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## APPENDIX E – PALEONTOLOGICAL RESOURCES ASSESSMENT

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# PALEONTOLOGICAL ASSESSMENT FOR THE PORT OF LOS ANGELES TRUCK LOT PROJECT

LOS ANGELES COUNTY, CALIFORNIA

APNs 7440-016-001, -002, -003, and 7412-024-007

**Lead Agency:**

Los Angeles Harbor Department  
Environmental Management Division  
425 South Palos Verdes Street  
San Pedro, California 90733

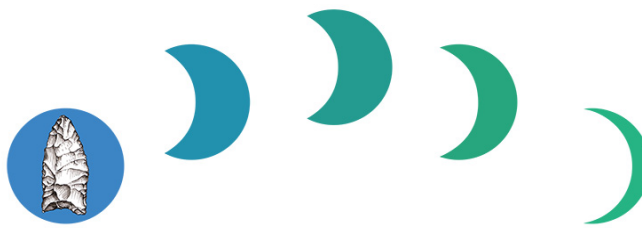
**Prepared For:**

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*July 31, 2023; Revised August 21, 2023*



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**BFSA Environmental Services**  
A Perennial Company

## **Paleontological Database Information**

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***Report Date:*** July 31, 2023; Revised August 21, 2023

***Report Title:*** Paleontological Assessment for the Port of Los Angeles Truck  
Lot Project, Los Angeles County, California

***Prepared For:*** EPD Solutions  
3333 Michelson Drive, Suite 500  
Irvine, CA 92612

***Lead Agency:*** Los Angeles Harbor Department  
Environmental Management Division  
425 South Palos Verdes Street  
San Pedro, California 90733

***USGS Quadrangle:*** Torrance, California (7.5-minute) USGS Quadrangle

***Assessor's Parcel Numbers:*** 7440-016-001, -002, -003, and 7412-024-007

***Study Area:*** 18.63 acres

***Key Words:*** Paleontological assessment; Palos Verdes Sand; San Pedro Sand;  
high paleontological resource sensitivity; monitoring  
recommended.

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## **I. INTRODUCTION AND LOCATION**

A paleontological resource assessment has been completed for the Port of Los Angeles Truck Lot Project, located at 1599 John S. Gibson Boulevard near the San Pedro community in Los Angeles County, California (Figures 1 and 2). The project consists of four parcels (Assessor's Parcel Numbers [APNs] 7440-016-001, -002, -003, and 7412-024-007). The project is situated within unsectioned land, as shown on the U.S. Geological Survey (USGS) *Torrance, California* (7.5-minute) topographic quadrangle map (Figure 2). The highest elevation within the project area reaches approximately 65 feet above mean sea level. The Port of Los Angeles Truck Lot Project proposes to develop a new truck parking facility with 393 stalls covering 811,741 square feet (18.63 acres) of area. A project-specific geotechnical investigation report was not available at the time of this report. The current project area was part of the Western Terrace housing project for war workers during World War II. The units overlapped a portion of the project area but were removed circa the late 1950s, with Interstate 110 being built sometime in the early 1960s. After that, the project area remained largely untouched, save for the buildings that were constructed just south of the site in the early 1980s.

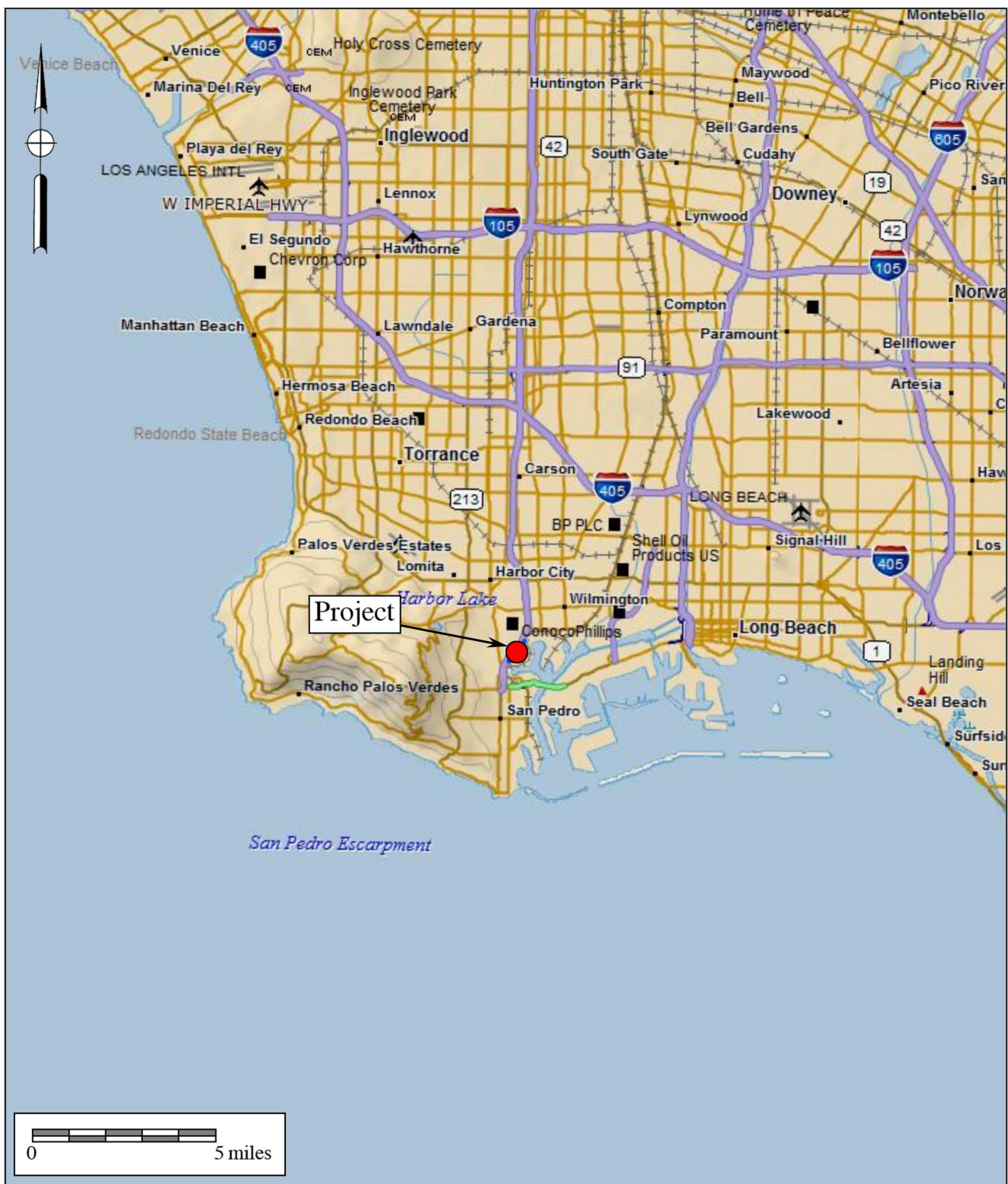
As the lead agency, the Los Angeles Harbor Department (LAHD) has required the preparation of a paleontological assessment to evaluate the project's potential to yield paleontological resources, following California Environmental Quality Act (CEQA) and LAHD guidelines. The paleontological assessment of 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**

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

### *State of California*

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



**Figure 1**  
**General Location Map**

The Port of Los Angeles Truck Lot Project  
DeLorme World Base Map Service (1:250,000 series)





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

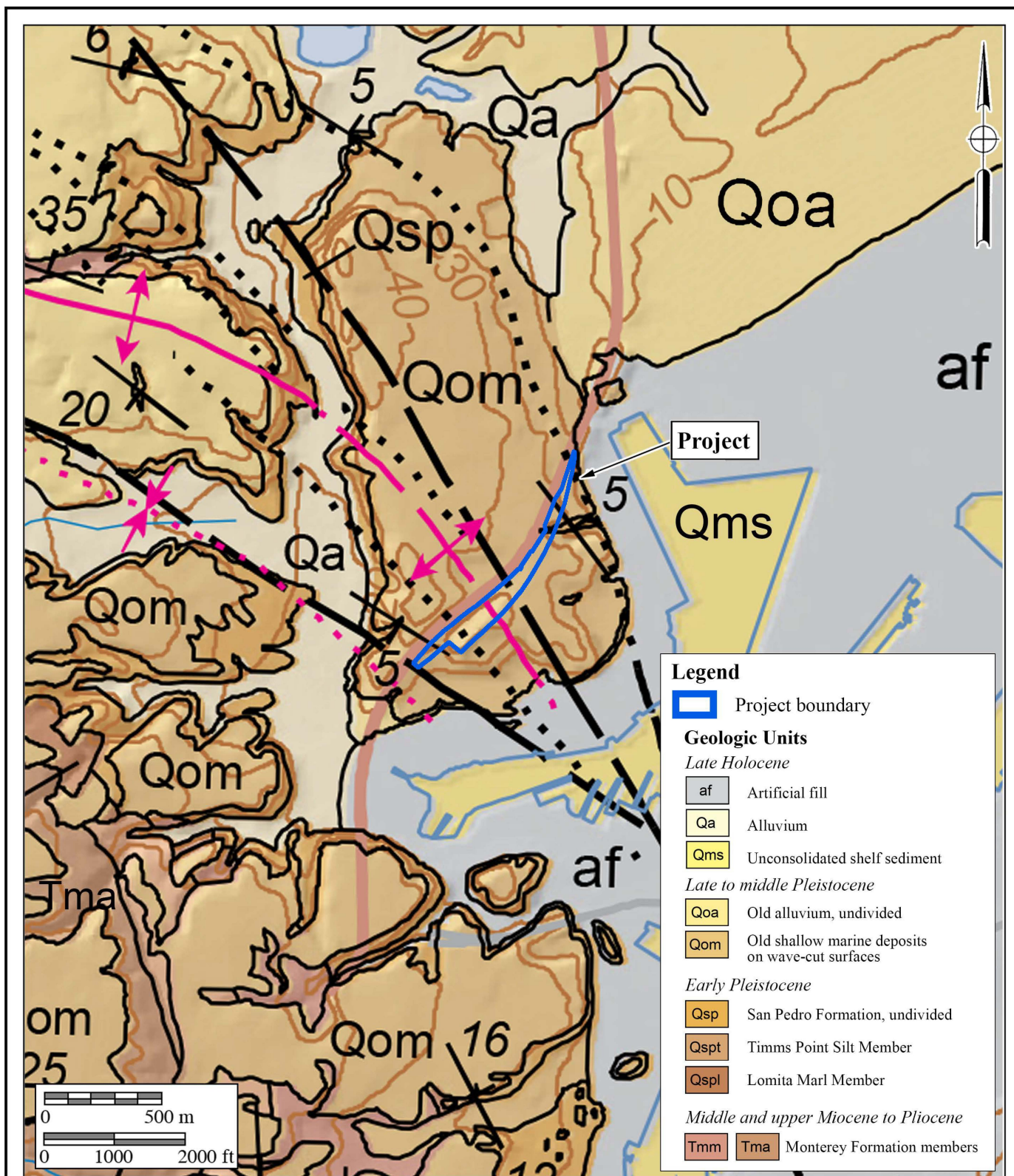
- a) A person shall not knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological,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

### **III. GEOLOGY**

The proposed project is situated within the Los Angeles Basin which comprises more than 800 square miles extending from Cahuenga Peak south to the Pacific coast, and from Topanga Canyon southeast to the Aliso Creek region. The project rests on the lowest of several emergent marine terraces in the San Pedro area (Woodring et al. 1946; Kennedy 1975).

The geology mapped within the project area and along John S. Gibson Boulevard are late to middle Pleistocene-aged old shallow marine deposits on wave-cut surface or terrace (light brown area labeled "Qom" on Figure 3, after Saucedo et al. 2016). The old shallow marine deposits in this area have been further defined as consisting of a cover of non-marine terrace deposits that overlie the Palos Verdes Sand (Woodring et al. 1946; Kennedy 1975). The Palos Verdes Sand consists of predominately coarse sands and fossiliferous basal sandy gravels (Kennedy 1975); in places, Woodring et al. (1946) include silty sands that overlie the coarser materials as an upper part of the Palos Verdes Sand. The silty sands were noted to grade into the overlying non-marine deposits, consisting of poorly sorted sand and gravel representing cliff talus, stream fan and channel, slope wash deposits, and are thought to be late Pleistocene to Holocene in age (Woodring et al. 1946).





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

The Port of Los Angeles Truck Lot Project

*Geology after Saucedo et al. 2016*

The conventional view of the Palos Verdes Sand around the project is that it represents deposition in a large, warm-water, shallow, inner sublittoral, and protected shore environment. It is approximately 125,000 years old which corresponds to the sea level high-stand (interglacial) of marine oxygen isotope ( $\delta^{18}\text{O}$ ) stage 5e (MIS 5.5) (Kennedy 1993; Muhs et al. 1992). However, Muhs et al. (1992) have indicated that the Palos Verdes Sand consists of two fossiliferous deposits: the older 125,000-year-old deposits in “northern” San Pedro and younger, approximately 80,000-year-old deposits in “southern” San Pedro. These disparate deposits occupy the same marine terrace in the area.

Unconformably underlying the Palos Verdes Sand is the San Pedro Sand (dark brown, fringing lower outcrops labeled “Qsp” on Figure 3). The San Pedro Sand includes fossiliferous, cross-bedded sands (Woodring et al. 1946), and was deposited during the middle Pleistocene, dating to approximately 450,000 to 300,000 years ago (Kennedy 1993), although Powell and Ponti (2007) suggest a range of approximately 200,000 to 500,000 years ago. In general, this unit is said to represent deposition in a shallow, outer sublittoral marine environment (Kennedy 1975).

At the project, Kennedy (1993) noted that both the Palos Verdes Sand and the San Pedro Sand—and presumably the upper non-marine deposits—are exposed at the existing cut above John S. Gibson Boulevard, however, the relative thicknesses of the units were not defined. Particularly noteworthy, he indicated that the cut is a fossil-collecting stop for a paleontological field trip.

#### **IV. PALEONTOLOGICAL RESOURCES**

##### **Definition**

Paleontological resources are the remains of prehistoric life that have been preserved in the 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 [SVP] 2010) but may include younger remains (subfossils) when viewed in the context of local extinction of the organism or habitat, for example.

##### **Fossil Locality Record Search**

A paleontological records search was performed for the project by the Los Angeles County Museum of Natural History (LACM; Bell 2023; Appendix B). The records search found that there are several recorded localities *within the project*, consisting of abundant invertebrate fossils (shells) as well as the fossil bone(s) of a whale, from both the Palos Verdes Sand and the San Pedro Sand. The “Gibson Boulevard Site,” as it is known according to Bell:

has been sampled and has quite a bit of additional information available in our collections database: the locality is about 1000 feet of north - south 45-degree slope, grading upward to the west, and about 100 feet high. Strata appear almost horizontal, dipping slightly north. Most of the locality contains macrofossils: a notable exception is a large coarse sand

deposit toward the mid-southern end. The Gibson Boulevard site, as used here, refers to the most fossiliferous section at the locality's central half, at the middle of which it is virtually at slope top. It averages 2 feet in thickness and within its own domain varies considerably along its length both lithologically and faunally.

As specified in Section III, Kennedy (1993) described the existing cut at the project as a fossil-collecting stop for a paleontological field trip, stating:

The Palos Verdes Sand is exposed at the top of the hill, truncating the San Pedro Sand, and is richly fossiliferous. This locality is dominated by sandy bottom species, with others coming from nearby epifaunal habitats.

Two fossil beds in the San Pedro Sand are present in the middle of the hillside, but are covered by brush and weeds. Most of the shells on the slope have been washed down from the Palos Verdes Sand above.

Additional localities near the project include multiple species of fish, mammals, and mollusks, all but one from the San Pedro Sand. Notably, at least one locality was derived via screening techniques (Bell 2023). Other detailed sources for fossil localities at or very close to the project include Miller (1971), Kennedy (1975), and Langenwalter (1975).

#### Project Survey

Personnel from BFS Environmental Services, a Perennial Company, under the direction of Principal Investigator Todd A. Wirths, conducted a pedestrian survey of the project on March 2, 2023. The subject property is an undeveloped lot that slopes upwards to the east abutting the 110 Freeway along its eastern edge. The property has been disked and likely was graded in the past. Aerial photographs from 1952 through 1963 show that between those years, the entire project area had been developed, then cleared and then eventually graded again for the development of the 110 Freeway. Currently, a trail intersects the project largely from north to south across the property. As a result, the original landform and soil have been impacted by previous use. Although visibility was limited throughout the project due to vegetative ground cover, remnant evidence of an unconsolidated prehistoric (cultural) shell scatter was identified during the survey at the flattened, top surface. Shells were also observed on the slope mixed into a thin cover of modern, slope wash sediments. Some shells appeared bleached and without color, suggesting a pre-modern (Pleistocene) age.

## V. PALEONTOLOGICAL SENSITIVITY

### Overview

The degree of paleontological sensitivity of any particular area is based upon 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 thus is typically assigned a low paleontological sensitivity.

Fossils have been collected from Pleistocene deposits now known as the Palos Verdes Sand and the San Pedro Sand for over a century, as summarized by Deméré (2007). A comprehensive monograph of the geology and paleontology of the Palos Verdes Hills and San Pedro areas by Woodring et al. (1946) established the chronostratigraphic sequence of Pliocene and Pleistocene terraces in the region. Kennedy (1975) and Langenwalter (1975) summarized the then-current state of paleontological knowledge for the Pliocene and Pleistocene invertebrate and vertebrate faunas and listed all the species known from the various localities of the area.

Later studies indicate the Palos Verdes Sand includes two horizons of different ages, an older horizon dating to approximately 125,000 years old, and a younger horizon of about 80,000 years old (Muhs et al. 1992; Powell and Ponti 2007). According to these authors and others, based upon amino acid-analyses of selected molluscan species, the older horizon is characterized by a warm-water molluscan fauna, while the approximately 80,000-year-old horizon is characterized by a cold-water molluscan fauna.

### Professional Standards

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

- High Potential: Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- Undetermined Potential: Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment, and that further study is needed to determine the potential of the rock unit.
- Low Potential: Rock units that are poorly represented by fossil specimens in institutional collections or based on a general scientific consensus that only preserve fossils in rare circumstances.

- No Potential: Rock units that have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

Using these criteria, based upon the presence of onsite significant fossil localities, the Pleistocene-aged deposits of the Palos Verdes Sand and the San Pedro Sand have a high potential to yield significant paleontological resources. The Pleistocene-aged non-marine deposits that overlie the Palos Verdes Sand may be assigned an undetermined potential. While the paleontological record of these deposits in the vicinity of the project appears to be poorly documented, terrestrial alluvial deposits in Los Angeles County are known to yield the fossilized bones of Pleistocene vertebrates (Miller 1971; Jefferson 1991). Disturbed deposits at the surface have no paleontological potential, since any fossils that might be contained in this stratum will be out of geologic context.

## **VI. CONCLUSIONS AND RECOMMENDATIONS**

The existence of multiple, fossiliferous Pleistocene-aged shallow marine deposits at the project, and the high paleontological resource sensitivity assigned to these sediments support the recommendation that full-time paleontological monitoring be required starting at the surface (below any disturbed/artificial fill deposits) during grading, excavation, or utility trenching activities at the project.

A Paleontological Resource Impact Mitigation Program (PRIMP) is strongly recommended for the project. The PRIMP must be consistent with the provisions of CEQA, LAHD guidelines, and the guidelines of the SVP (2010). If implemented, the PRIMP report would mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources (fossils) if present, to less than significant. The PRIMP should include methods for:

- Attendance by a qualified paleontologist at the preconstruction meeting to consult with the grading and excavation contractors.
- On-site presence of a paleontological monitor to inspect for paleontological resources during the excavation of previously undisturbed deposits.
- During monitoring, detailed stratigraphic measurements and descriptions of the cut shall be performed.
- Salvage and recovery of paleontological resources by the qualified paleontologist or paleontological monitor. Collecting shall be carefully documented and precisely performed for each fossil-bearing horizon. Collections consisting of mixed (contaminated) fossil-bearing horizons and materials shall be avoided.
- Onsite screening of bulk samples may be necessary.



- Preparation (repair and cleaning), sorting, and cataloging of recovered paleontological resources.
- Donation of prepared fossils, field notes, photographs, and maps to a scientific institution with permanent paleontological collections.
- Completion of a final summary report that outlines the results of the mitigation program.

All mitigation programs shall be performed by a qualified professional paleontologist, defined as an individual with a M.S. or Ph.D. in paleontology or geology who has proven experience in paleontology and who is knowledgeable in professional paleontological procedures and techniques. Fieldwork may be conducted by a qualified paleontological monitor, defined as an individual who has experience in the collection and salvage of fossil materials. The paleontological monitor shall always work under the direction of a qualified paleontologist.

## **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

August 21, 2023

Date

## **VIII. REFERENCES**

- Bell, A. 2023. Paleontological resources for the Port of Los Angeles Truck Lot Project (BFSA Project No. 23-063). Unpublished letter to BFSA Environmental Services, Poway, California, by the Los Angeles County Museum of Natural History, Los Angeles, California.
- Deméré, T.A. 2007. San Pedro Waterfront Project Environmental Impact Statement/ Environmental Impact Report (EIR/EIS), City of Los Angeles, Los Angeles, California. Unpublished consulting report prepared for Jones & Stokes, Irvine, California, by the Department of PaleoServices, San Diego Natural History Museum, San Diego, 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.
- Kennedy, G.L. 1975. Paleontologic record of areas adjacent to the Los Angeles and Long Beach Harbors, Los Angeles County, California. *In*, Soule, D.F., and Oguri, M., eds., Marine studies of San Pedro Bay, California: Part 9: Paleontology. Published by The Allen Hancock Foundation Harbors Environmental Projects and The Office of Sea Grant Programs, University of Southern California, Los Angeles, California.
- Kennedy, G.L. 1993. Field Trip Guide: The Pleistocene marine record of the Palos Verdes Hills, Los Angeles County, southern California. CalPaleo 1993: California Paleontology Conference, April 1993.
- Langenwalter, P.E., II. 1975. Chordates: The fossil vertebrates of the Los Angeles-Long Beach Harbors region, *in*, Kennedy, G.L., Paleontologic record of areas adjacent to the Los Angeles and Long Beach Harbors, Los Angeles County, California. *In*, Soule, D.F., and Oguri, M., eds., Marine studies of San Pedro Bay, California: Part 9: Paleontology. Published by The Allen Hancock Foundation Harbors Environmental Projects and The Office of Sea Grant Programs, University of Southern California, Los Angeles, California.
- Miller, W.E. 1971. Pleistocene vertebrates of the Los Angeles basin and vicinity (exclusive of Rancho La Brea). Bulletin of the Los Angeles County Museum of Natural History Science 10:1-124.
- Muhs, D.R., Miller, G.H., and Kennedy, G.L. 1992. Aminostratigraphy and oxygen isotope stratigraphy of marine-terrace deposits, Palos Verdes Hills and San Pedro areas, Los Angeles County, California. Quaternary Coasts: Marine and Lacustrine Systems, SEPM Special Publication No. 48.
- Powell, C.L., II, and Ponti, D.J. 2007. Paleontologic and stratigraphic re-evaluation of Deadman Island, formerly in San Pedro Bay, California. *In*, Brown, A.R., Shlemon, R.J., and Cooper, J.D., eds., Geology and paleontology of Palos Verdes Hills, California: A 60<sup>th</sup> anniversary revisit to commemorate the 1946 publication of U.S. Geological Survey Professional Paper 207: Pacific Section SEPM, book 103, p. 101-120.
- Saucedo, G.J., Greene, H.G., Kennedy, M.P., and Bezore, S.P. 2016. Geologic map of the Long Beach 30' x 60' Quadrangle, California. California Department of Conservation, California Geological Survey Regional Map Series, v. 2.0, scale 1:100,000.

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, [https://vertpaleo.org/wp-content/uploads/2021/01/SVP\\_Impact\\_Mitigation\\_Guidelines-1.pdf](https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf).

Woodring, W.P., Bramlette, M.N., and Kew, W.S. 1946. Geology and paleontology of Palos Verdes Hills, California. U.S. Geological Survey Professional Paper 207.

**APPENDIX A**

**Qualifications of Key Personnel**

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

## Senior Paleontologist

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## E ducation

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

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

## P rofessional C ertifications

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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

## P rofessional M emberships

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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

## E xperience

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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 BFSAE nvironmental Services, 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.

## S elected R ecent R eports

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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.

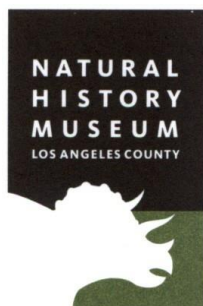
2019 *Paleontological Assessment for the MorningStar Marguerite Project, Mission Viejo, Orange County, California.* Prepared for T&B Planning. Report on file at Brian F. Smith and Associates, Inc., Poway, California.



- 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**



Natural History Museum  
of Los Angeles County  
900 Exposition Boulevard  
Los Angeles, CA 90007

tel 213.763.DINO  
www.nhm.org

Research & Collections

e-mail: [paleorecords@nhm.org](mailto:paleorecords@nhm.org)

March 12, 2023

BFSA Environmental Services  
Attn: Todd Wirths

re: Paleontological resources for the Port of Los Angeles Truck Lot Project (BFSA Project No. 23-063)

Dear Todd:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Port of Los Angeles Truck Lot project area as outlined on the portion of the Torrance USGS topographic quadrangle map that you sent to me via e-mail on March 6, 2023.

We do have any fossil localities that lie directly within the proposed project area, as shown in the table below. As these localities are invertebrates, there may be uncollected specimens still present at the sites.

Locality Number	Location	Formation	Taxa	Depth
LACM IP 12739, 17649, 31340	the Gibson Boulevard Site*	Palos Verdes Sand	Abundant invertebrates, including gastropods ( <i>Aartsenia</i> , <i>Acteocina</i> , <i>Alvinia</i> , <i>Calliostoma</i> , <i>Glossaulax</i> , <i>Graphis</i> , <i>Hirtoscala</i> , <i>Homalopoma</i> , <i>Littorina</i> , <i>Micranellum</i> , <i>Ophiodermella</i> , <i>Paciocinebrina</i> , <i>Petalococonchus</i> , <i>Volvarina</i> ), bivalves ( <i>Chione</i> , <i>Crassinella</i> ), scaphopods ( <i>Hirtoscala</i> )	Surface
LACM IP 12576	W side of John S. Gibson Blvd. and E of Harbor Fwy.	Palos Verdes Sand (matrix of coarse marine sand overlying terrace abrasion platform cut across dipping San Pedro Formation)	Whale (Cetacean) and invertebrates including gastropods ( <i>Acmaea</i> , <i>Atrimitra</i> , <i>Chama</i> , <i>Crepidula</i> , <i>Crossata</i> , <i>Fissurellidea</i> , <i>Hespererato</i> , <i>Lottia</i> , <i>Lucapinella</i> , <i>Megasurcula</i> , Pyramidellidae, <i>Ocinebrina</i> ), bivalves ( <i>Caryocorbula</i> , <i>Diplodonta</i> , <i>Modiolus</i> , <i>Tagelus</i> ), scaphopods ( <i>Antalis</i> , <i>Dentalium</i> , <i>Gadila</i> )	Surface
LACM IP 42367	Along Gibson Blvd	Unknown formation (Pleistocene)	Invertebrates including bivalves ( <i>Callithaca</i> , <i>Mactromeris</i> , <i>Tresus</i> )	Surface
LACM IP 42202, 42212	Located in artificial cut on west side of	San Pedro Sand	Invertebrates including the bivalve <i>Mexicardia</i>	Unknown

Gibson Boulevard,  
San Pedro

*IP, Invertebrate Paleontology; bgs, below ground surface*

The Gibson Site has been sampled and has quite a bit of additional information available in our collections database: the locality is about 1000 feet of north - south 45 degree slope, grading upward to the west, and about 100 feet high. Strata appear almost horizontal, dipping slightly north. Most of the locality contains macrofossils: a notable exception is a large coarse sand deposit toward the mid-southern end. The Gibson Boulevard site, as used here, refers to the most fossiliferous section at the locality's central half, at the middle of which it is virtually at slope top. It averages 2 feet in thickness and within its own domain varies considerably along its length both lithologically and faunally. Sub sites of interest follow; all rest on a medium grained sand / non-fossiliferous base of at least one foot. 1. (secondary) an assemblage, semi-cemented, from beneath a ten foot long, gently arched section of sandstone about 4 + feet thick. Rear of cave sloping sharply downward after about four feet of excavation. Apart from some coquina, the species are in excellent condition: predominantly *Zirfaea*, *Bulla* and colorful, glossy *Olivella*. 2. (tertiary) paired *Macoma* and *Leporimetis* in an otherwise barren three foot section of sand. 3. (tertiary) a four foot heavy concentration of *Anomia* and *Pododesmus* in sand with occasional, well worn *Ocenebra* and semi-worn *Pteropurpura*. 4. (primary) a ten foot stretch with many *Nassarius*, *Olivella* and *Polinices reclusianus* in good condition, underlain by sand containing only occasional *Cancellaria tritonidea*.

We have additional fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth. The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	Location	Formation	Taxa	Depth
LACM VP 3270; LACM IP 31313, 42006	Harbor Yard in bluff adjacent to Westoil Terminals	San Pedro Sand (fine grained sand varying from tan to gray & containing clasts of clay)	Baleen whale ( <i>Eschrichtius</i> ), uncatalogued fish and invertebrates	Unknown
LACM VP 7655	Los Angeles Police Department Harbor Community Police Station; 2175 John S. Gibson Blvd	San Pedro Sand (light greenish-gray to brown siltstone)	Rabbit ( <i>Sylvilagus</i> ), rodent (Rodentia), snake (Colubridae), smooth-hound (Mustelus), stingray ( <i>Dasyatis</i> ), eagle ray ( <i>Myliobatis</i> ), fish (Teleostei)	Unrecorded, collected from screening of a 1000-lb matrix sample
LACM VP 3175	South side of Miraflores Ave. at junction of Miraflores Ave. & Pacific Ave	San Pedro Sand (fine, clean sandy matrix)	Rodent (Rodentia), harbor seal ( <i>Phoca vitulina</i> ), fish ( <i>Atherinops</i> , <i>Brosmophycis</i> , <i>Icichthys</i> , <i>Engraulis</i> , <i>Oxyjulis</i> , <i>Rhacochilus</i> , <i>Clupea</i> , <i>Radulinus</i> , <i>Genyonemus</i> , <i>Trachurus</i> , <i>Cymatogaster</i> , <i>Scorpaenichthys</i> , <i>Glyptocephalus</i> , <i>Sebastes</i> , <i>Spirinchus</i> , <i>Lyopsetta</i> , <i>Porichthys</i> , <i>Icelinus</i> , <i>Microgadus</i> , <i>Notorhynchus</i> , <i>Raja</i> , and others)	Surface at base of cliff; deposit is 18 - 24 inches thick and extends for 50 feet
LACM IP 4683, 4801	New Lumberyard Co.; east side of West Basin of Port	Unknown formation (Pleistocene)	Invertebrates ( <i>Cymatosyrinx</i> , <i>Macron</i> )	Unknown

*VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface*

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,

A handwritten signature in black ink that reads "Alyssa Bell". The signature is written in a cursive, flowing style. The first name "Alyssa" is written in a larger, more prominent script, and "Bell" is written in a slightly smaller, more compact script. The signature is set against a light beige background.

Alyssa Bell, Ph.D.  
Natural History Museum of Los Angeles County

enclosure: invoice