

**Appendix E**  
**Paleontological Resources Inventory Report**  
**(January 2021)**



# **PALEONTOLOGICAL RESOURCES INVENTORY REPORT ENCOMPASS HEALTH CHULA VISTA, CITY OF CHULA VISTA, SAN DIEGO COUNTY, CALIFORNIA**

*Lead Agency:*

## **City of Chula Vista**

276 Fourth Avenue  
Chula Vista, California 91910

*Prepared for:*

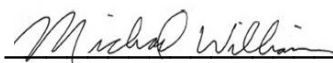
## **Encompass Health**

Contact: John Tschudin  
9001 Liberty Parkway  
Birmingham, Alabama 35242

**DUDEK**

605 Third Street  
Encinitas, California 92024

*Prepared by:*

A handwritten signature in black ink, reading "Michael Williams", is written over a horizontal line.

*Michael Williams, Ph.D.*

**JANUARY 2021**



January 2021

Mr. John Tschudin  
9001 Liberty Parkway  
Birmingham, Alabama 35242

**Subject:** *Paleontological Resources Inventory Report for the Encompass Health Chula Vista Project, City of Chula Vista, San Diego County, California*

Dear Mr. Tschudin:

This letter documents the results of the paleontological resources inventory in support of the Encompass Health Chula Vista project (project), located in the City of Chula Vista, San Diego County, California (Figure 1). The project includes the development of a new healthcare facility on a currently vacant property. The City of Chula Vista (City) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA).

The project site is comprised of a 9.79-acre parcel of land located at the western terminus of Shinohara Lane, in the City of Chula Vista. The project site falls within Section 19 of Township 18 South, Range 2 West on the Imperial Beach, CA 7.5-minute United States Geological Survey (USGS) Topographic Quadrangle Map (Figure 1). The Assessor's Parcel Number is 644-040-01-00.

In accordance with CEQA guidelines, Dudek performed a paleontological resources inventory for the project. The inventory consisted of a San Diego Natural History Museum (SDNHM) records search, review of geological mapping and geological and paleontological literature, and intensive pedestrian surveys of the project site. The results of the paleontological records search were negative for paleontological resources within the project site; however, the SDNHM reported fossil localities nearby from the same geological units that underlie the project site. Fragmentary, fossilized exoskeletal remains were documented during the supplemental pedestrian survey (Figures 2 - 4). N. Scott Rugh, an expert in invertebrate fossil identification, identified the exoskeletal material as likely belonging to the crab, *Randallia* sp. (Rugh. Pers. Comm. 2020).

As the project site has been never developed, there is a potential to encounter intact subsurface paleontological resources. As such, a paleontological monitoring program, which includes the preparation and implementation of a Paleontological Resources Impact Mitigation Program (PRIMP), is necessary to reduce impacts to any potential paleontological resources onsite.

## Paleontological Resources

Paleontological resources are the remains or traces of plants and animals that are preserved in earth's crust, and per the Society of Vertebrate Paleontology ([SVP] 2010) guidelines, are older than written history or older than approximately 5,500 years. They are limited, nonrenewable resources of scientific and educational value, which are afforded protection under state laws and regulations. This study satisfies requirements in accordance with state guidelines (13 PRC, 2100 et seq.) and Public Resources Code Section 5097.5 (Stats 1965, c 1136, p. 2792). This analysis also complies with guidelines and significance criteria specified by SVP (2010). Table 1 provides definitions for high, moderate, low,

marginal, and no paleontological resource potential, or sensitivity, as set forth in and in agreement with the County of San Diego's (2009) Guidelines for Determining Significance: Paleontological Resources.

**Table 1. Paleontological Resource Sensitivity Criteria**

Resource Sensitivity / Potential	Definition
High	High resource potential and high sensitivity are assigned to geologic formations known to contain paleontological localities with rare, well preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleoclimatic, paleobiological and/or evolutionary history (phylogeny) of animal and plant groups. In general, formations with high resource potential are considered to have the highest potential to produce unique invertebrate fossil assemblages or unique vertebrate fossil remains and are, therefore, highly sensitive.
Moderate	Moderate resource potential and moderate sensitivity are assigned to geologic formations known to contain paleontological localities. These geologic formations are judged to have a strong, but often unproven, potential for producing unique fossil remains (Deméré and Walsh 1993).
Low	Low resource potential and low sensitivity are assigned to geologic formations that, based on their relatively young age and/or high-energy depositional history, are judged unlikely to produce unique fossil remains. Low resource potential formations rarely produce fossil remains of scientific significance and are considered to have low sensitivity. However, when fossils are found in these formations, they are often very significant additions to our geologic understanding of the area.
Marginal	Marginal resource potential and marginal sensitivity are assigned to geologic formations that are composed either of volcanoclastic (derived from volcanic sources) or metasedimentary rocks, but that nevertheless have a limited probability for producing fossils from certain formations at localized outcrops. Volcanoclastic rock can contain organisms that were fossilized by being covered by ash, dust, mud, or other debris from volcanoes. Sedimentary rocks that have been metamorphosed by heat and/or pressure caused by volcanoes or plutons are called metasedimentary. If the sedimentary rocks had paleontological resources within them, those resources may have survived the metamorphism and still be identifiable within the metasedimentary rock, but since the probability of this occurring is so limited, these formations are considered marginally sensitive.
No Potential	No resource potential is assigned to geologic formations that are composed entirely of volcanic or plutonic igneous rock, such as basalt or granite, and therefore do not have any potential for producing fossil remains. These formations have no paleontological resource potential, i.e., they are not sensitive.

Source: County of San Diego 2009.

## Regulatory Framework

### California Environmental Quality Act

The CEQA Guidelines require that all private and public activities not specifically exempted be evaluated against the potential for environmental damage, including effects to paleontological resources. Paleontological resources, which are limited, nonrenewable resources of scientific, cultural, and educational value, are recognized as part of the environment under these state guidelines. This study satisfies project requirements in accordance with CEQA (13 PRC, 2100 et seq.) and Public Resources Code Section 5097.5 (Stats 1965, c 1136, p. 2792). This analysis also complies with guidelines and significance criteria specified by SVP (2010).

Paleontological resources are explicitly afforded protection by CEQA, specifically in Section VII(f) of CEQA Guidelines Appendix G, the “Environmental Checklist Form,” which addresses the potential for adverse impacts to “unique paleontological resource[s] or site[s] or ... unique geological feature[s].” This provision covers fossils of signal importance – remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group – as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth. Further, CEQA provides that generally, a resource shall be considered “historically significant” if it has yielded or may be likely to yield information important in prehistory (PRC 15064.5 [a][3][D]). Paleontological resources would fall within this category. The PRC, Chapter 1.7, sections 5097.5 and 30244 also regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.

### City of Chula Vista Regulations

#### City of Chula Vista’s General Plan

The environmental chapter of the City of Chula Vista General Plan (Chapter 9, Section 3.1.10) specifically addresses potential impacts to non-renewable paleontological resources and outlines policies to mitigate negative impacts (City of Chula Vista 2005). The objective and policies protecting paleontological resources are outlined below:

**Objective E-10:** Protect important paleontological resources and support and encourage public education and awareness of such resources.

**Policy E-10.1:** Continue to assess and mitigate the potential impacts of private development and public facilities and infrastructure to paleontological resources in accordance with the California Environmental Quality Act.

**Policy E-10.2:** Support and encourage public education and awareness of local paleontological resources, including the establishment of museums and educational opportunities accessible to the public.

## Methods

### Geological Map and Literature Review

Published geological maps (Kennedy 1975; Kennedy and Tan 2008) and published and unpublished reports were reviewed to identify geological units on the site and determine their paleontological sensitivity.

### Paleontological Records Search

A records search request was sent to the SDNHM on March 01, 2019. The purpose of the museum records search is to determine whether there are any known fossil localities in or near the project site, identify the sensitivity of geological units present within the project site, and aide in determining whether a paleontological mitigation program is warranted to avoid or minimize potential adverse effects of construction on paleontological resources.

### Field Survey

Dudek archaeologist, Scott Wolf, who is cross-trained in paleontological field techniques, conducted the pedestrian survey of the project site on March 08, 2019. The survey was conducted to determine if any surficial paleontological resources are present within the project site. The survey utilized standard paleontological survey procedures and consisted of systematic surface inspection of the project site on 15 m interval transects. The ground surface was examined for the presence of exposed surficial fossils. Ground disturbances such as burrows and eroded hillsides were also visually inspected for exposed subsurface fossils and sediments.

A supplemental paleontological survey was conducted by Dudek field paleontologist Jason Collins on June 24, 2020. While the entire project site with exposed strata was surveyed for paleontological resources, the survey focused on an outcropping of the San Diego Formation exposed on an eroded hillside in the northern portion of the project site. In addition to inspecting exposed strata for paleontological resources, sedimentological and taphonomic characteristics were noted.

## Results

### Geological Map Review, Literature Review, and Paleontological Records Search

The project site lies within the Peninsular Ranges Geomorphic Province (California Geological Survey, 2002). This province extends from the tip of the Baja California Peninsula to the Transverse Ranges (the San Gabriel and San Bernardino Mountains) and includes the Los Angeles Basin, offshore islands (Santa Catalina, Santa Barbara, San Nicholas, and San Clemente), and continental shelf. The eastern boundary is the Colorado Desert Geomorphic Province (California Geological Survey 2002; Morton and Miller 2006). The ancestral Peninsular Ranges were formed by uplift of plutonic igneous rock resulting from the subduction of the Farallon Plate underneath the North American Plate during the latter portion of the Mesozoic era (approximately 125 to 90 million years ago [mya]) (Abbott 1999).



According to surficial geological mapping at a scale of 1:100,000 (Kennedy and Tan 2008) and the results of a paleontological records search conducted by the SDNHM (Confidential Appendix A), the project site is underlain by the late Pliocene to early Pleistocene (~ 3.6 mya to 1.8 mya) San Diego Formation (map unit Tsdss), early to middle Pleistocene (~2.58 mya to 781,000 years ago) very old undivided paralic deposits (=Lindavista Formation) (map unit Qvop), and middle to late Pleistocene (~781,000 to 11,700 years ago) old alluvial floodplain deposits (map unit Qoa).

Boring logs and test pit analyses within the geotechnical report for the project indicate the majority of the project site is underlain by up to six feet of artificial fill, which is in turn underlain by the San Diego Formation (Partner Engineering and Science 2019).

The records search results letter from the SDNHM was received on March 13, 2019 and no records of fossil localities were found within the boundaries of the project site. However, 15 fossil localities are located within a 1-mile radius buffer zone of the project site. Of these, three localities are from geological units not present within the project site, 11 fossil localities are from the San Diego Formation and a single locality is from the Lindavista Formation (Table 2) (Confidential Appendix A). The following paragraphs summarize the records search results and geological units present within the project site from oldest to youngest.

### San Diego Formation (Tsdss)

The late Pliocene to early Pleistocene, marine San Diego Formation is mapped in the northwestern portion of the project site and consists of fossiliferous yellowish-gray to yellowish-brown, weakly consolidated, fine-grained sandstones, poorly sorted gravels, pebble conglomerates, and bedded claystones (Kennedy 1975; Deméré and Walsh 1993). The San Diego Formation is abundantly fossiliferous and has produced significant marine and terrestrial fossils throughout its extent in San Diego County. Jefferson (2003) reported a variety of birds and small and large terrestrial mammals in his compilation of early late Pliocene to early Pleistocene fossil localities. The SDNHM reported 11 fossil localities within the 1-mile radius buffer zone for the project site. These localities yielded fossil burrows, leaf and seed pod impressions and remains, brachiopods, gastropods, bivalves, tusk shells, sand dollars, barnacles, crabs, sharks, rays, sea birds, toothed whales, baleen whales, walruses, rabbits, and horses (Table 2). Based on the productivity of the San Diego Formation, it is assigned high paleontological sensitivity (Confidential Appendix A).

### Very Old Paralic Deposits (Qvop) = Lindavista Formation

The early to middle Pleistocene Lindavista Formation is mapped in the northeastern corner of the project site and is a fossiliferous, nearshore marine and partly terrestrial (deltaic) geological unit that consists of interfingering cobble-rich conglomerates and sandstones that are oxidized to a reddish brown color (Kennedy 1973; Kennedy 1975). The formation has yielded scientifically significant marine invertebrate and vertebrate specimens, including molluscs (gastropods and bivalves), Polychaeta worm burrows, echinoderms, and crustaceans (Kennedy 1973; Kennedy 1975). The SDNHM reported one Lindavista Formation fossil locality from within the 1-mile radius buffer zone of the project site that consisted of fossil steinkerns (internal molds) of pholad clams and burrows. This geological unit is assigned moderate paleontological sensitivity in the area of the project site (Table 2) (Confidential Appendix A).

## Old Alluvial Floodplain Deposits (Qoa)

Pleistocene old alluvial floodplain deposits are mapped on the surface in the southern project site. These deposits consist of varying amounts of clays, sands, silts, and gravels that are usually moderately indurated and oxidized. Old alluvial floodplain deposits have produced significant paleontological resources in San Diego County. In his compilation of Quaternary (~2.58 mya – recent) vertebrates from California, Jefferson (1991a, 1991b) reported numerous fossil localities from old alluvial floodplain deposits in San Diego County that produced fossil amphibian, reptile, bird, and mammal specimens. The SDNHM reported no fossil localities from old alluvial floodplain deposits within the 1-mile radius buffer zone of the project site; however, they do have fossil localities from other areas of San Diego County that have yielded fossil reptiles, birds, small mammals, and Ice-Age megafauna (e.g., mammoth, bison, horse, and camel). This geological unit is assigned moderate paleontological sensitivity in the area of the project (Table 2) (Confidential Appendix A).

**Table 2. Geological Units, Paleontological Sensitivities, and SDNHM Localities within a 1-Mile Radius Buffer Zone of the Project Site**

Geological Unit	Epoch, Period, or Era	Geological Age (Millions of Years)	Paleontological Sensitivity	No. of SDNHM Localities within One Mile of Project Site
San Diego Formation (Tsdss)	Late Pliocene to Early Pleistocene	~ 3.6 – 1.8	High	11
Lindavista Formation (Qvop)	Early to Middle Pleistocene	~ 2.58 – 0.781	Moderate	1
Old Alluvial Floodplain deposits (Qoa)	Middle to Late Pleistocene	~ .781 – 0.117	Moderate	0

## Paleontological Survey

The majority of the project site terrain consists of a modestly sloping hillside with a moderately dense cover of mixed-grass scrub brush communities and landscaped trees and vegetation. Much of the ground surface was obscured by vegetation when the initial survey was conducted on March 08, 2019 (Figure 2); however, there was much greater surface visibility during the supplemental survey on June 24, 2020 (Figure 3). While surveying an exposed San Diego Formation outcrop in the northern portion of the project site on June 24, 2020, Dudek field paleontologist Jason Collins discovered a fragmentary fossil crab weathering out on the surface (Figure 4). The strata dipped slightly to the southwest and were composed of fine-grained, silty sandstone.

## Summary and Management Recommendations

Dudek's review of records search data, geological mapping, geological and paleontological literature did not identify any existing paleontological resources within the project site; however, a fragmentary fossil crab was documented during the supplemental survey from within San Diego Formation deposits. In addition, the paleontological records search conducted by the SDNHM revealed 12 localities within a 1-mile radius buffer zone of the project site

boundary from the same geological units that underlie the project site. Based on the records search results, survey results, and map and literature review, the project site has moderate to high potential to produce paleontological resources during planned construction activities. A qualified paleontologist should be retained for the project who meets or exceeds the qualifications set forth in the SVP (2010) guidelines. The qualified paleontologist shall prepare and adopt a paleontological resources impact mitigation program (PRIMP) prior to the commencement of project-related earthmoving activities. Implementation of a paleontological mitigation program would reduce any potential impacts to below a level of significance for paleontological resources.

## Monitoring and Reporting

Prior to the issuance of grading permits, the applicant shall provide written confirmation to the City that a qualified paleontologist has prepared a PRIMP and has been retained to carry out the PRIMP. A qualified paleontologist is defined as an individual with an MS or PhD in paleontology or geology who is familiar with paleontological procedures and techniques and has expertise in local geology, stratigraphy, and biostratigraphy. The PRIMP shall be consistent with the SVP (2010) guidelines and contain the following components:

- Introduction to the project, including project location, description grading activities with the potential to impact paleontological resources, and underlying geologic units.
- Description of the relevant laws, ordinances, regulations, and standards pertinent to the project and potential paleontological resources.
- Requirements for the qualified paleontologist to attend the pre-construction meeting and provide worker environmental awareness training at the pre-construction meeting as well as at the jobsite the day grading is to be initiated. In addition, the qualified paleontologist shall inform the grading contractor and City Resident Engineer of the paleontological monitoring program methodologies.
- Identification of where paleontological monitoring of excavations impacting the San Diego Formation, very old paralic deposits (Lindavista Formation), and old alluvial floodplain deposits, is required within the project site based on construction plans and/or geotechnical reports.
- Procedures for adequate paleontological monitoring (including necessary monitoring equipment), methods for treating fossil discoveries, fossil recovery procedures, and sediment sampling for microvertebrate fossils, including the following requirements:
  - A paleontological monitor shall be on site at all times during the original cutting of previously undisturbed sediments of moderately to highly sensitive geologic units (e.g., San Diego Formation, very old paralic deposits, and old alluvial floodplain deposits) to inspect cuts for contained fossils. (A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.) The paleontological monitor shall work under the direction of a qualified paleontologist. Monitoring is not required during excavation within low resource sensitivity geological units (e.g., young alluvial flood-plain deposits) if determined to be present within the project site.
  - Paleontological monitoring is not required in areas underlain by artificial fill unless grading activities are anticipated to extend beneath the veneer of fill and impact underlying geological units with moderate to high paleontological sensitivity (e.g., San Diego Formation, very old paralic deposits [Lindavista Formation], and/or old alluvial floodplain deposits).

Mr. Tschudin

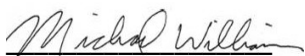
Subject: *Paleontological Resources Inventory Report for the Encompass Health Chula Vista Project, City of Chula Vista, San Diego County, California*

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- If fossils are discovered, the qualified paleontologist and/or paleontological monitor shall recover them. The paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading within 50 feet of the resource to allow recovery of fossil remains. Because of the potential for the recovery of small fossil remains, it may be necessary in certain instances, and at the discretion of the qualified paleontologist, to set up a screen-washing operation on the project site. Alternatively, sediment samples can be collected and processed off-site.
- Paleontological reporting, and collections management:
  - Prepared fossils along with copies of all pertinent field notes, photos, maps, and the final paleontological monitoring report discussed below shall be deposited in a scientific institution with paleontological collections such as the San Diego Natural History Museum within 90 days of completion of monitoring unless the City and the qualified paleontologist determine the extent of fossils recovered will require more preparation, stabilization, and/or curatorial time. Any curation costs shall be paid for by the applicant.
  - A final paleontological monitoring report shall be completed. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils, and shall be submitted to the designated scientific institution within 90 days of the completion of monitoring unless the City and the qualified paleontologist determine the extent of fossils recovered will require more preparation, stabilization, and/or curatorial time.

Should you have any questions relating to this report and its findings please contact Michael Williams (mwilliams@dudek.com) or Sarah Siren (ssiren@dudek.com).

Respectfully Submitted,



Michael Williams, Ph.D.  
Senior Paleontologist  
Mobile: 225.892.7622  
Email: mwilliams@dudek.com

Att.: *Figure 1, Regional Location Map*  
*Figures 2 – 4, Survey Photos*  
*Appendix A, Confidential SDNHM Paleontological Records Search Results*

cc: *Micah Hale, Dudek*  
*Sarah Siren, Dudek*  
*Dawna Marshall, Dudek*

## References

Abbott, P.L., 1999. *The Rise and Fall of San Diego: 150 Million Years of History Recorded in Sedimentary Rocks.* San Diego, California: Sunbelt Publications.

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Mr. Tschudin

Subject: *Paleontological Resources Inventory Report for the Encompass Health Chula Vista Project, City of Chula Vista, San Diego County, California*

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SVP (Society of Vertebrate Paleontology). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. [https://vertpaleo.org/Membership/Member-Resources/SVP\\_Impact\\_Mitigation\\_Guidelines.aspx](https://vertpaleo.org/Membership/Member-Resources/SVP_Impact_Mitigation_Guidelines.aspx).



Mr. Tschudin

Subject: Negative Paleontological Resources Report for the Encompass Health Chula Vista Project, City of Chula Vista, San Diego County, California







Figure 2. Photograph from original survey on March 03, 2019 showing vegetation minimizing surface visibility.





Figure 3. Eroded San Diego Formation outcrop at north end of the project site.





Figure 4. Fragmentary fossil crab weathering out of a San Diego Formation outcrop.



# Appendix A

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SDNHM Records Search Results (Confidential)



## SAN DIEGO NATURAL HISTORY MUSEUM

13 March 2019

Dr. Michael Williams  
Dudek  
605 Third Street  
Encinitas, CA 92024

RE: Paleontological Records Search – Encompass Health Outpatient Rehabilitation Facility Project  
(Dudek PN 11575)

Dear Dr. Williams:

This letter presents the results of a paleontological records search conducted for the Encompass Health Outpatient Rehabilitation Facility Project (Project), located in the south central portion of the City of Chula Vista, San Diego County, California. The Project site is bordered to the north and west by existing residential development, and to the east and south by existing commercial development.

A review of published geological maps covering the Project site and surrounding area was conducted to determine the specific geologic units underlying the Project. Each geologic unit was subsequently assigned a paleontological resource sensitivity following County of San Diego guidelines (Deméré and Walsh, 1993; Stephenson et al., 2009). Published geological reports (e.g., Kennedy and Tan, 2008) covering the Project area indicate that the proposed Project has the potential to impact Pleistocene-age old alluvial flood plain deposits, the early to middle Pleistocene-age Lindavista Formation, and the late Pliocene- to early Pleistocene-age San Diego Formation. These geologic units and their paleontological sensitivity are summarized in detail in the following section.

In addition, a search of the paleontological collection records housed at the San Diego Natural History Museum (SDNHM) was conducted in order to determine if any documented fossil collection localities occur at the Project site or within the immediate surrounding area (Figure 1). The SDNHM has 15 recorded fossil localities within 1 mile of the Project site. Three of these localities are from the late Oligocene-age Otay Formation and the middle Eocene-age Mission Valley Formation, which are not expected to be impacted by construction of the Project. The remaining 12 localities are from the Lindavista Formation and San Diego Formation, and are discussed in greater detail below.

### Geologic Rock Units Underlying the Project Area

**old alluvial flood plain deposits** – Pleistocene-age (approximately 2.6 million to 10,000 years old) old alluvial flood plain deposits underlie the southern portion of the Project site. The SDNHM does not have any fossil localities from old alluvial deposits within a 1-mile radius of the Project. However, fossils are known from these deposits elsewhere in western San Diego County. Recovered fossils include scientifically significant terrestrial vertebrate fossils (e.g., reptiles, birds, small mammals, and large-bodied “Ice-Age” mammals such as mammoth, bison, horse, and camel). Old alluvial flood plain deposits are assigned a moderate paleontological sensitivity.

**Lindavista Formation** – The marine and/or non-marine terrace deposits of the early to middle Pleistocene-age (approximately 1.5 to 0.5 million years old) Lindavista Formation are exposed in the



P.O. BOX 121390, SAN DIEGO, CA 92112-1390  
SDNAT.ORG P 619.232.3821 F 619.232.0248



northern portion of the Project site. The SDNHM has one recorded fossil collection locality from these deposits within a 1-mile radius of the Project site, which yielded several fossil internal molds of pholad clams and burrows. More generally, the Lindavista Formation has produced remains of nearshore marine invertebrates (e.g., clams, scallops, snails, barnacles, and sand dollars), as well as sparse remains of marine vertebrates (e.g., sharks and baleen whales). Fossils have primarily been recovered from localities in Tierrasanta and Mira Mesa where the Lindavista Formation is assigned a high paleontological sensitivity; elsewhere in San Diego County, including in the vicinity of the Project site, the Lindavista Formation is assigned a moderate paleontological sensitivity.

**San Diego Formation** – Marine sedimentary deposits of the late Pliocene to early Pleistocene-age (approximately 3 to 1.5 million years old) San Diego Formation are exposed across the central and northern portions of the Project site. The SDNHM has 11 recorded fossil collection localities from the San Diego Formation within a 1-mile radius of the Project site. These localities produced trace fossils (e.g., burrows) and fossilized impressions or remains of plants (e.g., leaf and seed pod impressions of vascular plants), marine invertebrates (e.g., brachiopods, snails, mussels, scallops, clams, tusk shells, barnacles, crabs, and sand dollars), marine vertebrates (e.g., sharks, rays, sea birds, walrus, toothed whales, and baleen whales), and terrestrial vertebrates (e.g., rabbit and horse). Based on the important fossil remains of marine mammals, sea birds, and mollusks recovered from this geologic unit, the San Diego Formation has been assigned a high paleontological sensitivity.

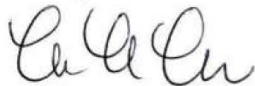
### Summary and Recommendations

The high paleontological sensitivity of the San Diego Formation and the moderate paleontological sensitivity of Pleistocene alluvial floodplain deposits and the Lindavista Formation in San Diego County (Deméré and Walsh, 1993; Stephenson et al., 2009), as well as the presence of fossil localities in the vicinity of the Project site, suggest the potential for construction of the Project to result in impacts to paleontological resources. Any proposed excavation activities that extend deep enough to encounter previously undisturbed deposits of these geologic units have the potential to impact the paleontological resources preserved therein. For these reasons, implementation of a complete paleontological resource mitigation program during ground-disturbing activities is recommended.

The fossil collection locality information contained within this paleontological records search should be considered private and is the sole property of the San Diego Natural History Museum. Any use or reprocessing of information contained within this document beyond the scope of the Encompass Health Outpatient Rehabilitation Facility Project is prohibited.

If you have any questions concerning these findings please feel free to contact me at 619-255-0321 or [kmccomas@sdnhm.org](mailto:kmccomas@sdnhm.org).

Sincerely,



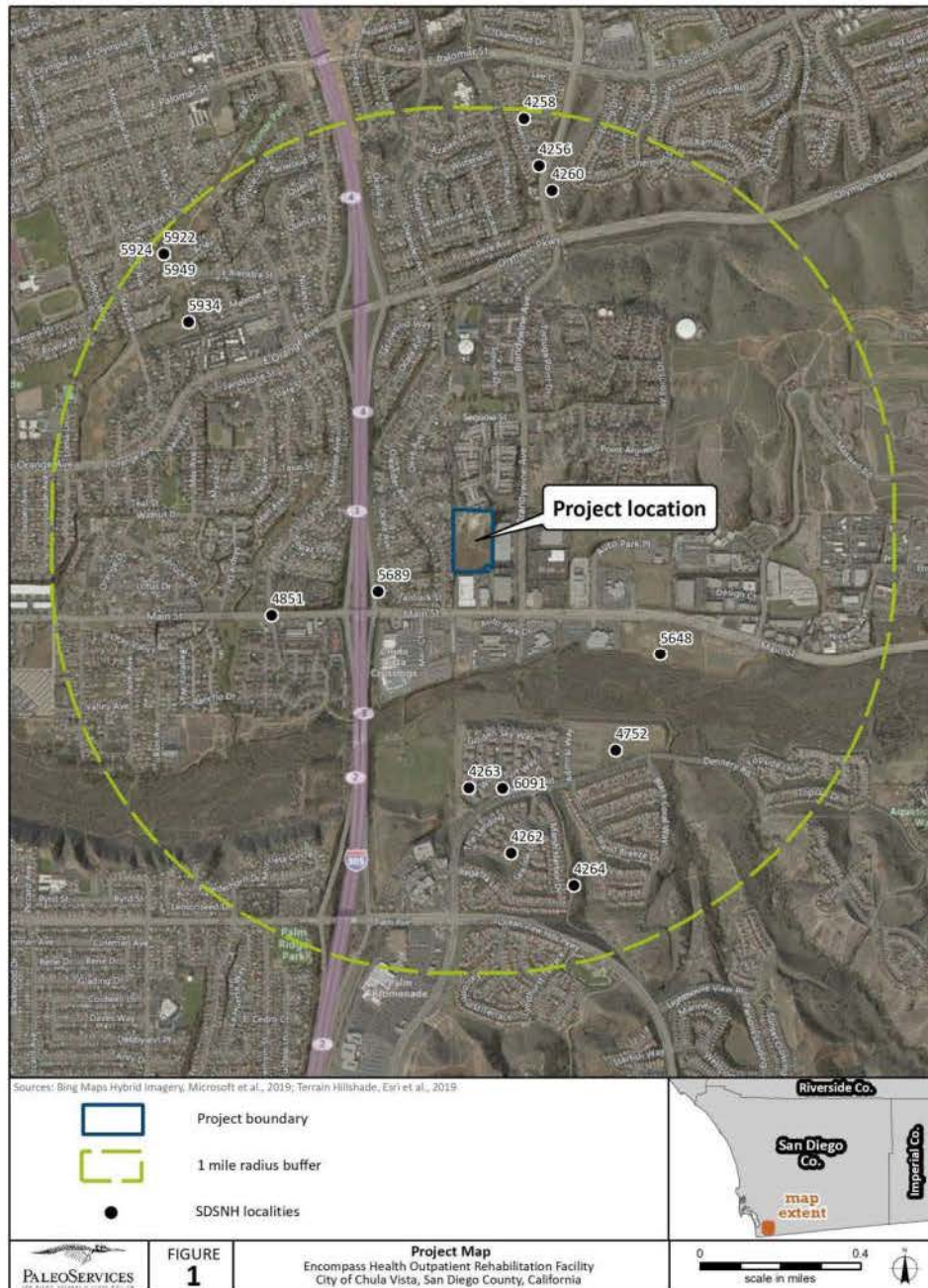
Katie McComas, M.S.  
Paleontological Report Writer & GIS Specialist  
San Diego Natural History Museum

Enc: *Figure 1: Project map*

*Appendix: List of SDNHM fossil localities in the vicinity of the Project*

### **Literature Cited**

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Encompass Health Outpatient Rehabilitation Facility - Paleontological Records Search

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Appendix A  
SDNHM Records Search Results (Confidential)

**Appendix: Locality List**  
San Diego Natural History Museum  
Department of Paleontology

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
5922	SDG&E OMP&A Transmission Project - SP 300	City of Chula Vista, San Diego County, CA	213	Lindavista Formation	Cenozoic	Quaternary	Pleistocene
4262	Dennerly Ranch	City of San Diego, San Diego County, CA	196	San Diego Formation	Cenozoic	Neogene	late Pliocene
4263	Dennerly Ranch	City of San Diego, San Diego County, CA	130	San Diego Formation	Cenozoic	Neogene	late Pliocene
4851	Salt Creek Interceptor - Main Street	City of Chula Vista, San Diego County, CA	130	San Diego Formation	Cenozoic	Neogene	Pliocene
5689	Olympic Parkway Interchange	City of Chula Vista, San Diego County, CA	149	San Diego Formation	Cenozoic	Neogene	Pliocene
6091	Dennerly Ranch Planning Areas 2 & 3	City of San Diego, San Diego County, CA	159	San Diego Formation	Cenozoic	Neogene	Pliocene
4256	Sunbow II #2	City of Chula Vista, San Diego County, CA	245	San Diego Formation, member 4	Cenozoic	Neogene	late Pliocene
4260	Sunbow II #6	City of Chula Vista, San Diego County, CA	260	San Diego Formation, member 4	Cenozoic	Neogene	late Pliocene
4258	Sunbow II #4	City of Chula Vista, San Diego County, CA	300	San Diego Formation, member 6	Cenozoic	Neogene	late Pliocene
5924	SDG&E OMP&A Transmission Project - SP 231	City of Chula Vista, San Diego County, CA	344	San Diego Formation, member 7	Cenozoic	Neogene	Pliocene
5934	SDG&E OMP&A Transmission Project - SP 310	City of Chula Vista, San Diego County, CA	178	San Diego Formation, upper member	Cenozoic	Neogene	Pliocene
5949	SDG&E OMP&A Transmission Project - SP 300	City of Chula Vista, San Diego County, CA	191	San Diego Formation, upper member	Cenozoic	Neogene	Pliocene
4264	Dennerly Ranch	City of San Diego, San Diego County, CA	275	Otay Formation, gritstone member	Cenozoic	Paleogene	late Oligocene
4752	Dennerly Ranch Road Cut	City of Chula Vista, San Diego County, CA	120	Mission Valley Formation	Cenozoic	Paleogene	middle Eocene
5648	Sunroad Auto Park	City of Chula Vista, San Diego County, CA	90	Mission Valley Formation	Cenozoic	Paleogene	middle Eocene

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