

# PALEONTOLOGICAL ASSESSMENT FOR THE DISCOVERY MORENO VALLEY PROJECT

**MORENO VALLEY, RIVERSIDE COUNTY**

**APN 486-240-010**

**Prepared for:**

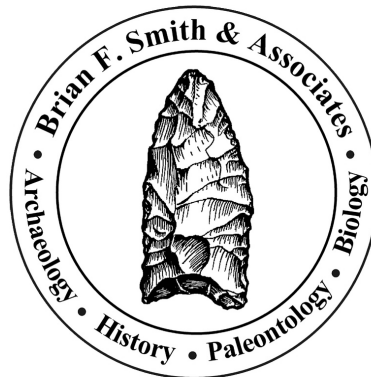
**EPD Solutions  
2 Park Plaza, Suite 1120  
Irvine, California 92614**

**Submitted to:**

**City of Moreno Valley  
Community Development Department  
Planning Division  
14177 Frederick Street  
Moreno Valley, California 92552**

**Prepared by:**

**Brian F. Smith and Associates, Inc.  
14010 Poway Road, Suite A  
Poway, California 92064**



*September 30, 2021*

## **Paleontological Database Information**

***Author:*** Todd A. Wirths, M.S., Senior Paleontologist, California  
Professional Geologist No. 7588

***Consulting Firm:*** Brian F. Smith and Associates, Inc.  
14010 Poway Road, Suite A  
Poway, California 92064  
(858) 679-8218

***Report Date:*** September 30, 2021

***Report Title:*** Paleontological Assessment for the Discovery Moreno Valley  
Project, Moreno Valley, Riverside County

***Prepared for:*** EPD Solutions  
2 Park Plaza, Suite 1120  
Irvine, California 92614

***Submitted to:*** City of Moreno Valley  
Community Development Department  
Planning Division  
14177 Frederick Street  
Moreno Valley, California 92552

***Prepared by:*** Brian F. Smith and Associates, Inc.  
14010 Poway Road, Suite A  
Poway, California 92064

***USGS Quadrangle:*** Section 15, Township 3 South, Range 3 West *Sunnymead*,  
*California* Quadrangle (7.5-minute)

***APN:*** 486-240-010

***Study Area:*** 8.77 acres

***Key Words:*** Paleontological assessment; Pleistocene very old alluvial fan  
deposits; High paleontological resource sensitivity; Riverside  
County; city of Moreno Valley.

## Table of Contents

<u>Section</u>	<u>Page</u>
I. INTRODUCTION AND LOCATION.....	1
II. REGULATORY SETTING .....	1
<i>State of California</i> .....	1
<i>City of Moreno Valley</i> .....	4
III. GEOLOGY .....	4
IV. PALEONTOLOGICAL RESOURCES.....	5
<i>Definition</i> .....	5
<i>Fossil Locality Search</i> .....	7
V. PALEONTOLOGICAL SENSITIVITY .....	7
<i>Overview</i> .....	7
<i>Professional Standard</i> .....	7
<i>City of Moreno Valley Assessment</i> .....	8
VI. CONCLUSIONS AND RECOMMENDATIONS .....	8
VII. CERTIFICATION.....	12
VIII. REFERENCES.....	12

## Appendices

Appendix A – Qualifications of Key Personnel

Appendix B – Fossil Locality Search Report

## List of Figures

<u>Figure</u>	<u>Page</u>
Figure 1      General Location Map .....	2
Figure 2      Project Location Map.....	3
Figure 3      Geologic Map.....	6

## **I. INTRODUCTION AND LOCATION**

This paleontological assessment report has been completed for the Discovery Moreno Valley Project, located at the northeast corner of the intersection of Brodiaea Avenue and Oliver Street in the city of Moreno Valley, Riverside County, California (Figures 1 and 2). The project is comprised of one lot totaling 8.77 acres (Assessor's Parcel Number 486-240-010). On the U.S. Geological Survey, 7.5-minute, 1:24,000-scale *Sunnymead, California* topographic quadrangle map, the project is located in the northeast quarter of Section 15, Township 3 South, Range 3 West, San Bernardino Baseline and Meridian. Elevations within the project range from approximately 1,550 to 1,560 feet above mean sea level. The project proposes a housing subdivision, an open space park, and associated improvements.

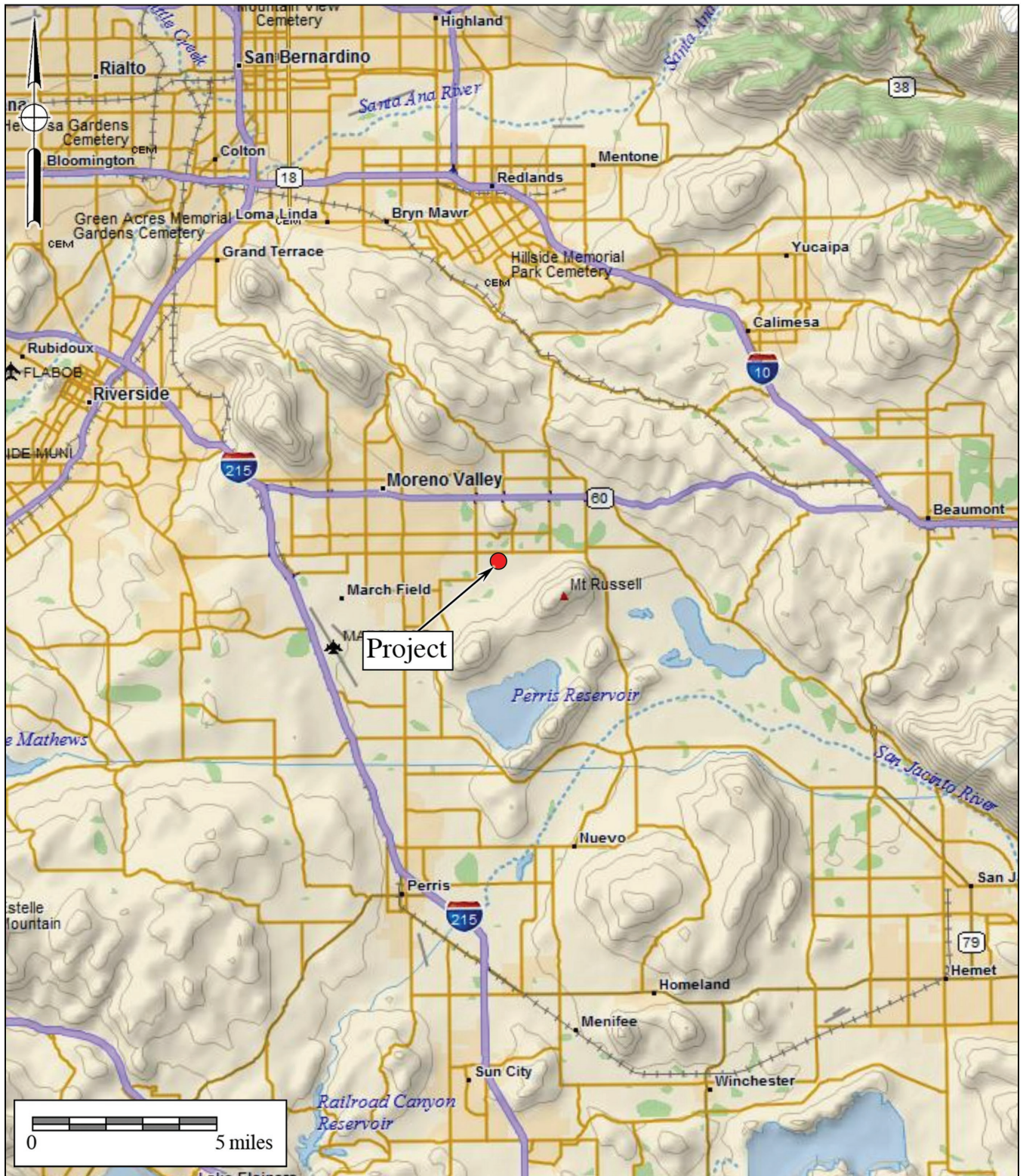
As the lead agency, the City of Moreno Valley has required the preparation of a paleontological assessment to evaluate the project's potential to yield paleontological resources. The paleontological assessment of the project included a review of paleontological literature and fossil locality records; a review of the underlying geology; and recommendations to mitigate impacts to potential paleontological resources, if necessary. A paleontological field survey was not conducted since the surface of the project property is flat-lying and disturbed.

## **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 cultural and 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.

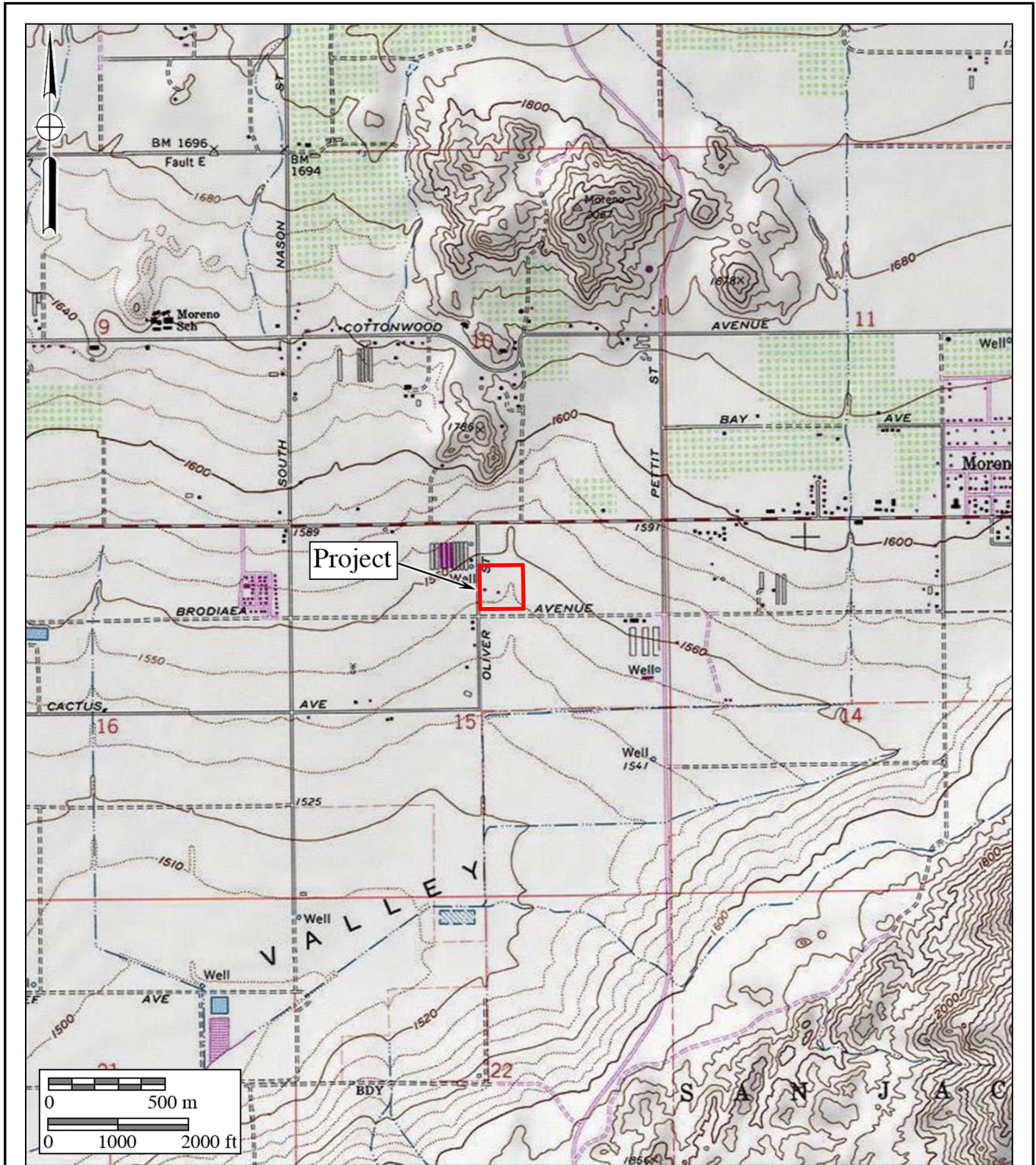


**Figure 1**  
**General Location Map**  
 The Discovery Moreno Valley Project

DeLorme (1:250,000)







**Figure 2**

**Project Location Map**

The Discovery Moreno Valley Project

USGS *Sunnymead* Quadrangle (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 by which 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 Moreno Valley

The treatment of paleontological resources and applicable mitigation measures are outlined in Section 4.7.1.5 of the City of Moreno Valley’s Draft Environmental Impact Report (EIR) (RECON Environmental, Inc. 2021). In the Draft EIR, paleontological sensitivity ratings for the city of Moreno Valley are presented as Figure 4.7-4. In Figure 4.7-4, mapped geological formations within the city limits are assigned one of three levels of paleontological sensitivity: no, low/high, and high. The assigned levels generally follow the mapping of Morton and Matti (2001) (see Section III in this report). The “low/high” assignment is the only level of sensitivity with a definition, where excavations shallower than 10 feet are deemed as having a low potential to impact paleontological resources, while excavations deeper than 10 feet are assigned a high sensitivity (RECON Environmental, Inc. 2021). The Draft EIR recognizes that earth disturbance activities associated with future development could significantly impact potential paleontological resources. The Draft EIR’s mitigation measure to decrease the level of impact to a level below significant (Mitigation Measure PAL-1) is stated in Section VI in this report.

**III. GEOLOGY**

The geology mapped at the project consists of a veneer of Holocene and late Pleistocene young sandy alluvial fan deposits (areas labeled “Qyf<sub>a</sub>” and shown in light yellow on Figure 3, after Morton and Matti 2001). These deposits are described as:

Gray-hued sand and cobble- and gravel-sand deposits derived from lithically diverse sedimentary units. Extensively developed in eastern Moreno Valley and in San Timoteo Canyon and its tributary canyons, where unit is mostly sand and gravel-sand. (Morton and Matti 2001)

At the project's northwest corner are lower Pleistocene, very old, sandy alluvial fan deposits (areas labeled "Qvof<sub>a</sub>" and shown in brown on Figure 3). These older deposits underlie the surficial young alluvial fan sediments and are described as:

Mostly well-dissected, well-indurated, reddish-brown sand deposits, containing minor gravel. Commonly contains duripans and locally silcretes. Forms widespread deposits north and south of Moreno Valley, flanking bedrock areas. Deposits on older erosion surfaces lack diagnostic features, and may or may not be alluvial fan deposits. (Morton and Matti 2001)

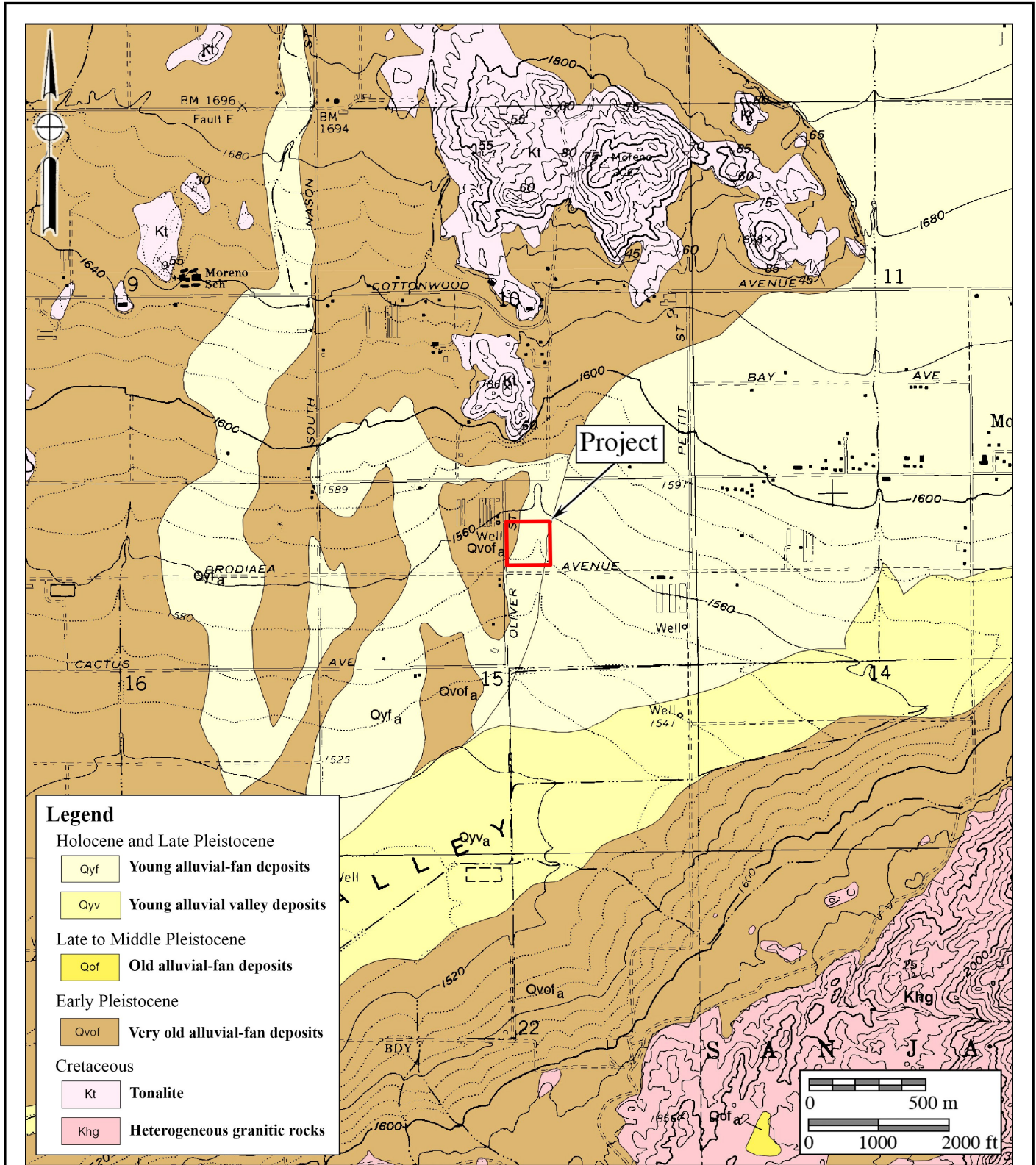
A geotechnical investigation was recently performed for the nearby Valley and Whitney Project by GeoTek, Inc. (Hick et al. 2021). The Valley and Whitney Project is located just west of the Discovery Moreno Valley Project across Oliver Street, and is likely to have similar geological conditions. The investigation included drilling and soil sampling results to a maximum depth of approximately 51 feet below the surface. Encountered strata consisted of "interbedded layers of sandy silts, silty sands, clayey sands, and relatively clean sands with variable amounts of gravel" (Hick et al. 2021). The differentiation of young and very old alluvial fan deposits, as mapped within the project boundaries by Morton and Matti (2001), was not recognized by Hick et al. (2021). In their report, Hick et al. (2021) anticipated a grading depth of five feet or less below the existing surface to accomplish the project improvements. They recommended a cut of at least four feet below the current natural (undisturbed) surface, or two feet below the base of the proposed foundation, whichever is greater, for the Valley and Whitney Project.

#### **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 city guidelines (see Section II of this report).





**Figure 3**  
**Geologic Map**

The Discovery Moreno Valley Project

Geology after Morton and Matti (2001)



### Fossil Locality Search

A paleontological locality records search was conducted for the adjacent Valley and Whitney Project by the Western Science Center (WSC; McDonald 2021 [see Appendix B]). The Valley and Whitney Project is located across Oliver Street, west of the Discovery Moreno Valley Project. The records search indicated that the WSC did not have records of fossil localities within one mile of the Valley and Whitney Project, but that Pleistocene-aged fossil vertebrates have been found throughout the region from sedimentary deposits similar to those mapped at that project.

Prior record searches performed by the WSC indicate the closest known fossil localities to the Valley and Whitney Project are from the Aldi Distribution Center property, located southwest of Highway 60 and Redlands Boulevard in Moreno Valley, just over two miles northeast of the project. These localities include WSC locality numbers 192, 193, and 194, all of late Pleistocene age, which consist of the remains of a horse (*Equus* sp.), a giant ground sloth (*Megalonyx jeffersonii*), and a llama (*Hemiauchenia* sp.); these animals became extinct in North America at or soon after the end of the Pleistocene epoch, about 11,700 years ago. The depths of the fossils ranged from approximately 11 to 13 feet below the surface. On the geologic map of Morton and Matti (2001), these fossil localities are situated in an area mapped as Holocene and late Pleistocene sandy, gravelly, young alluvial fan deposits (“Qyf”) at the surface, which suggests deposits of late Pleistocene age and older (greater than 11,700 years) are present beginning at a depth of less than 11 feet below the surface.

## **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 therefore, is typically assigned a Low paleontological sensitivity. Pleistocene (greater than 11,700 years old) alluvial and alluvial fan deposits in the Inland Empire, however, often yield important Ice Age terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, and camel, saber-toothed cats, and others (Jefferson 1991). These Pleistocene sediments are thus 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.

Under these criteria, the presence of nearby significant fossil localities in Riverside County and the strong likelihood that the nearby fossil localities originated from the same geologic formation as that which is mapped at the project, the Pleistocene very old alluvial fan deposits can be considered to have a high potential to yield significant paleontological resources. The Holocene deposits may be considered to have an undetermined or low potential.

#### City of Moreno Valley Assessment

The City of Moreno Valley’s Draft EIR acknowledges that significant impacts to paleontological resources could potentially occur as a result of development within the city limits (RECON Environmental, Inc. 2021). This is based on the project’s position within the Draft EIR’s Paleontological Sensitivity figure, Figure 4-7.4. Within the project boundaries, levels of paleontological sensitivity fairly match the geologic contacts mapped by Morton and Matti (2001) (see Figure 3). Thus, the Pleistocene, very old, sandy alluvial fan deposits are assigned a high sensitivity, while the Holocene and late Pleistocene young sandy alluvial fan deposits are assigned a low/high sensitivity. As a result, Mitigation Measure PAL-1 (RECON Environmental, Inc. 2021:4.7-17; see Section VI, below) is provided to reduce potential impacts to fossil resources to a level below significant during earth disturbance activities.

## **VI. CONCLUSIONS AND RECOMMENDATIONS**

Research has confirmed the existence of potentially fossiliferous Pleistocene very old alluvial fan deposits mapped at the surface of the project (“Qvof<sub>a</sub>” on Figure 3), as well as underlying the Holocene young alluvial fan deposits (“Qyf<sub>a</sub>”). There are documented occurrences of terrestrial vertebrate fossils at shallow depths from Pleistocene old alluvial fan sediments very close to the project and across the Inland Empire of western Riverside County. These facts, combined with the “High” paleontological sensitivity rating typically assigned to Pleistocene old

alluvial fan sediments support the recommendation that paleontological monitoring be required during mass grading, trenching, and excavation activities at the project in undisturbed Pleistocene very old alluvial fan sediments in order to mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources. Monitoring is recommended on a full-time basis starting at the surface, where mapped, in undisturbed Pleistocene old alluvial fan deposits at the Discovery Moreno Valley Project. Monitoring of Holocene young sandy alluvial fan deposits (“Qyfa”) is not recommended; however, these deposits are likely relatively thin and overlie Pleistocene very old alluvial fan deposits. Therefore, monitoring in areas mapped as young sandy alluvial fan deposits may commence when those deposits are graded away and the very old alluvial fan deposits become exposed. Mitigation Measure PAL-1 listed in the City of Moreno Valley’s Draft EIR is presented below:

**PAL-1:** Applications for future development, wherein the Community Development Director or his or her designee has determined a potential for impacts to paleontological resources, shall review the underlying geology and paleontological sensitivity of the site. If it is determined that the potential exists that sensitive paleontological resources are present, the applicant shall be required to comply with the following mitigation framework.

A qualified paleontological monitor shall be present during grading in project areas where a project specific technical study has determined that such monitoring is necessary due to the potential for paleontological resources to reside within the underlying geologic formations. The geologic technical study shall also provide specific duties of the monitor, and detailed measures to address fossil remains, if found. (RECON Environmental, Inc. 2021)

Paleontological monitoring of geological deposits associated with Pleistocene old alluvial fan deposits is recommended. Prior to the issuance of a grading plan, a paleontologist shall prepare a Paleontological Resource Impact Mitigation Plan (PRIMP) for submittal and review by the City. Implementation of the PRIMP will ensure that adverse impacts to potentially significant paleontological resources are mitigated to a level less than significant. The PRIMP should follow the outline below:

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. The PRIMP shall stipulate that monitoring will be conducted either full or part time at the determination of the paleontologist, based upon the



- identification of undisturbed sediments of Pleistocene very old alluvial fan deposits (“Qvof<sub>a</sub>”). Monitoring of Holocene young sandy alluvial fan deposits (“Qyf<sub>a</sub>”) is not recommended; however, these deposits are likely relatively thin and overlie Pleistocene very old alluvial fan deposits. Therefore, monitoring in areas mapped as young sandy alluvial fan deposits may commence when those deposits are graded away and the very old alluvial fan deposits become exposed. The project paleontologist is responsible to periodically visit the property during the initial stages of grading to identify the Pleistocene deposits and direct the initiation of monitoring.
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 upon 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 over-run 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 Western Science Center) 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 Moreno Valley) 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.
  11. Decisions regarding the intensity of the MMRP will be made by the project paleontologist based on the significance of the paleontological resources and their biostratigraphic, biochronologic, paleoecologic, taphonomic, and taxonomic attributes, not upon the ability of a project proponent to fund the MMRP.

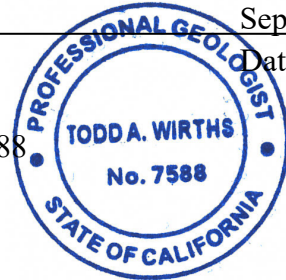
## **VII. CERTIFICATION**

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

September 30, 2021



## **VIII. REFERENCES**

- Hick, B.A., LaMont, E.H., and McHargue, K.R. 2021. Geotechnical and infiltration evaluation, proposed single-family residential tract development, Whitney 162 and Valley Church (80 Lots) Project, Alessandro Boulevard and Oliver Street, Moreno Valley, Riverside County, California. Unpublished consulting report for D. R. Horton Los Angeles Holding Company, Inc., Corona, California, by GeoTek, Inc., Corona, California.
- 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.
- Morton, D.M. and Matti, J.C. 2001. Geologic map of the Sunnymead 7.5' quadrangle, Riverside County, California: U.S. Geological Survey Open-File Report 01-450, scale 1:24,000.
- McDonald, A. 2021. Untitled letter of fossil record search results for the Valley and Whitney Project. Prepared for Brian F. Smith and Associates, Inc., Poway, California, by Western Science Center, Hemet, California. (attached)
- RECON Environmental, Inc. 2021. Draft environmental impact report for the MoVal 2040: Moreno Valley comprehensive general plan update, housing element update, and climate action plan, SCH # 2020039022. Prepared for the City of Moreno Valley. Electronic document, <http://www.moval.org/cdd/documents/general-plan-documents-deir.html>.
- 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](http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx).

**APPENDIX A**

**Qualifications of Key Personnel**



# Todd A. Wirths, MS, PG No. 7588

## Senior Paleontologist

Brian F. Smith and Associates, Inc.  
14010 Poway Road • Suite A •  
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: twirths@bfsa-ca.com



## Education

---

<b>Master of Science, Geological Sciences, San Diego State University, California</b>	<b>1995</b>
<b>Bachelor of Arts, Earth Sciences, University of California, Santa Cruz</b>	<b>1992</b>

## 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**

**Fossil Locality Search Report**



Brian F. Smith and Associates, Inc.

August 18, 2021

Todd Wirths  
14010 Poway Road  
Poway, CA 92064

Dear Mr. Wirths,

This letter presents the results of a record search conducted for Brian F. Smith and Associates, Inc., Valley and Whitney Project (21-187) in the City of Moreno Valley, Riverside County, California. The project site is located northwest of the intersection of Brodiaea Avenue and Oliver Street, in NW  $\frac{1}{4}$  of Section 15, Township 3 South and Range 3 West on the Sunnymead USGS 7.5 minute topographic quadrangle.

The geologic units underlying the project area are mapped as Mesozoic granitic rocks, which have no fossil potential, and Quaternary alluvium dating to the Pliocene-Holocene, which is potentially fossiliferous. Quaternary alluvial units are considered to be of high paleontological sensitivity. The Western Science Center does not have localities within the project area, 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 Valley and Whitney Project area would be scientifically significant. Excavation activity associated with development of the area has the potential to impact the paleontologically sensitive Quaternary 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 [amcdonald@westerncentermuseum.org](mailto:amcdonald@westerncentermuseum.org)

Sincerely,

A handwritten signature in cursive script that reads 'Andrew McDonald'.

Andrew McDonald  
Curator