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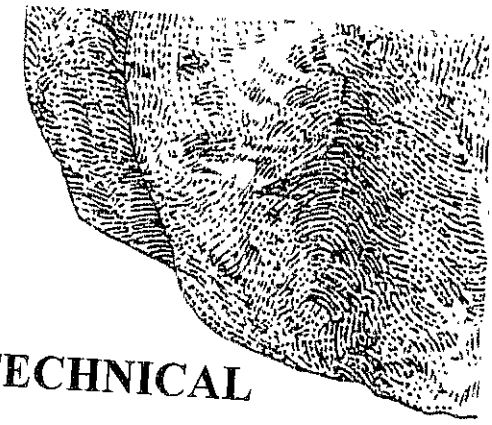
PALEONTOLOGY - ARCHAEOLOGY - HISTORY



PALEONTOLOGICAL RESOURCES TECHNICAL REPORT FOR THE REXCO TRIO PROPERTIES, CITY OF CORONA, RIVERSIDE COUNTY, CALIFORNIA

Prepared for:
Rexco Development
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Principal Investigator:
Kim Scott, Principal Paleontologist

Reviewer:
John Harris, Paleontology Practice Leader

March 2016

Project Number: 3821-01, -02, -03
Type of Study: Paleontological Resources Assessment
Localities: None
USGS Quadrangle: Corona South 7.5'
Area in acres: Dos Lagos Planning Area Six 3.57, Parcel B 2.07, Terrano 22.4 acres
Key Words: prior grading and fill; negative survey

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State Certifications DBE, WBE, SBE, UDBE

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LIST OF ACRONYMS and ABBREVIATIONS

B.A.	Bachelor of Arts
B.S.	Bachelor of Science
BLM	Bureau of Land Management
CEQA	California Environmental Quality Act
Cogstone	Cogstone Resource Management Inc.
GIS	Geographic Information System
LACM	Natural History Museum of Los Angeles County
LACMIP	Natural History Museum of Los Angeles County, Department of Invertebrate Paleontology
M.A.	Master of Arts
M.S.	Master of Sciences
PBDB	Paleobiology Database
PFYC	Potential Fossil Yield Classification
Ph.D	Doctor of Philosophy
Project	Dos Lagos project
Terrano Development	Dos Lagos Planning area 1
Parcel B	Pronio Drive Office Project
PA-6	Planning Area 6
PRIMP	Paleontological Resource Impact Mitigation Program
RV	University of California at Riverside Vertebrate Paleontology collection
SBCM	San Bernardino County Museum
UCMP	University of California Museum of Paleontology
U.K.	United Kingdom
USGS	United States Geological Survey
WEAP	Worker Environmental Awareness Program

EXECUTIVE SUMMARY

This purpose of this study was to determine the potential effects on paleontological resources within three proposed projects - Dos Lagos Planning Area 6 Project (PA6), Parcel B/Pronio Drive Office Project (PB), and the Terrano/Dos Lagos Planning Area 1Project (Terrano) (north to south order) in the City of Corona, Riverside County, California.

The three projects are located east of Interstate 15 along Temescal Canyon Drive (Figure 1). Planned vertical impacts on these properties are a maximum of approximately 5 feet for all projects. However all three projects were previously excavated and re-compacted to form pads as part of planned construction that then did not occur. Only the previous pad areas will be impacted for these projects.

A record search of the project area and a one mile radius was received from the Western Science Center in Riverside County. Online records from the University of California Museum of Paleontology database and the Paleobiology Database were searched for fossils as well as print sources.

There are no records of fossils within the proposed project boundaries or a one mile radius. In the vicinity extinct animals recovered include 3 types of ground sloth, dire wolf, saber-toothed cat, 2 types of mammoth, mastodon, camel, llama, dwarf pronghorn, bison, horse and tapir.

No fossils were observed during survey as the existing building pads were previously excavated and re-compacted. Native sediments are present outside of these impact areas in PA6 but consist young axial channel sediments. This rock unit is too young to contain fossils to depths of at least 8 feet. PB sediments were inaccessible as virtually the entire property is currently a parking lot or landscaped. Terrano has exposed fill with hardscaping present.

The proposed maximum depth of cuts for each of the three projects is 5 feet below current ground surface. There is no known sensitivity for fossils at this depth within the building footprint of the three projects.

If unanticipated fossils are unearthed during construction, work should be halted in that area until a qualified paleontologist can assess the significance of the find. Work may resume immediately a minimum of 50 feet away from the find.

INTRODUCTION

PURPOSE OF STUDY

This purpose of this study was to determine the potential effects on paleontological resources within three proposed projects - Dos Lagos Planning Area 6 Project (PA6), Parcel B/Pronio Drive Office Project (PB), and the Terrano/Dos Lagos Planning Area 1Project (Terrano) (north to south order) in the City of Corona, Riverside County, California (Figure 1).

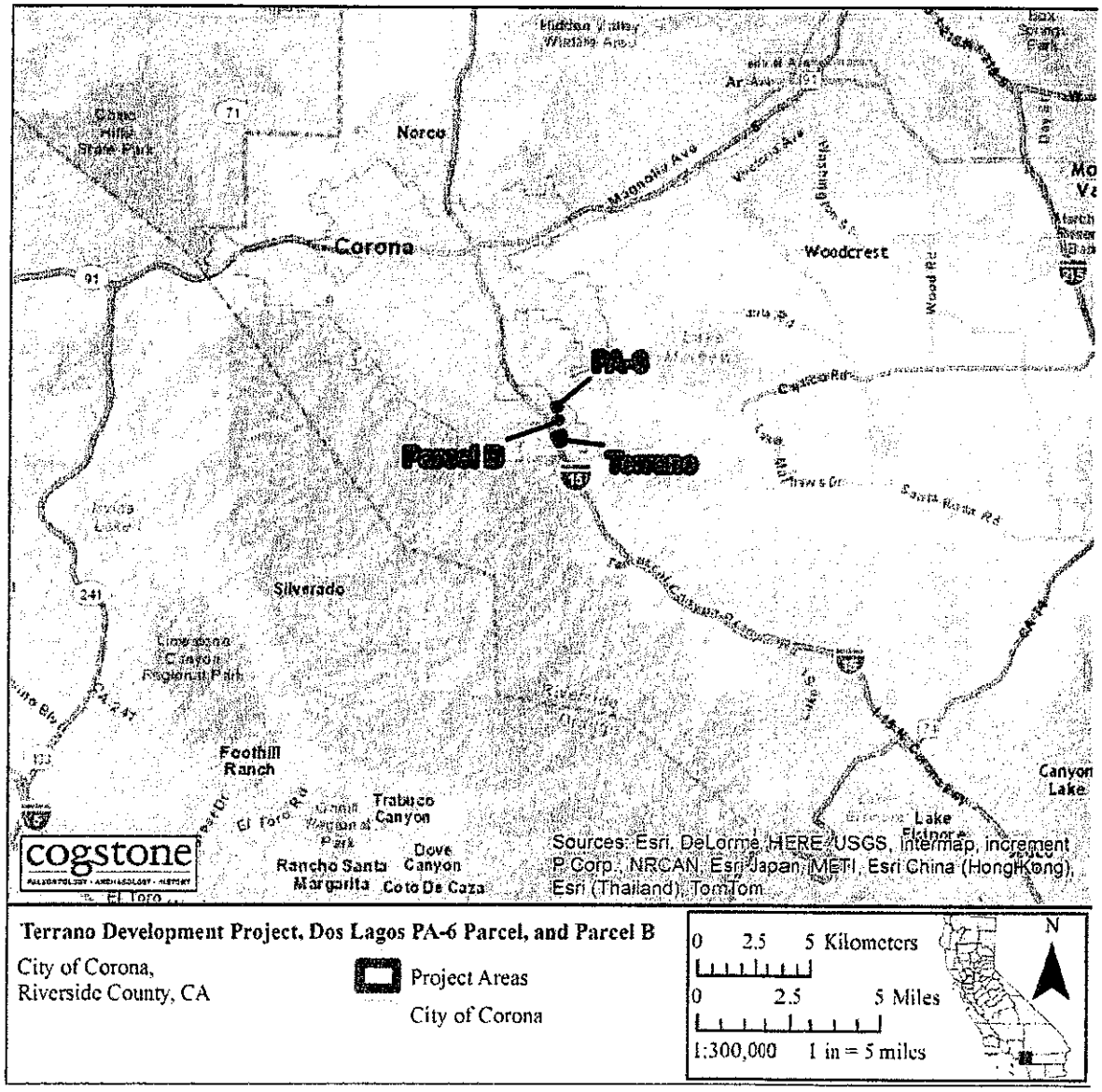

Figure 1. Project Trio Vicinity Map

PROJECT DESCRIPTION AND LOCATION

The three projects are located east of Interstate 15 along Temescal Canyon Drive (Figure 2). See individual descriptions below. Planned vertical impacts on these properties are a maximum of approximately 5 feet for all projects. However all three projects were previously excavated and re-compacted to form pads as part of planned construction that then did not occur. Only the previous pad areas will be impacted for these projects.

PA6 DESCRIPTION

Dos Lagos Planning Area 6 project will include construction of two new tilt up industrial buildings. Each building will be approximately 30,000 sq. ft.

This project is located within the Corona South 7.5 minute United States Geological Survey (USGS) quadrangle in section 16 of Township 4 South, Range 6 West within the San Bernardino Base and Meridian. The property is located east of Temescal Canyon Road, north of Breezy Meadow Lane and south of Cajalco Road. Planned vertical impacts on the 3.57 acre property are a maximum of 5 feet below current grade. Fill is documented from 0-14 ft. based on geotechnical borings.

PB DESCRIPTION

Parcel B/Pronio Office Project will include two office / professional buildings: a two story 17,000 sq. ft. building and a single story 5,000 sq. ft. building.

This project is located within the Corona South 7.5 minute United States Geological Survey (USGS) quadrangle in section 16 of Township 4 South, Range 6 West within the San Bernardino Base and Meridian. The property is located east and south of Blue Springs Drive, north of Pronio Drive and west of Temescal Canyon Road. Planned vertical impacts on the 2.07 acre property are a maximum of 5 feet below current grade. This project is currently entirely paved and fill is present at unknown depths.

TERRANO DESCRIPTION

The Terrano/Dos Lagos Planning Area 1 project will consist of 37,500 square foot (sq. ft.) of retail buildings including 14,000 sq. ft. of inline shops, a 14,000 sq. ft. retail pad, a 4,000 sq. ft. retail pad, and a 3,500 sq. ft. drive through food and fuel station. There will also be 276 apartment units built on this project including 38 separate buildings.

This project is located within the Corona South 7.5 minute United States Geological Survey (USGS) quadrangle in section 21 of Township 4 South, Range 6 West within the San Bernardino Base and Meridian. The property is located east of Interstate 15, north of Dos Lagos Drive, west of Temescal Canyon Road and south of the Shops at Dos Lagos. Planned vertical impacts on the 22.4 acre property are a maximum of 5 feet below current grade. Fill is documented from 0-8 ft. minimum based on geotechnical borings.

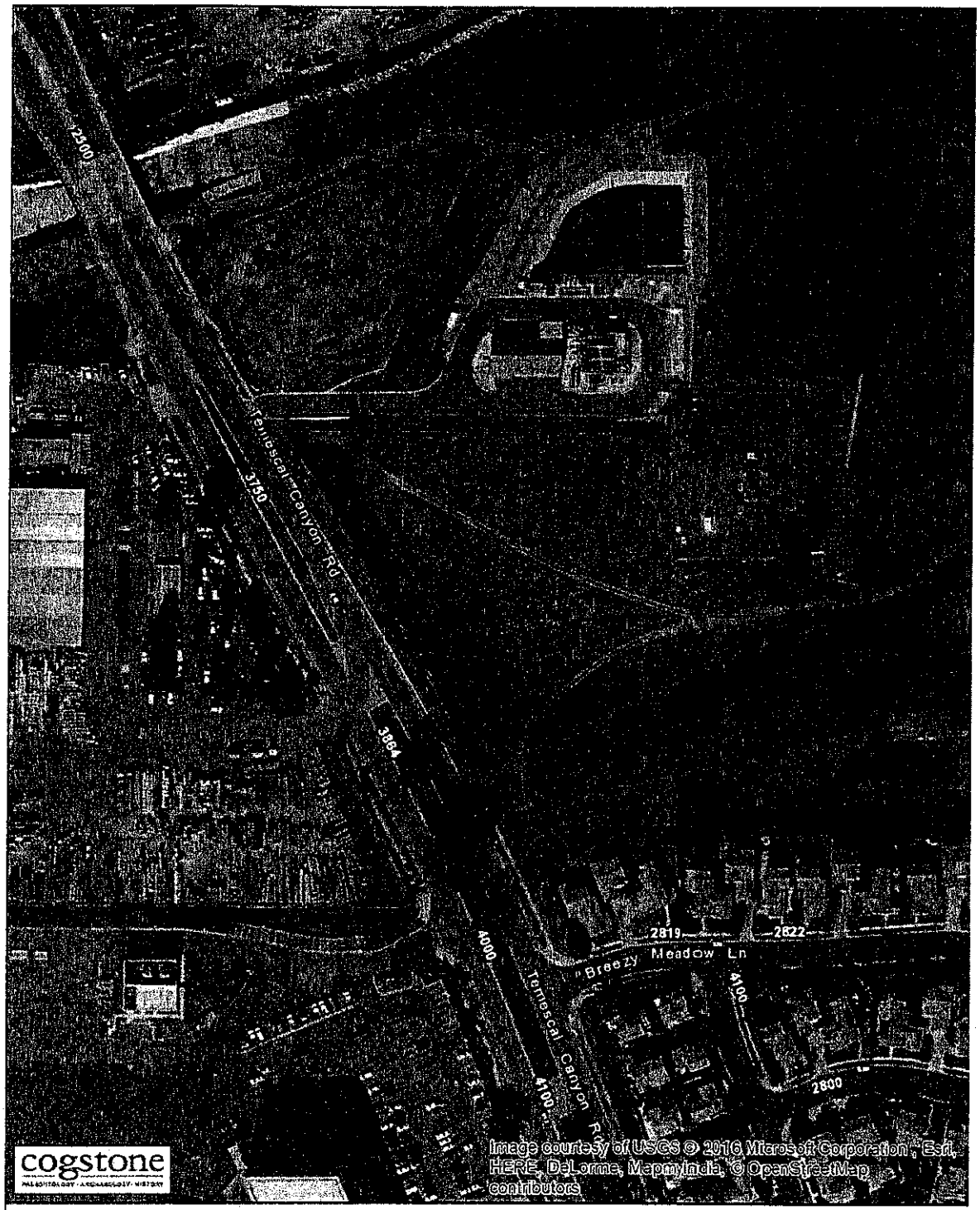

Figure 2a. PA6 aerial

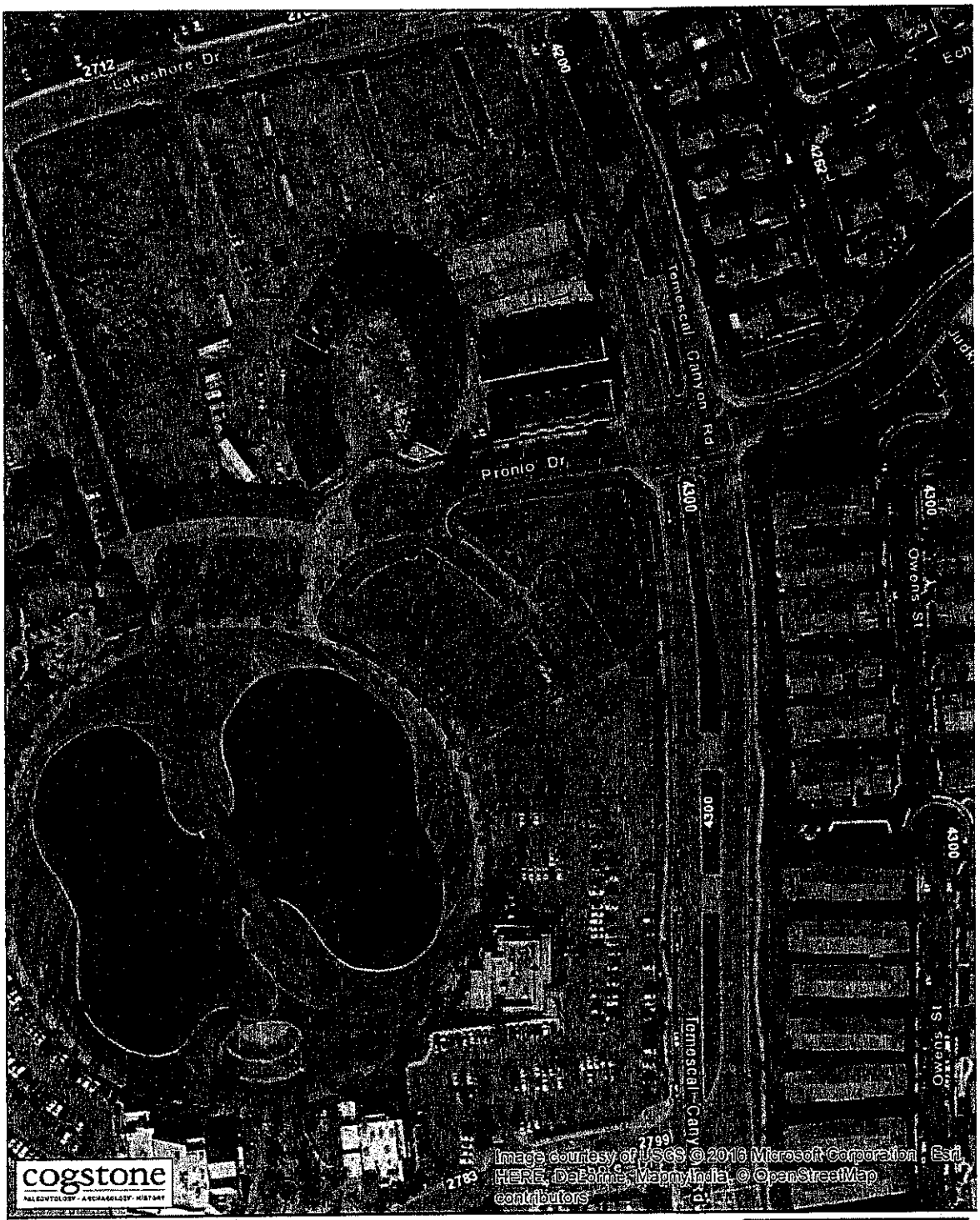

Figure 3b. PB aerial

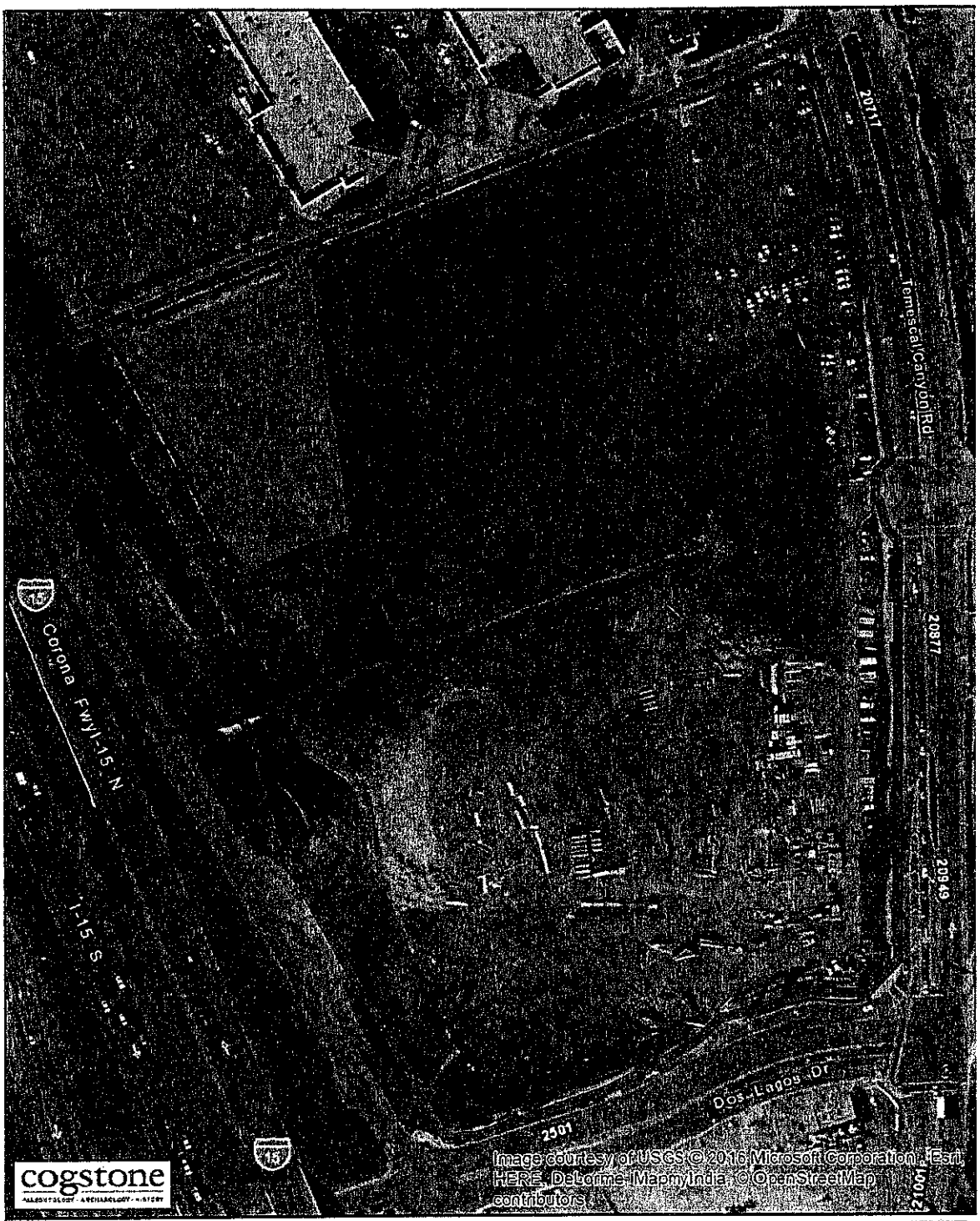

Figure 4c. Terrano aerial

PROJECT PERSONNEL

Cogstone Resource Management Inc. (Cogstone) conducted the paleontological resources studies and brief resumes of senior staff are appended (Appendix A).

- Kim Scott served as the Principal Paleontologist for the project, preformed a ground-truthing survey, and wrote this report. Scott has a M. S. in Biology with an emphasis in paleontology from California State University, San Bernardino, a B.S. in Geology with an emphasis in paleontology from the University of California, Los Angeles, and over 20 years of experience in California paleontology and geology.
- Dr. John Harris reviewed this report for quality control. He has a Ph.D. in Geology from the University of Bristol (U.K.), an M.A. in Geology from the University of Texas, Austin, and a B.S. in Geology from the University of Leicester (U.K.). Dr. Harris has more than 40 years of experience in Cenozoic paleontology and specializes in terrestrial vertebrate species from Rancho la Brea California and Africa.
- André Simmons prepared the Geographic Information System (GIS) maps throughout this report. Simmons has a M.A. in Anthropology from California State University Fullerton, a GIS certification, and over six years of experience in California archaeology and paleontology.
- Sarah Nava, a cross-trained archaeologist and paleontologist, performed the survey. Nava has a M.A. in Anthropology from California State University Fullerton, a GIS certification, and over two years of experience in California archaeology and paleontology.

REGULATORY ENVIRONMENT

STATE LAWS AND REGULATIONS

Paleontological resources are protected by state law. This protection extends to all vertebrate fossils (animals with backbones) and any unique paleontological locality.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA declares that it is state policy to: "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered. If paleontological resources are identified as being within the proposed project study area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

PUBLIC RESOURCES CODE RELATED TO PALEONTOLOGICAL RESOURCES

Section 5097.5: No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands (lands under state, county, city, district or public authority jurisdiction, or the jurisdiction of a public corporation), except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor. As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

Section 30244: This section requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands.

CITY OF CORONA GENERAL PLAN, OPEN SPACE ELEMENT

Paleontological resources are included with cultural resources in the City of Corona's General Plan[1]. The following policies provide direction for paleontological resources:

[1] online at http://www.discovercorona.com/CityOfCorona/media/Media/CommunityDevelopment/GeneralPlan/GenPlan.pdf

PALEONTOLOGICAL RESOURCES

Prehistoric or paleontological resources, such as fossilized plants and animals, have also been discovered in some of the deeper canyons and drainages in the South Corona area. In general, very few archeological or paleontological sites have been found or recorded in Corona. The City has required that field surveys be performed in conjunction with large-scale development activities on vacant lands to determine the presence of potential resources. (pg. 111)

Goal 4.3

Recognize the importance of archeological and paleontological resources and ensure the identification and protection of those resources within the City of Corona. (pg. 115)

Policies

4.3.1: Compile and maintain an inventory of all known archeological and paleontological resources within the City and the Sphere of Influence, and identify areas of cultural and resource sensitivity for future study in conjunction with development proposals. (pg. 115-116)

4.3.2 Incorporate specific measures to identify, protect, and preserve cultural resources in the planning, environmental review, and development process.

4.3.6 Any project that involves earth-disturbing activities in soil or rock units known or reasonably suspected to be fossil-bearing shall require monitoring by a qualified paleontologist retained by the project applicant for the duration of excavation or trenching.

4.3.7 Paleontological resources found prior to or during construction shall be evaluated by a qualified paleontologist, and appropriate mitigation measures applied, pursuant to Section 21083.2 of CEQA, before the resumption of development activities. Any measures applied shall include the preparation of a report meeting professional standards, which shall be submitted to the Riverside County Museum of Natural History.

PALEONTOLOGICAL RESOURCES SIGNIFICANCE CRITERIA

Only qualified, trained paleontologists with specific expertise in the type of fossils being evaluated can determine the scientific significance of paleontological resources. Fossils are considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct;
2. The fossils provide data useful for determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein;
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life;
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

As so defined, significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically important. Significant fossils can include remains of large to very small aquatic and terrestrial vertebrates or remains of plants and animals previously not represented in certain portions of the stratigraphy. Assemblages of fossils that might aid stratigraphic correlation, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, and paleoclimatology are also critically important (Scott and Springer, 2003; Scott et al., 2004).

BACKGROUND

GEOLOGICAL SETTING

The proposed project sites are situated in one of the most tectonically active regions of North America. To the north of the projects, the San Andreas Fault Zone travels up Cajon Pass where it is the boundary between the Pacific Plate and the North American Plate. The Transverse Ranges are a result of these two plates grinding past each other and "catching" along the bend in the San Andreas. The projects are located on the Pacific Plate which is composed of numerous blocks that can move independently.

The Transverse Range Province is an east-west trending series of steep mountain ranges and valleys, oblique to the normal northwest trend of coastal California, hence the name "Transverse." The province extends offshore to include San Miguel, Santa Rosa, and Santa Cruz

islands. Its eastern extension, the San Bernardino Mountains, has been displaced to the south along the San Andreas Fault. Intense north-south compression is squeezing the Transverse Ranges, and as a result this is one of the most rapidly rising regions of the earth (Wagner, 2002).

PROJECT GEOLOGY

All three proposed projects were previously graded and re-compacted to depths of 10-14 ft. for building pads. The current geotechnical borings demonstrate fill to these depths from prior work about 2006. The most recent geology map is dated 2002 (Gray, Morton, and Webber, 2002) and thus is not accurate for the project areas. Native sediments are present outside the impact areas.

PALEONTOLOGICAL RECORD SEARCHES

A record search of the project area and a one mile radius was obtained from the Western Science Center in Riverside County (Radford, 2016; Appendix B). Online records from the University of California Museum of Paleontology database (UCMP, 2016), the Natural History Museum of Los County Department of Invertebrate Paleontology (LACMIP, 2016), and the Paleobiology Database (PBDB, 2016) were searched for fossil records as well as print sources (Jefferson, 1991a, 1991b; Scott, Gust, and Richards, 2014; Scott, 2015; McLeod, 2016).

There are no records of Pleistocene fossils from within the proposed boundaries or a one mile radius. Eleven fossil localities are known within a ten-mile radius (Table 1).

Extinct animals recovered from the localities include three types of ground sloth, dire wolf, saber-toothed cat, two types of mammoth, mastodon, camel, llama, dwarf pronghorn, bison, horse and tapir. Sediments similar to those found within the project have also produced American lions, short-faced bears and plant remains in San Bernardino and Riverside counties (Scott, 2015).

Table 1. Fossils Known in the Vicinity

† indicates extinct taxa; LACM = Natural History Museum of Los Angeles County; RV = University of California at Riverside Vertebrate Paleontology collection; SBCM = San Bernardino County Museum

Common Name	Taxon	Locality	Depth below surface; Formation; Reference(s)
deer	*Odocoileus* sp.	Corona, west side of SR 91 at Cota Street near Temescal Wash; LACM 1207	"shallow"; Quaternary older alluvium; Jefferson 1991b, McLeod, 2016
bony fish	Osteichthyes	Corona - Santa Ana River a.k.a. Corona East; RV8601	unknown; Quaternary older alluvium; Jefferson, 1991a, 1991b; UCMP, 2016
lizard	Sauria		
rabbit	Lagomorpha		
vole	*Microtus* sp.		
woodrat	*Neotoma* sp.		
mastodon	†*Mammut* sp.		
horse	†*Equus* sp.		
cf. camel	†cf. *Camelops* sp.		
bison	†*Bison* sp.		
horse	†*Equus occidentalis*	Riverside, SW side of Pachappa Hill; Riverside Municipal Museum	11 feet; Quaternary older alluvial fan; Scott, Gust, and Richards, 2014
mammoth	†*Mammuthus* sp.	Riverside; UCMP V65248	unknown; Quaternary older alluvium; Jefferson 1991b
Shasta ground sloth	†*Nothrotheriops shastensis*	Chino, LACM 1728	unknown; Quaternary deposit; Jefferson, 1991b
horse	† cf. *Equus* sp.		
camel	†cf. *Camelops* sp.		
horse	†cf. *Equus* sp.	Chino Los Serranos Creek, Aspen Lane, SBCM 1.116.1	6 feet; Quaternary deposit; Jefferson, 1991b
deer	*Odocoileus* sp.		
bison	†*Bison* sp. cf. *B. antiquus*		
Harlan's ground sloth	†*Paramylodon harlani*	Chino Carbon Canyon wastewater, SBCM 5.1.9-5.1.10	11-15 feet; Quaternary deposit; Jefferson, 1991b
horse	†*Equus* sp.		
camel	†cf. *Camelops* sp.		
ground sloth	†*Megalonyx* sp.	Chino, Inland Empire Utilities Agency, no repository as yet; ~8 miles southeast of project NOTE: Large fauna, only extinct animals listed	5-25 feet; Quaternary older alluvium; unpublished
ground sloth	†*Paramylodon* sp.		
dire wolf	†*Canis dirus*		
sabre-toothed cat	†?*Smilodon* sp.		
Columbian mammoth	†*Mammuthus columbi*		
horse	†*Equus* sp.		
tapir	†*Tapirus* sp.		
llama	†*Hemiauchenia* sp.		
camel	†*Camelops* sp.		
dwarf pronghorn	†*Capromeryx* sp.		
ancient bison	†*Bison antiquus*		
Harlan's ground sloth	†*Paramylodon harlani*	Rubidoux - Santa Ana River, Thompson Sand Pit; private collection	unknown; Quaternary older alluvium; Jefferson 1991b
mastodon	†*Mammut* sp.		
southern mammoth	†*Mammuthus meridionalis*		
Columbian mammoth	† *Mammuthus columbi*		
horse	†*Equus* sp.		

PALEONTOLOGICAL FIELD RECONNAISSANCE

The paleontological resources survey is conducted to identify any paleontological resources exposed and confirm the mapped geology. Sarah Nava, Cogstone staff archaeologist and cross-trained paleontologist, completed an intensive pedestrian survey of the undeveloped ground surface areas of the project area on February 11, 2016. Kim Scott returned on March 2, 2016 to review the site geology. No fossils were observed.

As previously discussed, the building pads were previously excavated and re-compacted. Native sediments are present outside of these impact areas in PA6 but consist young axial channel sediments. This rock unit is too young to contain fossils but overlies older rock units which might be sensitive. PB sediments were inaccessible as virtually the entire property is currently a parking lot or landscaped. Terrano has exposed fill with hardscaping present.

PALEONTOLOGICAL SENSITIVITY

A multilevel ranking system was developed by professional resource managers within the Bureau of Land Management (BLM) as a practical tool to assess the sensitivity of sediments for fossils. The Potential Fossil Yield Classification (PFYC) system (BLM, 2007; Appendix C) has a multi-level scale based on demonstrated yield of fossils. The PFYC system provides additional guidance regarding assessment and management for different fossil yield rankings.

Fossil resources occur in geologic units (e.g., formations or members). The probability for finding significant fossils in a project area can be broadly predicted from previous records of fossils recovered from the geologic units present in and/or adjacent to the study area. The geological setting and the number of known fossil localities help determine the paleontological sensitivity according to PFYC criteria

Using the PFYC system, geologic units are classified according to the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts within the known extent of the geological unit. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher PFYC value; instead, the relative abundance of localities is intended to be the major determinant for the value assignment.

The artificial fill has a very low (no) sensitivity (PFYC 1). Young axial channel deposits are ranked as low (PFYC 2) sensitivity at the surface and increasing to moderate and patchy sensitivity (PFYC 3a) by 8 feet deep. However, since this project's impacts are only to 5 feet, the finding is no sensitivity for fossils.

CONCLUSIONS AND RECOMMENDATIONS

The proposed maximum depth of cuts is 5 feet below current ground surface. There is no known sensitivity for fossils at this depth within the building footprint of the three projects.

If unanticipated fossils are unearthed during construction, work should be halted in that area until a qualified paleontologist can assess the significance of the find. Work may resume immediately a minimum of 50 feet away from the find.

REFERENCES CITED

BLM

2007 Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands. Online at http://www.blm.gov/pgdata/etc/medialib/blm/ut/natural_resources/cultural/paleo/Paleontology_Documents.Par.97864.File.dat/IM2008-009_att1%20-%20PFYC%20System.pdf

Gray, C. H. Jr., D. M. Morton, and F. H. Weber

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Jefferson, G. T.

1991a A Catalogue of late Quaternary Vertebrates from California: Part one, nonmarine lower vertebrate and avian taxa. *Natural History Museum of Los Angeles, Technical Report* #5.

1991b A Catalogue of late Quaternary Vertebrates from California: Part two, Mammals. *Natural History Museum of Los Angeles, Technical Report* #7.

LACMIP

2016 Online records search of the Natural History Museum of Los Angeles County, Department of Invertebrate Paleontology database.

McLeod, S.

2016 Vertebrate Paleontology Records Check for paleontological resources for the proposed Corona Affordable Housing Project, Cogstone Project #3796, in the City of Corona, Riverside County, project area. On File with Cogstone.

Morton, D. M. and F. H. Weber Jr.

2001 Geologic map of the Lake Mathews 7.5-minute quadrangle, Riverside County, California. Version 1.0, digital preparation by Diep, V.M., and Edwards-Howells, Ursula. U.S. Geological Survey, Open-File Report OF-2001-479, scale 1:24,000.

OCPC
2016 Online records search of the Orange County Paleontology Collection database.

PBDB
2016 Online records search of the PaleoBiological database.

Radford, D.
2016 Paleontology literature and records review of Dos Lagos Project, City of Corona, Riverside County, California. See Appendix B.

Scott, E.
2015 Paleontology literature and records review, Interstate 10 Grove Interchange Project, City of Riverside, Riverside County, California. On File with Cogstone.

Scott, E. and K. Springer
2003 CEQA and fossil preservation in southern California. The Environmental Monitor, Winter: 4-10, 17.

Scott, E., K. Springer, and J. C. Sagebiel
2004 Vertebrate paleontology in the Mojave Desert: the continuing importance of 'follow through' in preserving paleontologic resources, p. 65-70, in M. W. Allen and J. Reed (eds.), The human journey and ancient life in California's Deserts: Proceedings from the 2001 Millennium Conference. Maturango Museum Publication No. 15, Ridgecrest, California, USA.

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2014 Paleontological Mitigation Report for the State Route 91 High Occupancy Vehicle Lane addition between Adams and the 60/91/215 interchange in the City of Riverside, Riverside County, California; 08-RIV-91 PM 15.6/21.6 EA 08-448403 Contract # 08A1988

UCMP
2016 Online records search of the University of California, Berkeley paleontology database.

Wagner, D.L.
2002 California Geomorphic Provinces. *California Geologic Survey Note* 36. Website: http://www.consrv.ca.gov/cgs/information/

APPENDIX A: QUALIFICATIONS

JOHN HARRIS
Paleontology Practice Leader

EDUCATION

1970 Ph.D. Geology with paleontology emphasis, University of Bristol (U.K.)
1967 M.A. Geology with paleontology emphasis, University of Texas, Austin
1964 B.S., Geology, University of Leicester (U.K.)

SUMMARY QUALIFICATIONS

Dr. Harris has more than 40 years of experience in Cenozoic paleontology and specializes in terrestrial vertebrate species from Rancho la Brea California and Africa. He is the Chief Curator Emeritus, George C. Page Museum (2015- present); an Adjunct Professor, Department of Geology & Geophysics, University of Utah (1996-present); a Visiting Associate in Geology, Division of Geological and Planetary Sciences, California Institute of Technology (2001-present); and a Research Associate, National Museums of Kenya (2007 – present).

SELECTED PROJECTS

Grove Avenue Corridor, Caltrans District 8, Los Angeles San Bernardino County, CA. Paleontology Practice Leader. Interchange Improvement Project in Ontario. Quality Control and Revisions for the Combined Paleontological Identification and Evaluation Report with Paleontological Mitigation Plan. 2015

Interstate 10 Grove Avenue Interchange, Caltrans District 8, Los Angeles San Bernardino County, CA. Paleontology Practice Leader. Corridor Specific Plan in Ontario. Quality Control and Revisions for the Combined Paleontological Identification and Evaluation Report with Paleontological Mitigation Plan. 2015

SR99 at Avenue 12 Interchange, Caltrans District 6, Madera County, CA. Paleontology Practice Leader. Project was monitoring of excavations; fossils recovered. Quality Control and Revisions for the Paleontological Monitoring Report. 2015

SR178 at Morning Drive Interchange Improvements, Thomas Roads Improvement Program/ Caltrans District 6, Bakersfield, CA. Monitoring for six mile roadway improvements project. Paleontology Practice Leader. Quality Control and Revisions for the Paleontological Monitoring Report. 2015

I-680 North Segment Express Lane Conversion, Contra Costa Transportation Authority/ Caltrans District 4, Walnut Creek, CA. Paleontology Practice Leader. Project to expand lanes including underground utilities. Quality Control and Revisions for the Combined Paleontological Identification and Evaluation Report with Paleontological Mitigation Plan. 2015

1200 S. Figueroa Mixed-Use, Jamison Development, Los Angeles, CA. Paleontology Practice Leader. Project was monitoring of large scale excavations up to 30 ft. deep. Quality Control and Revisions for the Paleontological Monitoring Memo. 2015

North-South Pipeline, CPUC, San Bernardino and Riverside Counties, CA. Paleontology Practice Leader. Proposed project will install large diameter natural gas pipeline through Cajon Pass. Review and Data Gap Analysis. 2015

KIM SCOTT
Principal Paleontologist

EDUCATION

2000 B.S., Geology with paleontology emphasis, University of California, Los Angeles
2013 M.S., Biology with a paleontology emphasis, California State University, San Bernardino

SUMMARY QUALIFICATIONS

Scott has more than 20 years of experience in California paleontology and geology. She is a qualified geologist and field paleontologist with extensive survey, monitoring and fossil salvage experience. In addition, she has special skills in fossil preparation (cleaning and stabilization) and preparation of stratigraphic sections and other documentation for fossil localities. Scott serves as company safety officer and is the author of the company safety and paleontology manuals.

SELECTED PROJECTS

Palm Avenue Grade Separation, Caltrans District 8, San Bernardino County. Directed the assessment of paleontological resources for proposed grade separation of the Burlington Northern Sante Fe (BNSF) Railroad tracks at Palm Avenue and Route 66. Co-authored a combined Paleontological Identification/Evaluation Report. Field Director. 2013

State Route 91 HOV Project, Caltrans District 8, Riverside. Co-authored a combined Paleontological Identification/Evaluation Report and Paleontological Mitigation Plan for the SR 91 High Occupancy Vehicle Lane Addition between Adams St. and the 60/91/215 Interchange in Riverside. Managed monitoring during construction. Co-author of Paleontological Monitoring Report (PMR). Paleontology Field and Lab Director. 2011-2014

Ranchero Road-BNSF Grade Separation, City of Hesperia, Hesperia. Directed paleontological resources monitoring for the duration of all ground disturbing activities in native sediments greater than five feet deep. Field Director and Report Co-author. 2011-2013

Avenue 52 Grade Separation, Caltrans District 8, Coachella, Riverside County. Performed paleontological record searches, background research, reconnaissance survey, and co-authored PIR/PER. Paleontology Field and Lab Director. 2012

Merced Freeway Project, Caltrans District 10, Merced. Alternated 2 week rotations performing direction of fossil recovery and field preparation of fossils for 5 mile segment of State Route 99 south of Merced. Some 128 localities and 1667 fossils recovered in five months of excavation for detention basins. Contributed to final report. Field / Lab Director and Report Contributor. 2012

Geospatial Paleontology Database, Caltrans District 6, 9, and 10. Conducted paleontological research for 15 counties in central and eastern California for paleontological screening tool. Paleontology Researcher. 2011-2012

Tehachapi Renewable Transmission Project, Segments 1-3, Southern California Edison, Los Angeles and Kern counties. Co-authored paleontological resources management plans and directed paleontological monitoring for construction of new electrical transmission facilities. Paleontology Field and Lab Director and Report Co-author. 2007-2009

El Casco Substation Project, Southern California Edison, Riverside County. Performed preconstruction mitigation measures and prepared portions of Paleontological Resources Treatment Plan. Field and Lab Director and Report co-author. 2009

ANDRÉ-JUSTIN C. SIMMONS

Archaeologist/Cross-trained Paleontologist & GIS Supervisor

EDUCATION

2014 M.A., Anthropology: Specializing in Anthropological Archaeology, California State University, Fullerton

2010 B.A., Anthropology and History, California State University, Fullerton, graduated *cum laude*

2012 Certificate in Geographic Information Systems, California State University, Fullerton

SUMMARY QUALIFICATIONS

Mr. Simmons is a qualified archaeologist and cross-trained paleontologist with extensive field experience in survey, monitoring, faunal analysis, and excavation. He exceeds the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. Further, he is certified in Geographic Information Systems (GIS) and specializes in ESRI's ArcGIS software. Mr. Simmons is responsible for supervising GIS data collection and management, geospatial analysis, and the production of GIS maps and databases for large and small-scale projects. His key research interests include settlement patterns and use of space among Paleoindians, the American Southwest, early historic and prehistoric California, and historical Mexico. He has over six years of experience in California Archaeology and paleontological monitoring along with more than 24 hours of paleontology training and over four years of GIS experience.

SELECTED PROJECTS

WECC Path 42, Southern California Edison, Riverside County, CA. Conducted a cultural resources records search and field survey for a 14.5 mile transmission line segment near Thousand Palms. Archaeological/ Paleontological Technician. 2011-2012

Eldorado-Ivanpah Transmission Project, Southern California Edison, Eldorado, NV to Ivanpah, CA. Performed paleontological monitoring for project that involves construction of 195 miles of new transmission lines and associated fiber optic lines across BLM and private lands. Paleontological Monitor. 2012-2013

Devers-Mirage 115 KV System Split Project, Southern California Edison, Riverside County, CA. Performed archaeological and paleontological monitoring during construction activities associated with maintaining and upgrading the electrical systems of Cathedral City, Indian Wells, Palm Desert, Palm Springs, Rancho Mirage, Thousand Palms and unincorporated Riverside County. Archaeological/Paleontological Monitor. 2011-2012

Leatherneck Substation Project, Southern California Edison, San Bernardino County, CA. Prepared GIS maps for a cultural resources survey and subsequent survey report for ten pulling stations near Twenty-Nine Palms. GIS Technician. 2012

Fogarty Substation, Southern California Edison, Riverside County, CA. Performed archaeological and paleontological monitoring during ground disturbing activities in Lake Elsinore. A historic glass fragment and prehistoric shells were recovered. Archaeological/Paleontological Monitor. 2010-2011

Daggett II, Southern California Edison, San Bernardino County, CA. Conducted archaeological and paleontological monitoring of construction activities of transmission towers and associated access roads for the 225-acre Human External Cargo Helicopter Training Facilities Project in Daggett. Archaeological/Paleontological Monitor. 2011

SR 99 Arboleda Drive Freeway Project, Caltrans District 10, Merced County, CA. Conducted paleontological resources monitoring, fossil recovery, and fossil preparation for a 5-mile segment. Prepared GIS report maps. Some 128 localities and 1,667 fossils recovered in five months of excavation for detention basins. Paleontology & GIS Technician. 2012

APPENDIX B: RECORDS SEARCH

WESTERN SCIENCE CENTER

February 10, 2016

Andre Simmons
Cogstone
1518 W. Taft Ave
Orange, CA 92865-4157

Dear Mr. Simmons,

This letter presents the results of a record search conducted for the Dos Lagos project site (Cogstone # 3821) in the city of Corona in Riverside County, California. The project site contains 3 locations for a total of 28 acres located along Temescal Canyon Road, south of Cajalco Road in Section 16 and 21 of the Corona South USGS 7.5 minute quadrangle.

The geologic units underlying this project are mapped as a combination of alluvial, artificial fill, and Paleocene Silverado Formation deposits. Significant portions of the project area lie within geologic units dating to the Paleocene and the early Pleistocene age (Gray, Morton, and Weber, 1997). The Western Science Center does not currently have records for fossil localities within the project area, or within 1 mile radius from the proposed project area. The Museum does however have numerous fossil localities that presented significant paleontological finds within similar Pleistocene alluvium as the proposed project area including the Diamond Valley Lake Project and El Casco Project.

Pleistocene alluvial units, as well as the Silverado Formation, are considered to be of high paleontological sensitivity. Any fossils recovered from the project area would be scientifically significant. Excavation activity associated with development of the project area would impact the paleontologically sensitive Pleistocene alluvial and Silverado Formation units. It is the recommendation of the Western Science Center that a paleontological resource mitigation program be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area.

If you have any questions, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,

Darla Radford
Collections Manager

2345 Searl Parkway ♦ Hemet, CA 92543 ♦ phone 951.791.0033 ♦ fax 951.791.0032 ♦ WesternScienceCenter.org

APPENDIX C: SENSITIVITY RANKING CRITERIA

PFYC Rank	PFYC Description (BLM, 2007)
1	Very Low. The occurrence of significant fossils is non-existent or extremely rare. Includes igneous or metamorphic and Precambrian or older rocks. Assessment or mitigation of paleontological resources is usually unnecessary.
2	Low. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils. Includes rock units too young to produce fossils, sediments with significant physical and chemical changes (e.g., diagenetic alteration) and having few to no fossils known. Assessment or mitigation of paleontological resources is not likely to be necessary.
3b	Potentially Moderate but Undemonstrated Potential. Units exhibit geologic features and preservational conditions that suggest fossils could be present, but no vertebrate fossils or only common types of plant and invertebrate fossils are known. Surface-disturbing activities may require field assessment to determine appropriate course of action.
3a	Moderate Potential. Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered and of low abundance. Common invertebrate or plant fossils may be found. Surface-disturbing activities may require field assessment to determine appropriate course of action.
4	High. Geologic units containing a high occurrence of significant fossils. Fossils must be abundant per locality. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities.
5	Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. On-the-ground surveys prior to authorizing any surface disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities.

As per BLM (2007).