ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

April 20, 2026

29 Build, LLC
2525 El Camino Real #165
Carlsbad, CA 92008

RE: Paleontological Assessment Memorandum for the Desert Knoll Project, San Bernardino County, California

To Whom It May Concern:

ECORP Consulting, Inc. (ECORP) completed a thorough investigation of the potential for construction of the Desert Knoll Project (Proposed Project) to result in direct impacts to paleontological resources (Figure 1). This investigation included a paleontological record search through the San Bernardino County Museum (SBCM), Redlands, California and a desktop study of the geology and paleontology of the Proposed Project Area.

The Proposed Project would construct a single-family residential subdivision comprising 177 residential lots on approximately 88 acres. Each lot would average approximately 17,000 square feet in size, and approximately 11,000 feet of new public street would be constructed. The subdivision would be constructed in multiple phases, of which approximately 18 acres have already been developed. The development of the remaining 70 acres is the subject of this report (ECORP 2026).

The Project Area comprises approximately 70 acres of land located in the southeastern quarter of Section 21 of Township 1 North, Range 9 East, San Bernardino Base and Meridian, as depicted on the 1973 (photorevised 1994) U.S. Geological Survey Twentynine Palms, California 7.5-minute quadrangle (Figure 1). The Project Area comprises two parcels identified by Assessor's Parcel Numbers 0621-231-11 and 0621-231-14. The Project Area comprises undeveloped land bordered by Utah Trail to the east and Desert Knoll Avenue to the west.

GEOLOGIC SETTING

The Proposed Project Area is located in the Morongo Basin on the southern edge of the Mojave Desert, northeast of the Little San Bernardino Mountains and northwest of the Pinto Mountain. Neighboring mountains are composed of granitic and metamorphic rock of Mesozoic age. Those mountains to the south are important since they slope and drain to the north. Thus, all the onsite alluvial sediment is derived from the southern mountains (Schmidtling 2023). Dibblee has discussed the Project Area as composed of older Quaternary alluvial sediments with a smaller component made of recent Quaternary alluvium (Dibblee 1968). Granitic and Metamorphic rocks are void of fossils and therefore will not be discussed. Furthermore, the Quaternary deposits are what will be encountered during ground disturbance as they will be found on the surface or near the surface. Surficial sediments include unconsolidated and semi-consolidated alluvium, lake, playa, and terrace deposits (Figure 2). The thickness may be as much as 100 feet, grading down into Quaternary older alluvium (Qoa) located more along the western portion of the Project. These surficial deposits are interpreted as Holocene or Recent. Older sediments consist of

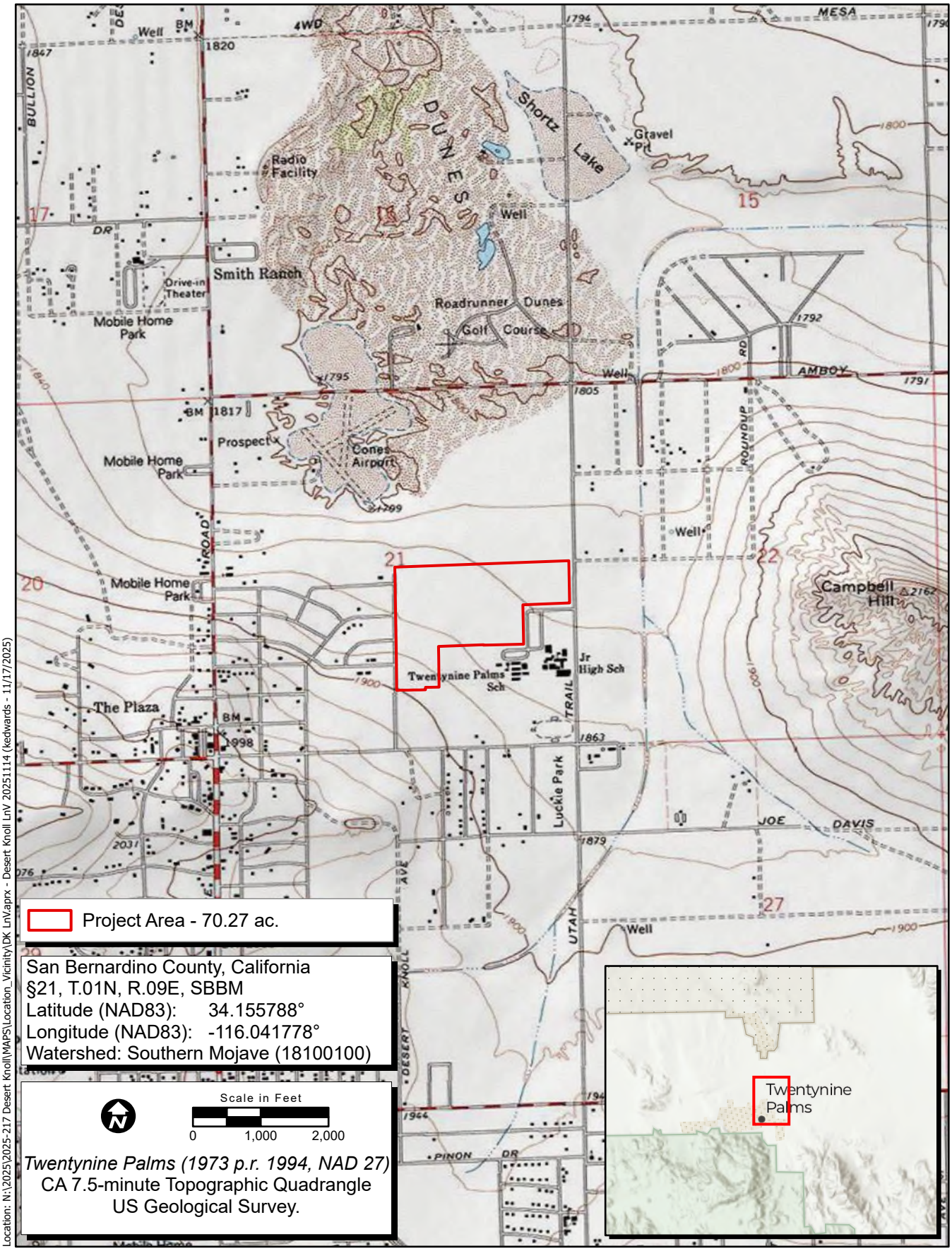
weakly consolidated alluvial deposits that may be as thick as 1000 feet or more. These older alluvial deposits consist of light gray, poorly bedded to non-bedded, fine to coarse arkosic sand and minor mixtures of pebble-cobble gravel. Older gravel and sand consist of mostly light gray, poorly bedded gravel composed of subrounded cobbles and pebbles in matrix of arkosic sand (Dibblee 1968). Older surficial sediments are interpreted as Pleistocene and possibly in part Tertiary in age.

RECORD SEARCH RESULTS

Most professional paleontologists in California adhere to the Society of Vertebrate Paleontology (SVP 2010) guidelines to determine the mitigation protocols. These guidelines are used to assess the paleontological resource potential of the underlying geologic units. The potential of the geologic unit(s) can be assigned to one of four categories defined by the SVP (SVP 2010). These categories include high, undetermined, low, and no potential. According to the paleontological sensitivity outlined by the Society of Vertebrate Paleontology (2010), both recent artificial fill and young Holocene-age sediments (10,000 years old to present) have low sensitivities to produce fossils.

ECORP conducted a paleontological record search through the SBCM, located in Redlands, California. The SBCM did not have any records of previous finds recorded directly within the Proposed Project Site, however, four localities exist within 1 mile of the Project Site's perimeter. These localities, SBCM 1.86.9 and SBCM 1.86.11 – 13, are 0.73 – 1.0 miles east of the Project Site on Campbell Hill. All occur in units of Qoa and Quaternary older gravel, including a grey sandstone, tilted lacustrine sediments, and fluvial sand deposits below a calcareous sandstone bed. *Equus* sp. (extinct horse) bones were found in these localities, all disassociated and most being surface collected as float.

In addition to the record search results, ECORP conducted reviews of published and unpublished literature. Schmidtling conducted a paleontological resources assessment for the Cactus Club Hotel Project approximately 10 miles west of the City of Twentynine Palms (Schmidtling 2023). A record search conducted through the SBCM resulted in no known paleontological localities within the Project Area. The geologic units within the Project Area are mapped as Holocene-age alluvial deposits similar to the surficial deposits discussed for this Project Area discussed in this report.



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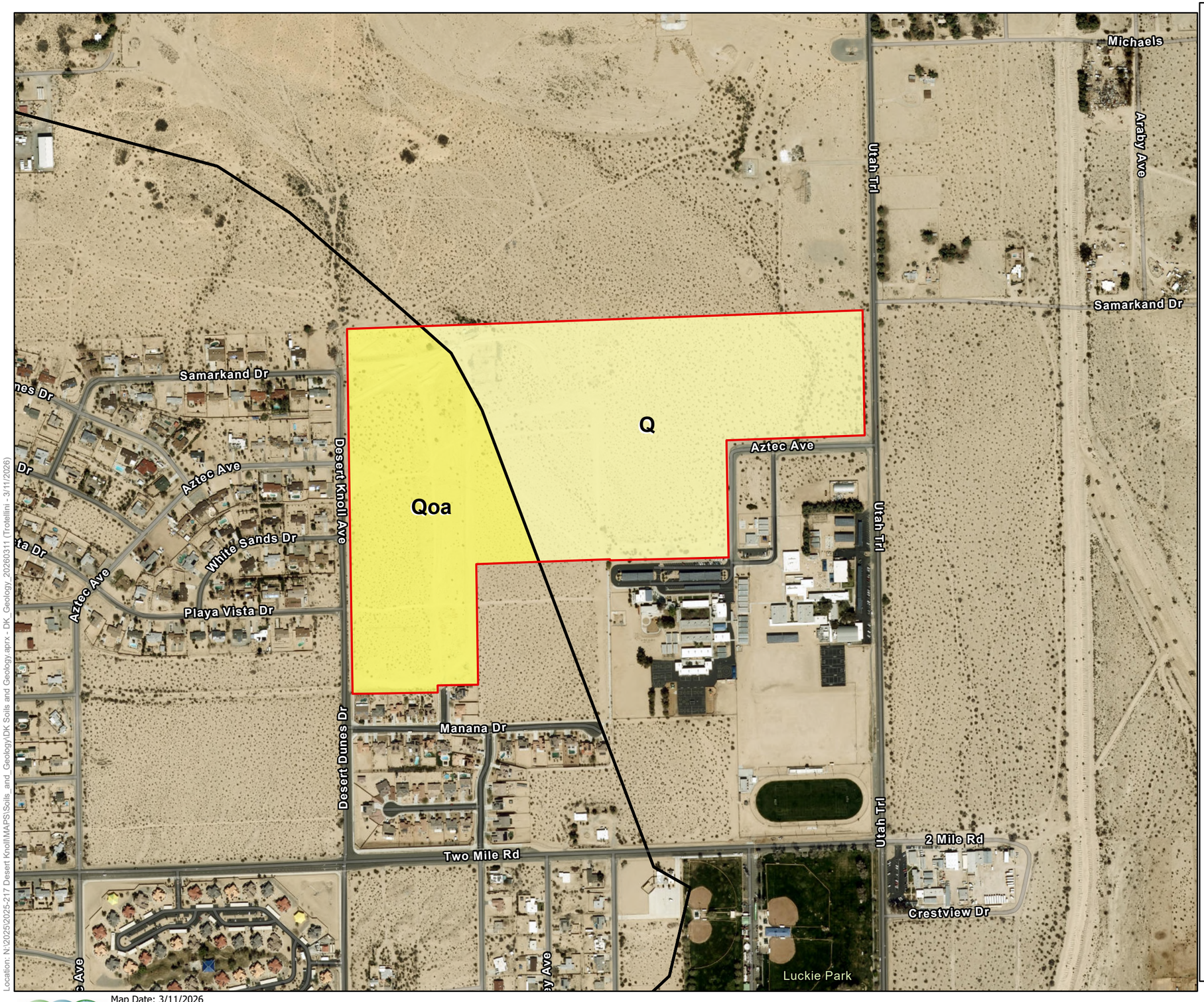
Map Date: 11/17/2025
Sources: ESRI, USGS

Figure 1. Project Location and Vicinity



Map Features

Project Area - 70.27 ac.

Geologic Units within Project Boundary

Quaternary Deposits

Q - Alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated

Qoa - Older alluvium, lake, playa, and terrace deposits

Sources:
California Department of Conservation - Geologic Atlas of California (2010)

Location: N:\2025\2025-217 Desert Knoll\MAPS\Soils_and_Geology\DK Soils and Geology.aprx - DK_Geology_20260311 (Trotellini - 3/11/2026)

Map Date: 3/11/2026

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Scale in Feet
0 500

Figure 2. Geologic Units

2025-217 Desert Knoll

RECOMMENDATIONS

CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 also applies to paleontological resources. Due to the presence of Holocene-age alluvium sediments in the Project Area and therefore having low sensitivity to produce fossils, the potential of the Proposed Project to impact significant paleontological resources is low. Therefore, no paleontological monitoring during ground-disturbing activities associated with the Project is recommended. If an inadvertent discovery is made during earth disturbing activities, all work in that area must be halted or diverted until a qualified paleontologist can evaluate the scientific significance of the find.

If you have any questions about the information presented in this letter, please contact me at nkottachchi@ecorpconsulting.com or (916) 708-5330.

Sincerely,

Niranjala Kottachchi
Paleontological Program Manager

REFERENCES

Dibblee, T.W. 1968. Geologic Map of the Twentynine Palms Quadrangle, San Bernardino and Riverside Counties, California. Miscellaneous Geologic Investigations Map I-561.

ECORP Consulting, Inc. (ECORP) 2026. *Archaeological Resources Inventory Report for the Desert Knoll Project, San Bernardino County, California, 36p.*

Schmidtling, R. 2023. Paleontological Resources Assessment Report: Cactus Club Hotel Project, 17p.

Society of Vertebrate Paleontologists (SVP). 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.