

Appendix E  
*Paleontological Records Search*



# SAN DIEGO NATURAL HISTORY MUSEUM

28 February 2019

Ms. Sarah Siren  
Dudek  
605 Third Street  
Encinitas, CA 92024

RE: Paleontological Records Search – Breeze Project (Dudek Project No. 11705)

Dear Ms. Siren:

This letter presents the results of a paleontological records search conducted for the Breeze Project (Project), located in the City of Oceanside, San Diego County, CA. The Project site is bordered to the northwest by Oceanside Boulevard, to the west by existing residential development along South Nevada Street and South Ditmar Street, and to the south and east by the North County Transit District light rail.

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 covering the Project area (e.g., Kennedy and Tan, 2007) indicate that the proposed Project has the potential to impact the middle Eocene-age Santiago Formation. This geologic unit and its 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 along the Project site or within the immediately surrounding area (Figure 1). The SDNHM has one recorded fossil locality within 1 mile of the Project site from Pleistocene-age nonmarine deposits, which are not expected to be impacted by construction of the Project. In lieu of nearby fossil localities, the fossil content of the Santiago Formation is described generally below.

## **Geologic Rock Units Underlying the Project Site**

**Santiago Formation** – The Santiago Formation underlies the entire Project site at the surface. The middle Eocene-age (approximately 49 to 40 million years old) Santiago Formation has been divided into three informal members in the Encinitas-Carlsbad-Vista area of San Diego County (Wilson, 1972). The SDNHM does not have any recorded fossil localities from the Santiago Formation within a 1-mile radius of the Project site. Elsewhere in San Diego County, localities from the Santiago Formation have yielded well-preserved fossils of terrestrial vertebrates (e.g., turtles, snakes, lizards, crocodiles, birds, opossums, insectivores, primates, rodents, brontotheres, tapirs, rhinoceroses, uinatheres, protoreodonts, and other early artiodactyls), as well as marine and estuarine mollusks and calcareous nannoplankton. The Santiago Formation has produced significant terrestrial fossil vertebrate localities in northern San Diego County, and is considered to have a high paleontological sensitivity.

## Summary and Recommendations

The high paleontological sensitivity of the Santiago Formation in San Diego County (Deméré and Walsh, 1993; Stephenson et al., 2009) suggests 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 this geologic unit 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 the locality information contained within this document beyond the scope of the Breeze 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.

Sincerely,



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

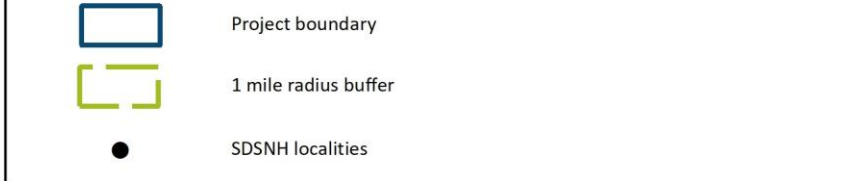
*Enc: Figure 1: Project map  
Appendix: List of SDNHM fossil localities in the vicinity of the Project*

## Literature Cited

- Deméré, T.A., and Walsh, S.L. 1993. Paleontological Resources, County of San Diego. Prepared for the San Diego Planning Commission: 1–68.
- Kennedy, M.P., and Tan, S.S. 2007. Geologic Map of the Oceanside 30' x 60' Quadrangle, California. California Geological Survey, Regional Geologic Map Series 1:100,000 scale, map no. 2.
- Stephenson, B., and seven others. 2009. County of San Diego Guidelines for determining significance, paleontological resources. Land Use and Environment Group, Department of Planning and Land Use, Department of Public Works, 46 p.
- Wilson, K.L. 1972. Eocene and related geology of a portion of the San Luis Rey and Encinitas quadrangles, San Diego County, California. Unpublished Master's. Thesis, University of California, Riverside.

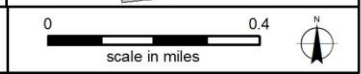


Sources: Bing Maps Hybrid Imagery, Microsoft et al., 2019; Terrain Hillshade, ESRI et al., 2019



**FIGURE 1**

**Project Map**  
Breeze  
City of Oceanside, San Diego County, California



## Appendix: Locality List

San Diego Natural History Museum

Department of Paleontology

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
4007	I-5 and SR-78	City of Oceanside, San Diego County, CA	49	Bay Point Formation, unnamed nonmarine deposit	Cenozoic	Quaternary	Pleistocene