

## **Appendix G3 Paleontological Resources Memorandum**

## Appendices

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December 6, 2023

Nicole Vermilion  
PlaceWorks, Inc.  
Submitted via email: [nvermilion@placeworks.com](mailto:nvermilion@placeworks.com)

**RE: *Paleontological Assessment Memorandum for the Ontario Sports Complex Project, San Bernardino County, California***

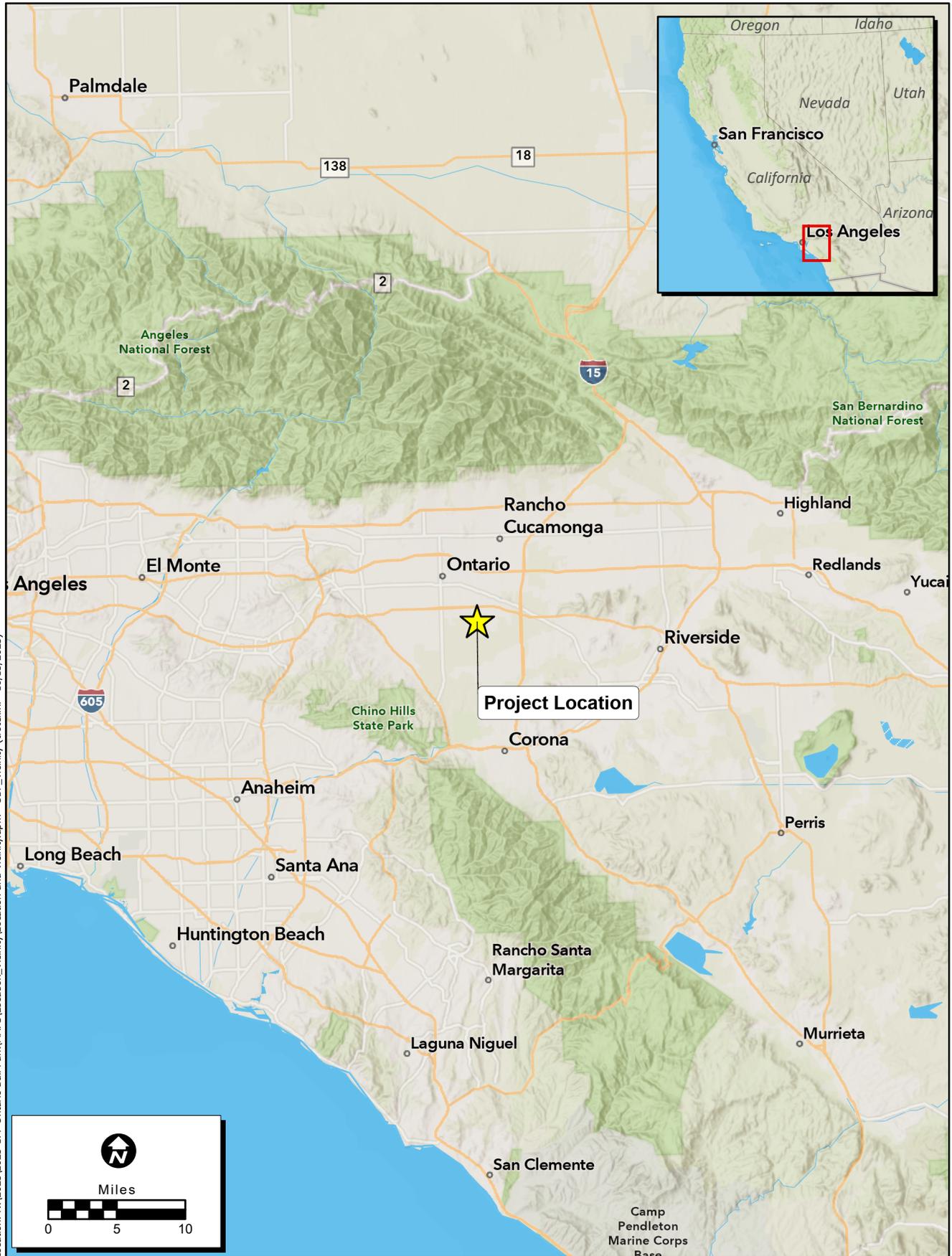
Dear Ms. Vermilion:

ECORP Consulting, Inc. completed a thorough investigation into the potential to directly impact paleontological resources during the construction of the Ontario Sports Complex Project (Project). This investigation included a paleontological record search through the Western Science Center (WSC) in Hemet, California and a desktop study of the geology and paleontology of the Project Area. The Project Area consists of approximately 191 acres with offsite improvements for water and sewer lines (assumed to be up to 2 miles in length and up to 50 feet on either side of the existing paved roadways), improvements to the existing Chino Avenue (assumed to be up to 1 mile in length with a corridor width of 150 feet). It is located west of the Cucamonga Creek Flood Control Channel, east of Vineyard Avenue, south of Riverside Drive, and north of Chino Avenue. The Project Area occurs within Township 1 South, Range 7 West, Sections 33 and 34, as well as Township 2 South, Range 7 West, Sections 2, 3, 10, 11, 14, 15, 22, and 23 on the San Bernardino, California U.S. Geological Survey 7.5-minute topographic quadrangle map (Figure 1).

## **GEOLOGIC SETTING**

Regionally, the Project Area is part of the Peninsular Ranges Geomorphic Province that extends approximately 900 miles from the Transverse Ranges and the Los Angeles Basin southward to the southern tip of Baja California. The province is characterized by steep, mountainous terrain and valleys trending in a northwestern direction. Plutonic and metamorphic rocks, making up the bedrock, compose the majority of the surrounding mountains. Plio/Pleistocene-aged to older Quaternary-aged alluvial fan deposits fill the valleys and younger alluvium fill the incised drainages (L.D. King, Inc. 2014).

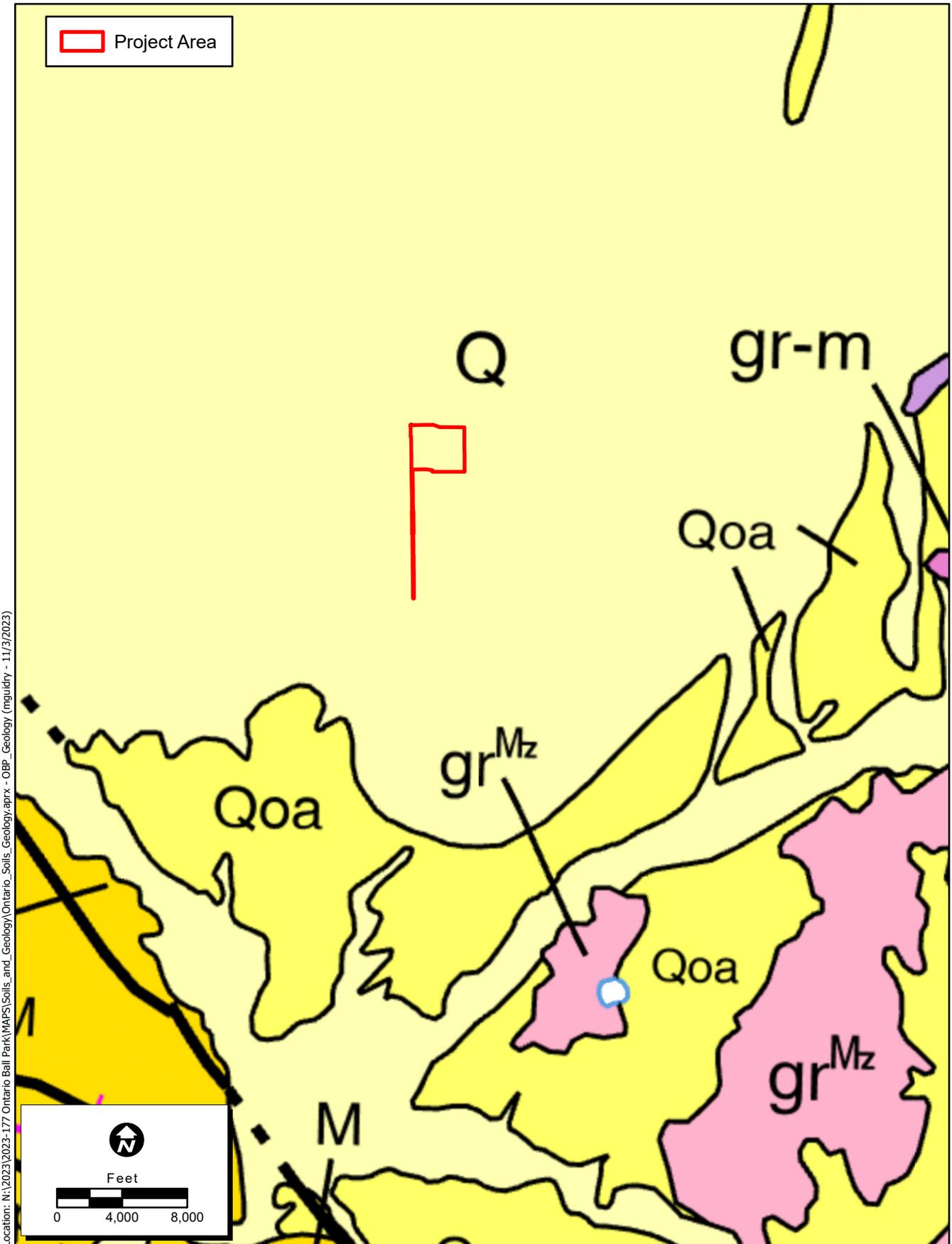
Located in the western section of the San Bernardino Valley, south of the San Gabriel Mountains, the City of Ontario, along with the Project Area, is underlain by alluvial soils resulting from the erosion of the San Gabriel Mountains to the north (Figure 2). Desktop studies of the geology for the Project Area indicate that the underlying geologic units are primarily alluvial deposits from the Holocene epoch (Morton and Miller 2006). These deposits consist of fine-grained, silty sands and fine- to medium-grained sand and vary in color from brown, gray, or yellowish-brown (Morton and Miller 2003).



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Map Date: 10/13/2023  
Sources: ESRI

**Figure 1. Location and Vicinity Map**



Location: N:\2023\2023-177 Ontario Ball Park\MAPS\Soils\_and\_Geology\Ontario\_Soils\_Geology.aprx - OBP\_Geology (mguidry - 11/3/2023)

Map Date: 11/3/2023  
Sources: ESRI

**Figure 2. Geology**

## RECORD SEARCH RESULTS

ECORP conducted a paleontological record search through the Western Science Center in Hemet, California. The WSC does not have fossil localities in the Project Area or within a 1-mile radius of the Project Area (Stoneburg 2023). Because the geologic units mapped in the area are alluvial deposits from the Holocene, they are unlikely to contain fossils due to the modern associated dates. However, if ground disturbance exceeds the alluvial deposits, the likelihood of reaching Pleistocene (approximately 2 million years ago to 11,700 years ago) alluvial sediments would increase, and there is potential within these sediments to contain fossils. In addition, a record search conducted by the San Bernardino County Museum found the remains of a mammoth from approximately 20 feet below the ground surface within the City area (PlaceWorks 2022). This further supports that there is potential for fossils to be found with depth.

## RECOMMENDATIONS

To assess the significance of a geologic unit to contain paleontological resources (i.e., paleontological potential/sensitivity), paleontologists have adopted the standards set forth by the Society of Vertebrate Paleontology (2010). Holocene alluvium on the surface within the Project Area has been assigned a low sensitivity criteria for producing fossils. However, due to the presence of Pleistocene alluvial deposits beneath and the discovery of mammoth remains within City limits, it is recommended that a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) be set forth prior to the start of construction. The PRMMP will discuss the laws and regulations that have been set for the protection of paleontological resources, the significance of the fossils, and protocol to follow in case a discovery is made. The PRMMP will also outline the duties of the paleontological monitor onsite, including the salvaging and preparation of fossils and the final submission of all paleontological resources to an accredited museum or facility for curation. Below are Mitigation Measures to be carried out before and during Project construction.

**GEO-1:** Prior to grading, a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) shall be prepared by a Qualified Paleontologist meeting the standards of Society of Vertebrate Paleontology (2010). The PRMMP shall discuss the laws and regulations for the protection of paleontological resources, the significance of fossils, and protocol to follow in case a discovery is made. The PRMMP shall also outline the duties of paleontological monitoring onsite, including the salvaging and preparation of fossils and the final submission of all paleontological resources to an accredited museum or facility for curation.

**GEO-2:** During excavations exceeding depth of approximately 5-10 feet below ground surface, a qualified paleontological monitor shall be present during construction activities to spot check the sediments and depths of excavations to determine the geologic units encountered. If paleontological resources are discovered, full-time monitoring shall be required during grading, as identified in the Paleontological Resources Monitoring and Mitigation Plan.

**GEO-3:** In the event of any fossil discovery, regardless of depth or geologic formation, construction work shall halt within a 50-foot radius of the find until its significance can be determined by a qualified paleontologist. Significant fossils shall be recovered, prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility in accordance with the standards of the Society of Vertebrate Paleontology (2010). A regional repository shall be identified by the City Council and a curatorial arrangement shall be signed prior to collection of the fossils.

If you have any questions, please feel free to contact me via email or directly at (916) 708-5330.

Sincerely,



Niranjala Kottachchi  
Paleontological Resources Manager

## REFERENCES

- Alta California Geotechnical Inc. 2015. Preliminary Geotechnical Investigation: Armstrong Ranch Specific Plan, DeBoer Parcels, City of Ontario, County of San Bernardino, California, 39p.
- L.D. King, Inc. 2014. Grand Park Specific Plan. [https://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Maps/gpsp\\_toc.pdf](https://www.ontarioca.gov/sites/default/files/Ontario-Files/Planning/Maps/gpsp_toc.pdf).
- Morton D.M. and Miller, F.K. 2006. Geologic Map of the San Bernardino and Santa Ana 30' x 60' quadrangles, California.
- \_\_\_\_\_. 2003. Preliminary Geologic Map of the San Bernardino 30' x 660' Quadrangle, California, Version 1.0: United States Geological Survey Open File Report 03-293.
- PlaceWorks 2022. The Ontario Plan 2050 City of Ontario. Final Supplemental Environmental Impact Report, 748p.
- Society of Vertebrate Paleontologists. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. 11 pp. [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).

## PERSONAL COMMUNICATION

Email from Brittney Stoneburg. November 1, 2023. Paleontological Record Search Western Science Center, Hemet, California.