

PALEONTOLOGICAL ASSESSMENT FOR THE PERRIS VALLEY CHANNEL LATERAL B EXTENSION PROJECT

PERRIS, CALIFORNIA

Submitted to:

**City of Perris
Planning and Development
135 North D Street
Perris, California 92570**

Prepared for:

**Duke Realty
200 Spectrum Center Drive, Suite 1600
Irvine, California 92618**

Prepared by:

**Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
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June 22, 2022

Paleontological Database Information

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Report Date: June 22, 2022

Report Title: Paleontological Assessment for the Perris Valley Channel Lateral
B Extension Project, Perris, California

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135 North D Street
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Assessor's Parcel Numbers: N/A

USGS Quadrangle: Section 36, Township 3 South, Range 4 West of the *Perris*,
California (7.5-minute).

Study Area: 100-foot by 900-foot proposed drainage alignment

Key Words: Paleontological assessment; Quaternary very old alluvial fan
deposits; High paleontological sensitivity; City of Perris; full-
time monitoring recommended starting at a depth of five feet
below the surface.

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I. INTRODUCTION AND LOCATION

A paleontological resource assessment has been completed for a proposed connection to the Perris Valley Channel, located west of March Air Reserve Base in the northern corner of the city of Perris, Riverside County, California (Figures 1 and 2). The proposed drainage alignment will extend Lateral B of the Perris Valley Channel, running east of Patterson Avenue between two commercial parcels. The survey included a corridor measuring 100 feet wide and approximately 900 feet long. On the United States Geological Survey, 7.5-minute, 1:24,000-scale *Perris, California* topographic quadrangle map, the project is located in Section 36, Township 3 South, Range 4 West, of the San Bernardino Baseline and Meridian (Figure 2).

As the lead agency, the City of Perris 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.

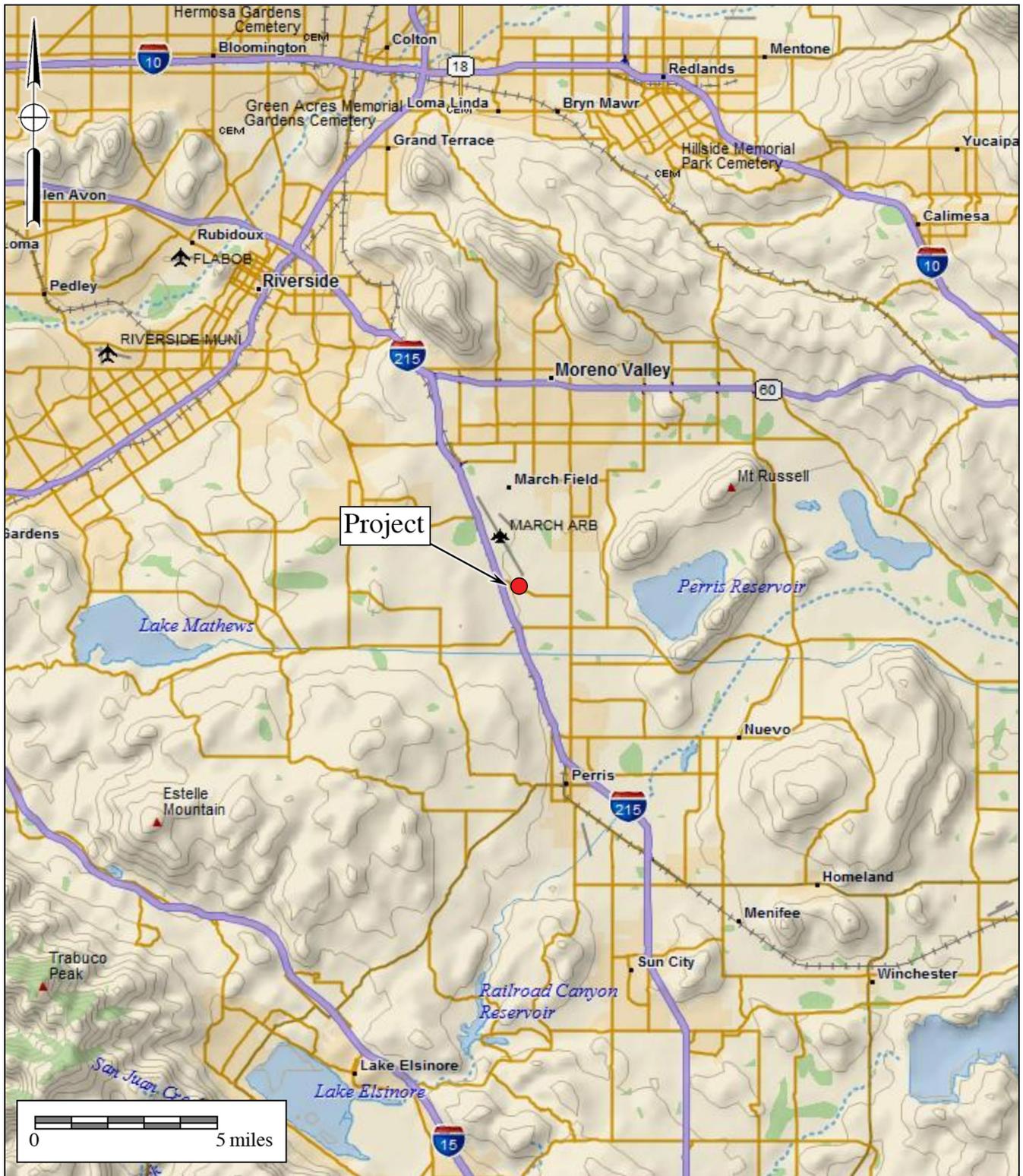
II. REGULATORY SETTING

The California Environmental Quality Act (CEQA), which is patterned after the National Environmental Policy Act, is the overriding regulation that sets the requirement for protecting California’s cultural and paleontological resources. CEQA does not establish specific rules that must be followed but 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.

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 by which protects nonrenewable resources including fossils, which is paraphrased below:



Project

Figure 1

General Location Map

The Perris Valley Channel Lateral B Extension Project

DeLorme (1:250,000)



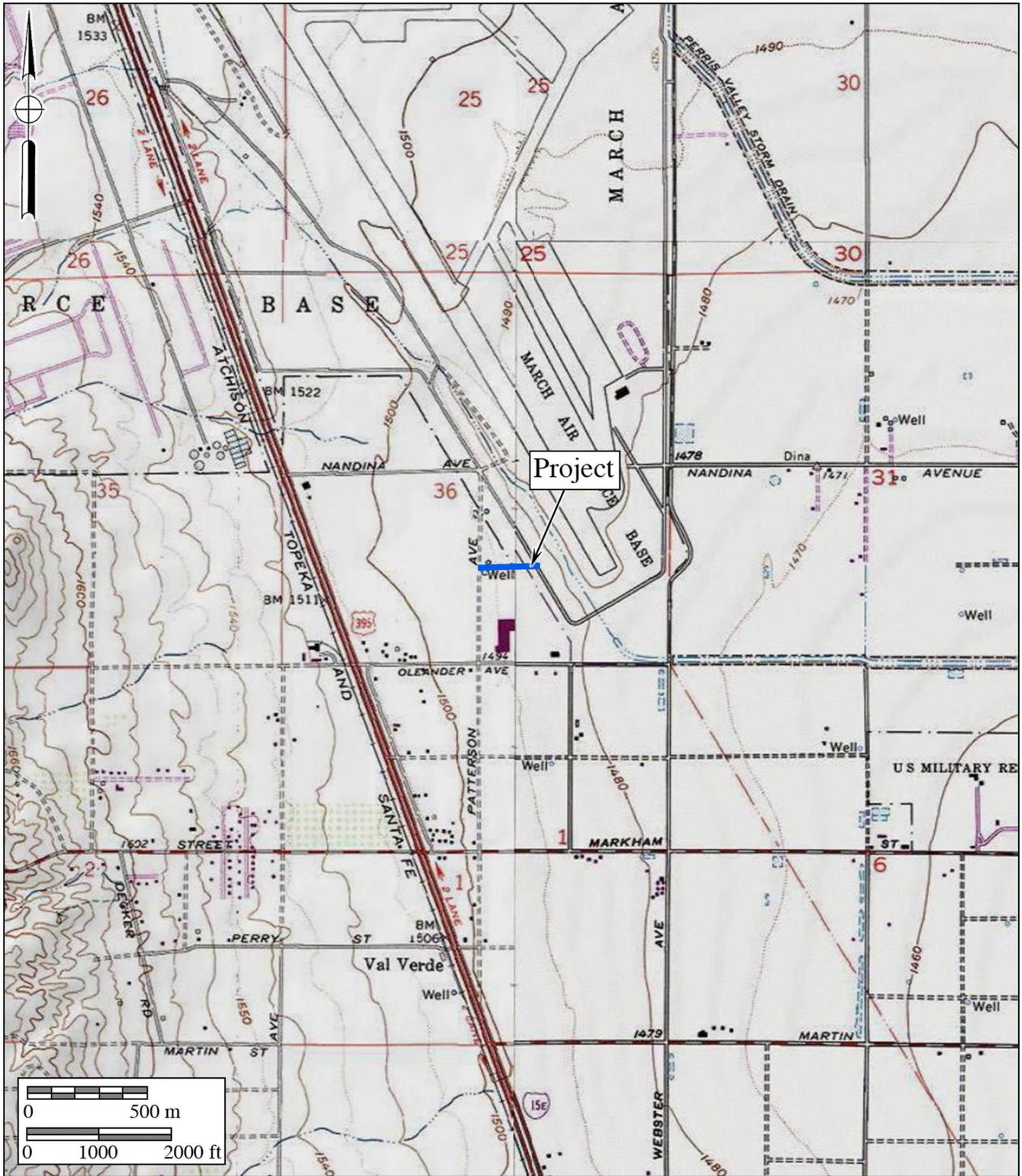


Figure 2

Project Location Map

The Perris Valley Channel Lateral B Extension Project

USGS Riverside East, Steele Peak, Perris, and Sunnymead Quadrangles (7.5-minute series)



- 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 Perris

The City of Perris has allocated requirements addressing paleontological resources in the Conservation Element of the City’s General Plan (City of Perris 2005:26–27 [Exhibit CN-7]). The Conservation Element “provides goals and policies as a framework for the management, preservation, and use of the City’s resources” (City of Perris 2005). Goals, policies, and implementation measures specific to paleontological resources are as follows:

Measure IV.A.4: In Area 1 and Area 2 shown on the Paleontological Sensitivity Map [Exhibit CN-7], paleontological monitoring of all projects requiring subsurface excavations will be required once any excavation begins. In Areas 4 and 5, paleontological monitoring will be required once subsurface excavations reach 5 feet in depth, with monitoring levels reduced if appropriate, at the discretion of a certified Project Paleontologist. (City of Perris 2005:47)

Based on the Paleontological Sensitivity Map (Exhibit CN-7) in the Conservation Element of the City’s General Plan (City of Perris 2005), Lateral B, Stage 4, of the Perris Valley Channel is located within Area 1, which requires paleontological monitoring once excavation begins.

Perris Valley Commerce Center Specific Plan

The project is located within the boundaries of a “specific plan” prepared by the City of Perris called the Perris Valley Commerce Center Specific Plan (PVCCSP) (City of Perris 2011). The PVCCSP includes Environmental Impact Report (EIR) mitigation measures addressing cultural resource impacts, which include paleontological resources. In the PVCCSP EIR, Mitigation Measure (MM) Cultural 1 outlines the requirements for preparation of a Phase I cultural resources study (City of Perris 2011), which has been completed through the preparation of this assessment. MM Cultural 5 would be applicable to the proposed project should a Mitigation Monitoring and Reporting Program (MMRP) be proposed (City of Perris 2011). Since an MMRP

is outlined in this assessment (refer to Section VI, Recommendations), MM Cultural 5 is satisfied but must be approved prior to the issuance of grading permits. The City has subsequently modified PVCCSP EIR MM Cultural 5; the modified mitigation measure applicable to the Project is presented below:

Prior to the issuance of grading permits, the Project Applicant shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Monitoring Program (PRIMMP). The PRIMMP shall include the provision of a qualified professional paleontologist (or his or her trained paleontological monitor representative) during onsite and offsite subsurface excavation that exceeds five (5) feet in depth below the pre-grade surface. Selection of the paleontologist shall be subject to approval of the City of Perris Planning Manager and no grading activities shall occur at the site or within offsite Project improvement areas until the paleontologist has been approved by the City.

Monitoring shall be restricted to undisturbed subsurface areas of older Quaternary alluvium, which might be present below the surface. The paleontologist shall be prepared to quickly salvage fossils as they are unearthed to avoid construction delays. The paleontologist shall also remove samples of sediments which are likely to contain the remains of small fossil invertebrates and vertebrates. The paleontologist shall have the power to temporarily halt or divert grading equipment to allow for removal of abundant or large specimens.

Collected samples of sediments shall be washed to recover small invertebrate and vertebrate fossils. Recovered specimens shall be prepared so that they can be identified and permanently preserved. Specimens shall be identified and curated and placed into an accredited repository (such as the Western Science Center or the Riverside Metropolitan Museum) with permanent curation and retrievable storage.

A report of findings, including an itemized inventory of recovered specimens, shall be prepared upon 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 the City of Perris Planning Division, will signify completion of the program to mitigate impacts to paleontological resources.

III. GEOLOGY

Regionally, the project lies within the Perris Block, a structural block bounded on the west by the Elsinore fault zone and on the east by the San Jacinto fault zone (Morton 2003). The

geology mapped underlying the project and immediate area indicates that the project is underlain by lower Pleistocene (approximately 1.8 million to perhaps 200,000 to 300,000 years old) very old alluvial fan deposits (labeled as “Qvof_a,” and shown in brown on Figure 3) (Morton 2001, 2003; Morton and Cox 2001; Morton and Matti 2001). These sediments are described as “... mostly well dissected, well-indurated, reddish-brown sand deposits. Commonly contains duripans and locally silcretes” (Morton 2001). According to Woodford et al. (1971), the alluvium overlying the granitic bedrock below the project is approximately 390 feet thick.

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), for example, when viewed in the context of local extinction of the organism or habitat. Fossils are considered a nonrenewable resource under state and local guidelines (see Section II of this report, above).

Fossil Records Search

A paleontological locality records search was recently conducted for the Ramona Webster Project by the Western Science Center (WSC) in Hemet (Radford 2021; Appendix B). The Ramona Webster Project is located approximately one and a half miles south of the current project. The records search indicated there are no known fossil localities within the project or within a one-mile radius; however, Pleistocene-aged sedimentary deposits within Riverside County are considered to be of high paleontological sensitivity. The fossil bones of Pleistocene-aged mammals have been recovered from similar deposits in the region. In the records search letter, Radford (2021) concluded:

Any fossils recovered from the Ramona Webster Project area would be scientifically significant. Excavation activity associated with development of the area has the potential to impact the paleontologically sensitive Pleistocene alluvial units and it is the recommendation of the Western Science Center that a paleontological resource mitigation plan be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area.

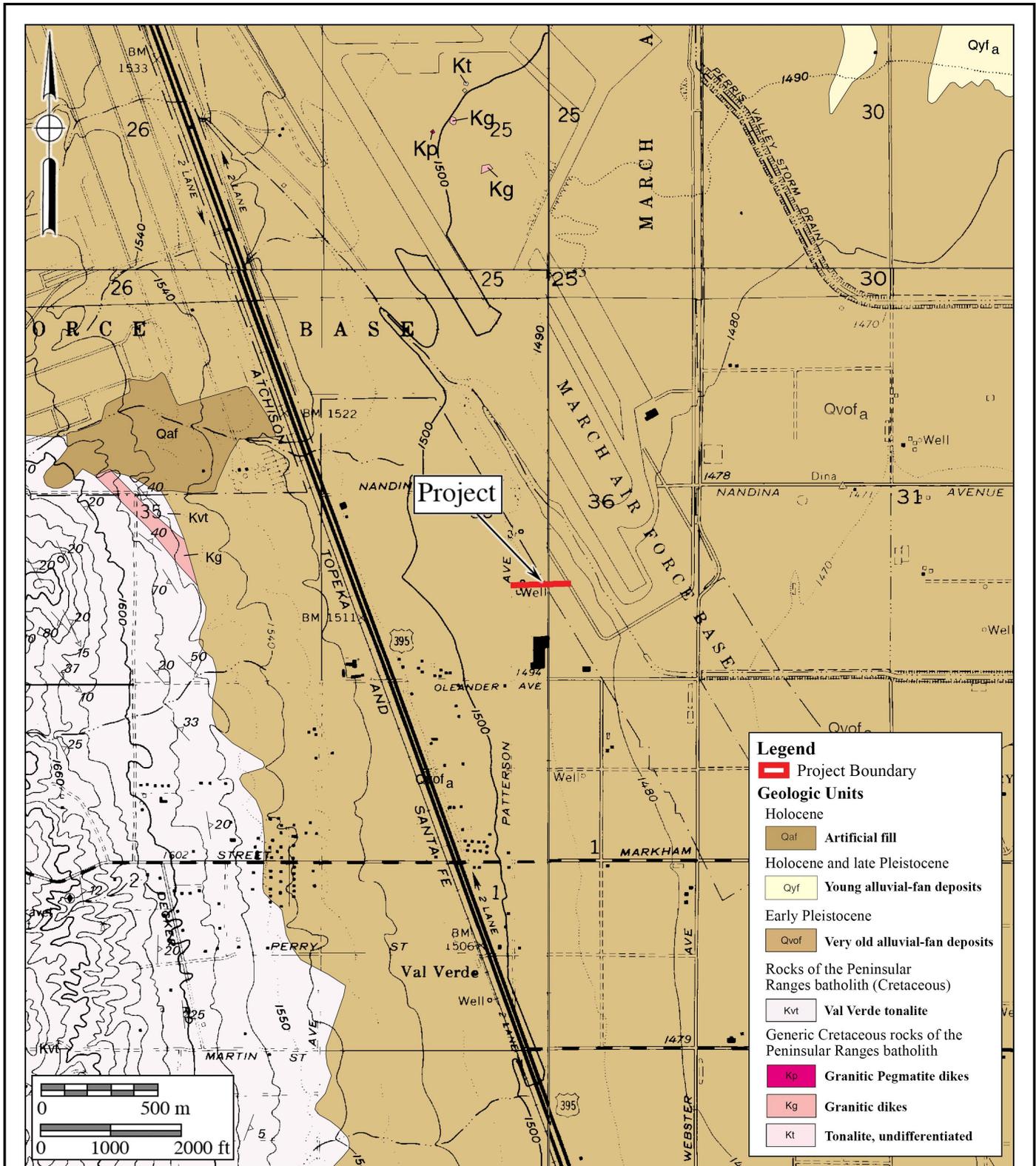


Figure 3
Geologic Map

The Perris Valley Channel Lateral B Extension Project

Geology after Morton and Cox (2001), Morton and Matti (2001), and Morton (2001, 2003)



Project Survey

The paleontological survey was conducted at the project by staff under the supervision of Todd Wirths, a Riverside County qualified paleontologist, on June 2, 2022, to determine if paleontological resources exist within the proposed drainage alignment. The survey of the property did not result in the identification of any paleontological resources, or evidence suggesting the presence of paleontological resources. The survey area was generally highly disturbed and previously graded.

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 therefore typically assigned a low paleontological sensitivity. However, Pleistocene (greater than 11,700 years old) alluvial and alluvial fan deposits in western Riverside County and the Inland Empire can yield important Ice Age terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, camel, saber-toothed cats, and others (Jefferson 1991). Therefore, these Pleistocene sediments are accorded a High paleontological resource sensitivity.

Professional Standard

The Society of Vertebrate Paleontology 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 age of the geologic formation mapped at the project and the fossil record of the formation, the very old alluvial fan deposits at the project may be assigned with a high potential to yield significant paleontological resources.

City of Perris Paleontological Sensitivity Assessment

Based on the Paleontological Sensitivity Map in the Conservation Element of the City's Comprehensive General Plan (City of Perris 2005 [Exhibit CN-7]), the project is located within Area 1, which is assigned a high paleontological sensitivity, based on the presence of the Pleistocene older valley deposits mapped at the surface. Sites located within Area 1 are required to have paleontological monitoring commence once any excavation begins (City of Perris 2005, Goal IV.A.4). However, because the project is also located within the area covered by the PVCCSP, it is subject to the mitigation measure guidelines specified within it (City of Perris 2011). MM Cultural 5 (City of Perris 2011) of the PVCCSP EIR restricts the monitoring of paleontological resources to excavations exceeding five feet deep in subsurface areas of undisturbed older alluvium. The specific guidelines of MM Cultural 5 are presented in Section II of this study.

VI. RECOMMENDATIONS

Research has confirmed the existence of potentially fossiliferous Pleistocene alluvial fan deposits mapped as underlying the Perris Valley Channel Lateral B Extension Project (Qvof_a on Figure 3), and the occurrence of terrestrial vertebrate fossils at shallow depths from Pleistocene older alluvial fan sediments across the Inland Empire and western Riverside County has been documented. The "High" paleontological sensitivity typically assigned to Pleistocene alluvial fan sediments for yielding paleontological resources supports the recommendation that paleontological monitoring be required during mass grading, trenching, and excavation activities in undisturbed Pleistocene alluvial fan sediments in order to mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources.

Full-time monitoring is recommended starting at a depth of five feet below the surface during earth disturbance activities, as required by the City of Perris (City of Perris 2005) and the PVCCSP EIR. A suggested PRIMMP is detailed below. When implemented with the provisions of CEQA, and the guidelines of the Society of Vertebrate Paleontology (2010), this PRIMMP would mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources (fossils), if present, to a level below significant.

Suggested PRIMMP

1. Monitoring of mass grading and excavation activities shall be performed by a qualified paleontologist or paleontological monitor. Full-time monitoring for paleontological resources will be conducted in areas where grading, excavation, or drilling activities occur at five feet or deeper in order to mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources. Monitoring of artificial fill and disturbed soils is not warranted.
2. If a fossil(s) is found at a shallower depth, earth disturbance activities should be halted within a radius of 50 feet from the location of the fossil, and a project-level paleontologist shall be consulted to determine the significance of the fossilized remains. If the fossil is deemed significant by the project-level paleontologist, full-time monitoring should be initiated at the project.
3. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediment 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 for the removal of abundant or large specimens in a timely manner. The monitor shall notify the project paleontologist, who will then notify the concerned parties of the discovery. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface, or if they are present, are determined upon exposure and examination by qualified paleontological personnel to have low potential to contain fossil resources.
4. Preparation of recovered specimens to a point of identification and permanent preservation will be conducted, including screen-washing sediments to recover small vertebrates and invertebrates if indicated by the results of test sampling. Preparation of any individual vertebrate fossils is often more time-consuming than for accumulations of invertebrate fossils.
5. All fossils must be deposited in an accredited institution (university or museum) that maintains collections of paleontological materials. The WSC in Hemet, California, is the preferred institution by the County of Riverside and the City of Perris. All costs of the paleontological monitoring and mitigation program, including any one-time charges by the receiving institution, are the responsibility of the developer.
6. Preparation of a final monitoring and mitigation report of findings and significance will be completed, including lists of all fossils recovered and necessary maps and graphics to accurately record their original location(s). A letter documenting receipt and acceptance of all fossil collections by the receiving institution must be included in the final report. The report, when submitted to and accepted by the appropriate lead agency (*e.g.*, the City of Perris), will signify satisfactory completion of the project program to mitigate impacts to any nonrenewable paleontological resources.

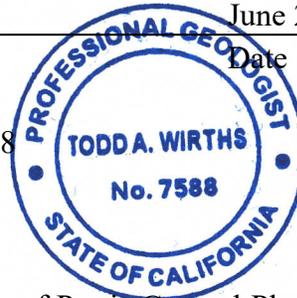
VII. CERTIFICATION

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.



Todd A. Wirths
Senior Paleontologist
California Professional Geologist No. 7588

June 22, 2022



VIII. REFERENCES CITED

- City of Perris. 2005. Conservation Element, City of Perris General Plan. Electronic document, http://www.cityofperris.org/city-hall/general-plan/Conservation_Element_01-08-09.pdf.
- City of Perris. 2011. Perris Valley Commerce Center Specific Plan Draft EIR. Electronic document, <http://www.cityofperris.org/city-hall/specific-plans/PVCC/PVCC-DEIR%2007-20-11.pdf>.
- Jefferson, G.T. 1991. A catalogue of late Quaternary vertebrates from California: Part two, mammals. Natural History Museum of Los Angeles County, Technical Reports, no. 7: i-v + 1-129.
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- Radford, D. 2021. Untitled letter regarding paleontological resources near the Ramona Webster Project, to Brian F. Smith and Associates, Inc., Poway, California, by the Western Science Center, Hemet, California.

- Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources; by the SVP Impact Mitigation Guidelines Revision Committee. Electronic document, http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx.
- Woodford, A.O., Shelton, J.S., Doehring, D.O., and Morton, R.K. 1971. Pliocene-Pleistocene history of the Perris Block, southern California. *Geological Society of America Bulletin*, v. 82, p. 3421–3448, 18 figs.

APPENDIX A

Qualifications of Key Personnel

Todd A. Wirths, MS, PG No. 7588

Senior Paleontologist

Brian F. Smith and Associates, Inc.

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Education

Master of Science, Geological Sciences, San Diego State University, California 1995

Bachelor of Arts, Earth Sciences, University of California, Santa Cruz 1992

Professional Certifications

California Professional Geologist #7588, 2003

Riverside County Approved Paleontologist

San Diego County Qualified Paleontologist

Orange County Certified Paleontologist

OSHA HAZWOPER 40-hour trained; current 8-hour annual refresher

Professional Memberships

Board member, San Diego Geological Society

San Diego Association of Geologists; past President (2012) and Vice President (2011)

South Coast Geological Society

Southern California Paleontological Society

Experience

Mr. Wirths has more than a dozen years of professional experience as a senior-level paleontologist throughout southern California. He is also a certified California Professional Geologist. At BFSa, Mr. Wirths conducts on-site paleontological monitoring, trains and supervises junior staff, and performs all research and reporting duties for locations throughout Los Angeles, Ventura, San Bernardino, Riverside, Orange, San Diego, and Imperial Counties. Mr. Wirths was formerly a senior project manager conducting environmental investigations and remediation projects for petroleum hydrocarbon-impacted sites across southern California.

Selected Recent Reports

2019 *Paleontological Assessment for the 10575 Foothill Boulevard Project, City of Rancho Cucamonga, San Bernardino County, California.* Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Assessment for the MorningStar Marguerite Project, Mission Viejo, Orange County, California.* Prepared for T&B Planning. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

- 2019 *Paleontological Monitoring Report for the Nimitz Crossing Project, City of San Diego.* Prepared for Voltaire 24, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2019 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Jack Rabbit Trail Logistics Center Project, City of Beaumont, Riverside County, California.* Prepared for JRT BP 1, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Monitoring Report for the Oceanside Beachfront Resort Project, Oceanside, San California.* Prepared for S.D. Malkin Properties. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Resource Impact Mitigation Program for the Nakase Project, Lake Forest, Orange County, San California.* Prepared for Glenn Lukos Associates, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Resource Impact Mitigation Program for the Sunset Crossroads Project, Banning, Riverside County.* Prepared for NP Banning Industrial, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Assessment for the Ortega Plaza Project, Lake Elsinore, Riverside County.* Prepared for Empire Design Group. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Resource Record Search Update for the Green River Ranch III Project, Green River Ranch Specific Plan SP00-001, City of Corona, California.* Prepared for Western Realco. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Assessment for the Cypress/Slover Industrial Center Project, City of Fontana, San Bernardino County, California.* Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 *Paleontological Monitoring Report for the Imperial Landfill Expansion Project (Phase VI, Segment C-2), Imperial County, California.* Prepared for Republic Services, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2021 *Paleontological Assessment for the Manitou Court Logistics Center Project, City of Jurupa Valley, Riverside County, California.* Prepared for Link Industrial. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2021 *Paleontological Resource Impact Mitigation Program for the Del Oro (Tract 36852) Project, Menifee, Riverside County.* Prepared for D.R. Horton. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2021 *Paleontological Assessment for the Alessandro Corporate Center Project (Planning Case PR-2020-000519), City of Riverside, Riverside County, California.* Prepared for OZI Alessandro, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2021 *Paleontological Monitoring Report for the Boardwalk Project, La Jolla, City of San Diego.* Prepared for Project Management Advisors, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

APPENDIX B

Paleontological Records Search



May 26, 2021

Brian F. Smith and Associates
Todd Wirths
14010 Poway Road, Suite A
Poway, CA 92064

Dear Mr. Wirths,

This letter presents the results of a record search conducted for Ramona Webster Project in the city of Perris, Riverside County, California. The project site consists of 52 acres located south of Ramona Expressway, west of Webster Avenue, east of I-215 and north of Morgan Avenue in Section 12, Township 4 South and Range 4 West on the *Perris, CA* USGS 7.5 minute topographic quadrangle.

The geologic unit underlying the project area is mapped entirely as very old alluvial fan deposits dating to the early Pleistocene epoch (Morton, Bovard & Alvarez, 2003). Pleistocene alluvial units are considered to be of high paleontological sensitivity. The Western Science Center does not have localities within the project area or a one mile radius, but does have numerous localities within similarly mapped alluvial sediments throughout the region. Pleistocene alluvial deposits in southern California are well documented and known to contain abundant fossil resources including those associated with Columbian mammoth (*Mammuthus columbi*), Pacific mastodon (*Mammut pacificus*), Sabertooth cat (*Smilodon fatalis*), Ancient horse (*Equus sp.*) and many other Pleistocene megafauna.

Any fossils recovered from the Ramona Webster Project area would be scientifically significant. Excavation activity associated with development of the area has the potential to impact the paleontologically sensitive Pleistocene alluvial units and it is the recommendation of the Western Science Center that a paleontological resource mitigation plan be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area.

If you have any questions, or would like further information, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,

A handwritten signature in black ink, appearing to read 'Darla Radford', is written over a white background.

Darla Radford
Collections Manager