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July 6, 2023

Ryan Birdseye
Birdseye Planning Group
P.O. Box 1956
Vista, California 92085
Transmitted via email to ryan@birdseyeplanninggroup.com

RE: Paleontological Resource Assessment for the Alabbasi Commercial Project, City of Perris, Riverside County, California

Dear Ryan Birdseye,

At the request of Birdseye Planning Group (BPG), PaleoWest, LLC (PaleoWest) conducted a paleontological resource assessment for the Alabbasi Commercial Project (Project) in the City of Perris, Riverside County, California. The goal of the assessment was to summarize the results of the museum record search, characterize the paleontological sensitivity of the geologic units present within the Project site, assess the potential for adverse effects to scientifically significant paleontological resources under California Environmental Equality Act (CEQA) guidelines, and provide management recommendations for avoiding or reducing adverse effects to paleontological resources from project development, as necessary. This paleontological resource assessment included a fossil locality records search conducted by the Western Science Center in Hemet (WSC). The records search was supplemented by a review of existing geologic maps and primary literature regarding fossiliferous geologic units within the proposed Project vicinity and region. This technical memorandum, written in accordance with the guidelines set forth by the Society of Vertebrate Paleontology (SVP) (2010), has been prepared to support environmental review under CEQA.

PROJECT LOCATION AND DESCRIPTION

The Project area is on an undeveloped parcel between Ramona Expressway on the north and East Dawes Street on the south in Perris, California (Figure 1). It encompasses Assessor's Parcel Numbers (APN) 303-100-012 and 303-100-014 and totals 17.64 acres. As shown in Figure 2, the Project area is within Township (T) 4 South (S), Range (R) 3 West (W), San Bernardino Baseline and Meridian (SBBM), as depicted on the Perris, California 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle. Elevation is approximately 1452 feet (ft) above mean sea level (amsl).

The proposed Project consists of the development of a 300,000-square-foot (sf) industrial building, a 45,000-sf hotel with 75–90 rooms, and two sit-down restaurants—one 4,000 sf and the other 6,000 sf—on an approximately 17-acre site.

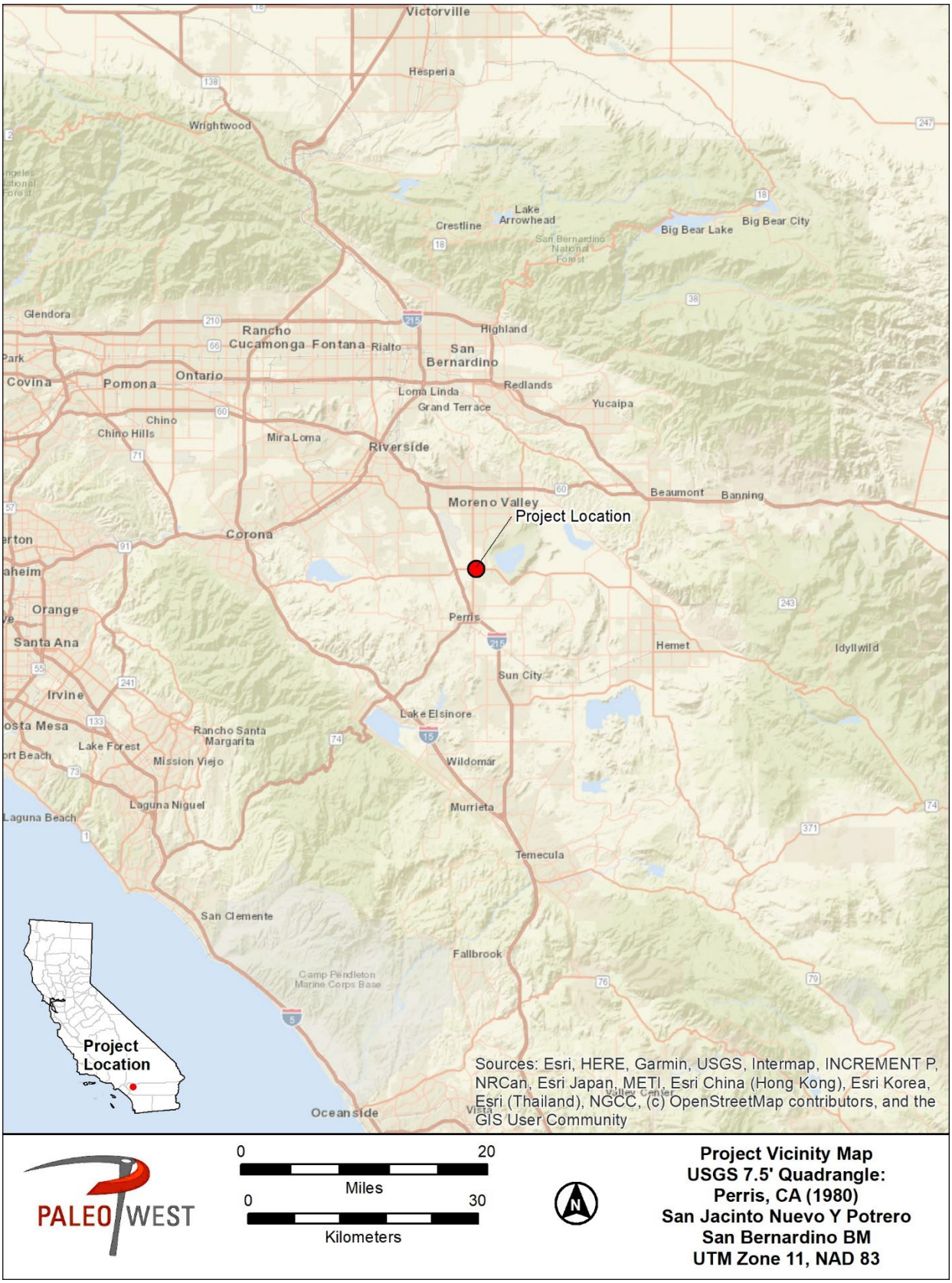


Figure 1. Project vicinity map.

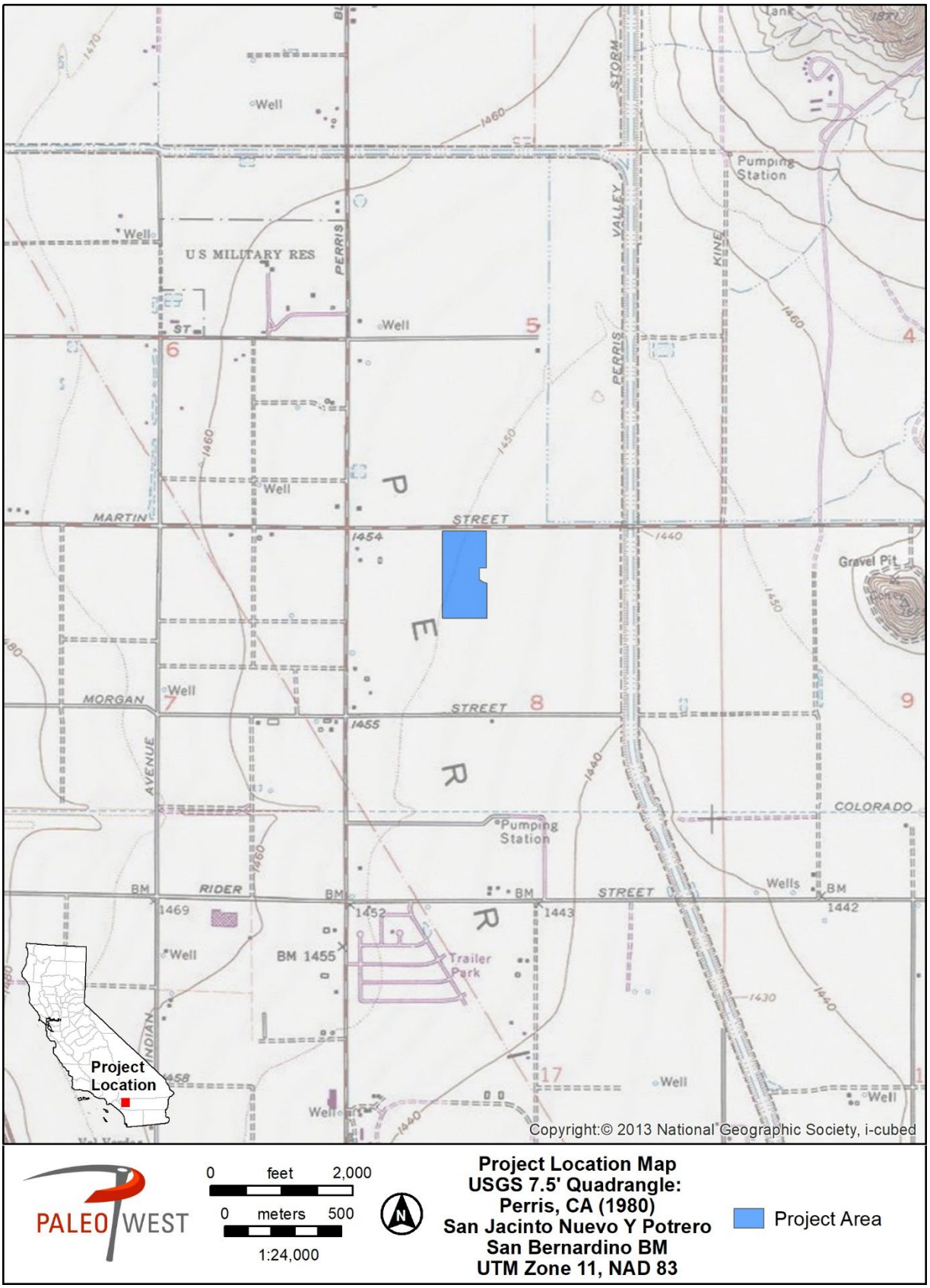


Figure 2. Project location map.

REGULATORY CONTEXT

Paleontological resources (i.e., fossils) are considered nonrenewable scientific resources because, once destroyed, they cannot be replaced. As such, paleontological resources are afforded protection under various federal, state, and local laws and regulations. Laws pertinent to this Project are discussed below.

STATE LAWS AND REGULATIONS

California Environmental Quality Act

CEQA requires that public agencies and private interests identify the potential environmental consequences of their projects on any object or site of significance to the scientific annals of California (Division I, California Public Resources Code [PRC] Section 5020.1 [j]). Appendix G to the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines) provides an Environmental Checklist of questions (CEQA Guidelines, Appendix G, Section VII, Part f) that includes the following: "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?"

CEQA does not define "a unique paleontological resource or site." However, the SVP has provided guidance designed to support state and Federal environmental review. The SVP broadly defines significant paleontological resources as follows (SVP, 2010:11):

> "Fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years)."

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, diagnostically important, or common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve our understanding of paleochronology, paleoecology, paleophylogeography, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well represented lineages can be equally important for studying evolutionary patterns and processes, evolutionary rates, and paleophylogeography. Even unidentifiable material can provide useful data for dating geologic units if radiometric dating is possible. As such, common fossils (especially vertebrates) may be scientifically important and therefore considered significant.

California Public Resources Code

Section 5097.5 of the Public Resources Code (PRC) states:

> "No person shall 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, 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. Violation of this section is a misdemeanor. As used in this PRC 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."

Consequently, public agencies are required to comply with PRC 5097.5 for their activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

CITY OF PERRIS GENERAL PLAN

The City of Perris General Plan (City of Perris, 2005) Conservation Element divides the city into five areas based on their paleontological potential. The Project area is in Area 4, which is generally composed of younger Holocene alluvium overlying older Pleistocene alluvium at depth. Young Quaternary alluvium has a low paleontological potential, but the potential for impacts to fossil resources changes from low to high potential with the older Pleistocene alluvium at unspecified depth (City of Perris, 2005). For projects within Area 4, implementation measure IV.A.4 from the Conservation Element requires paleontological monitoring once subsurface excavations reach five feet in depth, with monitoring levels reduced if appropriate, at the discretion of a certified project paleontologist.

PERRIS VALLEY COMMERCE CENTER SPECIFIC PLAN

The Project area is located within the Perris Valley Commerce Center Specific Plan (PVCCSP) planning area of the City of Perris. The PVCCSP area covers approximately 5.23 square miles in the northern part of the City and provides for light and general industrial uses, commercial, business parks, professional offices, residential, public facilities, and open space. The PVCCSP was adopted by the City of Perris on January 12, 2012 (Ordinance No. 1284). Environmental impacts resulting from implementation of allowed development under the PVCCSP have been evaluated in the Perris Valley Commerce Center Specific Plan Final Environmental Impact Report (PVCCSP EIR) (State Clearinghouse No. 2009081086), which was certified by the City of Perris in January 2012. The PVCCSP EIR was prepared as a Program EIR pursuant to State CEQA Guidelines Section 15168.

Development within the PVCCSP planning area is subject to the mitigation measures identified in the PVCCSP EIR, whether or not the project-specific impacts of the individual project are significant. This paleontological resource assessment has been prepared to comply with PVCCSP EIR mitigation measure MM Cultural 1.

The PVCCSP EIR mitigation measure for paleontological resources has been revised and the City requires project developers to submit to and receive approval from the City of Perris Planning Division 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.

PALEONTOLOGICAL RESOURCE POTENTIAL

Absent specific agency guidelines, most professional paleontologists in California adhere to the guidelines set forth by SVP (2010) to determine the course of paleontological mitigation for a given project. These guidelines establish protocols for the assessment of the paleontological resource potential of underlying geologic units and outline measures to mitigate adverse impacts that could result from project development. Using baseline information gathered during a paleontological resource assessment, the paleontological resource potential of the geologic unit(s) (or members thereof) underlying a project area can be assigned to one of four categories defined by SVP (2010). Although these standards were written specifically to protect vertebrate paleontological resources, all fields of paleontology have adopted the following guidelines:

HIGH POTENTIAL (SENSITIVITY)

Rock units from which significant vertebrate or significant invertebrate fossils or significant suites of plant fossils have been recovered have a high potential for containing significant nonrenewable fossiliferous resources. These units include but are not limited to, sedimentary formations and some volcanic formations which contain significant nonrenewable.

LOW POTENTIAL (SENSITIVITY)

Sedimentary rock units that are potentially fossiliferous but have not yielded fossils in the past or contain common and widespread invertebrate fossils of well-documented and understood taphonomic, phylogenetic species, and habitat ecology. Reports in the paleontological literature or field surveys by a qualified vertebrate paleontologist may allow a determination that some areas or units have low potential for yielding significant fossils before the start of construction. Generally, these units will be poorly represented by specimens in institutional collections and will not require protection or salvage operations. However, as excavation for construction is underway, it is possible that significant and unanticipated paleontological resources might be encountered and require a change of classification from Low to High Potential and; thus, require monitoring and mitigation if the resources are found to be significant.

UNDETERMINED POTENTIAL (SENSITIVITY)

Specific areas underlain by sedimentary rock units for which little information is available have undetermined fossiliferous potentials. Field surveys by a qualified vertebrate paleontologist to determine the rock units' potential are required before programs of impact mitigation for such areas can be developed.

NO POTENTIAL

Rock units of metamorphic or igneous origin are commonly classified as having no potential for containing significant paleontological resources.

METHODS

To assess whether a particular area has the potential to contain significant fossil resources in the subsurface, it is necessary to review published geologic mapping to determine the geology and stratigraphy of the area. Geologic units are considered "sensitive" for paleontological resources if they are known to contain significant fossils anywhere in their extent. Therefore, a search of pertinent local and regional museum repositories for paleontological localities within and nearby the Project area is necessary to determine whether fossil localities have been previously discovered within a particular rock unit. For this Project, a formal museum records search was conducted at the WSC. Informal records searches were also conducted of the online University of California Museum of Paleontology Collections and San Diego Natural History Museum Collections, the online Paleobiology Database and FAUNMAP, and other published and unpublished geological and paleontological literature of the area.

RESOURCE CONTEXT

GEOLOGIC SETTING

The Project area is in the north-central portion of the Peninsular Ranges geomorphic province. A geomorphic province is a region of unique topography and geology distinguished from other regions based on its landforms and diastrophic history. The Peninsular Ranges are a northwest-southeast oriented complex of blocks that extend 125 miles (mi) from the Transverse Ranges and Los Angeles Basin to the tip of Baja California. The Peninsular Ranges are bounded to the east by the Colorado Desert and range in width from 30–100 mi (Norris and Webb, 1976). Locally, Perris is underlain by alluvial sediments from the Pleistocene epoch (2.6 million years ago to 11,700 years ago) and the Holocene epoch (11,700 years ago to today) Epochs, reaching at least 1000 ft deep (Woodford et al., 1971). The alluvial sediments are sourced from the surrounding elevated basement rock composed of igneous and metamorphic rocks, predominantly from the Lakeview Mountains Pluton to the north and east (Morton, 1969).

SITE SPECIFIC GEOLOGY AND PALEONTOLOGY

According to Morton (2003), the Project is entirely underlain by Very old alluvial fan deposits (Qvof) of well-indurated reddish-brown sand from alluvial fans of the early Pleistocene Epoch (Figure 3). Elsewhere in San Bernardino County, Pleistocene deposits have produced remains of a diverse terrestrial fauna, including ground sloth, deer, mammoth, camel, horse, bison, badger, mole, rabbit, gray fox, coyote, snake (Jefferson, 1991a, 1991b; Miller 1971).

RECORDS SEARCH RESULTS

The WSC records search did not produce any fossil localities from within the Project or 1 mi (Attachment A). Searches of online databases and other literature did not produce any additional fossil localities within 3 mi (Graham and Lundelius, 2010; Jefferson, 1991,1991b; Miller, 1971; PBDB, 2022; SDNHM, 2022; UCMP, 2022).

Pleistocene-age alluvial, fluvial, and lacustrine deposits have produced scientifically significant paleontological resources throughout Southern California. Northeast of the Project area, in the vicinity of Lakeview, a diverse assemblage of fossil resources included *Mammuthus* sp. (mammoth), *Smilodon* sp. (sabre-toothed cat), *Equus* sp. (extinct horse), *Bison antiquus* (bison), and numerous small mammals, reptiles, invertebrates, and plant remains (Springer et al., 2009). East of the Project area, the largest known open-environment nonasphaltic late Pleistocene fossil assemblage has been documented in the Diamond and Domenigoni Valleys, producing nearly 100,000 identifiable fossils representing over 105 vertebrate, invertebrate, and plant taxa. The vertebrate taxa recovered include reptiles such as frogs, turtles, and lizards; birds such as robins, swallows, jays, ravens, hawks, and ducks; small mammals such as rabbit, squirrel, mice, and weasels; and large mammals such as fox, bear, coyote, deer, bison, mammoths, mastodons, and ground sloths (Springer et al., 2009). The invertebrate taxa recovered include ostracodes, snails, termites, slugs, beetles, and bivalves, and plant taxa include diatoms, pollen, and wood debris (Anderson et al., 2002). Northwest of the Project area near Lake Mathews, remains of *Ustatochoerus* cf. *californicus* (ground dwelling herbivore) and camel have been recovered (Woodford et al., 1971).

FIELD SURVEY

PaleoWest Senior Paleontologist Benjamin Scherzer, M.S., conducted a pedestrian field survey of the Project area on November 10, 2022. The purpose of the field survey was to visually inspect the ground surface for exposed fossils and to evaluate geologic exposures for their potential to contain preserved fossil material at the subsurface. Visibility was nearly 100 percent due to the lack of vegetation, though human trash was abundant in the Project area (Figure 4). The Project area was inspected by walking 2-meter (m) transects, with additional focus paid to areas of bare sediment exposed at the ground surface. Sediment was a consistent massive, reddish-brown clay/silt to coarse-grained sand (Figure 5). The surficial sediment showed signs of extensive disturbance, including tire marks and common rodent burrows. No paleontological resources were observed during the field survey.

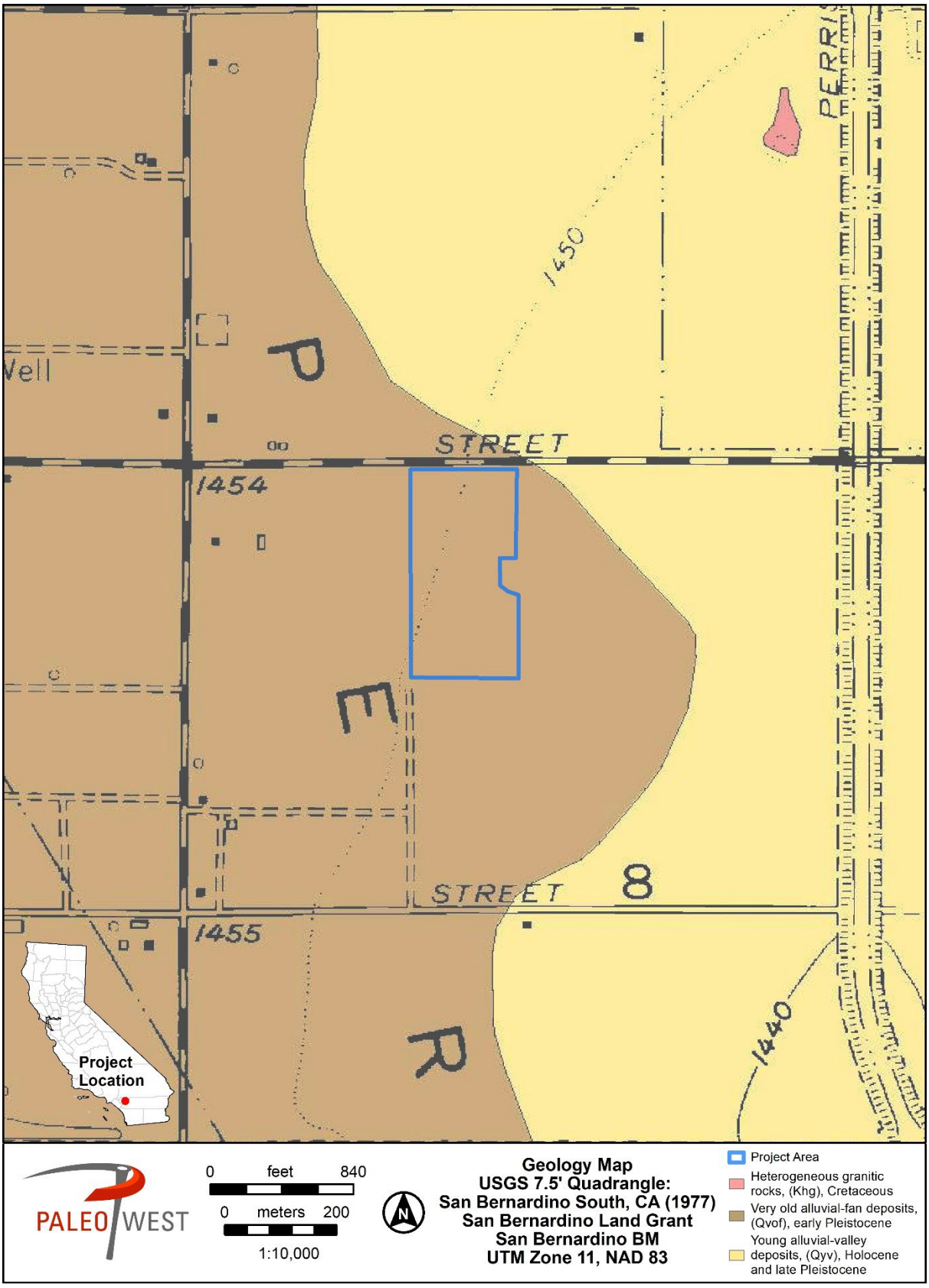


Figure 3. Geologic map of the Project area.

Figure 4. View of Project area from southwest corner, facing northeast, showing trash and tire marks.

Figure 5. Typical lithology exposed at the ground surface, in center of Project area, showing disturbance by rodent burrows.

FINDINGS

This memorandum utilizes the SVP system (2010) to assess paleontological sensitivity and the level of effort required to manage potential impacts to significant fossil resources. Using this system, the sensitivity of geologic units was determined by the relative abundance and risk of adverse impacts to vertebrate fossils and significant invertebrates and plants.

Based on the literature review and museum records search results, and in accordance with the SVP (2010) sensitivity scale, the Quaternary Very old alluvial fan deposits (Qvof) in the Project area have high paleontological sensitivity because similar deposits have yielded significant fossils in the vicinity. Due to the presence of fossil localities in the vicinity, Project-related ground disturbance has the potential to impact paleontological resources throughout the Project area.

RECOMMENDATIONS

In general, the potential for a given project to result in negative impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the project; thus, the higher the amount of ground disturbances within geological deposits with a known paleontological sensitivity, the greater the potential for negative impacts to paleontological resources. Since this Project entails excavation and grading for an industrial building, hotel, and restaurants, significant ground disturbances are anticipated. The presence of Pleistocene-age sediment at the surface suggests that ground disturbance may result in significant impacts under CEQA to paleontological resources, such as destruction, damage, or loss of scientifically important paleontological resources. A qualified paleontologist should be retained to develop and implement the measures recommended below. These measures have been developed in accordance with SVP guidelines; if implemented, these measures will satisfy the requirements of CEQA.

WORKER'S ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

Prior to the start of the proposed Project activities, all field personnel will receive a worker's environmental awareness training on paleontological resources. The training will provide a description of the laws and ordinances protecting fossil resources, the types of fossil resources that may be encountered in the Project area, the role of the paleontological monitor, outline steps to follow if a fossil discovery is made, and provide contact information for the Project Paleontologist. The training will be developed by the Project Paleontologist and can be delivered concurrently with other training, including cultural, biological, safety, et cetera.

PALEONTOLOGICAL MITIGATION MONITORING

Prior to the commencement of ground disturbing activities, a professional paleontologist will be retained to prepare and implement a paleontological mitigation plan for the Project. The plan will describe the monitoring required during ground disturbing activities. Monitoring will entail the visual inspection of excavated or graded areas and trench sidewalls. If the Project Paleontologist determines full-time monitoring is no longer warranted based on the geologic conditions at depth, they may recommend that monitoring be reduced or cease entirely.

FOSSIL DISCOVERIES

If a paleontological resource is discovered, the monitor will have the authority to temporarily divert the construction equipment around the find until it is assessed for scientific significance and, if appropriate, collected. If the resource is determined to be of scientific significance, the Project Paleontologist shall complete the following:

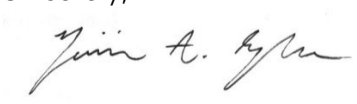
1. Salvage of Fossils. If fossils are discovered, all work in the immediate vicinity should be halted to allow the paleontological monitor and Project Paleontologist to evaluate the discovery and determine if the fossil may be considered significant. If the fossils are determined to be potentially significant, the Project Paleontologist (or paleontological monitor) should recover them following standard field procedures for collecting paleontological resources as outlined in the paleontological mitigation plan for the Project. Typically, fossils can be safely salvaged quickly by a single paleontologist and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. In this case, the paleontologist should have the authority to temporarily direct, divert or halt construction activity to ensure that the fossil(s) can be removed in a safe and timely manner.
2. Fossil Preparation and Curation. The paleontological mitigation plan for the Project will identify the museum that has agreed to accept fossils that may be discovered during Project related excavations. Upon completion of fieldwork, all significant fossils collected will be prepared in a properly equipped laboratory to a point ready for curation. Preparation may include the removal of excess matrix from fossil materials and stabilizing or repairing specimens. During preparation and inventory, the fossils specimens will be identified to the lowest taxonomic level practical prior to curation at an accredited museum. The fossil specimens must be delivered to the accredited museum or repository no later than 30 days after all laboratory work is completed. The cost of curation will be assessed by the repository and will be the responsibility of the client.

FINAL PALEONTOLOGICAL MITIGATION REPORT

Upon completion of ground disturbing activity (and curation of fossils, if necessary), the Project Paleontologist should prepare a final mitigation and monitoring report outlining the results of the mitigation and monitoring program. The report should include a discussion of the location, duration, and methods of the monitoring, stratigraphic sections, any recovered fossils, and the scientific significance of those fossils and where fossils were curated.

Thank you for contacting PaleoWest for this Project. If you have any questions, please do not hesitate to contact us.

Sincerely,



Benjamin Scherzer, M.S. | Senior Paleontologist
PALEOWEST

REFERENCES

Anderson, R.S., Power, M.J., Smith, S.J., Springer, K.B., and E. Scott, 2002, Paleoecology of a Middle Wisconsin deposit from southern California: Quaternary Research, v. 58, no. 3), p. 310–317.

City of Perris, 2005, General plan, conservation element. Adopted February 18. Available at: https://www.cityofperris.org/home/showpublisheddocument/449/637203139693370000

Graham, R.W., and E.L. Lundelius, Jr., 2010, FAUNMAP II: New data for North America with a temporal extension for the Blancan, Irvingtonian and early Rancholabrean. FAUNMAP II Database, version 1.0, https://ucmp.berkeley.edu/faunmap/about/index.html

Jefferson, G.T., 1991a, A catalogue of Late Quaternary Vertebrates from California: Part One, nonmarine lower vertebrate and avian taxa. Natural History Museum of Los Angeles County Technical Reports No. 5.

_____ 1991b, A catalogue of Late Quaternary Vertebrates from California: Part Two, Mammals. Natural History Museum of Los Angeles County Technical Reports No. 7.

Miller, W.E., 1971, Pleistocene Vertebrates of the Los Angeles Basin and Vicinity: exclusive of Rancho La Brea. Los Angeles County Museum of Natural History, No. 10.

Morton, D.M., 1969, The Lakeview Mountains Pluton, Southern California Batholith Part I: petrology and structure. Geological Society of America Bulletin, v. 80, no. 8, p. 1539–1552. https://doi.org/10.1130/0016-7606(1969)80[1539:TLMPSC]2.0.CO;2

_____ 2003, Geologic map of the Perris 7.5' quadrangle, Riverside County, California. California Geological Survey Open-file Report 03-270, scale 1:24,000. https://pubs.usgs.gov/of/2003/0270/pdf/per_map.pdf

Norris, R.M., and R.W. Webb, 1976, Geology of California. John Wiley & Sons, New York

Paleobiology Database (PBDB), 2022, The Paleobiology Database. Accessed on November 8. Available at: https://paleobiodb.org/#/

San Diego Natural History Museum (SDNHM), 2022, Collection database. Accessed on November 8. Available at: https://www.sdnhm.org/science/paleontology/resources/collection-database/

Society of Vertebrate Paleontology (SVP), 2010, Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources Society of Vertebrate Paleontology. Impact Mitigation Guidelines Revision Committee, p. 1–11. Bethesda, MD.

Springer, K.B., Scott, E., Sagebiel, J.C., and L.K. Murray, 2009, The Diamond Valley Lake local fauna: late Pleistocene vertebrates from inland southern California. Papers on Geology, Vertebrate Paleontology and Biostratigraphy in Honor of Michael O. Woodburne (L.B. Albright III, ed). Museum of Northern Arizona Bulletin 65, 217–235.

University of California Museum of Paleontology (UCMP), 2022, Specimen search. Accessed on November 17. Available at https://ucmpdb.berkeley.edu/

Woodford, A.O., Shelton, J.S., Doehring, D.O., and R.K. Morton, 1971, Pliocene-Pleistocene history of the Perris Block, Southern California. Geological Society of America Bulletin, v. 82, p. 3421—3448.

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Attachment A.
WSC Record Search Results

WESTERN SCIENCE CENTER

December 6th, 2022

PaleoWest
Benjamin Scherzer
517 S. Ivy Avenue
Monrovia, CA 91016

Dear Mr. Scherzer,

This letter presents the results of a record search conducted for Alabbasi Commercial Project Project in the city of Perris, Riverside County, CA. This Project is located north of E. Dawes Street, south of Ramona Expressway, west of Redlands Avenue and east of N. Perris Blvd on Township 4 South, Range 3 West, Section 8 of the *Perris, California* U.S. Geological Survey 7.5' quadrangles.

The geologic units underlying this project are mapped entirely as alluvial sand and clay deposits from the Holocene epoch (Dibblee and Minch 2003). Holocene alluvial units are considered to be of high preservation value, but material found is unlikely to be fossil material due to the relatively modern associated dates of the deposits. However, if development requires any substantial depth of disturbance, the likelihood of reaching Pleistocene alluvial sediments would increase. The Western Science Center does not have localities within the project area or within a 1 mile radius.

While the presence of any fossil material is unlikely, if excavation activity disturbs deeper sediment dating to the earliest parts of the Holocene or Late Pleistocene periods, the material would be scientifically significant. Excavation activity associated with the development of the project area is unlikely to be paleontologically sensitive, but caution during development should be observed.

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

Sincerely,

Brittney Elizabeth Stoneburg, MSc
Collections Manager

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