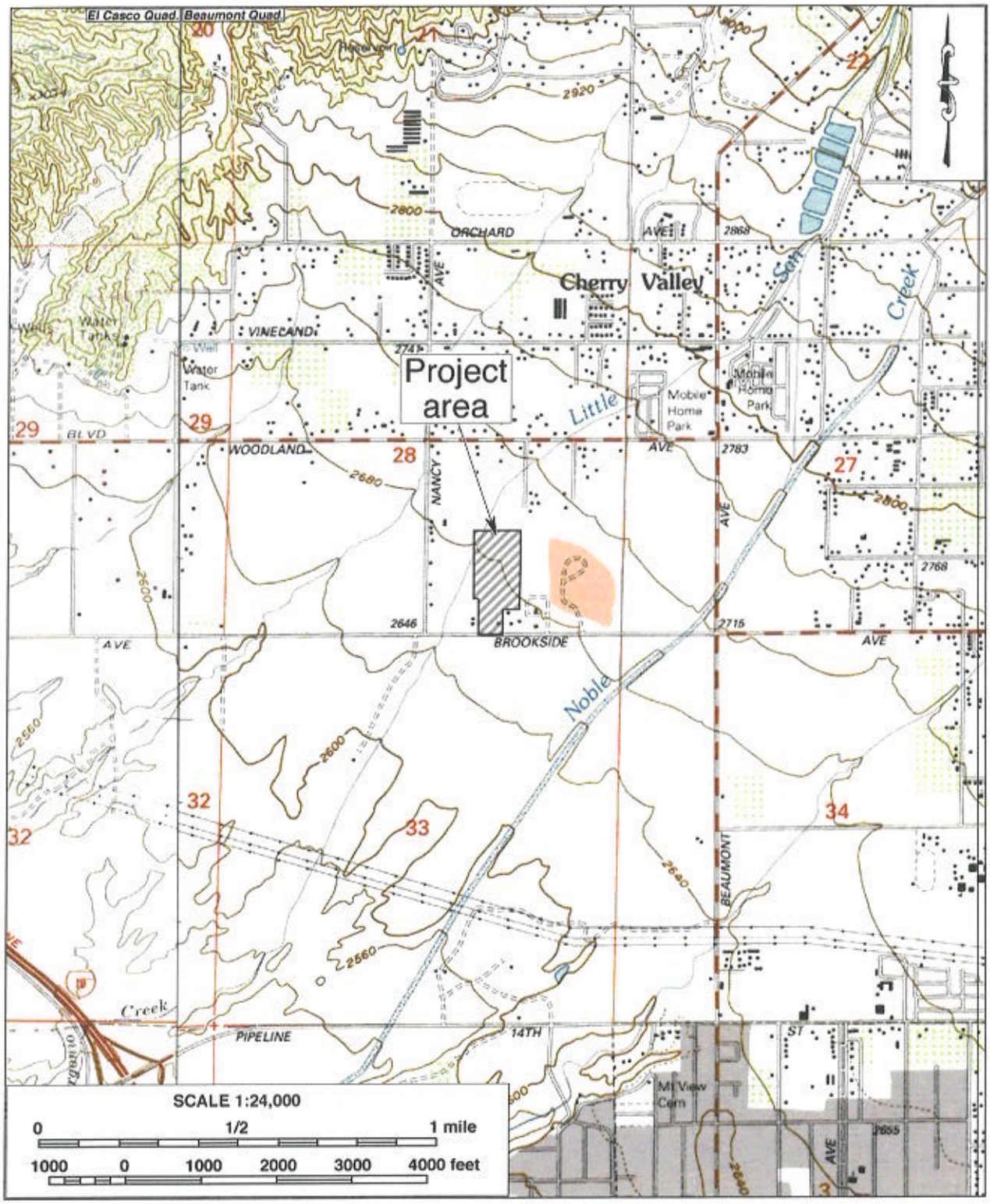

Figure 2. Project area. (Based on USGS El Casco and Beaumont, Calif., 1:24,000 quadrangles)

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 prove 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.

SIGNIFICANCE CRITERIA

According to guidelines proposed by Eric Scott and Kathleen Springer (2003) of the San Bernardino County Museum, paleontological resources can be considered to be of significant scientific interest if they meet one or more of the following criteria:

1. The fossils provide information on the evolutionary relationships and developmental trends exhibited 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 the interactions between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life; and/or
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.

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 (Raup and Stanley 1978). 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, and 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 (1995:22-27) issued a set of standard guidelines intended to assist paleontologists to assess and mitigate any adverse effects/impacts to 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.

SETTING

GEOLOGIC SETTING

California has 11 geomorphic provinces, or naturally defined geologic regions that exhibit a distinct landscape or landform based on geology, faults, topographic relief and climate (Fig. 3). The project area lies within the northern portion of the Peninsular Ranges Province, in close proximity to where it abuts with the Transverse Ranges Province (Jenkins 1980; Harms 1996). The Peninsular Ranges Province is bounded on the north by the Transverse Ranges Province, to the east by the Colorado Desert Province, and on the west by the Pacific Ocean (*ibid.*). It extends further southward to the southern tip of Baja California (Jahns 1954; Harden 2004).

Figure 3. Map of California geomorphic provinces. (Adapted from CGS 2002)

The Peninsular Ranges Province consists of a series of northwest-southeast trending structural blocks of uplifted mountains separated by valley basins developed along the intervening fault zones. The mountains are composed largely of igneous intrusive rock, metasedimentary rock, and a small quantity of metavolcanic rock (Harden 2004:466-468). The non-crystalline rock in the western portion include metavolcanic and metasedimentary rock primarily of Mesozoic age, while the eastern portion contains mostly metasedimentary rock of Paleozoic and older age (*ibid.*:471-472). The crystalline basement rock present in both the western and eastern portions is Mesozoic-age granitic rocks with some scattered gabbroic intrusions (*ibid.*:466-468).

The intervening valley basins are, for the most part, filled with Pliocene to Recent non-marine sedimentary rock (Woodford et al. 1971:3421). An exception to this is the San Bernardino Valley, which contains Miocene through Recent non-marine sedimentary rock (Clarke 1978-1979). Reynolds and Reeder (1986:52) state:

> Dibblee (1981) suggests the San Timoteo formation was probably deposited in a northwest-southeast trending depositional basin which extended from the San Bernardino plain into the San Jacinto Valley, and eastward through the San Gorgonio Pass and into the Salton Trough. The upper Pliocene basin in which the San Timoteo formation was deposited was probably partially coincident with the former Mio-Pliocene marine embayment responsible for the deposition of the Imperial formation.

CURRENT NATURAL SETTING

The unincorporated community of Cherry Valley is situated in the general vicinity of the San Gorgonio Pass, within a mile from the southern foothills of the San Bernardino Mountains. The San Gorgonio Pass, a low-lying, east-west trending corridor between the San Bernardino Mountains on the north and the San Jacinto Mountains on the south, is an important connection between southern California's coastal regions and the vast Colorado Desert, represented near the project location by the arid Coachella Valley.

Located between Mountain View Avenue and Nancy Avenue and near the northern boundary of the City of Beaumont, the project area is bounded on the south by Brookside Avenue and by rural residential properties or open land on the other sides. It consists of two adjacent residential properties, one of them located at 38692 Brookside Avenue (APN 405-230-006) and the other at 38718 Brookside Avenue (APN 405-230-010). A single-family residence stands on each of the parcels, both of them accompanied by ancillary buildings of various functions.

Elevations in the project area range between 2,660 feet and 2,695 feet above sea mean level, with a gradual incline to the northeast. Several large cottonwood and eucalyptus trees are scattered across the project area, and loosely formed eucalyptus grove is found in the northern portion (Fig. 4). Other vegetation observed included oleanders, foxtails, landscaping plants, and grasses. The ground surface in the project area is highly disturbed due to mechanical clearing, animal grazing, tree cultivation, and construction activities.

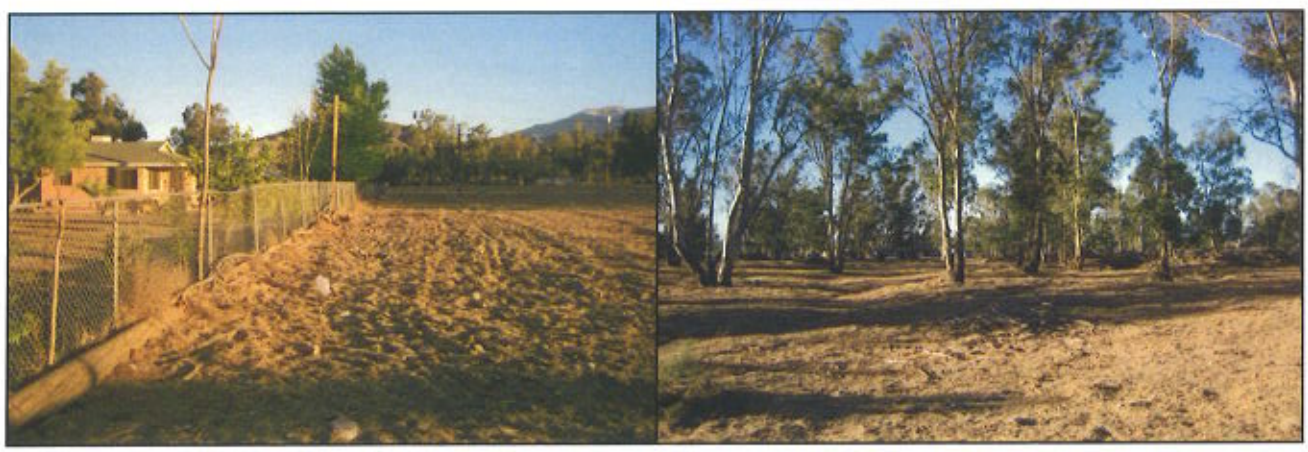

Figure 4. Typical landscapes in the project area. *Left*: along the western project boundary (view to the north); *right:* eucalyptus grove in the northern portion of the project area (view to the southwest). (Photos taken on November 17, 2009)

METHODS AND PROCEDURES

RECORDS SEARCHES

Paleontological records search requests were sent on November 4, 2009, to the Regional Paleontological Locality Inventory located at the San Bernardino County Museum (SBCM) in Redlands and to the Natural History Museum of Los Angeles County (NHMLAC) in Los

Angeles. These institutions maintain files of regional paleontological localities and supporting maps and documents. The records search results identify geological exposures and formations, as well as known paleontological localities in the project vicinity. In addition, the Riverside County Land Information System (RCLIS) was consulted on December 2 to identify the paleontological sensitivity rating for the project area as listed by the County.

LITERATURE REVIEW

In conjunction with the records searches, a literature search was conducted using materials in the CRM TECH library, including unpublished reports produced during surveys of other properties in the vicinity of the project area, and the personal library of CRM TECH geologist/paleontologist Harry M. Quinn, California Professional Geologist #3477 (see App. 1 for qualifications).

FIELD SURVEY

The paleontological field survey was conducted in conjunction with an archaeological survey of the project area on November 17, 2009, by CRM TECH archaeological/paleontological surveyor Daniel Ballester (see App. 1 for qualifications) under the direction of Harry M. Quinn. The intensive-level pedestrian survey by walking parallel north-south transects spaced 15 meters (approx. 50 feet) apart, interrupted only by the buildings on the property. In this way, the entire project area was systematically and carefully examined to determine the soil types and verify the geological formations wherever they were exposed at the surface, and to look for any indications of paleontological remains. Ground visibility varies from poor (30%) to good (75%) depending the density of vegetation.

RESULTS AND FINDINGS

RECORDS SEARCHES

The Natural History Museum of Los Angeles County found no known paleontological localities within the project boundaries, but reported that there was a fossil locality nearby from the same or similar sedimentary deposits that also occur in the project area (McLeod 2009; see App. 2). According to the NHMLAC, the surficial deposits in the northwestern portion of the project area consist of younger Quaternary alluvium, derived as fluvial (stream) deposits from the Little San Gorgonio Creek (*ibid.*). Normally, these sediments do not contain the remains of significant vertebrate fossils in the uppermost layers and no vertebrate fossil localities have been identified anywhere nearby from similar deposits (*ibid.*).

The remainder of the project area contains surficial deposits of older Quaternary alluvium derived as fan deposits from the San Bernardino Mountains to the northeast (McLeod 2009). The nearest known vertebrate fossil locality from similar older Quaternary alluvium deposits as those in the project area, LACM 4540, is some seven miles to the south-southwest, near the intersection of Jackrabbit Trail and Gilman Springs Road, which produced a fossil specimen of a horse, *Equidae*.

The NHMLAC determined that surface grading or shallow excavations within the younger Quaternary alluvium in the Little San Gorgonio Creek drainage in the northwestern portion of the project area are "unlikely to uncover significant vertebrate fossils" (McLeod 2009:1). However, deeper excavations that will extend into the older Quaternary alluvium may well encounter significant vertebrate fossil remains (*ibid.*).

According to the San Bernardino County Museum, early geologic mapping of the project area by Rogers (1965) found it to be situated entirely within older Pleistocene alluvium. These deposits are recognized as having a high potential to yield significant nonrenewable paleontological resources. This determination is based on the numerous significant fossil remains representing extinct taxa, such as mammoths, mastodons, ground sloths, dire wolves, short-faced bears, saber-toothed cats, large and small horses, camels, and bison, that have been found elsewhere throughout inland Riverside and San Bernardino Counties (Scott 2009).

The records search by the SBCM did not identify any known paleontological localities within the project area (Scott 2009). However, one previously discovered fossil locality, SBCM 1.95.5, is located approximately three quarters of a mile to the north-northeast of the project area. The fossil remains of plants and a possible camel vertebra from identical older Pleistocene alluvium deposits were found at that locality (*ibid.*). After a review of the available literature and the Regional Paleontologic Locality Inventory, the SBCM determined that excavations that will disturb the older Pleistocene alluvium in the project area will have a high potential to impact significant nonrenewable fossil resources (*ibid.*).

According to RCLIS (n.d.), the paleontological sensitivity for the project area is currently listed as undetermined. Although the County has not assessed the level of paleontological sensitivity for the project area and its immediate surroundings, a sensitivity rating of "undetermined" does not indicate an absence of paleontological resources.

LITERATURE REVIEW

Since the early 1920s, the geologic morphology and soil types in the project vicinity have been mapped several times. Vaughan (1922:Plate 1) mapped the surface geology within the project area as consisting entirely of alluvium of Recent age (**Qa**). The previous year, Frick (1921) uncovered vertebrate remains in the Mount Eden beds at several localities south of Beaumont, which he determined to be Pliocene in age. Plant remains contained within the rock material of the Mount Eden beds provided additional evidence that this formation dates to the Pliocene age (Axelrod 1937). While these rocks do not appear to outcrop in the project area, they may be encountered at some unknown depth under the ground subsurface.

In the early 1950s, the surface geology for the project area was mapped by Jahns (1954:Plate 3), whose findings agreed with Vaughn's that the project area consisted of Recent alluvium (**Qal**). A decade later, however, Rogers (1965) mapped the surface geology in the project area as primarily Pleistocene-age non-marine sedimentary rocks (**Qc**). He also mapped the outcropping geology to the south of the City of Beaumont as undivided Pliocene-age non-marine sedimentary rocks (**Pc**). Subsequently, Woodford et al. (1971) mapped the surface geology in the project area as "alluvium, new and old" as well as the outcropping geology to the south, which they described as "continental Pliocene and lower Pleistocene sedimentary rock."

Dibblee (1981) mapped the surface geology in the project area as primarily Recent alluvium (**Qa**), with possibly some older alluvium (**Qoa**), both of which are of probable Holocene age. He indicated that the outcropping geology to the south of the City of Beaumont represents San Timoteo Formation valley sediments of Pliocene and Pleistocene age (**QTs**). Recent mapping of the surface geology in the project area by Dibblee (2003) identified the rocks as Pleistocene-age dissected alluvial fan sand and gravel, light reddish in color and crudely bedded (**Qoa**). Dibblee also determined that the area where Little San Gorgonio Creek cuts through the project area consists of Holocene-age alluvial sand, gravel, and clay of the flat flood plains of stream channels (**Qa**).

Mapping of the surface soils by Knecht (1971) indicates most of the project area contains sediments from the Tujunga (**TwC** and **TvC**) and Gorgonio (**GmD**) soil series. More recent soil mapping and data provided by the National Resources Conservation Service (NRCS n.d.) indicate that the project area contains one additional soil type to the three identified by Knecht (1971), the Hanford soil series (**HcC**), found within the surficial sediments from the Little San Gorgonio Creek (Fig. 5).

The Gorgonio soil series consist of dark grayish brown and brown, gravelly loamy fine sand formed in coarse-textured alluvium derived from granite, granodiorite, schist, and related rocks. They are found on alluvial fans and are somewhat excessively drained, with slow or medium runoff, and rapid permeability (NRCS n.d.). The Hanford soil series consist of very deep, well-drained soils that formed in deep, moderately coarse-textured alluvium derived predominantly from granite and other quartz bearing rocks of similar texture (*ibid.*). Hanford soils are found on stream bottoms, floodplains and alluvial fans and are well-drained, with negligible to low runoff, and moderately rapid permeability. The Tujunga series consists of very deep, somewhat excessively drained soils formed in sandy alluvium derived mostly from granitic sources (*ibid.*). These soils can be found on alluvial fans and flood plains and are excessively drained, with negligible or very low water runoff, and rapid permeability. The **TwC** and **GmD** soils match well with the mapped Pleistocene-age sediments and the **TvC** match the Recent stream channel sediments.

Figure 5. Soil types within the project area. (Source: NRCS n.d.)

FIELD SURVEY

Throughout the course of the field survey, no evidence of any fossil remains was found on the ground surface within or adjacent to the project area. The exposed surface soils in the

project area were confirmed in the field as consisting of either a gravelly loamy fine sand or a coarse sandy alluvium.

DISCUSSION

The results of the records searches, the literature research, and the field survey indicate that the project area contains surficial deposits of younger (Recent) Quaternary alluvium and older Pleistocene-age alluvium. The NHMLAC maintains that the younger alluvium is found mostly in the northwestern portion of the project area, in the form of fluvial (stream) deposits from the Little San Gorgonio Creek, and that it has a low potential for significant nonrenewable fossil remains (McLeod 2009). The remainder of the project area, according to the NHMLAC (McLeod 2009), contains surficial deposits of older Quaternary alluvium derived as fan deposits from the San Bernardino Mountains. These sediments have a high potential to contain fossil remains (*ibid.*).

The SBCM considers the project area to be situated entirely on older Pleistocene alluvium sediments. With the kinds and quantities of previously identified fossil localities from similar sediments in the Inland Empire, the SBCM believes that these soils have a high potential to contain nonrenewable paleontological resources.

Geologic mapping of the project area show it to be located well north of any outcropping Plio-Pleistocene sedimentary rock known to contain both vertebrate and plant fossil remains. While several geologic maps show the surface geology of the project area to be mostly Pleistocene-age alluvial fan material with minor amounts of Recent alluvium, the Recent alluvium rests on top of, and in some cases is developed from, the older, potentially fossil-bearing Pleistocene-age sedimentary deposits. The thickness of the Recent alluvium is unknown but presumed to vary. The thickness of the Recent strata might be determined from the geotechnical boring logs, should they be available.

CONCLUSION AND RECOMMENDATIONS

CEQA guidelines (Title 14 CCR App. G, Sec. V(c)) require that, during the environmental review process, public agencies in the State of California determine whether a proposed project would "directly or indirectly destroy a unique paleontological resource." The present study, conducted in compliance with this provision, is designed to identify any significant, non-renewable paleontological resources that may exist within or adjacent to the project area, and to assess the possibility for such resources to be encountered in future excavation and construction activities.

Based on the results of the study, the proposed project's potential to impact paleontological resources appears to range from low to high, depending upon the type of sediments disturbed. The shallow surface soils have a low potential to contain significant nonrenewable paleontological resources, while the undisturbed older Pleistocene-age alluvium underneath has a high potential. Due to the variable thickness of the Recent alluvium, CRM TECH recommends that periodic, "spot-check" monitoring be implemented at the start of any earth-moving operations associated with the project. Once excavations reach approximately three feet below the existing surface, or if older, potentially

fossiliferous sediments are encountered at shallower depths, continuous monitoring will become necessary.

Since monitoring of earth-moving activities is recommended, a plan to mitigate impacts to the paleontological resources that might be unearthed should be developed prior to the commencement of the project, in accordance with the provisions of CEQA, the regulations currently implemented by the County of Riverside, and the proposed guidelines of the Society of Vertebrate Paleontology. Under these conditions, the proposed project may be cleared to proceed in compliance with CEQA provisions on paleontological resources. The plan should include, but not be limited to the following:

- The excavation of areas identified as likely to contain paleontologic resources should be monitored by a qualified paleontological monitor. Monitoring should be restricted to the older, undisturbed Pleistocene-age alluvium, which is present below the surface at unknown and variable depths. Periodic spot checks should be employed to determine when older, potentially fossiliferous sediments that should be monitored are encountered.
- The monitor should be prepared to quickly salvage fossils as they are unearthed to avoid construction delays. The monitor should also remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor must have the power to temporarily halt or divert grading equipment to allow for removal of abundant or large specimens.
- Collected samples of sediments should be washed to recover small invertebrate and vertebrate fossils. Recovered specimens should be prepared so that they can be identified and permanently preserved.
- Specimens should be identified, curated, and placed into a repository with permanent retrievable storage.
- A report of findings, including an itemized inventory of recovered specimens, should be prepared upon completion of the steps outlined above. The report should include a discussion of the significance of all recovered specimens. The report and inventory, when submitted to the appropriate Lead Agency, would signify completion of the program to mitigate impacts to paleontologic resources.

Under these conditions, the proposed project may be cleared to proceed in compliance with CEQA provisions on paleontological resources.

CERTIFICATION: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this paleontological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

DATE: 12/7/09 **SIGNED:** Larry M. Quinn (BT)

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APPENDIX 1

PERSONNEL QUALIFICATIONS

GEOLOGIST/PALEONTOLOGIST
Harry M. Quinn, M.S.

Education

1968 M.S., Geology, University of Southern California, Los Angeles, California.
1964 B. S, Geology, Long Beach State College, Long Beach.
1962 A.A., Los Angeles Harbor College, Wilmington North Palm Springs, California.

- Graduate work oriented toward invertebrate paleontology; M.S. thesis completed as a stratigraphic paleontology project on the Precambrian and Lower Cambrian rocks of Eastern California.

Professional Experience

2000- Project Paleontologist, CRM TECH, Riverside/Colton, California.
1998- Project Archaeologist, CRM TECH, Riverside/Colton, California.
1992-1998 Independent Geological/Geoarchaeological/Environmental Consultant, Pinyon Pines, California.
1994-1996 Environmental Geologist, E.C E.S., Inc, Redlands, California.
1988-1992 Project Geologist/Director of Environmental Services, STE, San Bernardino, California.
1987-1988 Senior Geologist, Jirsa Environmental Services, Norco, California.
1986 Consulting Petroleum Geologist, LOCO Exploration, Inc. Aurora, Colorado.
1978-1986 Senior Exploration Geologist, Tenneco Oil E & P, Englewood, Colorado.
1965-1978 Exploration and Development Geologist, Texaco, Inc., Los Angeles, California.

Previous Work Experience in Paleontology

1969-1973 Attended Texaco company-wide seminars designed to acquaint all paleontological laboratories with the capability of one another and the procedures of mutual assistance in solving correlation and paleo-environmental reconstruction problems.
1967-1968 Attended Texaco seminars on Carboniferous coral zonation techniques and Carboniferous smaller foraminifera zonation techniques for Alaska and Nevada.
1966-1972, 1974, 1975 Conducted stratigraphic section measuring and field paleontological identification in Alaska for stratigraphic controls. Pursued more detailed fossil identification in the paleontological laboratory to establish closer stratigraphic controls, mainly with Paleozoic and Mesozoic rocks and some Tertiary rocks, including both megafossil and microfossil identification, as well as fossil plant identification.
1965 Conducted stratigraphic section measuring and field paleontological identification in Nevada for stratigraphic controls. Pursued more detailed fossil identification in the paleontological laboratory to establish closer stratigraphic controls, mainly with Paleozoic rocks and some Mesozoic and Tertiary rocks. The Tertiary work included identification of ostracods from the Humboldt and Sheep Pass Formations and vertebrate and plant remains from Miocene alluvial sediments.

Memberships

Society of Vertebrate Paleontology; American Association of Petroleum Geologists; Canadian Society of Petroleum Geologists; Rocky Mountain Association of Geologists, Pacific Section; Society of Economic Paleontologists and Mineralogists; San Bernardino County Museum.

Publications in Geology

Five publications in Geology concerning an oil field study, a ground water and earthquake study, a report on the geology of the Santa Rosa Mountain area, and papers on vertebrate and invertebrate Holocene Lake Cahuilla faunas.

PALEONTOLOGICAL SURVEYOR
Daniel Ballester, B.A.

Education

1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.

- Cross-trained in paleontological field procedures and identifications by CRM TECH Geologist/Paleontologist Harry M. Quinn.

Professional Experience

2002-	Field Director, CRM TECH, Riverside/Colton, California.
	• Report writing, site record preparation, and supervisory responsibilities over all aspects of fieldwork and field crew.
1999-2002	Project Archaeologist/Field Paleontologist, CRM TECH, Riverside, California.
	• Survey, testing, data recovery, monitoring, and mapping.
1998-1999	Field Crew, K.E.A. Environmental, San Diego, California.
	• Two and a half months of excavations on Topomai village site, Marine Corp Air Station, Camp Pendleton.
1998	Field Crew, A.S.M. Affiliates, Encinitas, California.
	• Two weeks of excavations on a site on Red Beach, Camp Pendleton, and two weeks of survey in Camp Pendleton, Otay Mesa, and Encinitas.
1998	Field Crew, Archaeological Research Unit, University of California, Riverside.
	• Two weeks of survey in Anza Borrego Desert State Park and Eureka Valley, Death Valley National Park.

APPENDIX 2

RECORDS SEARCH RESULTS

Natural History Museum of Los Angeles County

900 Exposition Boulevard • Los Angeles, CA 90007

Vertebrate Paleontology Section
Telephone: (213) 763-3325
FAX: (213) 746-7431
e-mail: smcleod@nhm.org

25 November 2009

CRM Tech
1016 East Cooley Drive, Suite B
Colton, CA 92324

Attn: Nina Gallardo

re: Paleontological resources for the proposed Brookside Mini Storage Project, APNs 405-230-006 & -010, CRM Tech # 2401-P (Brookside Lots Paleo), in the community of Cherry Valley, Riverside County, project area

Dear Nina:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Brookside Mini Storage Project, APNs 405-230-006 & -010, CRM Tech # 2401-P (Brookside Lots Paleo), in the community of Cherry Valley, Riverside County, project area as outlined on the portion of the Beaumont USGS topographic quadrangle map that you sent to me via e-mail on 4 November 2009. We do not have any fossil localities that lie directly within the proposed project area, but we do have a fossil locality somewhat nearby from the same or similar sedimentary deposits as occur in the proposed project area.

In the very northwestern portion of the proposed project area the surficial deposits consist of younger Quaternary Alluvium, derived as fluvial deposits from the Little San Gorgonio Creek that flows through there.. These deposits typically do not contain significant vertebrate fossils, at least in the uppermost layers, and we have no fossil vertebrate localities anywhere nearby from similar deposits. Otherwise the surficial deposits in the proposed project area consist of older Quaternary Alluvium, derived as fan deposits from the San Bernardino Mountains to the northeast. Our closest vertebrate fossil locality from older Quaternary deposits is LACM 4540, located south-southwest of the proposed project area on the northeast side of the San Jacinto Valley near the intersection of Jackrabbit Trail and Gilman Springs Road, that produced fossil specimens of horse, Equidae.

Surface grading or shallow excavations in the younger Quaternary Alluvium occurring in the Little San Gorgonio Creek drainage in the very northwestern portion of the proposed project area are unlikely to uncover significant vertebrate fossils. Deeper excavations there, as well as any excavations elsewhere in the proposed project area with exposures of older Quaternary deposits,

however, may well encounter significant fossil vertebrate remains. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains uncovered while not impeding development. Any fossils collected should be placed in an accredited scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: draft invoice

ACCREDITED by the AMERICAN ASSOCIATION OF MUSEUMS

SAN BERNARDINO COUNTY MUSEUM

2024 Orange Tree Lane • Redlands, California USA 92374-4560
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TDD (909) 792-1462

COUNTY OF SAN BERNARDINO
PUBLIC AND SUPPORT
SERVICES GROUP

ROBERT L. McKERNAN
Director

25 November 2009

CRM Tech
attn: Nina Gallardo
1016 E. Cooley Drive, Suite "B"
Colton, CA 92324

re: **PALEONTOLOGY RECORDS REVIEW, BROOKSIDE LOTS, CHERRY VALLEY REGION, RIVERSIDE COUNTY, CALIFORNIA**

Dear Ms. Gallardo,

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) has completed a records search for the above-named ~17.5-acre property in Riverside County. The proposed property is specifically located within the southeastern quadrant of section 28, Township 2 South, Range 1 West, San Bernardino Base and Meridian, as shown on the Beaumont, California 7.5' United States Geological Survey topographic quadrangle map (1953 edition, photorevised 1988).

Previous geologic mapping of the proposed project property (Rogers, 1965) indicates that the property is situated entirely upon older Pleistocene alluvium (= unit **Qc**). This older alluvium has high potential to yield significant nonrenewable paleontologic resources, and so is assigned high paleontologic sensitivity. Older Pleistocene alluvial sediments elsewhere throughout inland Riverside and San Bernardino Counties and the Inland Empire have been reported to yield significant fossils of plants and extinct animals from the Ice Age (Jefferson, 1991; Reynolds and Reynolds, 1991; Woodburne, 1991; Springer and Scott, 1994; Scott, 1997; Springer and others, 1998, 1999; Anderson and others, 2002). Fossils recovered from these Pleistocene sediments represent extinct taxa including mammoths, mastodons, ground sloths, dire wolves, short-faced bears, sabre-toothed cats, large and small horses, large and small camels, and bison (Jefferson, 1991; Reynolds and Reynolds, 1991; Woodburne, 1991; Scott, 1997; Springer and others, 2009).

For this review, I conducted a search of the Regional Paleontologic Locality Inventory (RPLI) at the SBCM. The results of this records search indicated that no previously-recorded paleontologic localities are present within the boundaries of the study area. However, locality SBCM 1.95.5 is situated within ¾-mile north-northeast of the project property; this locality yielded fossil remains of plants and a possible camel vertebra from Pleistocene older alluvium identical to that mapped within the boundaries of the study area. The proximity of this locality to the study area demonstrates the high paleontologic potential of Pleistocene older alluvium in this region.

Recommendations

The results of the literature review and the check of the RPLI at the SBCM demonstrate that excavation within the boundaries of the proposed project property has high potential to impact significant nonrenewable fossil resources. This property is therefore assigned high paleontologic sensitivity. Excavation into Pleistocene older alluvium will require a qualified vertebrate paleontologist to develop a program to mitigate impacts to nonrenewable paleontologic resources. This mitigation program should be consistent with the provisions of the California Environmental Quality Act (Scott and Cox, 2003), as well as with regulations currently implemented by the County of Riverside and the proposed guidelines of the Society of Vertebrate Paleontology. This program should include, but not be limited to:

1. Monitoring of excavation in areas identified as likely to contain paleontologic resources by a qualified paleontologic monitor. Monitoring should be conducted in all excavation into undisturbed sediments of Pleistocene older alluvium. Paleontologic monitors should be equipped to salvage fossils as they are unearthed, to avoid construction delays, and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor must be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring may be reduced if the potentially-fossiliferous units described herein are determined upon exposure and examination by qualified paleontologic personnel to have low potential to contain fossil resources.

2. Preparation of recovered specimens to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Preparation and stabilization of all recovered fossils are essential in order to fully mitigate adverse impacts to the resources (Scott and others, 2004).

3. Identification and curation of specimens into an established, accredited museum repository with permanent retrievable paleontologic storage (e.g., SBCM). These procedures are also essential steps in effective paleontologic mitigation (Scott and others, 2004) and CEQA compliance (Scott and Springer, 2003). The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. Mitigation of adverse impacts to significant paleontologic resources is not complete until such curation into an established, accredited museum repository has been fully completed and documented.

4. Preparation of a report of findings with an appended itemized inventory of specimens. The report and inventory, when submitted to the appropriate Lead Agency along with confirmation of the curation of recovered specimens into an established, accredited museum repository, will signify completion of the program to mitigate impacts to paleontologic resources.

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Please do not hesitate to contact us if we can be of further assistance.

Sincerely,

Eric Scott, Curator of Paleontology
Division of Geological Sciences
San Bernardino County Museum