



April 28, 2015

Mr. Neal Holdridge
Principal - Environmental Manager
Trammell Crow Southern California Development, Inc.
3501 Jamboree Road, Suite 230
Newport Beach, California 92660

Subject: **Paleontological Resource Assessment** for the Decker Parcels I Project, unincorporated Riverside County, California (APNs 314-040-001, 314-040-002, 314-040-003, and 314-040-008)

Dear Mr. Holdridge:

Site Location: The following letter report summarizes the results of a **Paleontological Resource Assessment** necessary to address potential impacts associated with the planned mass grading activities for the construction of the proposed 717,430-square-foot warehouse facility and associated improvements at the Decker Parcels I Project. The project is situated east of Perris and the Interstate 215 (I-215) freeway in unincorporated Riverside County, California (Attachments 1 and 2). The proposed project site (Assessor's Parcel Numbers [APNs] 314-040-001, 314-040-002, 314-040-003, and 314-040-008) encompasses approximately 37.08 acres of previously undeveloped land south of March Air Force Base and east of Perris. On the U. S. Geological Survey, 1:24,000-scale, 7.5-minute Steele Peak, California topographic quadrangle map (Attachment 2), the subject property is located in the northwest quarter of the northeast quarter of Section 2, Township 4 South, Range 4 West, San Bernardino Base and Meridian. The property is bounded on the north by Oleander Avenue, on the west by Decker Road, on the south by existing residential properties along Redwood Drive, and on the east by the northward projection of Beck Street. The project development plan calls for approximately one-half (47.9 percent) of the site to be a single, slab-on-grade warehouse building surrounded by paved truck parking areas. The western margin will slope down to the main grade of the building pad, and part of the eastern margin will have a detention basin for runoff. It is assumed that the entire parcel will be graded as part of the project development; however, the total depth of grading has not been determined.

Geology: Geomorphically, the project site is located on the gentle eastern slope of the unnamed foothills that descend to the alluvial Perris Valley below to the east. The geology of the area (Attachment 3) is shown on the geologic map of the Steele Peak quadrangle by D. M. Morton (2001, Geologic map of the Steele Peak 7.5' quadrangle, Riverside County, California). Geologically, the major part of the project area is underlain by Cretaceous granitic rocks (biotite-hornblende tonalite) of the Val Verde pluton (Val Verde Tonalite, Kvt on Attachment 3), surface

outcrops of which are particularly evident in the southeastern quarter of the site (based on Google Earth imagery). The very eastern margin of the property is overlain by a thin, but eastward thickening, section of Quaternary very old alluvial fan sediments (Qvof_a on Attachment 3) derived from the granitic foothills to the west. These rock units are shown on Attachment 3 in light brown and white, respectively.

Paleontology: Paleontologically, the granitic rocks (biotite-hornblende tonalite) that comprise most of the subject property **do not have any potential** for the discovery of fossiliferous materials. However, Pleistocene very old alluvial fan deposits in the alluvial valleys of the Inland Empire do have a record of yielding a diverse assortment of extinct Ice Age terrestrial vertebrate fossils, including mammoth, mastodon, extinct camels, extinct bison, extinct horses, giant ground sloths, and a variety of carnivores such as extinct short-faced bears and saber-toothed cats (G. T. Jefferson, 1991; and collection records of the San Bernardino County Museum in Redlands [SBCM] and the Natural History Museum of Los Angeles County in Los Angeles). However, the closest well documented Pleistocene fossil mammal assemblages are all about 15 miles distant, in the Salt Creek and Diamond Valley Lake areas (e.g., R. E. Raschke, 1994; K. B. Springer *et al.*, 1999, 2009; R. S. Anderson *et al.*, 2002; Stewart *et al.*, 2005), as well as from the Murrieta and Temecula areas of the Elsinore Valley (SBCM collection records) to the southeast and south, respectively. Fossils from these areas were derived from the same types of alluvial and alluvial fan deposits as mapped in the Perris Valley at lower elevations. Thus, a slight potential does exist for the discovery of additional Ice Age vertebrate fossils in certain depositional settings and attention must be paid to their potential discovery during paleontological monitoring activities. A pedestrian field survey conducted by personnel of Brian F. Smith and Associates, Inc. on September 4, 2014 did not reveal the presence of any fossils or fossil-bearing sedimentary units across the subject property.

Paleontological Sensitivity: A “paleontological sensitivity map and report” generated by the Riverside County Land Information System on August 21, 2014 (Attachment 4) ranks the greatest part of the subject property, that is, the area underlain by granitic rocks, as having a Low potential to yield nonrenewable paleontological resources, and thus a Low paleontological sensitivity. Only the northeastern fringe of the property is shown as having a High Potential/Sensitivity (High B) to yield paleontological resources, which is “based on the occurrence of fossils at a specified depth below the surface. The category High B indicates that fossils are likely to be encountered at or below four feet of depth, and may be impacted during excavation by construction activities.” The granitic rocks of the Val Verde pluton must be regarded as having a paleontological resource potential of low to none. The likelihood of discovering fossils in granitic rocks is nil and paleontological monitoring is not required on the greatest part of the subject property.

The boundary between the area of High (High B) Sensitivity (yellow-brown on Attachment 4) and the area assigned a Low potential (light green on Attachment 4) only approximately follows the geologic contacts as shown on Attachment 3, probably as a result of scaling from the original presentation down to that shown on Attachment 4. However, we regard the geologic map as presenting the most accurate reflection of possible paleontological sensitivity and use the geologic contact between the Quaternary sediments (Qvof_a) and the Cretaceous granitic rocks (Kvt) as the boundary between areas with High and Low sensitivity levels. The High paleontological sensitivity ranking (High B) encompasses only the outcrop areas of the mapped Quaternary very

old alluvial fan sediments (Qvof); however, they would be thinnest along the mapped contact. These Quaternary sediments often yield important Ice Age fossils such as large terrestrial vertebrates (e.g., bison, mammoth, mastodon, horse, camel, giant ground sloth, short-faced bears, saber-toothed cats, and others [G. T. Jefferson, 1991; R. S. Anderson *et al.*, 2002; K. B. Springer *et al.*, 1999, 2009]). Because of the established presence of abundantly fossiliferous localities in the Inland Empire and the documented High (High B) paleontological sensitivity of the older alluvial fan sediments in this area (Attachment 4), paleontological monitoring of mass grading and excavation activities, including utility trenching, in areas so mapped is required to mitigate impacts to potentially significant nonrenewable paleontological resources (*i.e.*, fossils) if grading will achieve depths greater than four feet.

Potential Mitigation Program: A mitigation program (*i.e.*, Paleontological Resource Impact Mitigation Program [PRIMP]) consistent with the provisions of the California Environmental Quality Act (CEQA), regulations currently implemented by the County of Riverside, and proposed guidelines of the Society of Vertebrate Paleontology is recommended if grading will exceed four feet in depth in the northeast fringe of the property that is mapped as Quaternary older alluvial fan sediments (Qof). In the event that grading in the northeast portion of the project will achieve a depth greater than four feet, the County of Riverside shall require that a PRIMP be prepared and submitted to the County prior to the granting of a grading permit. The PRIMP will outline the locations where monitoring would be required and the protocols to be followed in the event that fossils are discovered.

Thank you for the opportunity to have provided paleontological services on this project. If you have any questions, please feel free to contact us at our Poway facility.

Sincerely,



George L. Kennedy, Ph.D.
Senior Paleontologist



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California Professional Geologist No. 7588



Appendix: References cited

Attachments: Index maps, geologic map, paleontological sensitivity map

Appendix: References Cited

- Anderson, R. S., Power, M. J., Smith, S. J., Springer, K. B., and Scott, E. G. 2002. Paleoecology of a middle Wisconsin deposit from southern California. *Quaternary Research*, 58(3): 310-317, figs. 1-3.
- Jefferson, G. T. 1991. A catalogue of late Quaternary vertebrates from California: Part two, mammals. Natural History Museum of Los Angeles County, Technical Reports, 7: i-v + 1-129.
- Morton, D. M. 2001. Geologic map and digital database of the Steele Peak 7.5' quadrangle, Riverside County, California. U. S. Geological Survey, Open-File Report 01-449, version 1.0: 1 map sheet (scale 1:24,000) with explanatory text.
- Raschke, R. E. 1994. Paleontological resources assessment for the Salt Creek channelization study area, Riverside County. Unpublished report prepared for the Riverside County Flood Control and Water Conservation District, Riverside, California, by RMW Paleo Associates, Mission Viejo, California.
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- Springer, K. B., Scott, E. G., Sagebiel, J. C., and Murray, L. K. 2009. The Diamond Valley Lake local fauna: Late Pleistocene vertebrates from inland southern California. *In* Albright, L. B., ed., *Papers on geology, vertebrate paleontology, and biostratigraphy in honor of Michael O. Woodburne*. *Museum of Northern Arizona Bulletin*, 65: 217-235.
- Stewart, J. D., Kennedy, G. L., and Shiller, G. I. 2005. Paleontological monitoring report, construction of Salt Creek Channel, Stage 6, Winchester region, Riverside County, California. Unpublished paleontological report prepared for L. D. Anderson, Incorporated, Bloomington, California, by Brian F. Smith and Associates, Poway, California.