PALEONTOLOGICAL ASSESSMENT FOR THE 5707 INDUSTRIAL PARKWAY PROJECT

SAN BERNARDINO, CALIFORNIA

APN 266-041-74

Prepared for:

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Submitted to:

County of San Bernardino
385 North Arrowhead Avenue
San Bernardino, California 92415

Prepared by:

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Paleontological Database Information

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Report Title:	Paleontological Assessment for the 5707 Industrial Parkway Project, San Bernardino, California (APN 266-041-74)
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USGS Quadrangle:	Unsectioned Township 1 North, Range 5 West, of the USGS *San Bernardino North, California* 7.5-minute quadrangle
Study Area:	Approximately seven acres
Key Words:	Paleontological assessment; Holocene wash deposits; Pelona Schist; low paleontological resource sensitivity; no monitoring recommended.

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I. INTRODUCTION AND LOCATION

A paleontological resource assessment has been completed for the 5707 Industrial Parkway Project, located in the northern portion of the city of San Bernardino, in San Bernardino County, California (Figures 1 and 2). The project is situated between Industrial Parkway and the west side of Interstate 215 and consists of one vacant parcel (APN 266-041-74) totaling approximately seven acres. On the U.S. Geological Survey (7.5-minute), 1:24,000-scale *San Bernardino North, California* topographic quadrangle map, the project is in an unsectioned area of Township 1 North, Range 5 West, of the San Bernardino Baseline and Meridian. The project parcel is being considered for development.

As the lead agency, the City of San Bernardino has required the preparation of a paleontological assessment to evaluate the project's potential to yield paleontological resources. The paleontological assessment of the project included a review of paleontological literature and fossil locality records in the area; a review of the underlying geology; and recommendations to mitigate impacts to potential paleontological resources, if necessary.

II. REGULATORY SETTING

The California Environmental Quality Act (CEQA), which is patterned after the National Environmental Policy Act, is the overriding environmental regulation that sets the requirement for protecting California's paleontological resources. CEQA mandates that governing permitting agencies (lead agencies) set their own guidelines for the protection of nonrenewable paleontological resources under their jurisdiction.

State of California

Under "Guidelines for Implementation of the California Environmental Quality Act," as amended in December 2018 (California Code of Regulations [CCR] Title 14, Division 6, Chapter 3, Sections 15000 et seq.), procedures define the types of activities, persons, and public agencies required to comply with CEQA. Section 15063 of the CCR provides a process by which a lead agency may review a project's potential impact to the environment, whether the impacts are significant, and provide recommendations, if necessary.

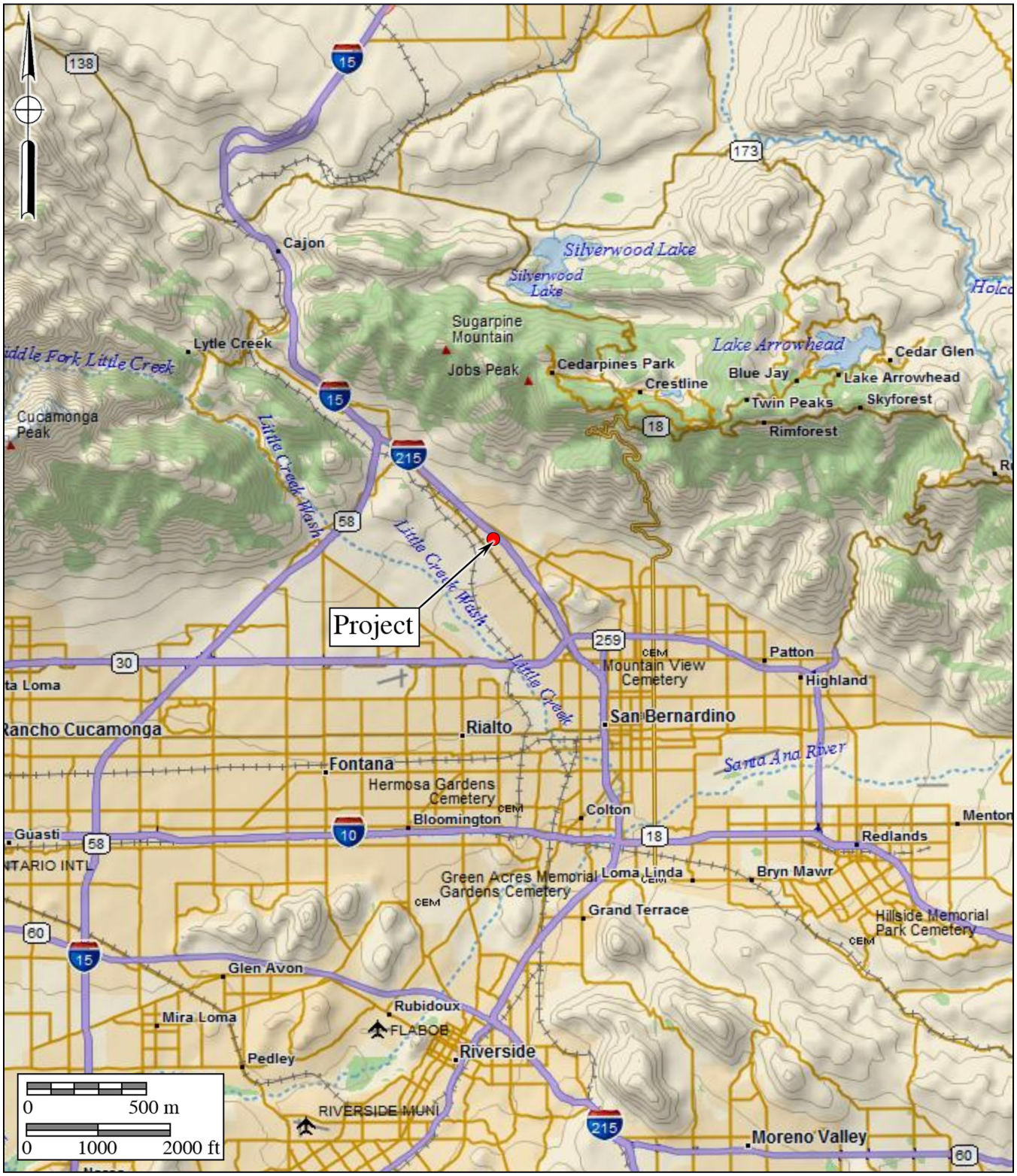


Figure 1

General Location Map

The 5707 Industrial Parkway Project

DeLorme (1:250,000)

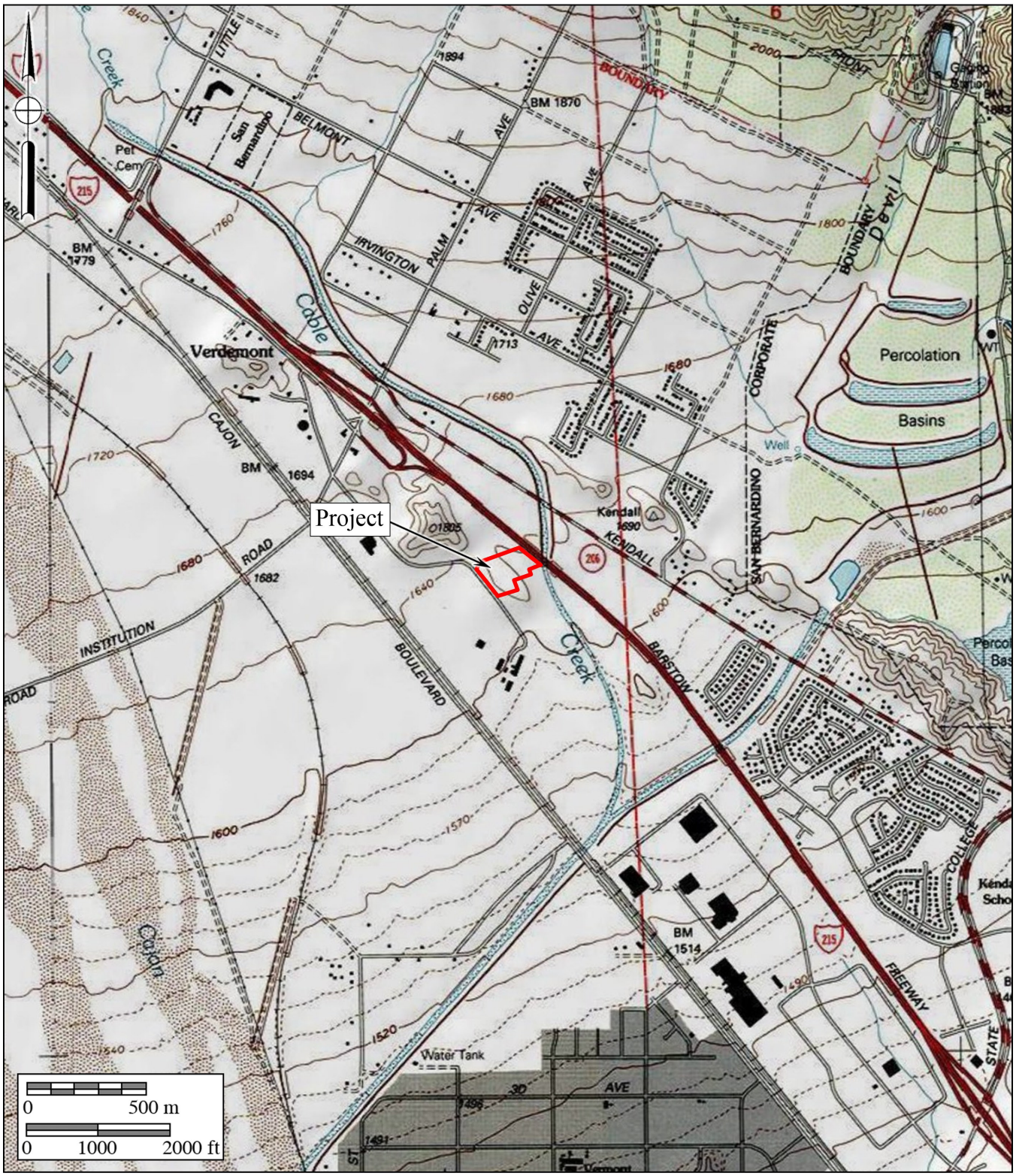


Figure 2

Project Location Map

The 5707 Industrial Parkway Project

USGS *San Bernardino North* and *Devore* Quadrangles (7.5-minute series)

In CEQA's Environmental Checklist Form, one of the questions to answer is, "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (Appendix G, Section VII, Part f). This is to ensure compliance with California Public Resources Code Section 5097.5, the law that protects nonrenewable resources including fossils, which is paraphrased below:

a) A person shall not knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands.
b) As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.
c) A violation of this section is a misdemeanor.

City of San Bernardino

The City of San Bernardino does not have goals or policies related to paleontological resources in their General Plan (City of San Bernardino 2005). However, the City recognizes that paleontological resources are "important assets for City residents," under CCCI-2, Historic Structures, Districts and the Depot (City of San Bernardino 2005 [Appendix 7: 6].

III. GEOLOGY

The project is within the modern drainage limits of Cajon Wash and is within a system of converging active faults in the region, including the San Andreas fault (Miller et al. 2001; Morton and Matti 2001). Sediments below the eastern portion of the project consist of Holocene-aged wash deposits of unconsolidated boulders, gravels, and sands (elongate areas shaded light and dark gray on Figure 3), while the western portion is occupied by the Mesozoic-aged Pelona Schist, a metamorphic rock formation (small hills shaded slate-blue on Figure 3). Mapped within the Project along Industrial Parkway are Holocene- and late Pleistocene-aged alluvial deposits (yellow areas on Figure 3; Miller et al. 2001).

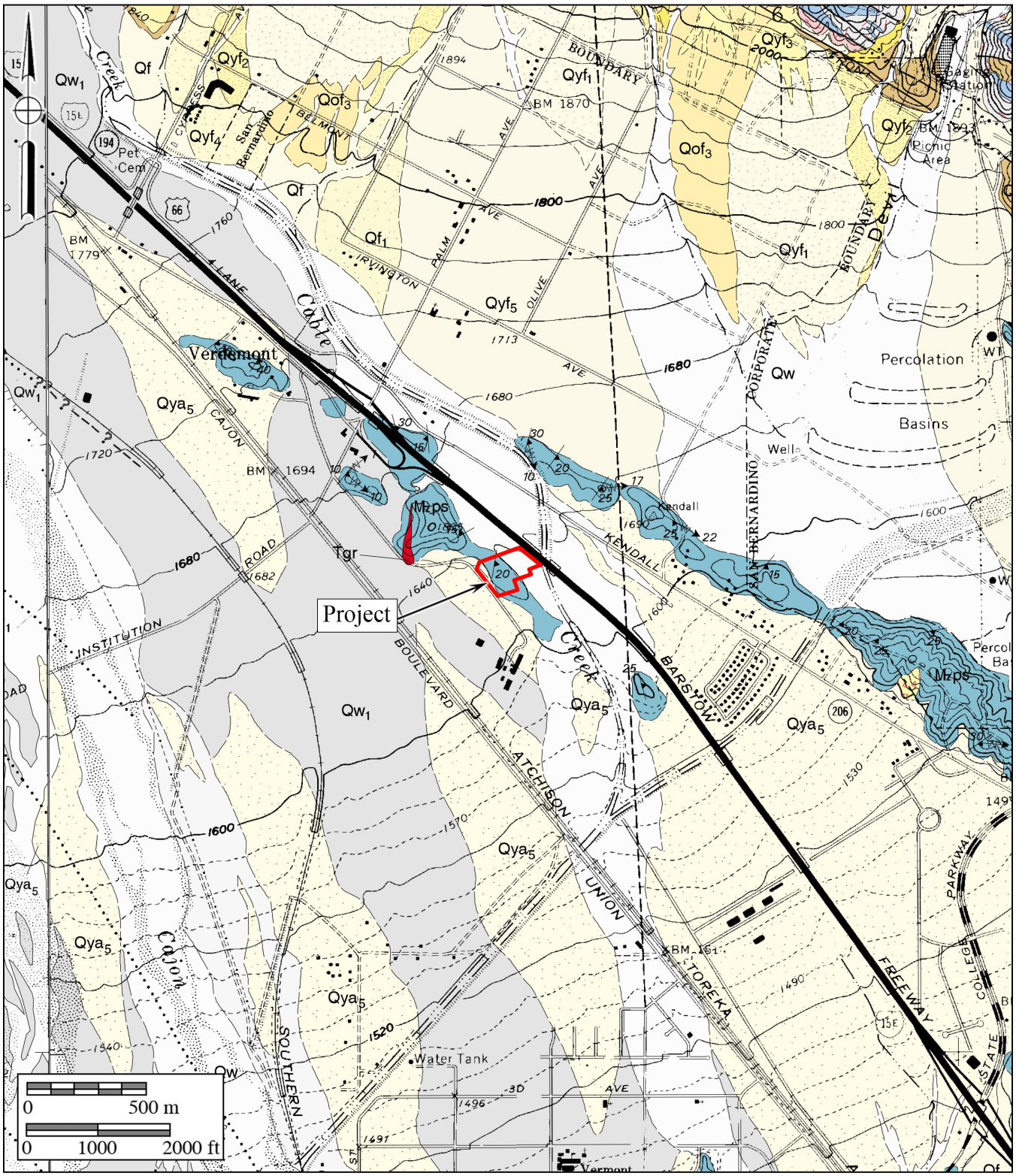


Figure 3

Geologic Map

The 5707 Industrial Parkway Project

Geology after Miller et al. (2001) and Morton and Matti (2001)

IV. PALEONTOLOGICAL RESOURCES

Definition

Paleontological resources are the remains of prehistoric life that have been preserved in geologic strata. These remains are called fossils and include bones, shells, teeth, and plant remains (including their impressions, casts, and molds) in the sedimentary matrix, as well as trace fossils such as footprints and burrows. Fossils are considered older than 5,000 years of age (Society of Vertebrate Paleontology 2010) but may include younger remains (subfossils) when viewed in the context of local extinction of the organism or habitat, for example. Fossils are considered a nonrenewable resource under state, county, and local guidelines (Section II of this report).

Fossil Locality Record Search

A paleontological literature review and collections and records search was conducted for the nearby San Bernardino Trailer Facility Project by the Los Angeles County Museum of Natural History (Bell 2021 [Appendix B]). The San Bernardino Trailer Facility Project is located approximately one and a half miles northwest of the current project. The records search indicates that no known fossil localities are present within the prior project boundaries or within several miles of the prior project. A search of published literature also indicated no known nearby fossil localities (Jefferson 1986, 1991). The nearest vertebrate fossil localities may be those reported by Reynolds et al. (2008) for mammal remains from Miocene-aged deposits in the area of Cajon Pass, several miles north of the project.

V. PALEONTOLOGICAL SENSITIVITY

Overview

The degree of paleontological sensitivity of any particular area is based on a number of factors, including the documented presence of fossiliferous resources on a site or in nearby areas, the presence of documented fossils within a particular geologic formation or lithostratigraphic unit, and whether or not the original depositional environment of the sediments is one that might have been conducive to the accumulation of organic remains that might have become fossilized over time. Holocene alluvium is generally considered to be geologically too young to contain significant nonrenewable paleontological resources (*i.e.*, fossils) and is thus typically assigned a low paleontological sensitivity. Pleistocene (over 11,700 years old) alluvial and alluvial fan deposits in the Inland Empire, however, often yield important terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, camel, saber-toothed cats, and others (Bell 2021, attached). These Pleistocene sediments are thus accorded a High paleontological resource sensitivity.

Professional Standards

The Society of Vertebrate Paleontology (SVP 2010) has drafted guidelines that include four categories of paleontological sensitivity for geologic units (formations) that might be impacted by a proposed project, as listed below:

- *High Potential:* Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- *Undetermined Potential:* Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment, and that further study is needed to determine the potential of the rock unit.
- *Low Potential:* Rock units that are poorly represented by fossil specimens in institutional collections or based on a general scientific consensus that only preserve fossils in rare circumstances.
- *No Potential:* Rock units that have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

Using these criteria, based on the young geologic age of the sediments mapped at the project, their extreme coarseness, and the lack of nearby significant fossil localities, the Holocene wash deposits and Holocene alluvial deposits can be considered to have a low potential to yield significant paleontological resources. The Pelona Schist has no paleontological potential.

VI. CONCLUSIONS AND RECOMMENDATIONS

The existence of Holocene alluvial wash and alluvial deposits and metamorphic rocks at the project, and the lack of any known fossil specimens or fossil localities from within a several-mile radius encompassing the subject property support the recommendation that paleontological monitoring need *not* be required during earth disturbance activities at the 5707 Industrial Parkway Project. However, if fossils of any sort are discovered during grading and earthmoving activities, a paleontologist must be retained to develop a Paleontological Resources Impact Mitigation Program (PRIMP) consistent with the provisions of CEQA, those of the City of San Bernardino (2005), and those of the guidelines of the SVP (2010). Implementation of the PRIMP would mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources, if present, to a level below significant.

PRIMP

If fossils are inadvertently discovered, a suggested PRIMP is outlined below. The following suggested PRIMP, when implemented, would reduce potential impacts to paleontological resources to a level below significant. Paleontological monitoring may be reduced on the observations and recommendations of the professional-level project paleontologist:

1. If paleontological resources are discovered during earth disturbance activities, the discovery shall be cordoned off with a 100-foot radius buffer so as to protect the discovery from further potential damage, and a county-qualified paleontologist shall be consulted to assess the discovery.

If the discovery is determined to be significant by the paleontologist, a PRIMP shall be implemented, which will include notification of appropriate personnel involved and monitoring of earth disturbance activities:

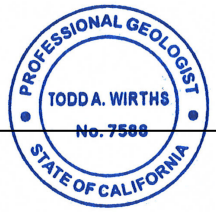
1. Monitoring of mass grading and excavation activities in areas identified as likely to contain paleontological resources shall be performed by a qualified paleontologist or paleontological monitor. Monitoring will be conducted full-time in areas of grading or excavation in undisturbed sedimentary deposits.
2. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays. The monitor must be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens in a timely manner. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface, or, if present, are determined on exposure and examination by qualified paleontological personnel to have low potential to contain fossil resources. The monitor shall notify the project paleontologist, who will then notify the concerned parties of the discovery.
3. Paleontological salvage during trenching and boring activities is typically from the generated spoils and does not delay the trenching or drilling activities. Fossils are collected and placed in cardboard flats or plastic buckets and identified by field number, collector, and date collected. Notes are taken on the map location and stratigraphy of the site, which is photographed before it is vacated, and the fossils are removed to a safe place. On mass grading projects, discovered fossil sites are protected by flagging to prevent them from being overrun by earthmovers (scrapers) before salvage begins. Fossils are collected in a similar manner, with notes and photographs being taken before removing the fossils. Precise location of the site is determined with the use of handheld GPS units. If the site involves remains from a large terrestrial vertebrate, such as large bone(s) or a mammoth tusk, that is/are too large to be easily removed by a single monitor, a fossil recovery crew shall excavate around the find, encase the find within a plaster and burlap jacket, and remove it after the plaster is set. For large fossils, use of the contractor's construction equipment may be solicited to help remove the jacket to a safe location.
4. Isolated fossils are collected by hand, wrapped in paper, and placed in temporary collecting flats or five-gallon buckets. Notes are taken on the map location and

stratigraphy of the site, which is photographed before it is vacated, and the fossils are removed to a safe place.

5. Particularly small invertebrate fossils typically represent multiple specimens of a limited number of organisms, and a scientifically suitable sample can be obtained from one to several five-gallon buckets of fossiliferous sediment. If it is possible to dry screen the sediment in the field, a concentrated sample may consist of one or two buckets of material. For vertebrate fossils, the test is usually the observed presence of small pieces of bones within the sediments. If present, as many as 20 to 40 five-gallon buckets of sediment can be collected and returned to a separate facility to wet-screen the sediment.
6. In accordance with the "Microfossil Salvage" section of the Society of Vertebrate Paleontology guidelines (2010:7), bulk sampling and screening of fine-grained sedimentary deposits (including carbonate-rich paleosols) must be performed if the deposits are identified to possess indications of producing fossil "microvertebrates" to test the feasibility of the deposit to yield fossil bones and teeth.
7. In the laboratory, individual fossils are cleaned of extraneous matrix, any breaks are repaired, and the specimen, if needed, is stabilized by soaking in an archivally approved acrylic hardener (*e.g.*, a solution of acetone and Paraloid B-72).
8. Recovered specimens are prepared to a point of identification and permanent preservation (not display), including screen-washing sediments to recover small invertebrates and vertebrates. Preparation of individual vertebrate fossils is often more time-consuming than for accumulations of invertebrate fossils.
9. Identification and curation of specimens into a professional, accredited public museum repository with a commitment to archival conservation and permanent retrievable storage (*e.g.*, the San Bernardino County Museum) shall be conducted. The paleontological program should include a written repository agreement prior to the initiation of mitigation activities. Prior to curation, the lead agency (*e.g.*, the City of San Bernardino) will be consulted on the repository/museum to receive the fossil material.
10. A final report of findings and significance will be prepared, including lists of all fossils recovered and necessary maps and graphics to accurately record their original location(s). The report, when submitted to, and accepted by, the appropriate lead agency, will signify satisfactory completion of the project program to mitigate impacts to any potential nonrenewable paleontological resources (*i.e.*, fossils) that might have been lost or otherwise adversely affected without such a program in place.

VII. 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, and have been compiled in accordance with CEQA criteria.



June 16, 2022

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VIII. REFERENCES

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