PROJECT ARCHAEOLOGIST/REPORT WRITER
Deirdre Encarnación, M.A.

Education

2003	M.A., Anthropology, San Diego State University, California.
2000	B.A., Anthropology, minor in Biology, with honors; San Diego State University, California.
1993	A.A., Communications, Nassau Community College, Garden City, N.Y.
2001	Archaeological Field School, San Diego State University.
2000	Archaeological Field School, San Diego State University.

Professional Experience

2004-	Project Archaeologist/Report Writer, CRM TECH, Riverside/Colton, California.
2001-2003	Part-time Lecturer, San Diego State University, California.
2001	Research Assistant for Dr. Lynn Gamble, San Diego State University.
2001	Archaeological Collection Catalog, SDSU Foundation.

Memberships

Society for California Archaeology; Society for Hawaiian Archaeology; California Native Plant Society.

PROJECT ARCHAEOLOGIST/NATIVE AMERICAN LIAISON
Nina Gallardo, B.A.

Education

2004 B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.

- Surveys, excavations, construction monitoring, field recordation, mapping, records searches, and Native American liaison.

Honors and Awards

2000-2002 Dean's Honors List, University of California, Riverside.

PROJECT ARCHAEOLOGIST/FIELD DIRECTOR
Daniel Ballester, M.S.

Education

2013	M.S., Geographic Information System (GIS), University of Redlands, California.
1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.
2007	Certificate in Geographic Information Systems (GIS), California State University, San Bernardino.
2002	"Historic Archaeology Workshop," presented by Richard Norwood, Base Archaeologist, Edwards Air Force Base; presented at CRM TECH, Riverside, California.

Professional Experience

2002- Field Director/GIS Specialist, CRM TECH, Riverside/Colton, California.

- Report writing, site record preparation, and supervisory responsibilities over all aspects of fieldwork and field crew. Manages and updates CRM TECH's GIS database, produces maps and extracts data using GIS. Manages field crews for field surveys, testing and data recovery projects. Oversees work to ensure correct procedures.

2011-2012 GIS Specialist for Caltrans District 8 Project, Garcia and Associates, San Anselmo, California.

- Created archaeological site maps based off points taken with hand-held GPS unit; responsible for accurately inputting data.

2009-2010 Field Crew Chief, Garcia and Associates, San Anselmo, California.

2009-2010 Field Crew, ECorp, Redlands.

1999-2002 Project Archaeologist, CRM TECH, Riverside, California.

- Conducted field surveys, site recording, site testing and data recovery; familiar with all types of prehistoric and historic period sites.

1998-1999 Field Crew, K.E.A. Environmental, San Diego, California.

- Two and a half months of excavations on Topomai village site, Marine Corp Air Station, Camp Pendleton.

1998 Field Crew, A.S.M. Affiliates, Encinitas, California.

- Two weeks of excavations on a site on Red Beach, Camp Pendleton, and two weeks of survey in Camp Pendleton, Otay Mesa, and Encinitas.

1998 Field Crew, Archaeological Research Unit, University of California, Riverside.

- Two weeks of survey in Anza Borrego Desert State Park and Eureka Valley, Death Valley National Park.

PROJECT HISTORIAN
Terri Jacquemain, M.A.

Education

2004	M.A., Public History and Historic Resource Management, University of California, Riverside.
2002	B.S., Anthropology, University of California, Riverside.
2001	Archaeological Field School, University of California, Riverside.
1991	A.A., Riverside Community College, Norco Campus.

Professional Experience

2003-	Historian/Architectural Historian/Report Writer, CRM TECH, Riverside/Colton, California.
2002-2003	Teaching Assistant, Religious Studies Department, University of California, Riverside.
2002	Interim Public Information Officer, Cabazon Band of Mission Indians.
2000	Administrative Assistant, Native American Student Programs, University of California, Riverside.
1997-2000	Reporter, *Inland Valley Daily Bulletin*, Ontario, California.
1991-1997	Reporter, *The Press-Enterprise*, Riverside, California.

PROJECT ARCHAEOLOGIST
Ben Kerridge, M.A.

Education

2014	Archaeological Field School, Institute for Field Research, Kephallenia, Greece.
2010	M.A., Anthropology, California State University, Fullerton.
2009	Project Management Training, Project Management Institute/CH2M HILL.
2004	B.A., Anthropology, California State University, Fullerton.

Professional Experience

2015-	Project Archaeologist/Report Writer, CRM TECH, Colton, California.
2015	Teaching Assistant, Institute for Field Research, Kephallenia, Greece.
2009-2014	Publications Delivery Manager, CH2M HILL, Santa Ana, California.
2010-	Naturalist, Newport Bay Conservancy, Newport Beach, California.
2006-2009	Technical Publishing Specialist, CH2M HILL, Santa Ana, California.

Memberships

Society for California Archaeology; Pacific Coast Archaeological Society

APPENDIX 2

CORRESPONDENCE WITH NATIVE AMERICAN REPRESENTATIVES*

* A total of 54 local Native American representatives were contacted; a sample letter is included in this report.

SACRED LANDS FILE & NATIVE AMERICAN CONTACTS LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916)373-3710
(916)373-5471 Fax
nahc@pacbell.net

Project: Corona Clay/Deleo Property Project (CRM TECH Contract No. 3283A)

County: Riverside

USGS Quadrangle Name: Lake Mathews, Calif.

Township 4 South **Range** 6 West SB **BM; Section(s)** 35

Company/Firm/Agency: CRM TECH

Contact Person: Nina Gallardo

Street Address: 1016 E. Cooley Drive, Suite A/B

City: Colton, CA **Zip:** 92324

Phone: (909) 824-6400 **Fax:** (909) 824-6405

Email: ngallardo@crmtech.us

Project Description: The primary component of the project is to develop approximately 122 acres of land located east of Tom's Farm, off Temescal Canyon Road, southwest of the El Sobrante Landfill, near the City of Corona, Riverside County, California.

October 26, 2017

From: ngallardo@crmtech.us
Sent: Thursday, October 26, 2017 3:42 PM
To: 'Tony Foussat'; 'eozdil@pechang-nsn.gov'
Subject: Cultural Study and Participation in Fieldwork for the Corona Clay/Deleo Property Project near the City of Corona, Riverside County (CRM TECH No. 3283A)

Hello,

I'm emailing to inform you that CRM TECH will be conducting a cultural study for the Corona Clay/Deleo Property Project near the City of Corona, Riverside County (CRM TECH No. 3283A). I'm contacting you to see if the tribe would like to participate in the field survey for the project and we will contact the tribe again when we have a specific time and date, possibly early next week, for the fieldwork. I am also writing to request your input on potential Native American cultural resources in or near the project area and I'm attaching the project area map and other information.

Thank you for your time and input on this project.

Nina Gallardo
(909) 824-6400 (phone)
(909) 824-6405 (fax)
CRM TECH
1016 E. Cooley Drive, Ste. A/B
Colton, CA 92324

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

October 31, 2017

Nina Gallardo
CRM TECH

Sent by E-mail: ngallardo@crmtech.us

RE: Proposed Corona Clay/ Deleo Property (CRM TECH Contract No. 3283A) Project, City of Corona; Lake Mathews USGS Quadrangle, Riverside County, California

Dear Ms. Gallardo:

A records search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.

Attached is a list of tribes culturally affiliated to the project area. I suggest you contact all of the listed Tribes. If they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst
(916) 373-3714

Native American Heritage Commission
Native American Contact List
Riverside County
10/31/2017

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Kumeyaay
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chariperson
P.O. Box 393 — Gabrieleno
Covina, CA, 91723
Phone: (626) 926 - 4131
gabrielenoindians@yahoo.com

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693 — Gabrieleno
San Gabriel, CA, 91778
Phone: (626) 483 - 3564
Fax: (626) 286-1262
GTTribalcouncil@aol.com

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231 — Gabrielino
Los Angeles, CA, 90012
Phone: (951) 807 - 0479
sgoad@gabrielino-tongva.com

Gabrielino Tongva Indians of California Tribal Council
Robert Dorame, Chairperson
P.O. Box 490 — Gabrielino
Bellflower, CA, 90707
Phone: (562) 761 - 6417
Fax: (562) 761-6417
gtongva@gmail.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7060.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Corona Clay/ Deleo Property Project, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
10/31/2017

Gabrielino-Tongva Tribe
Charles Alvarez,
23454 Vanowen Street — Gabrielino
West Hills, CA, 91307
Phone: (310) 403 - 6048
roadkingcharles@aol.com

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Kumeyaay
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Matias Belardes, Chairperson
32161 Avenida Los Amigos — Juaneno
San Juan Capisttrano, CA, 92675
Phone: (949) 293 - 8522

Juaneno Band of Mission Indians Acjachemen Nation - Belardes
Joyce Perry, Tribal Manager
4955 Paseo Segovia — Juaneno
Irvine, CA, 92603
Phone: (949) 293 - 8522
kaamalam@gmail.com

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairperson
P.O. Box 189 — Cahuilla
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712
Chapparosa@msn.com

Los Coyotes Band of Mission Indians
John Perada, Environmental Director
P. O. Box 189 — Cahuilla
Warner Springs, CA, 92086
Phone: (760) 782 - 0712
Fax: (760) 782-2730

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Morongo Band of Mission Indians
Denisa Torres, Cultural Resources Manager
12700 Pumarra Rroad — Cahuilla
Banning, CA, 92220 — Serrano
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Corona Clay/ Deleo Property Project, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
10/31/2017

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Rroad — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 849 - 8807
Fax: (951) 922-8146

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pauma Band of Luiseno Indians - Pauma & Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

Ramona Band of Cahuilla Mission Indians
John Gomez, Environmental Coordinator
P. O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
jgomez@ramonatribe.com

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairperson
P.O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramonatribe.com

Rincon Band of Mission Indians
Jim McPherson, Tribal Historic Preservation Officer
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
vwhipple@rincontribe.org

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Corona Clay/ Deleo Property Project, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
10/31/2017

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

Santa Rosa Band of Mission Indians
(951) 659-2700Steven Estrada, Chairperson
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92583 — Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198
carrieg@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92583 — Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 312 - 1935
lhaws@sycuan-nsn.gov

Torres-Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1177 — Cahuilla
Thermal, CA, 92274
Phone: (760) 399 - 0022
Fax: (760) 397-8146
mmirelez@tmdci.org

Viejas Band of Kumeyaay Indians
Julie Hagen,
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

Viejas Band of Kumeyaay Indians
Robert Welch, Chairperson
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Corona Clay/ Deleo Property Project, Riverside County.

November 2, 2017

Jeff Grubbe, Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

RE: Corona Clay/Deleo Property Project
Approximately 122 Acres Near the City of Corona
Riverside County, California
CRM TECH Contract #3283A

Dear Mr. Grubbe:

I am writing to bring your attention to an ongoing CEQA-compliance study for the proposed project referenced above. The project entails implementation of a land reclamation plan on a former clay processing operation and development of a motorcycle track on approximately 122 acres of partially developed land located east of Park Canyon Drive and Canta Rosa Road. The accompanying map, based on the USGS Lake Mathews, Calif., 7.5' quadrangle, depicts the location of the project area in the northeast quarter of Section 35, T4S R6W, SBBM.

According to records on file at the Eastern Information Center (EIC), there are no known historical/ archaeological sites within the boundaries of the project area. Outside the project boundaries but within a one-mile radius, EIC records show 27 historical/archaeological sites and 12 isolates—i.e., localities with fewer than three artifacts—were previously recorded. Twenty-two of these known sites and all of the isolates were of prehistoric—i.e., Native American—origin, consisting mostly of bedrock milling features such as slicks, habitation sites, lithic scatters, petroglyphs, and pictographs. These sites were concentrated among granitic boulder outcrops located in the rolling hills that surround the project area. The nearest among them to the project area was Site 33-001725, located about 250 feet to the west and described as a bedrock milling feature with six grinding slicks and one mortar on a boulder outcrop. The isolates consisted of metavolcanics flakes, a core, several metates, several granitic manos, and a basalt pestle. The other five sites dated to the historic period and included the Santa Fe Railway grade through the Temescal Valley, a water conveyance system, and historical markers for the Serrano Tanning Vats and Ruins of the Third Serrano Adobe.

In a letter dated October 31, 2017, the Native American Heritage Commission reports that the sacred lands record search identified no Native American cultural resources within the project area, but recommends that local Native American groups be contacted for further information (see attached). Therefore, as part of the cultural resources study for this project, I am writing to request your input on potential Native American cultural resources in or near the project area.

Please respond at your earliest convenience if you have any specific knowledge of sacred/religious sites or other sites of Native American traditional cultural value in or near the project area, or any other information to consider during the cultural resources investigations. Any information or concerns may be forwarded to CRM TECH by telephone, e-mail, facsimile, or standard mail.

Requests for documentation or information we cannot provide will be forwarded to our client and/or the lead agency, namely the County of Riverside.

We would also like to clarify that, as the cultural resources consultant for the project, CRM TECH is not involved in the AB 52-compliance process or in government-to-government consultations. The purpose of this letter is to seek any information that you may have to help us determine if there are cultural resources in or near the project area that we should be aware of and to help us assess the sensitivity of the project area. Thank you for your time and effort in addressing this important matter.

Respectfully,

Nina Gallardo
Project Archaeologist/Native American liaison
CRM TECH

From: Steven Estrada <SEstrada@santarosacahuilla-nsn.gov>
Sent: Thursday, November 2, 2017 6:37 PM
To: ngallardo@crmtech.us
Cc: Joseph Ontiveros
Subject: Re: NA Scoping Letter for the Corona Clay/Deleo Property Project near the City of Corona, Riverside County (CRM TECH # 3283A)

Thank you. We defer further consultation to the Soboba Band of Luiseño Indians.

From: THPO Consulting <ACBCI-THPO@aguacaliente.net>
Sent: Friday, November 3, 2017 8:04 AM
To: 'ngallardo@crmtech.us'
Subject: RE: NA Scoping Letter for the Corona Clay/Deleo Property Project near the City of Corona, Riverside County (CRM TECH # 3283A)

Greetings,

A records check of the Tribal Historic preservation office's cultural registry revealed that this project is not located within the Tribe's Traditional Use Area. Therefore, we defer to the other tribes in the area. This letter shall conclude our consultation efforts.

Thank you,

Katie Croft
Cultural Resources Manager
Agua Caliente Band of Cahuilla Indians

VIEJAS
TRIBAL GOVERNMENT

P.O Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

November 3, 2017

Nina Gallardo
Project Archaeologist/Native American Liaison
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: Corona Clay/Deleo Property Project

Dear Ms. Gallardo,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site has little cultural significance or ties to Viejas. We further recommend that you contact the tribe(s) closest to the cultural resources. We, however, request to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains in order for us to reevaluate our participation in the government-to-government consultation process.

Please do not hesitate to contact me if you have further questions. Please call Ernest Pingleton at 619-659-2314 or me at 619-659-2312, or email, epingleton@viejas-nsn.gov or rteran@viejas-nsn.gov. Thank you.

Sincerely,

Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

NOV 10 2017

From: Cultural Pauma <cultural@pauma-nsn.gov>
Sent: Monday, November 6, 2017 7:26 AM
To: ngallardo@crmtech.us
Cc: Dixon, Patti; Jeremy Zagarella
Subject: RE: NA Scoping Letter for the Corona Clay/Deleo Property Project near the City of Corona, Riverside County (CRM TECH # 3283A)

Ms. Gallardo,

Thank you for the notice for the Corona Clay/Deleo Property Project near the city of Corona. We are unaware of any specific cultural resources on the project property. We do believe the potential for discovery of cultural resources if high. As the project proceeds, we would recommend monitors for any ground disturbance that occurs. We would also like to request a copy of the Cultural Study to review and comment on. If there are any questions please contact us.

Thank you,

Mr. Chris Devers
Cultural Liaison
Pauma Band of Luiseno Indians

November 8, 2017

Nina Gallardo
Project Archaeologist/Native American Liaison
CRM TECH
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re.: Corona Clay/Deleo Property Project Project
Approximately 122 Acres Near the City of Corona
Riverside County, California
CRM TECH Contract #3283A

Dear Ms. Gallardo:

Thank you for contacting the Cabazon Band of Mission Indians concerning cultural resource information relative to the above referenced project.

The project is located outside of the Tribe's current reservation boundaries. The Tribe has no specific archival information on the site indicating that it may be a sacred/religious site or other site of Native American traditional cultural value within the project area.

We look forward to continued collaboration in the preservation of cultural resources or areas of traditional cultural importance.

Best regards,

Judy Stapp
Director of Cultural Affairs

NOV 10 2017

84-245 INDIO SPRINGS PARKWAY • INDIO, CALIFORNIA 92203-3499 • 760.342.2593 • FAX: 760.347.7880

From: ngallardo@crmtech.us
Sent: Tuesday, November 14, 2017 2:48 PM
To: 'Tony Foussat'
Subject: Fieldwork for the Corona Clay/Deleo Property Project near the City of Corona, Riverside County (CRM TECH # 3283A)

Hi Tony,

I'm contacting you to see if this Friday, November 17th (around seven in the morning) would be convenient for the tribe to join us to conduct the fieldwork for the above-mentioned project. Please let me know if this is a convenient day for you.

Thanks again for your time,

Nina Gallardo
(909) 824-6400 (phone)
(909) 824-6405 (fax)
CRM TECH
1016 E. Cooley Drive, Ste. A/B
Colton, CA 92324

From: Tony Foussat <tfoussat@pechanga-nsn.gov>
Sent: Wednesday, November 15, 2017 8:41 AM
To: 'ngallardo@crmtech.us'
Subject: RE: Fieldwork for the Corona Clay/Deleo Property Project near the City of Corona, Riverside County (CRM TECH # 3283A)

Hello Nina,

I will try and join the crew at some point in the day.

Thank you

Tony Foussat

Pechanga Cultural Resources Department
Monitor Supervisor
Tel: 951-770-6303
Cell: 951-265-1069
Email: tfoussat@pechanga-nsn.gov

PECHANGA TRIBAL HISTORIC PRESERVATION OFFICE
Temecula Band of Luiseño Mission Indians

Post Office. Box 2183 • Temecula, CA 92593
Telephone (951) 770-6300 • Fax (951) 506-9491

Tribal Historic Preservation Officer:
Gary P. DuBois, JD, MSW

THPO Historian:
Lisa Woodward, Ph.D.

Advisory Review Board:
Neal Ibanez
Bridgett Barcello
Darlene Miranda
Evie Gerber
Andrew Masiel, Sr.
Richard B. Scearce
Robert Villalobos

November 16, 2017

VIA E-Mail and USPS

Nina Gallardo, Project Archaeologist
CRM Tech
1016 E Cooley Drive, Suite A/B
Colton, CA 92347

RE: Request for Information for the Corona Clay/Deleo Project located in the City of Corona

Dear Ms. Gallardo,

The Pechanga Band of Luiseño Indians ("the Tribe") appreciates your request for information regarding the above referenced Project. After reviewing the provided maps and our internal documents, we have determined that the Project area is not within reservation lands although it is within our ancestral territory.

At this time, we are interested in participating in this Project based upon traditional knowledge of the area and previously recorded sites within the Project vicinity. The Tribe believes that the possibility for recovering subsurface resources during ground-disturbing activities for the Project is high.

The Tribe is dedicated to providing comprehensive cultural information to you and your firm for inclusion in the archaeological study as well as to the Lead Agency for CEQA review. At this time, the Tribe requests the following so we may continue the consultation process and to provide adequate and appropriate recommendations for the Project:

1) Notification once the Project begins the entitlement process, if it has not already;
2) Copies of all applicable archaeological reports, site records, proposed grading plans and environmental documents (EA/IS/MND/EIR, etc);
3) Government-to-government consultation with the Lead Agency; and
4) The Tribe believes that monitoring by a Riverside County qualified archaeologist and a professional Pechanga Tribe monitor may be required during earthmoving activities. Therefore, the Tribe reserves its right to make additional comments and recommendations once the environmental documents have been received and fully reviewed. Further, in the event that subsurface cultural resources are identified, the Tribe requests consultation with the Project proponent and Lead Agency regarding the treatment and disposition of all artifacts.

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As a sovereign government, the Tribe is entitled to appropriate and adequate government-to-government consultation regarding the proposed Project. For the record, the Tribe does not consider initial inquiry letters from project consultants to constitute appropriate government-to-government consultation, but rather tools to obtain further information about the Project area. Therefore, the Tribe reserves its right to participate in the formal environmental review process, including government-to-government consultation with the Lead Agency, and requests to be included in all correspondence regarding this Project.

Please note that we are interested in participating in surveys within Luiseño ancestral territory. Prior to conducting any surveys, please contact the Pechanga Cultural Resources Department. If you have any additional questions or comments, please contact me at eozdil@pechanga-nsn.gov or 951-770-6313.

Sincerely,

Tuba Ebru Ozdil
Planning Specialist

November 30, 2017

Attn: Nina Gallardo, Project Archaeologist/NA Liaison
CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324

SOBOBA BAND OF LUISEÑO INDIANS
EST. JUNE 19, 1883

RE: Corona Clay/Deleo Property Project – east of Park Canyon Drive and Canta Rosa Road, approximately 122 acres near the City of Corona, Riverside County, CA – CRM TECH Contract #3283A

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas. This project location is in proximity to known sites, is a shared use area that was used in ongoing trade between the tribes, and is considered to be culturally sensitive by the people of Soboba.

Soboba Band of Luiseño Indians is requesting the following:

1. To initiate a consultation with the project proponents and lead agency.
2. The transfer of information to the Soboba Band of Luiseno Indians regarding the progress of this project should be done as soon as new developments occur.
3. Soboba Band of Luiseño Indians continues to act as a consulting tribal entity for this project.
4. Working in and around traditional use areas intensifies the possibility of encountering cultural resources during the construction/excavation phase. For this reason the Soboba Band of Luiseño Indians requests that Native American Monitor(s) from the Soboba Band of Luiseño Indians Cultural Resource Department to be present during any ground disturbing proceedings. Including surveys and archaeological testing.
5. Request that proper procedures be taken and requests of the tribe be honored (Please see the attachment)

Multiple areas of potential impact were identified during an in-house database search. Specifics to be discussed in consultation with the lead agency.

Sincerely,

Joseph Ontiveros, Director of Cultural Resources
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA 92581
Phone (951) 654-5544 ext. 4137
Cell (951) 663-5279
jontiveros@soboba-nsn.gov

DEC 05 2017

Cultural Items (Artifacts). Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer should agree to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

The Developer should waive any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. Upon completion of authorized and mandatory archeological analysis, the Developer should return said artifacts to the Soboba Band within a reasonable time period agreed to by the Parties and not to exceed (30) days from the initial recovery of the items.

Treatment and Disposition of Remains.

A. The Soboba Band shall be allowed, under California Public Resources Code § 5097.98 (a), to (1) inspect the site of the discovery and (2) make determinations as to how the human remains and grave goods shall be treated and disposed of with appropriate dignity.

B. The Soboba Band, as MLD, shall complete its inspection within twenty-four (24) hours of receiving notification from either the Developer or the NAHC, as required by California Public Resources Code § 5097.98 (a). The Parties agree to discuss in good faith what constitutes "appropriate dignity" as that term is used in the applicable statutes.

C. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code § 5097.98 (a) and (b). The Soboba Band, as the MLD in consultation with the Developer, shall make the final discretionary determination regarding the appropriate disposition and treatment of human remains.

D. All parties are aware that the Soboba Band may wish to rebury the human remains and associated ceremonial and cultural items (artifacts) on or near, the site of their discovery, in an area that shall not be subject to future subsurface disturbances. The Developer should accommodate on-site reburial in a location mutually agreed upon by the Parties.

E. The term "human remains" encompasses more than human bones because the Soboba Band's traditions periodically necessitated the ceremonial burning of human remains. Grave goods are those artifacts associated with any human remains. These items, and other funerary remnants and their ashes are to be treated in the same manner as human bone fragments or bones that remain intact

Coordination with County Coroner's Office. The Lead Agencies and the Developer should immediately contact both the Coroner and the Soboba Band in the event that any human remains are discovered during implementation of the Project. If the Coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, the Coroner shall ensure that notification is provided to the NAHC within twenty-four (24) hours of the determination, as required by California Health and Safety Code § 7050.5 (c).

Non-Disclosure of Location Reburials. It is understood by all parties that unless otherwise required by law, the site of any reburial of Native American human remains or cultural artifacts shall not be disclosed and shall not be governed by public disclosure requirements of the California Public Records Act. The Coroner, parties, and Lead Agencies, will be asked to withhold public disclosure information related to such reburial, pursuant to the specific exemption set forth in California Government Code § 6254 (r). Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Soboba Band. The Developer agrees to return all Native American ceremonial items and items of cultural patrimony that may be found on the project site to the Soboba Band for appropriate treatment. In addition, the Soboba Band requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations. Where appropriate and agreed upon in advance, Developer's archeologist may conduct analyses of certain artifact classes if required by CEQA, Section 106 of NHPA, the mitigation measures or conditions of approval for the Project. This may include but is not limited or restricted to include shell, bone, ceramic, stone or other artifacts.

Confidentiality: The entirety of the contents of this letter shall remain confidential between Soboba and the County of Riverside, as well as hired consultant (CRM TECH). No part of the contents of this letter may be shared, copied, or utilized in any way with any other individual, entity, municipality, or tribe, whatsoever, without the expressed written permission of the Soboba Band of Luiseño Indians.

AUGUSTINE BAND OF CAHUILLA INDIANS

PO Box 846 84-481 Avenue 54 Coachella CA 92236
Telephone: (760) 398-4722
Fax (760) 369-7161
Tribal Chairperson: Amanda Vance
Tribal Vice-Chairperson: William Vance

December 1, 2017

Nina Gallardo
CRM Tech
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

RE: CRM Tech Contract #3283A

Dear Ms. Gallardo-

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project, and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources has resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time we are unaware of specific cultural resources that may be affected by the proposed project. We encourage you to contact other Native American Tribes and individuals within the immediate vicinity of the project site that may have specific information concerning cultural resources that may be located in the area. We also encourage you to contract with a monitor who is qualified in Native American cultural resources identification and who is able to be present on-site full-time during the pre-construction and construction phase of the project. Please notify us immediately should you discover any cultural resources during the development of this project.

Very truly yours,

Amanda Vance
Tribal Chairperson

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RINCON BAND OF LUISEÑO INDIANS

Cultural Resources Department

1 W. Tribal Road Valley Center, California 92082
(760) 297-2635 Fax:(760) 692-1498

December 7, 2017

Nina Gallardo
CRM Tech
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: Corona Clay/Deleo Property Project

Dear Ms. Gallardo:

This letter is written on behalf of the Rincon Band of Luiseño Indians. We have received your notification regarding the Corona Clay/Deleo Property Project and we thank you for the opportunity to consult on this project. The location you have identified is within the Territory of the Luiseño people, and is also within Rincon's specific area of Historic interest.

Embedded in the Luiseño Territory are Rincon's history, culture and identity. The project is within the Luiseño Aboriginal Territory of the Luiseño people. Thank you for the notification regarding the above referenced project. Rincon has no knowledge of any known resources near or within your project area. We do request a copy of the Cultural Assessment Report to include records and reports from the records search results.

We look forward to hearing from you. If there are any questions or concerns please do not hesitate to contact our office at (760) 297-2635 at your convenience.

Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Destiny Colocho
Manager
Rincon Cultural Resources

APPENDIX 3

PREVIOUS STUDIES NEAR THE PROJECT AREA

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-00281	NADB-R - 1080333; Voided - MF-0252	1977	Jean Tadlock and W. Lewis Tadlock	Archaeological Element of an Environmental Impact Report, Leighton Project No. 77023-1, (Tallichet-Hurford Ranch)		33-000853, 33-001143, 33-001144, 33-001145, 33-001146, 33-001147, 33-001148
RI-00336	NADB-R - 1080393; Voided - MF-0305	1978	Christina Brewer	An Archaeological Survey of Parcel Nos. 1, 2, and 3 on Parcel Map 11561, County of Riverside, California	Saddleback Community College, Mission Viejo, CA	
RI-00337	NADB-R - 1084932; Voided - MF-0305	1996	Jane Rosenthal	Archaeological Assessment for Corona Clay Parcels 1, 2, and 3 Temescal Canyon Vicinity, Riverside County, California	Petra Resources, Inc., Irvine, CA	
RI-00757	NADB-R - 1080807; Voided - MF-0677	1980	James E. Baldwin	Cultural Resource Impact Evaluation: Archaeological Inspection of Tentative Parcel Map No. 15490, Portion of Dawson Canyon, Corona, Riverside County	Field Survey Consultants, Chico, CA	
RI-01077	NADB-R - 1081178; Voided - MF-1023	1980	Jean A. Salpas	An Archaeological Assessment of 7.92 Acres in thr Temescal Valley (Portion of Parcel 2, Parcel Map 7239)	Consulting Archaeologist, Riverside, CA	
RI-01479	NADB-R - 1081740; Voided - MF-1553	1982	SCHROTH, ADELLA	ARCHAEOLOGICAL ASSESSMENT OF THE TEMESCAL VALLEY PROJECT, COUNTY OF RIVERSIDE, CALIFORNIA	ARCHAEOLOGICAL RESOURCE MANAGEMENT CORPORATION	33-000108, 33-000642, 33-001423, 33-001446, 33-001461
RI-01877	NADB-R - 1082252; Voided - MF-2037	1984	SALPAS, JEAN	AN ARCHAEOLOGICAL ASSESSMENT OF PROPOSED CALSS II SANITARY LANDFILL SITE NO. 8, RIVERSIDE COUNTY, CALIFORNIA	AUTHOR(S)	
RI-01878	NADB-R - 1083225; Voided - MF-2037	1990	DROVER, CHRISTOPHER E.	AN ARCHAEOLOGICAL ASSESSMENT OF THE EL SOBRANTE LANDFILL EXPANSION TEMESCAL CANYON, RIVERSIDE COUNTY, CALIFORNIA.	AUTHOR	
RI-01879	NADB-R - 1084194; Voided - MF-2037	1991	DROVER, CHRISTOPHER E.	ENVIRONMENTAL IMPACT EVALUATION: A CULTURAL RESOURCES ASSESSMENT OF THE 1100 ACRE EL SOBRANTE LANDFILL PROJECT; LAKE MATHEWS USGS QUADRANGLE, RIVERSIDE COUNTY, CALIFORNIA	AUTHOR	33-001143, 33-001144, 33-001146, 33-001147, 33-001148, 33-001149, 33-001651, 33-004307, 33-004980, 33-004981, 33-004982
RI-01880	NADB-R - 1084454; Voided - MF-2037	1993	BERGIN, KATHLEEN	REPORT: RECONNAISSANCE SURVEY OF PREVIOUSLY RECORDED SITES - PROPOSED EL SOBRANTE LANDFILL EXPANSION PROJECT AREA, RIVERSIDE COUNTY, CALIFORNIA	ENVIRONMENTAL SOLUTIONS, INC.	33-001143, 33-001144, 33-001146, 33-001147, 33-001148, 33-001149, 33-001651, 33-004307, 33-004980, 33-004981, 33-004982

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-01949	NADB-R - 1082345; Submitter - 809; Voided - MF-2120	1985	BOUSCAREN, STEPHEN	FINAL REPORT: AN ARCHAEOLOGICAL ASSESSMENT OF THE PROPOSED VALLEY-SERRANO 500 KV TRANSMISSION LINE CORRIDOR, ORANGE AND RIVERSIDE COUNTIES	ARCHAEOLOGICAL RESEARCH UNIT, U.C. RIVERSIDE	33-000714, 33-001078, 33-001655, 33-001725
RI-02270	NADB-R - 1082708; Voided - MF-2464	1988	DROVER, C.E.	AN ARCHAEOLOGICAL ASSESSMENT OF THE PROPOSED TEMSCAL WASH SAND AND GRAVEL MINING OPERATION, TEMSCAL CANYON, RIVERSIDE COUNTY, CALIFORNIA	AUTHOR(S)	33-000078
RI-02419	NADB-R - 1082913; Voided - MF-2655	1989	DROVER, CHRISTOPHER E. and COLE PARKER	TEST EXCAVATIONS OF RIV-1520, THE PABLO APIS ADOBE	AUTHOR(S)	33-001520
RI-02650	NADB-R - 1083120; Voided - MF-2855	1989	BERGIN, KATHLEEN A. and RANDAL P. PRESTON	TECHNICAL REPORT 3: ARCHAEOLOGICAL RESEARCH REPORT FOR THE TEMESCAL CANYON COMPOSING FACILITY EIR RIVERSIDE COUNTY, CALIFORNIA. SCH 88100318	HARMSWORTH ASSOCIATES	33-003531, 33-003532
RI-02651	NADB-R - 1083701; Submitter - 1109; Voided - MF-2855	1991	LOVE, BRUCE	LETTER REPORT: CULTURAL RESOURCES MONITORING: TEMESCAL CANYON COMPOSTING PROJECT	ARCHAEOLOGICAL RESEARCH UNIT	33-003531
RI-02743	NADB-R - 1083352; Voided - MF-2947	1990	MCCARTHY, DANIEL	ARCHAEOLOGICAL ASSESSMENT OF THE MORGER PROPERTY LOCATED IN OLSEN CANYON IN TEMESCAL VALLEY, RIVERSIDE COUNTY, CALIFORNIA	ARCHAEOLOGICAL RESEARCH UNIT	33-003819, 33-003820, 33-003821, 33-003822, 33-003823, 33-003824, 33-003825, 33-003826, 33-003827, 33-003828, 33-003829, 33-003830, 33-003831, 33-003832
RI-02744	NADB-R - 1083778; Voided - MF-2947	1990	MCKENNA, JEANETTE A., KEN HEDGES, and DIANE HAMANN	ARCHAEOLOGICAL TEST EXCAVATIONS IN THE TEMESCAL QUARRY SITE, OLSEN CANYON, RIVERSIDE COUNTY, CALIFORNIA	AUTHOR	33-003826, 33-003827, 33-003828, 33-003829
RI-02984	NADB-R - 1083524; Voided - MF-3205	1990	DROVER, CHRISTOPHER	AN ARCHAEOLOGICAL ASSESSMENT OF THE TEMESCAL VALLEY PROJECT, TEMESCAL VALLEY, EAST OF CORONA, CALIFORNIA.	AUTHOR(S)	33-001089
RI-03175	NADB-R - 1083733; Submitter - 1111; Voided - MF-3393	1991	SWOPE, KAREN	CULTURAL RESOURCES ASSESSMENT: TEMESCAL VALLEY PROJECT, RIVERSIDE COUNTY, CALIFORNIA	ARCHAEOLOGICAL RESEARCH UNIT, U.C. RIVERSIDE	33-000101, 33-000630, 33-000642, 33-001099, 33-003832, 33-004111, 33-004112, 33-013146, 33-013147, 33-013148

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-03306	NADB-R - 1083904; Voided - MF-3538	1989	FREEMAN, TREVOR A. and DAVID M. VAN HORN	ARCHAEOLOGICAL SURVEY REPORT: CULTURAL RESOURCE ASSESSMENT OF THE SEIGAL FARMS PROPERTY LAKE MATHEWS, RIVERSIDE COUNTY, CALIFORNIA	ARCHAEOLOGICAL ASSOCIATES, LTD.	33-001144, 33-001146, 33-001147, 33-001536, 33-002529, 33-004307, 33-004308, 33-004309
RI-03721	NADB-R - 1084527; Submitter - 999a; Voided - MF-4045	1992	WHITNEY-DESAUTELS, NANCY	PHASE I ARCHAEOLOGICAL SURVEY OF THE 15+ ACRE TOM'S FARMS PROPERTY LOCATED IN RIVERSIDE COUNTY, CALIFORNIA; PARCEL MAP 4927	SCIENTIFIC RESOURCE SURVEYS	
RI-03722	NADB-R - 1084528; Submitter - 999b/c; Voided - MF-4045	1993	DESAUTELS, NANCY and ROBERT BEER	GEOPHYSICAL INVESTIGATIONS AND SUBSURFACE RECOVERY ON TOM'S FARMS PROPERTY, RIVERSIDE COUNTY, CALIFORNIA; PARCEL MAP 4927	SCIENTIFIC RESOURCE SURVEYS	
RI-04097	NADB-R - 1085269; Other - CUP3246/VAR1649; Voided - MF-4559	1998	MACKO, MICHAEL E.	RESULTS OF A PHASE I CULTURAL RESOURCES SURVEY OF THE TOM'S FARMS PROPERTY IN TEMESCAL CANYON, RIVERSIDE COUNTY, CALIFORNIA	MACKO INC.	33-000101
RI-04144	NADB-R - 1085336; Submitter - 324; Voided - MF-4620	1998	LOVE, BRUCE and BAI "TOM" TANG	CULTURAL RESOURCES REPORT: TEMESCAL VALLEY REGIONAL INTERCEPTOR, SANTA ANA WATERSHED PROJECT AUTHORITY, RIVERSIDE COUNTY, CALIFORNIA	CRM TECH	33-000100, 33-000630, 33-001099, 33-003832, 33-004112
RI-04146	NADB-R - 1085338; Other - TR 19176; Voided - MF-4622	1998	LOVE, BRUCE and BAI "TOM" TANG	LETTER REPORT: HISTORICAL/ARCHAEOLOGICAL RECORDS SEARCH ON LOTS 26, TRACT NO. 19176	CRM TECH	
RI-04446	NADB-R - 1085791	1987	STICKEL, E. GARY	A PRELIMINARY CULTURAL RESOURCE ASSESSMENT OF PROPERTIES IN TEMESCAL VALLEY, RIVERSIDE COUNTY, CALIFORNIA	GARY E. STICKEL	
RI-04737	NADB-R - 1086099; Submitter - GRH830	1999	STRUDWICK, IVAN H. and KATHLEEN ANN BERGIN	ARCHAEOLOGICAL SURVEY, TESTING AND EVALUATION OF SITES CA-RIV-101/H, CA-RIV-2992/H, CA-RIV-6152/H AND CA-RIV-6153 FOR THE TEMESCAL SUMMIT PROJECT, RIVERSIDE COUNTY, CALIFORNIA	LSA ASSOCIATES INC.	33-000101, 33-002992, 33-008267, 33-008433

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-04765	NADB-R - 1086127	2004	HOOVER, ANNA M., KRISTIE R. BLEVINS, HUGH M. WAGNER, and STEPHEN VAN WORMER	AN ARCHAEOLOGICAL AND PALEONTOLOGICAL PHASE I SURVEY, A PHASE II SIGNIFICANCE TESTING PROGRAM, AND A HISTORIC PROPERTIES EVALUATION REPORT, THE SERRANO SPECIFIC PLAN (SSP), CASE #441, RIVERSIDE COUNTY, CALIFORNIA	L&L ENVIRONMENTAL, INC.	33-000034, 33-000108, 33-001090, 33-003832, 33-004111, 33-006438, 33-006441, 33-006820, 33-013622, 33-013623, 33-013624, 33-013625, 33-013690, 33-013691, 33-013692, 33-013693
RI-06888	Submitter - 06-63	2006	Lerch, Michael K. and Gray, Marlesa A.	Cultural Resources Assessment of the Valley-Ivyglen Transmission Line Project, Riverside County, California	Statistical Research, Inc.	33-015346, 33-015347, 33-015348, 33-015349, 33-015350, 33-015351, 33-015352, 33-015353, 33-015354, 33-015355, 33-015356, 33-015357, 33-015358, 33-015359, 33-015360, 33-015361, 33-015362, 33-015363, 33-015364, 33-015365, 33-015375, 33-015376, 33-015377, 33-015378, 33-015379, 33-015380, 33-015416, 33-015417, 33-015418, 33-015419, 33-015420, 33-015422, 33-015423, 33-015424, 33-015425, 33-015427
RI-07367	Other - 006644.07	2007	Patterson, Joshua	Archaeological Survey Report for Southern California Edison Company Chase- Ivy Glen Fiber Optic Cable Project Riverside County, California	Jones and Stokes	33-000101, 33-000883, 33-001099, 33-004111, 33-004112, 33-006439, 33-006442, 33-011089, 33-011090, 33-011091, 33-011183, 33-011184, 33-012559, 33-013147, 33-013148
RI-08145	Submitter - 301100	2008	Wayne Bonner and Marnie Aislin-Kay	Letter Report: Cultural Resource Records Search and Site Visit Results for American Tower Facility Candidate	Michael Brandman Associates, Irvine, California	
RI-08171		2008	Jennifer M. Sanka and Marnie Aislin-Kay	Cultural Resources Assessment Public Safety Enterprise Communication Project Riverside, Orange, San Bernadino, and San Diego Counties, FM 04174400010	Michael Brandman Associates	
RI-08348	Submitter - CRM TECH Contract #2398A	2009	Bai "Tom" Tang	Historical / Archaeological Resources Survey Lee Lake Water District Sewer Pipeline Project (Clay Canyon) Glen Ivy Area, Riverside County, California.	CRM TECH	
RI-08468	Other - SCE Purchase Order Number: 4500032069; Other - WO 6088-4800/0-4833	2010	Gary A. Jones	Archaeological Survey Report for Southern California Edison's Deteriorated Pole Project on the Barney Le 12kV Transmission Line Riverside County, California	AECOM	

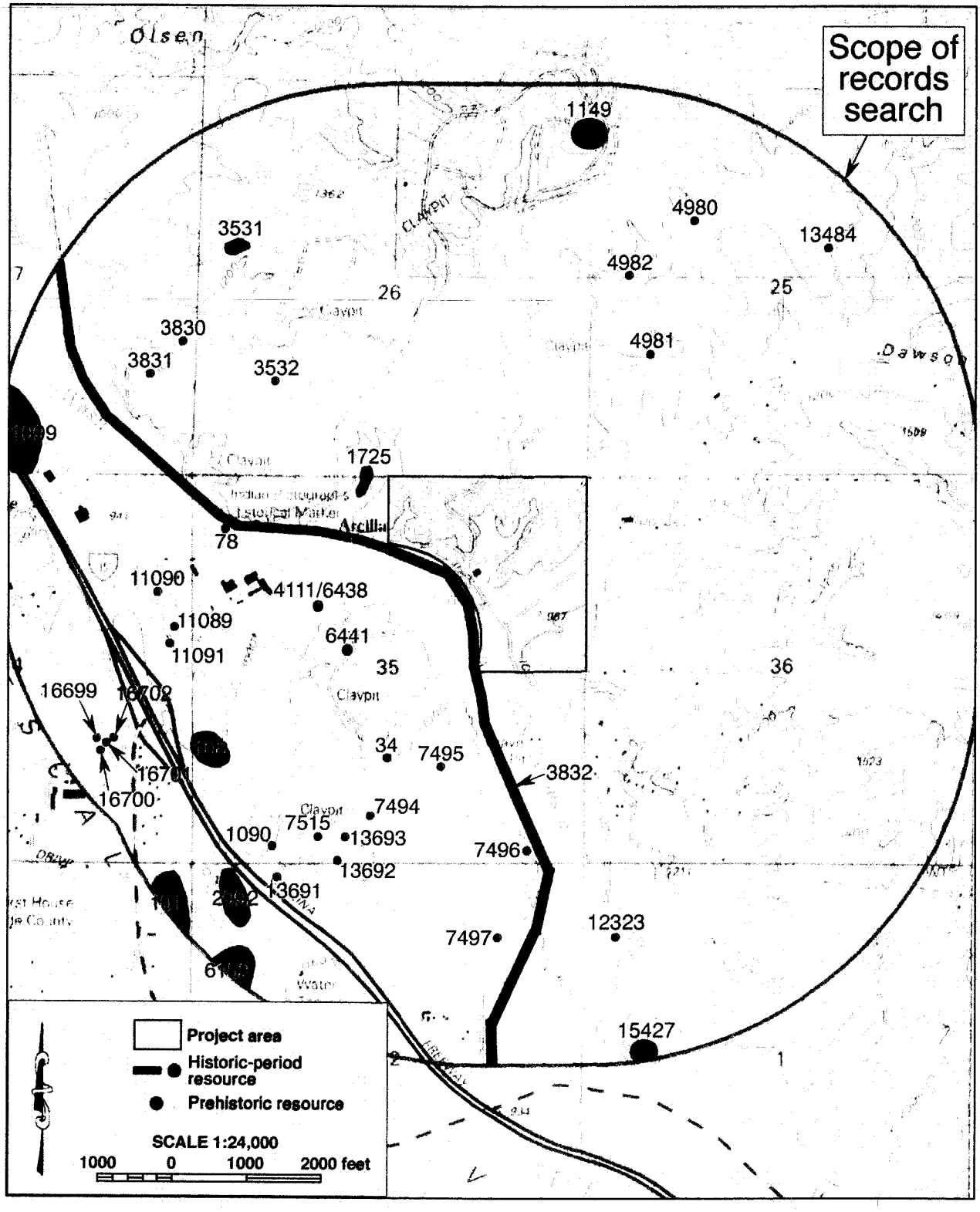
Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
RI-08534	Other - WO 6088-4800; 0-4876, 0-4877, 0-4881, 0-4883.2010; Other - WO 6088-4800; 0-4876, 0-4877, 0-4881, 0-4883.2010	2010	James J. Schmidt	Letter Report: Deterioarated Pole Replacements Projects (WO 6088-4800; 0-4876, 0-4877, 0-4881, 0-4883.2010), Riverside County, California	Compass Rose Archaeological, Inc	
RI-08585	Other - Job No. 100019791; Submitter - Job No. 100019791	2011	Jennifer M. Sanka and William R. Gillean	Phase I Cultural Resources Assessment Temescal Canyon Road Improvement Project Corona Vicinity, Riverside County, California	PBS & J	
RI-08632	Other - WO 6088-4800, Al 9-4812	2009	Cary D. Cotterman and Evelyn N. Chandler	Cultural Resources Inventory of 7 Proposed Pole Replacements in Temescal Valley and Dawson Canyon Riverside County, California (WO 6088-4800, Al 9-4812)	ECORP Consulting, Inc.	
RI-09419		2014	Brian F. Smith, David K. Grabski, and Tracy A. Stopes	A Section 106 (NHPA) Cultural Resources Study for the Toscana Project, Riverside County, California	Brian F. Smith and Associates, Inc.	
RI-09770		2014	Brian F. Smith and David K. Grabski	A Phase II Cultural Resource Evaluation Report For RIV-8118 at the Toscana Project	Brian F. Smith and Associates, Inc.	
RI-09771		2014	Brian F. Smith and Jennifer R. Kraft	Historic Structure Asssessment 11950 EL Hermando Road	Brian F. smith and Associates, Inc.	

APPENDIX 4

LOCATIONS OF PREVIOUSLY RECORDED CULTURAL RESOURCES NEAR THE PROJECT AREA

(Confidential)


Olsen
Scope of records search
1149
4980
13484
3531
4982
26
25
3830
4981
3831
3532
Dawson
1725
78
11090
4111/6438
11089
6441
11091
35
36
16699
16702
34
7495
3832
16701
16700
7494
7515
1090
13693
7496
13692
13691
12323
7497
15427
Project area
Historic-period resource
Prehistoric resource
SCALE 1:24,000
1000 0 1000 2000 feet

APPENDIX 5

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM RECORD FORMS: SITE 33-028055

(Confidential)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # 33-028055
HRI #
Trinomial
NRHP Status Code 6Z
Other Listings
Review Code Reviewer Date

Page 1 of 4 *Resource Name or # (Assigned by recorder)

P1. Other Identifier:
***P2.** Location: √ Not for Publication ___ Unrestricted ***a. County** Riverside
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Lake Mathews, Calif. **Date** 1997
T4S; R6W; NE 1/4 of SW 1/4 of NW 1/4 of NE 1/4 of Sec 35 ; S.B. B.M.
Elevation: Approximately 960 feet to 1,165 feet above mean sea level
c. Address N/A **City** **Zip**
d. UTM: (Give more than one for large and/or linear resources) **Zone** 11 ; 456008 **mE/** 3738239 **mN**
UTM Derivation: ___ USGS Quad √ GPS (NAD 83)
e. Other Locational Data: APN 283-190-040; approximately 4,200 feet east of Temescal Canyon Road and 500 feet north of Park Canyon Road

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries): The site represents the remains of a chute associated with nearby clay mining operations. The primary components of the site include the remnants of two parallel metal rails running generally north-south down a finger ridge, each of them supported by a set of vertical metal beams. The western rail has almost disappeared, and what is left of the eastern one measures approximately 10 feet long. Lumber that appears to have been part of the assembly lies on either side of the rail alignment, scattered on the slopes. To the southwest and northeast of the alignment, 6x6-inch wooden beams protrude from the hillside, supporting the remains of a rudimentary retaining structure. These beams are lashed together crudely with rusted metal cables. From the southwestern portion of the retaining structure, the cables extend up the hill to connect to the metal rails. The southwestern end of the retaining structure is now in disarray, as a portion of the finger ridge has collapsed.

***P3b. Resource Attributes:** (List attributes and codes) AH16: Other
***P4. Resources Present:** ___ Building √ Structure ___ Object √ Site ___ District ___ Element of District
Isolate Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)
P5b. Description of Photo: (view, date, accession #)
***P6. Date Constructed/Age and Sources:** √ Historic ___ Prehistoric ___ Both
***P7. Owner and Address:** Corona Clay Company, 22079 Knabe Road, Corona, CA 92883
***P8. Recorded by:** (Name, affiliation, and address) Ben Kerridge and Daniel Ballester, CRM TECH, 1016 East Cooley Drive, Suite A/B, Colton, CA 92324
***P9. Date Recorded:** November 20, 2017
***P10. Survey Type:** (Describe) Intensive-level survey
***P11. Report Citation:** (Cite survey report and other sources, or enter "none.") Bai "Tom" Tang, Deirdre Encarnación, Terri Jacquemain, Daniel Ballester, and Nina Gallardo (2017): Phase I Cultural Resources Assessment: Dawson Canyon Reclamation Plan-Corona Clay, CUP No. 03265, Temescal Valley Area, Riverside County, California

***Attachments:** ___ None √ Location Map √ Sketch Map ___ Continuation Sheet ___ Building, Structure, and Object Record
√ Archaeological Record ___ District Record ___ Linear Resource Record ___ Milling Station Record ___ Rock Art Record
___ Artifact Record ___ Photograph Record ___ Other (List):

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
ARCHAEOLOGICAL SITE RECORD

Primary # 33-028055
Trinomial

*Resource Name or # (Assigned by recorder)

A1. Dimensions: a. Length 65 feet (NE-SW) b. Width 40 feet (NW-SE)
Method of Measurement: Paced √ Taped Visual estimate √ Other: GPS
Method of Determination (Check any that apply.): √ Artifacts √ Features Soil Vegetation Topography Cut bank Animal burrow Excavation Property boundary Other (Explain):
Reliability of Determination: √ High Medium Low Explain:
Limitations (Check any that apply): Restricted access Paved/built over Site limits incompletely defined Disturbances Vegetation Other (Explain):

A2. Depth: None √ Unknown Method of Determination:

***A3. Human Remains:** Present √ Absent Possible Unknown (Explain):

***A4. Features:** The main components of the site include two metal rails, two sets of metal support beams, wooden retaining structures, metal cables, and discolored soil surrounding the assembly. The soil in the area is very fine, red and grey in color, and exhibits substantial concreting action. This soil is several inches thick, as evidenced by a collapsed section of the finger ridge that exposed the subsurface soil strata. The chute once extended at least 22 feet down the slope from its northernmost point, presumably leading to a local dock and the Santa Fe Railway siding below.

***A5. Cultural Constituents:** Debris within the site boundaries include several rusted metal nails measuring six inches long and fragments of a vehicle license plate.

***A6. Were Specimens Collected?** √ No Yes

***A7. Site Condition:** Good √ Fair Poor (Describe disturbances.):

***A8. Nearest Water** (Type, distance, and direction.): Temescal Wash lies approximately 750 feet to the southwest.

***A9. Elevation:** Approximately 960 to 1,165 feet above mean sea level

A10. Environmental Setting: The site is on the southwestern slope of a finger ridge in the rolling hills on the northeastern side of Temescal Valley, in an area known for clay mining during the historic period.

A11. Historical Information: According to Craig Deleo of Corona Clay Company, when a clay pit located approximately a half-mile northeast of the site area was in operation, the clay would be transported to this location by way of Clay Canyon Road and funneled down the hillside through the gravity-driven chute. At the bottom of the chute, the clay would be loaded onto waiting trucks bound for local manufacturers such as L.A. Brick, Liston Brick, and Pacific Clay, or onto open rail cars on the Santa Fe Railway for shipment to the Phoenix Brick Yard in Arizona, which was founded in 1917. The chute eventually fell out of use after the automotive industry produced more powerful trucks that were better able to climb the hills to the clay pit. The Santa Fe Railway's Temescal Valley line was removed in the 1970s, and the clay pit was closed in the 1990s.

***A12. Age:** Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 √ 1914-1945 √? Post 1945 Undetermined

A13. Interpretations:

A14. Remarks: The site does not appear eligible for the National Register of Historic Places or the California Register of Historical Resources.

A15. References: (Documents, informants, maps, and other references.): See Item P11.

A16. Photographs: (List subjects, direction of view, and accession numbers or attach a Photograph Record.):
Original Media/Negatives Kept at: CRM TECH, Colton, California

***A17. Form Prepared by:** Daniel Ballester and Ben Kerridge **Date:** December 7, 2017
Affiliation and Address: CRM TECH, 1016 E. Cooley Drive, #A/B, Colton, CA 92324

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # 33-028055
HRI #
Trinomial

*Resource Name or # (Assigned by recorder)

*Map Name: Lake Mathews, Calif. *Scale: 1:24,000 *Date of Map: 1997

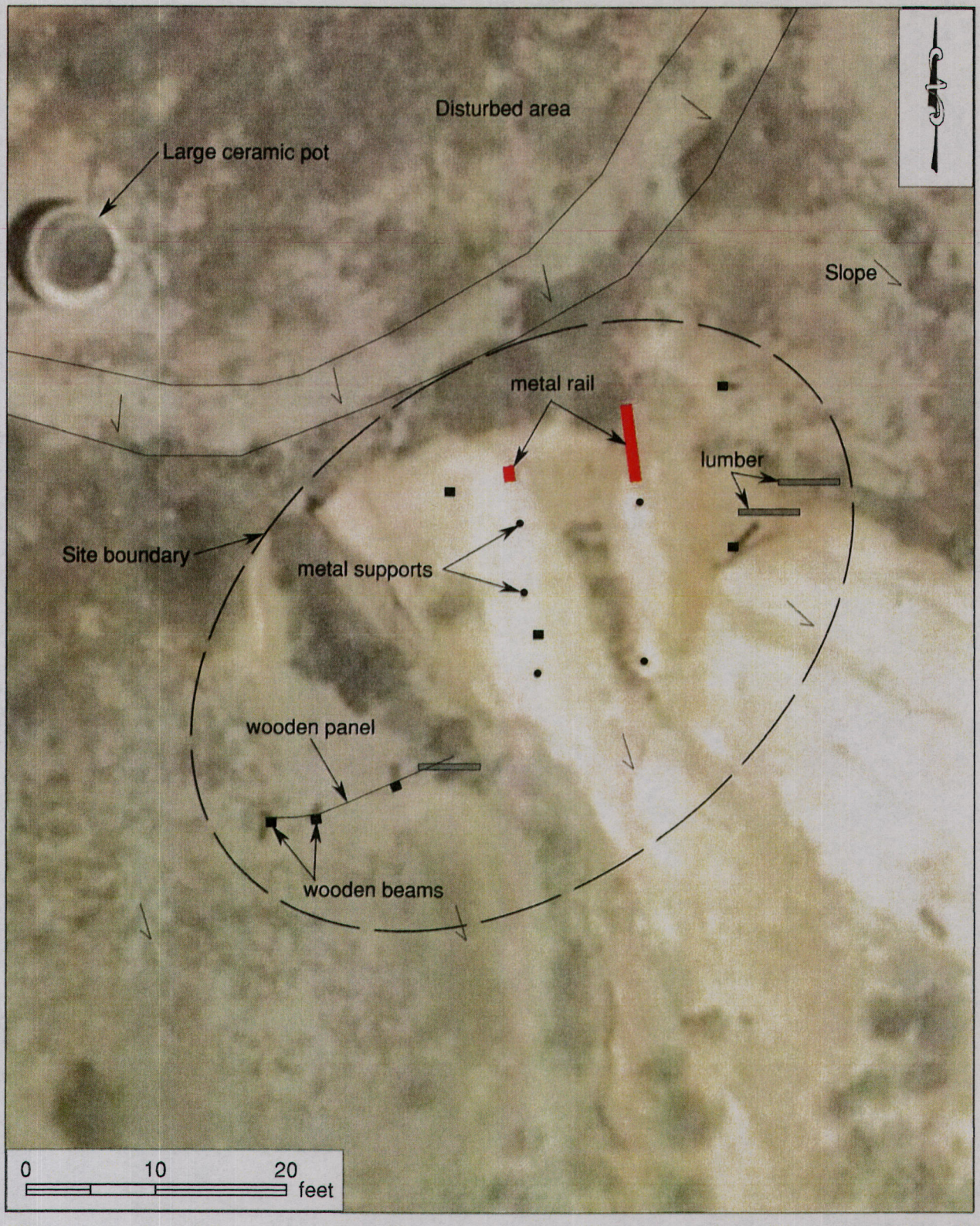
*Required information

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
SKETCH MAP

Primary # 33-028055
HRI #
Trinomial

Page 4 of 4 *Resource Name or # (Assigned by recorder)

*Drawn by: Daniel Ballester *Date: November 22, 2017



DPR 523K (1/95)

*Required information

PALEONTOLOGICAL RESOURCES ASSESSMENT REPORT

DAWSON CANYON RECLAMATION PLAN-CORONA CLAY

CUP No. 03265
Temescal Valley Area
Riverside County, California

For Submittal to:

Riverside County Planning Department
County Administrative Center
4080 Lemon Street
Riverside, CA 92502

Prepared for:

Lilburn Corporation
1905 Business Center Drive
San Bernardino, CA 92408
(909) 890-181

Prepared by:

Harry M. Quinn, Geologist/Paleontologist
Deirdre Encarnación, Report Writer
CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324
(909) 824-6400

Michael Hogan, Principal Investigator
Bai "Tom" Tang, Principal Investigator

December 27, 2017

CRM TECH Project No. 3283P
Approximately 122.71 acres
Lake Mathews, Calif., 7.5' quadrangle
Northeast quarter of Section 35, T4S R6W, SBBM

EXECUTIVE SUMMARY

Between October and December 2017, at the request of the Lilburn Corporation, CRM TECH performed a paleontological resource assessment on approximately 122.71 acres of rural land near the community of Arcilla in the unincorporated Temescal Valley area of Riverside County, California. The subject property of the study consists of Assessor's Parcel Nos. 283-190-019, -021, -022, -040 and -041, located near the intersection of Park Canyon Road and Dawson Canyon Road, in the northeast quarter of Section 35, T4S R6W, San Bernardino Baseline and Meridian.

The study is a part of the environmental review process for the entitlement of existing on-site uses, including a clay processing facility, seven motorcycle test tracks, a remote-controlled model airplane field, storage yards, and a residence. The County of Riverside, as the lead agency, required the study in compliance with the California Environmental Quality Act (CEQA). The purpose of the study is to provide the County with the necessary information and analysis to determine whether the entitlement would potentially disrupt or adversely affect any significant, nonrenewable paleontological resources, as mandated by CEQA.

In order to identify any paleontological resource localities that may exist in or near the project area and to assess the possibility for such resources to be encountered in future excavation and construction activities, CRM TECH initiated records searches at the appropriate repositories, conducted a literature search, and carried out a systematic field survey in accordance with the guidelines of the Society of Vertebrate Paleontology. The results of these research procedures indicate that the sediments in most of the project area, including all surface soils, are low in paleontological sensitivity, but the subsurface sediments at depth at lower elevations or in limestone lenses have a medium to high paleontological sensitivity.

Based on these findings, and considering the nature of the proposed project, CRM TECH recommends to the County of Riverside that no paleontological mitigation measures are currently required. However, if ground-disturbing activities become necessary in the future at lower elevations within the project area, or if limestone lenses are discovered elsewhere during such activities, a paleontological resource impact mitigation program should be developed and implemented to prevent potential effect on significant, nonrenewable paleontological resources or reduce the effect to a level less than significant. As the primary component of the mitigation program, paleontological monitoring should be required during all earth-moving operations within paleontologically sensitive sediments identified in the field.

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LIST OF FIGURES

INTRODUCTION

Between October and December 2017, at the request of the Lilburn Corporation, CRM TECH performed a paleontological resource assessment on approximately 122.71 acres of rural land near the community of Arcilla in the unincorporated Temescal Valley area of Riverside County, California (Fig. 1). The subject property of the study consists of Assessor's Parcel Nos. 283-190-019, -021, -022, -040 and -041, located near the intersection of Park Canyon Road and Dawson Canyon Road, in the northeast quarter of Section 35, T4S R6W, San Bernardino Baseline and Meridian (Figs. 2, 3).

The study is a part of the environmental review process for the entitlement of existing on-site uses, including industrial, recreational, and storage facilities as well as a residence. The County of Riverside, as the lead agency, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of the study is to provide the County with the necessary information and analysis to determine whether the entitlement would potentially disrupt or adversely affect any significant, nonrenewable paleontological resources, as mandated by CEQA.

In order to identify any paleontological resource localities that may exist in or near the project area and to assess the possibility for such resources to be encountered in future excavation and construction activities, CRM TECH initiated records searches at the appropriate repositories, conducted a literature search, and carried out a systematic field survey in accordance with the guidelines of the Society of Vertebrate Paleontology. The following report is a complete account of the methods, results, and final conclusion of this study. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

Figure 1. Project vicinity. (Based on USGS Santa Ana, Calif., 1:250,000 quadrangle)

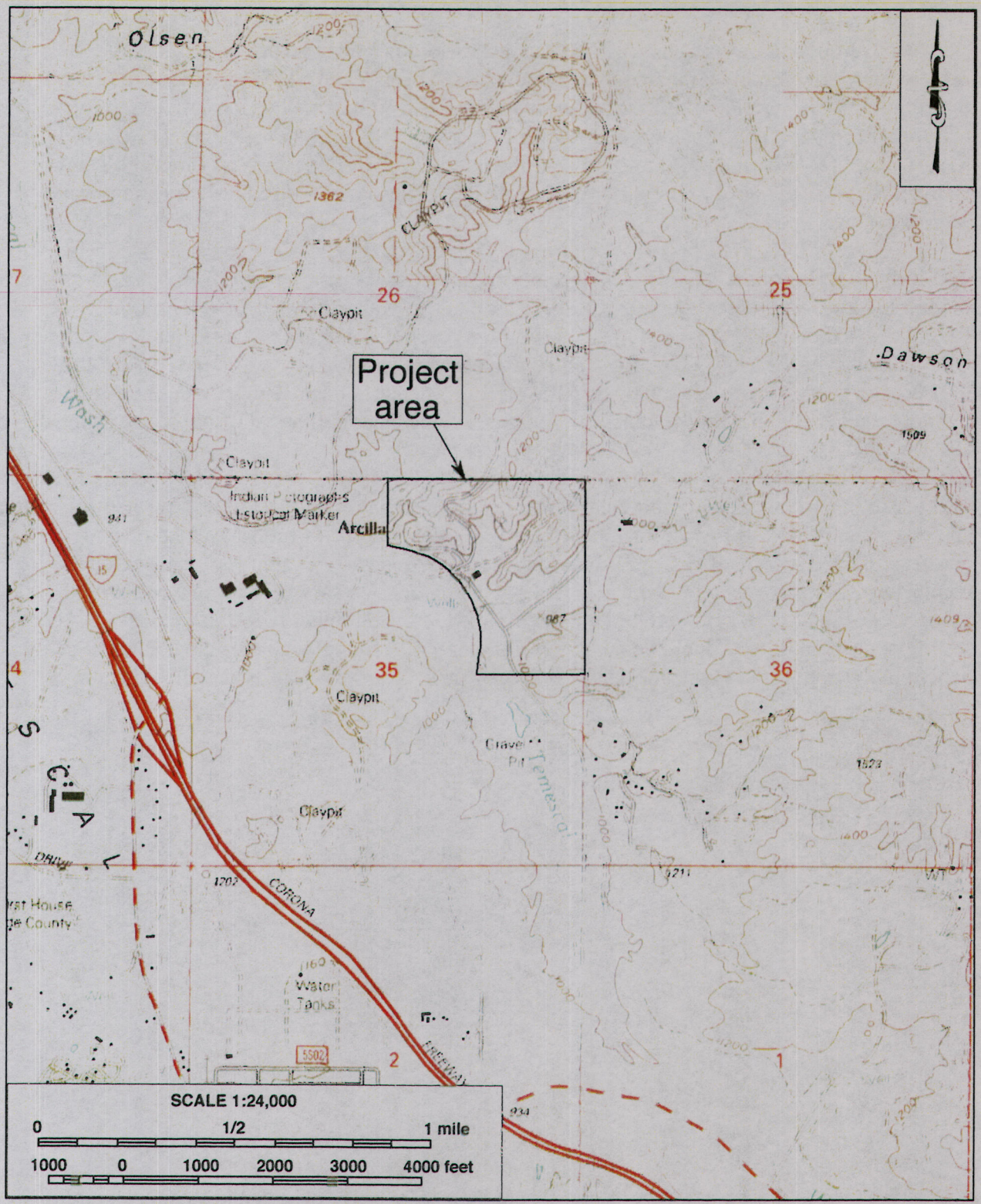

Figure 2. Project area. (Based on the USGS Lake Mathews, Calif., 1:24,000 quadrangle)

Figure 3. Aerial image of the project area.

PALEONTOLOGICAL RESOURCES

DEFINITION

Paleontological resources represent the remains of prehistoric life, exclusive of any human remains, and include the localities where fossils were collected as well as the sedimentary rock formations in which they were found. The defining character of fossils or fossil deposits is their geologic age, which is typically regarded as older than approximately 12,000 years, the generally accepted temporal boundary marking the end of the last late Pleistocene (circa 2.6 million to 12,000 years B.P.) glaciation and the beginning of the current Holocene epoch (circa 12,000 years B.P. to the present).

Common fossil remains include marine shells; the bones and teeth of fish, amphibians, reptiles, and mammals; leaf assemblages; and petrified wood. Fossil traces, another type of paleontological resource, include internal and external molds (impressions) and casts created by these organisms. These items can serve as important guides to the age of the rocks and sediments in which they are contained, and may prove useful in determining the temporal relationships between rock deposits from one area and those from another as well as the timing of geologic events. They can also provide information regarding evolutionary relationships, development trends, and environmental conditions.

Fossil resources generally occur only in areas of sedimentary rock (e.g., sandstone, siltstone, mudstone, claystone, or shale). Because of the infrequency of fossil preservation, fossils, particularly vertebrate fossils, are considered nonrenewable paleontological resources. Occasionally fossils may be exposed at the surface through the process of natural erosion or because of human disturbances; however, they generally lay buried beneath the surficial soils. Thus, the absence of fossils on the surface does not preclude the possibility of their being present within subsurface deposits, while the presence of fossils at the surface is often a good indication that more remains may be found in the subsurface.

SIGNIFICANCE CRITERIA

According to guidelines proposed by Eric Scott and Kathleen Springer (2003) of the San Bernardino County Museum, paleontological resources can be considered to be of significant scientific interest if they meet one or more of the following criteria:

1. The fossils provide information on the evolutionary relationships and developmental trends exhibited among organisms, living or extinct;
2. The fossils provide data useful in 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 the interactions between paleobotanical and paleozoological biotas;
4. The fossils demonstrate unusual or spectacular circumstances in the history of life; and/or
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.

PALEONTOLOGICAL SENSITIVITY

The fossil record is unpredictable, and the preservation of organic remains is rare, requiring a particular sequence of events involving physical and biological factors. Skeletal tissue with a high percentage of mineral matter is the most readily preserved within the fossil record; soft tissues not intimately connected with the skeletal parts, however, are the least likely to be preserved (Raup and Stanley 1978). For this reason, the fossil record contains a biased selection not only of the types of organisms preserved but also of certain parts of the organisms themselves. As a consequence, paleontologists are unable to know with certainty, the quantity of fossils or the quality of their preservation that might be present within any given geologic unit.

Sedimentary units that are paleontologically sensitive are those geologic units (mappable rock formations) with a high potential to contain significant nonrenewable paleontological resources. More specifically, these are geologic units within which vertebrate fossils or significant invertebrate fossils have been determined by previous studies to be present or are likely to be present. These units include, but are not limited to, sedimentary formations that contain significant paleontological resources anywhere within their geographical extent as well as sedimentary rock units temporally or lithologically amenable to the preservation of fossils.

A geologic formation is defined as a stratigraphic unit identified by its lithic characteristics (e.g., grain size, texture, color, and mineral content) and stratigraphic position. There is a direct relationship between fossils and the geologic formations within which they are enclosed and, with sufficient knowledge of the geology and stratigraphy of a particular area, it is possible for paleontologists to reasonably determine the formation's potential to contain significant nonrenewable vertebrate, invertebrate, marine, or plant fossil remains.

The paleontological sensitivity for a geologic formation is determined by the potential for that formation to produce significant nonrenewable fossils. This determination is based on what fossil resources the particular geologic formation has produced in the past at other nearby locations. Determinations of paleontologic sensitivity must consider not only the potential for yielding vertebrate fossils but also the potential of yielding a few significant fossils that may provide new and significant taxonomic, phylogenetic, and/or stratigraphic data.

The Society of Vertebrate Paleontology issued a set of standard guidelines intended to assist paleontologists to assess and mitigate any adverse effects/impacts to nonrenewable paleontological resources. The guidelines defined four categories of paleontological sensitivity for geologic units that might be impacted by a proposed project, as listed below (Society of Vertebrate Paleontology 2010:1-2):

- **High Potential**: Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- **Undetermined Potential**: Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment.
- **Low Potential**: Rock units that are poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances.
- **No Potential**: Rock units that have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

SETTING

The project area is situated in the northern portion of the Peninsular Ranges geomorphic province, which is bounded on the north by the Transverse Ranges province, on the east by the Colorado Desert province, and on the west by the Pacific Ocean (Jenkins 1980:40-41; Harms 1996:150). More specifically, the project area lies in the Gabelon Hills, a group of rolling hills on the northeastern side of the Temescal Valley, approximately two miles across the narrow valley from the base of the Santa Ana Mountains.

The Gabelon Hills constitute one of the high portions of the Perris Block, which is defined by English (1926) as the region between the San Jacinto and Elsinore-Chino fault zones. It is bounded on the north by the Cucamonga (San Gabriel) Fault and on the south by a vaguely delineated boundary near the southern end of the Temecula Valley (*ibid.*). This structural block is considered to have been active since Pliocene time (Woodford et al. 1971:3421). The Pliocene- and Pleistocene-age non-marine sedimentary rocks filling the valley areas have produced a few vertebrate fossils, as well as a few invertebrate fossil remains (Mann 1955:13).

The project area consists of an irregularly shaped tract of partially developed land containing a clay-processing facility, seven motorcycle-testing facilities, a remote-controlled model airplane field, storage areas, and a residence, all concentrated on the hilltops that have evidently been leveled in the past (Figs. 3, 4). Elevations on the property range approximately from 960 feet to 1,165 feet above mean sea level. The rugged slopes of the hillside at lower elevations are currently undeveloped (Figs. 3, 4).

The native vegetation in the area belongs to the Coastal Sage Scrub plant community and includes California sagebrush, buckwheat, manzanita, gooseberry, California aster, golden bush, and coyote brush. The existing vegetation on the property features a mix of native and invasive species, such as buckwheat, broom baccharis, sycamore and oak trees, tumbleweed, wild mustard, foxtail, and other small grasses and shrubs. Introduced landscaping plants were also observed around buildings and along roads. The ground surface on the hilltops and along the various roads has been greatly disturbed by past construction activities, but retains much more of its natural character on the lower slopes (Fig. 4).

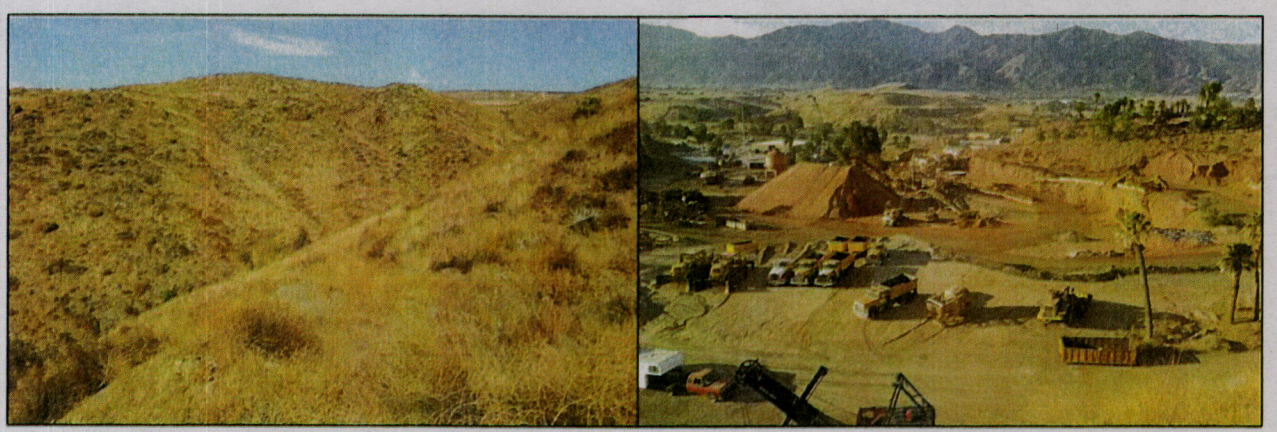

Figure 4. Typical landscapes in the project area. *Left*: view to the north across the western portion; *right*: clay-processing facility, view to the south. (Photographs taken on November 17 and 20, 2017)

METHODS AND PROCEDURES

RECORDS SEARCHES

The paleontological records searches for this study were provided by the San Bernardino County Museum (SBCM) in Redlands and the Natural History Museum of Los Angeles County (NHMLAC) in Los Angeles. These institutions maintain files of regional paleontological localities as well as supporting maps and documents. The records search results are used to identify known previously performed paleontological resource assessments as well as known paleontological localities within a one-mile radius of the project area. Copies of the records search results are attached to this report in Appendix 2.

LITERATURE REVIEW

In conjunction with the records searches, CRM TECH geologist/paleontologist Harry M. Quinn, California Professional Geologist #3477, pursued a literature review on the project area. Sources consulted during this part of the research include primarily topographic, geologic, and soil maps of the surrounding area, published geologic literature pertaining to the project location, and other materials in the CRM TECH library, including unpublished reports produced during similar surveys on nearby properties.

FIELD SURVEY

On November 17 and 20, 2017, CRM TECH paleontological surveyors Daniel Ballester, Nina Gallardo, and Ben Kerridge carried out the field survey of the project area under the direction of Harry M. Quinn. The survey was completed on foot by walking a series of parallel transects spaced 15 meters (approximately 50 feet) apart. On the relatively level hilltops, the transects were oriented in the north-south and northeast-southwest directions, in conformation with existing built-environment features. On the steep hillside, the transects were laid out along the natural contour lines. In this way, the ground surface in the entire project area was systematically and carefully examined to determine the soil types, to verify the geological formations, and to look for any indications of paleontological remains. Visibility of the native ground surface ranged widely from poor (virtually 0%) to good (80%) depending on the density of the vegetation growth.

RESULTS AND FINDINGS

RECORDS SEARCHES

The paleontological resources records searches by the NHMLAC and the SBCM identified no known vertebrate paleontological localities within the project area. However, the NHMLAC reported fossil localities nearby from the same or similar sediments as those known to be present at depth in the lower-lying terrain in the southern and central portions of the project area (McLeod 2017; see App. 2). The nearest fossil localities identified by the NHMLAC were discovered a few miles away in the vicinity of Corona, Canyon Lake, and Lake Elsinore, and produced fossils remains of deer (*Odocoileus*), horse (*Equus* sp.), and camel (*Camelops hesternus*; McLeod 2017:1). The

SBCM reported a fossil locality roughly three quarters of a mile southwest of the project area, but the sediments at that locality are not present within the project boundaries (Gilbert 2017:2).

According to the SBCM, the project area contains surficial and subsurface sediments of Holocene to Pleistocene origin (**Qya_g**) and some of Triassic age (**T_Rmu**), which have a low potential to contain significant nonrenewable paleontological resources (Gilbert 2017:2). The NHMLAC states that the elevated terrain in most of the project area contains metamorphic rocks that will not produce fossil remains, while the lower elevations contain potentially fossiliferous sediments at depth below the younger Quarternary alluvium (McLeod 2017:1).

Based on these findings, the NHMLAC and the SBCM assigned most of the project area a low potential for significant nonrenewable paleontological resources. However, the undisturbed older, finer-grained Quarternary sediments at depth in the areas at lower elevations are considered to have a potential for such resources (Gilbert 2017; McLeod 2017).

LITERATURE REVIEW

The surface geology within the project area has been mapped by Jahns (1954:Plate 3) as **Kp**, **Jh**, and **Qal**. **Kp** represents Cretaceous-age plutonic rocks of the southern California batholith, described as "mainly tonolite, granodiorite, and gabbroic rocks" (*ibid.*). **Jh** consists of hypabyssal intrusive rocks of Jurassic age, while **Qal** represents "alluvial-fan, flood-plain, swamp, lake, and dune deposits" of Recent origin (*ibid.*).

The presence of fossils in limestone lenses within the Bedford Canyon formation in the Santa Ana Mountains has been reported by Gray (1961:12-13). This formation consists of metasedimentary rocks similar to those reported to be present within the project area. Hill et al. (1991:Plate 1A) maps the geology in the project area as **ms** (metasedimentary rocks of uncertain age) and **Qya** (younger alluvium of Holocene age). The **ms** sediments are described as unconsolidated sand, gravel, and silt associated with intermittent river, stream, and alluvial fan deposits (*ibid.*).

Morton and Weber (2001) maps two types of sediments within project boundaries (Fig. 5). One of these is **M_zu**, namely metasedimentary rocks of Mesozoic age, which include a wide variety of low-grade metasedimentary rocks (*ibid*). The other sediment is **Qya_g**, or young axial channel deposits of Holocene and late Pleistocene age, described as "gray unconsolidated alluvium consisting of fine-grained sand and silt" (*ibid.*). Morton and Miller (2006) maps the geology in the project area as **T_Rmu** (Triassic-age meta-sedimentary rocks) and **Qya_g** (Holocene- to late Pleistocene-age sedimentary rocks).

Knecht (1971:Map Sheet 93) maps a variety of soil types within the project area, primarily **LpF2**. These soils types are listed below:

- **LpF2:** Lodo rocky loam, 25-50% slopes, eroded, found on rolling to hilly upland areas;
- **CmC:** Cortina cobbly loamy sand, 2-8% slopes;
- **CnC:** Cortina gravelly coarse sandy loam, 2-8% slopes, found on alluvial fans and in valley fills;
- **RuF:** Rough broken lands, alluvial materials on remnants of old alluvial fans and terraces.

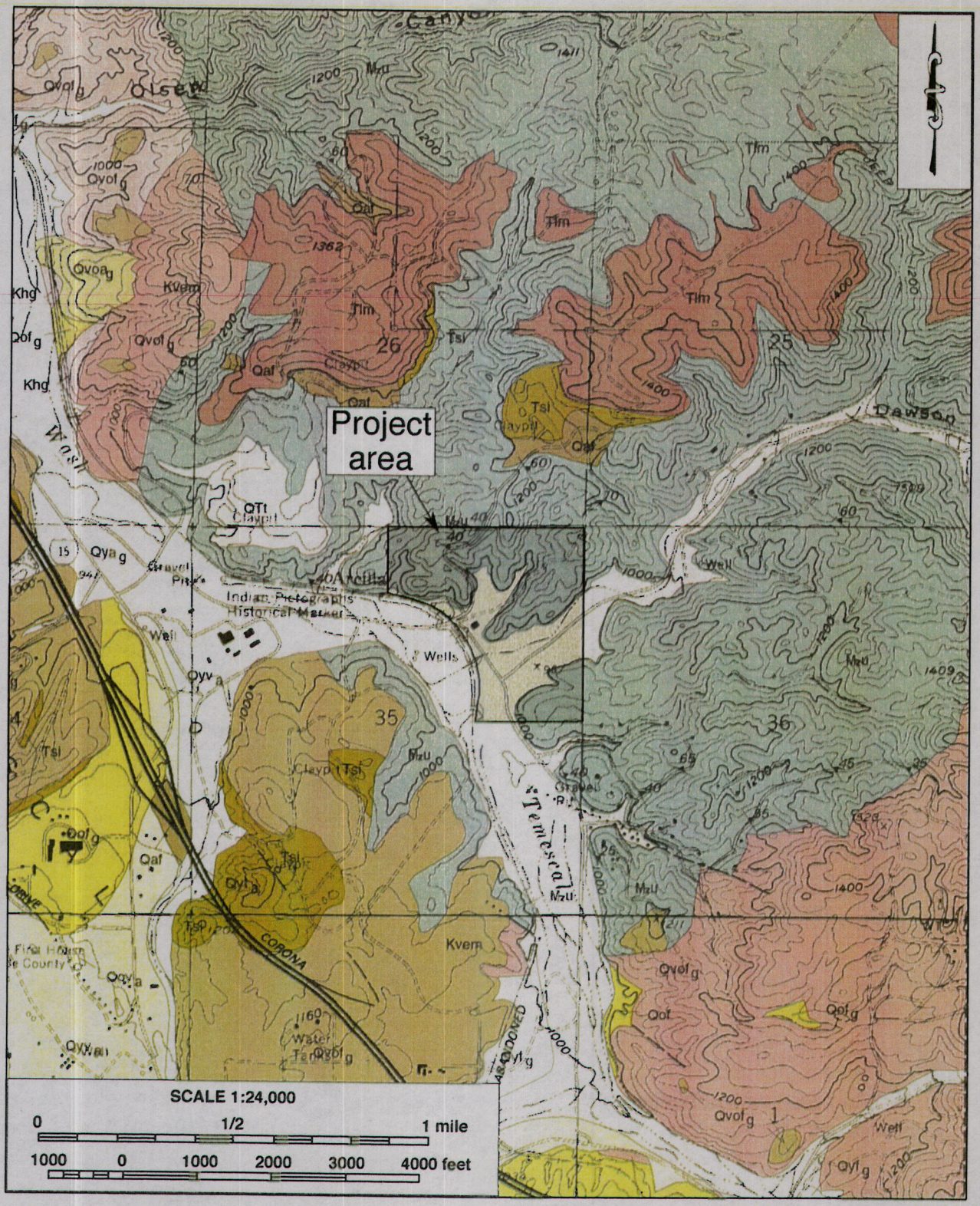

Figure 5. Geologic map of the project area. (Based on Morton and Weber 2001)

FIELD SURVEY

The field survey yielded negative findings for potential paleontological resources, and no surficial indications of any fossil remains were observed within or adjacent to the project area. As stated above, the ground surface in much of the project area was heavily disturbed during past developments on the property, especially where the ground surface has been leveled and graded to accommodate the various buildings/structures, roads, clay processing yard, motorcycle test tracks, and model airplane runway.

CONCLUSION AND RECOMMENDATIONS

CEQA guidelines (Title 14 CCR App. G, Sec. V(c)) require that public agencies in the State of California determine whether a proposed project would "directly or indirectly destroy a unique paleontological resource" during the environmental review process. The present study, conducted in compliance with this provision, is designed to identify any significant, nonrenewable paleontological resources that may exist within or adjacent to the project area and to assess the possibility for such resources to be encountered in future excavation and construction activities.

In summary of the research results outlined above, the surface sediments in the project area have been extensively disturbed in the past, and are therefore low in paleontological sensitivity. Most of subsurface formation in the project area consist of metamorphic rocks that are unlikely to contain any fossil remains. These rocks are also assigned a low paleontological sensitivity. However, the older alluvial sediments underlying the younger Quarternary alluvium on the surface at lower elevations in the southern and central portions of the project area appear to have a medium to high paleontological sensitivity, as fossil remains have been recovered in the surrounding area from similar alluvium and rock sequences. Limestone lenses recovered elsewhere from sediments similar to those in the project area have produced fossil remains as well.

Based on these findings, and considering the nature of the proposed project, CRM TECH recommends to the County of Riverside that no paleontological mitigation measures are currently required. However, if ground-disturbing activities become necessary in the future at lower elevations within the project area, or if limestone lenses are discovered elsewhere during such activities, a paleontological resource impact mitigation program should be developed and implemented to prevent potential effect on significant, nonrenewable paleontological resources or reduce the effect to a level less than significant.

As the primary component of the mitigation program, paleontological monitoring should be required during all earth-moving operations within paleontologically sensitive sediments identified in the field. The mitigation program should be developed in accordance with the provisions of CEQA as well as the proposed guidelines of the Society of Vertebrate Paleontology (2010), and should include but not be limited to the following components:

- Excavations in sediments identified as likely to contain fossil remains should be monitored for potential paleontological resources. The monitor should be prepared to quickly salvage fossils as they are unearthed to avoid construction delays, and should collect samples of sediments that are

likely to contain fossil remains of small vertebrates or in vertebrates. The monitor must have the power to temporarily halt or divert grading equipment to allow for the removal of abundant or large specimens.

- Collected samples of sediment should be processed to recover small fossils, and all recovered specimens should be identified and curated at a repository with permanent retrievable storage.
- A report of findings, including an itemized inventory of recovered specimens, should be prepared upon completion of the procedures outlined above. The report should include a discussion of the significance of the paleontological findings, if any. The report and the inventory, when submitted to the County of Riverside, would signify completion of the program to mitigate potential impacts on paleontological resources.

CERTIFICATION: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this paleontological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

DATE: December 27, 2017

SIGNED: Harry M. Quinn

Print Name: Harry M. Quinn

REFERENCES

English, W.A.
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APPENDIX 1

PERSONNEL QUALIFICATIONS

PROJECT GEOLOGIST/PALEONTOLOGIST
Harry M. Quinn, M.S., California Professional Geologist #3477

Education

1968 M.S., Geology, University of Southern California, Los Angeles, California.
1964 B.S, Geology, Long Beach State College, Long Beach.
1962 A.A., Los Angeles Harbor College, Wilmington, California.

- Graduate work oriented toward invertebrate paleontology; M.S. thesis completed as a stratigraphic paleontology project on the Precambrian and Lower Cambrian rocks of Eastern California.

Professional Experience

2000- Project Paleontologist, CRM TECH, Riverside/Colton, California.
1998- Project Archaeologist, CRM TECH, Riverside/Colton, California.
1992-1998 Independent Geological/Geoarchaeological/Environmental Consultant, Pinyon Pines, California.
1994-1996 Environmental Geologist, E.C E.S., Inc, Redlands, California.
1988-1992 Project Geologist/Director of Environmental Services, STE, San Bernardino, California.
1987-1988 Senior Geologist, Jirsa Environmental Services, Norco, California.
1986 Consulting Petroleum Geologist, LOCO Exploration, Inc. Aurora, Colorado.
1978-1986 Senior Exploration Geologist, Tenneco Oil E & P, Englewood, Colorado.
1965-1978 Exploration and Development Geologist, Texaco, Inc., Los Angeles, California.

Previous Work Experience in Paleontology

1969-1973 Attended Texaco company-wide seminars designed to acquaint all paleontological laboratories with the capability of one another and the procedures of mutual assistance in solving correlation and paleo-environmental reconstruction problems.

1967-1968 Attended Texaco seminars on Carboniferous coral zonation techniques and Carboniferous smaller foraminifera zonation techniques for Alaska and Nevada.

1966-1972, 1974, 1975 Conducted stratigraphic section measuring and field paleontological identification in Alaska for stratigraphic controls. Pursued more detailed fossil identification in the paleontological laboratory to establish closer stratigraphic controls, mainly with Paleozoic and Mesozoic rocks and some Tertiary rocks, including both megafossil and microfossil identification, as well as fossil plant identification.

1965 Conducted stratigraphic section measuring and field paleontological identification in Nevada for stratigraphic controls. Pursued more detailed fossil identification in the paleontological laboratory to establish closer stratigraphic controls, mainly with Paleozoic rocks and some Mesozoic and Tertiary rocks. The Tertiary work included identification of ostracods from the Humboldt and Sheep Pass Formations and vertebrate and plant remains from Miocene alluvial sediments.

Memberships

Society of Vertebrate Paleontology; American Association of Petroleum Geologists; Association of Environmental Professionals; Rocky Mountain Association of Geologists, Pacific Section; Society of Economic Paleontologists and Mineralogists; San Bernardino County Museum.

Publications in Geology

Five publications in Geology concerning an oil field study, a ground water and earthquake study, a report on the geology of the Santa Rosa Mountain area, and papers on vertebrate and invertebrate Holocene Lake Cahuilla faunas.

PALEONTOLOGICAL SURVEYOR
Daniel Ballester, M.S.

Education

2013	M.S., Geographic Information System (GIS), University of Redlands, California.
1998	B.A., Anthropology, California State University, San Bernardino.
1997	Archaeological Field School, University of Las Vegas and University of California, Riverside.
1994	University of Puerto Rico, Rio Piedras, Puerto Rico.

- Cross-trained in paleontological field procedures and identifications by CRM TECH Geologist/Paleontologist Harry M. Quinn.

Professional Experience

2002-	Field Director/GIS Specialist, CRM TECH, Riverside/Colton, California.
2011-2012	GIS Specialist for Caltrans District 8 Project, Garcia and Associates, San Anselmo, California.
2009-2010	Field Crew Chief, Garcia and Associates, San Anselmo, California.
2009-2010	Field Crew, ECorp, Redlands.
1999-2002	Project Archaeologist, CRM TECH, Riverside, California.
1998-1999	Field Crew, K.E.A. Environmental, San Diego, California.
1998	Field Crew, A.S.M. Affiliates, Encinitas, California.
1998	Field Crew, Archaeological Research Unit, University of California, Riverside.

PALEONTOLOGICAL SURVEYOR
Ben Kerridge, M.A.

Education

2014	Archaeological Field School, Institute for Field Research, Kephallenia, Greece.
2010	M.A., Anthropology, California State University, Fullerton.
2009	Project Management Training, Project Management Institute/CH2M HILL.
2004	B.A., Anthropology, California State University, Fullerton.

Professional Experience

2015-	Project Archaeologist/Paleontological Surveyor/Report Writer, CRM TECH, Colton, California.
2015	Teaching Assistant, Institute for Field Research, Kephallenia, Greece.
2009-2014	Publications Delivery Manager, CH2M HILL, Santa Ana, California.
2010-	Naturalist, Newport Bay Conservancy, Newport Beach, California.
2006-2009	Technical Publishing Specialist, CH2M HILL, Santa Ana, California.

PALEONTOLOGICAL SURVEYOR
Nina Gallardo, B.A.

Education

2004 B.A., Anthropology/Law and Society, University of California, Riverside.

Honors and Awards

2000 Dean's Honors List, University of California, Riverside.

Professional Experience

2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.

REPORT WRITER
Deirdre Encarnación, M.A.

Education

2003 M.A., Anthropology, San Diego State University, California.
2000 B.A., Anthropology, minor in Biology, with honors; San Diego State University, California.
1993 A.A., Communications, Nassau Community College, Garden City, N.Y.

2001 Archaeological Field School, San Diego State University.
2000 Archaeological Field School, San Diego State University.

Professional Experience

2004- Project Archaeologist/Report Writer, CRM TECH, Riverside/Colton, California.
2001-2003 Part-time Lecturer, San Diego State University, California.
2001 Research Assistant for Dr. Lynn Gamble, San Diego State University.

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Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

9 November 2017

CRM Tech
1016 East Cooley Drive, Suite B
Colton, CA 92324

Attn: Nina Gallardo, Project Archaeologist

re: Paleontological resources for the proposed Corona Clay / Deleo Property Project, CRM TECH No. 3283P, near the City of Corona, Riverside, project area

Dear Nina:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Corona Clay / Deleo Property Project, CRM TECH No. 3283P, near the City of Corona, Riverside, project area as outlined on the portion of the Lake Mathews USGS topographic quadrangle map that you sent to me via e-mail on 26 October 2017. We do not have any vertebrate fossil localities that lie directly within the proposed project boundaries, but we do have localities somewhat nearby from sedimentary deposits similar to those that may occur subsurface in the proposed project area.

In the elevated terrain in most of the proposed project area there are exposures of metamorphic rocks that will not contain recognizable fossils. In the lower lying terrain in the central and southern portions of the proposed project area there are surface deposits of younger Quaternary Alluvium, derived as alluvial fan deposits from the surrounding hills via the drainage in Dawson Canyon or from Temescal Creek, both of which currently flow through the proposed project area. These younger Quaternary alluvial deposits typically do not contain significant fossil vertebrates remains in the uppermost layers, but at relatively shallow depth there may be finer-grained older Quaternary deposits that may well contain significant vertebrate fossils. Our closest fossil vertebrate locality from these older Quaternary deposits is LACM 1207, between Corona and Norco northwest of the proposed project area north of the Riverside Freeway (Highway 91) on the west side of Cota Street in the Temescal Wash area, that produced a fossil specimen of deer, *Odocoileus*, at unknown depth. Our next closest fossil vertebrate localities from these older Quaternary deposits are LACM

(CIT) 572 and LACM 6059, southeast of the proposed project area just northeast and east of the current Lake Elsinore, along with LACM 5168, also southeast of the proposed project area but further eastward around Railroad Canyon Reservoir, that produced fossil specimens of horse, *Equus*, and camel, *Camelops hesternus*.

Excavations in the metamorphic rocks exposed in the elevated terrain in the proposed project area will not encounter any recognizable fossils. Shallow excavations in the younger Quaternary Alluvium exposed in the lower lying terrain in the proposed project area are unlikely to encounter significant fossil vertebrate remains. Deeper excavations in the latter areas that extend down into older and perhaps finer-grained Quaternary sediments, however, may well encounter significant vertebrate fossils. Any substantial excavations in the sedimentary deposits in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any specimens without impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

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SAN BERNARDINO COUNTY

San Bernardino County Museum
Division of Earth Sciences

Ian Gilbert
Curator of Earth Sciences

email:
igilbert@sbcm.sbcounty.org

16 November, 2017

CRM TECH
Attn: Nina Gallardo
1016 East Cooley Drive
Colton, CA 92324

PALEONTOLOGY LITERATURE / RECORDS REVIEW, Corona Clay/Deleo Property Project (CRM TECH Contract No. 3283P)

Dear Ms. Gallardo,

The Division of Earth Sciences of the San Bernardino County Museum (SBCM) has completed a literature review and records search for the above-named project in Riverside County, California. The proposed project is located near the City of Corona, east of Tom's Farm, off Temescal Canyon Road, southwest of the El Sobrante Landfill, Section 35, Township 4 South, Range 6 West, San Bernardino Base and Meridian, as seen on the United States Geological Survey (USGS) 7.5 minute Lake Mathews, California, topographic quadrangle map (1967 edition).

Previous geologic mapping by Morton and Miller (2006) indicates that the proposed project property traverses surface and subsurface rocks of Holocene to Late Pleistocene-aged young axial-channel gravel deposits (**Qya_g**), and Triassic Period-aged undifferentiated low-to high-grade metamorphic rocks of Menifee Valley (**T_Rmu**) (Figure 1). Both the Holocene to Pleistocene-aged unit, **Qya_g**, and the Triassic Period-aged unit, **T_Rmu**, have low potential to contain significant nonrenewable paleontological resources, and are therefore assigned low paleontological sensitivity.

For this review, I conducted a search of the Regional Paleontological Locality Inventory (RPLI) at the SBCM and a literature search through the SBCM Earth Sciences library. The results of this search indicate that no recorded paleontological resource localities are present within the proposed project. One fossil locality, SBCM 5.5.1, is recorded by the SBCM about ¾ of a mile southwest of the proposed project in sediments mapped by Morton and Miller (2006) as Paleocene-aged Silverado Formation (**Tsi**) (Figure 1). However, this unit is not found within the proposed project boundaries.

Recommendations

The results of the literature review and the check of the RPLI at the SBCM demonstrate that excavation in surficial and subsurface exposures of Holocene to Pleistocene-aged unit, **Qya_g**, and the Triassic Period-aged unit, **$T_R$mu,** have low potential to adversely impact significant nonrenewable paleontological resources. These units have low paleontological sensitivity. *No program to mitigate adverse impacts to fossil resources is recommended at this time for these units*.

Please do not hesitate to contact us with any further questions that you may have.

Sincerely,

Ian Gilbert, Curator of Earth Sciences
Division of Earth Sciences
San Bernardino County Museum

References

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Figures (CONFIDENTIAL)

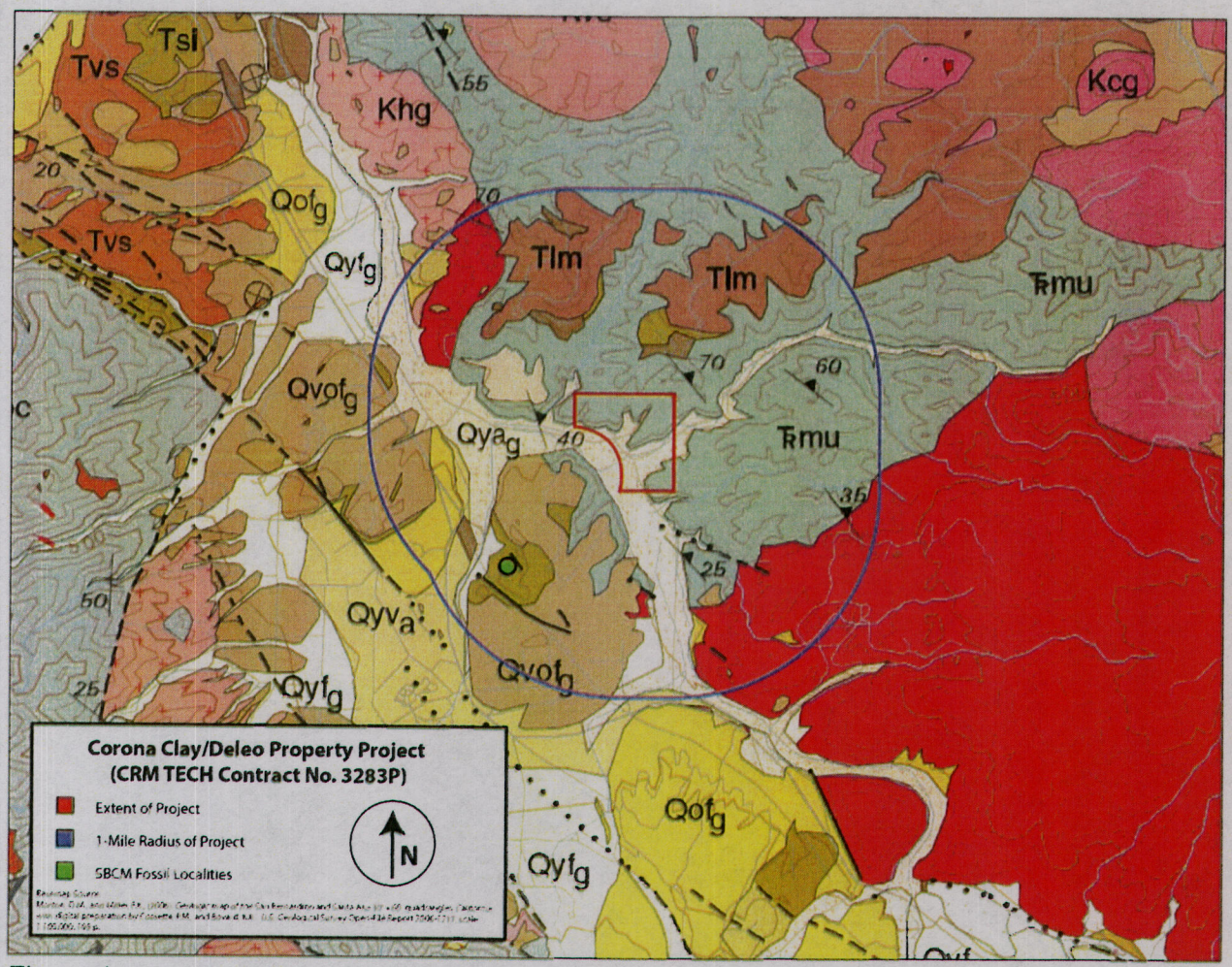

Figure 1.

CHJ Consultants
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77-564A Country Club Drive, Suite 122, Palm Desert, CA 92211 ◆ Phone (760) 772-8234 ◆ Fax (909) 503-1136

March 13, 2015

Corona Clay Company
22079 Knabe Road
Corona, CA 92883
Attention: Mr. Craig Deleo

Job No. 15112-8

Dear Mr. Deleo:

Attached herewith is the slope stability evaluation for the area of concern at Corona Clay, located at Park Canyon Road and Clay Canyon Road in Riverside County, California.

This report was based upon a scope of services generally outlined in our proposal, dated February 23, 2015, and other written and verbal communications.

We are pleased to provide geotechnical services for this project. If you have questions or comments concerning this report, please contact this firm at your convenience.

Respectfully submitted,
CHJ CONSULTANTS

Jay J. Martin, E.G.
Vice President

JJM:lb

SLOPE STABILITY EVALUATION
AREA OF CONCERN AT CORONA CLAY
PARK CANYON ROAD AND CLAY CANYON ROAD
RIVERSIDE COUNTY, CALIFORNIA
PREPARED FOR
CORONA CLAY COMPANY
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RIVERSIDE COUNTY, CALIFORNIA
PREPARED FOR
CORONA CLAY COMPANY
JOB NO. 15122-8

INTRODUCTION

We have prepared a slope stability evaluation for the area of concern at the Corona Clay Company facility in Riverside County, California. The area of concern includes an existing steep bedrock slope in the northern portion of the facility, which is proposed to be flattened to a more stable inclination. Our services included evaluation of kinematic and global slope stability for suitable rock slopes under Surface Mining and Reclamation Act (SMARA) criteria for reclaimed slopes. The purposes of our evaluation were to evaluate the site conditions and provide recommendations for configuration of suitable reclamation slopes with regard to kinematic and limit-equilibrium stability.

To orient our evaluation, we were provided with the following documents:

- Corona Clay Grading Exhibit – Current Conditions, prepared by K &A Engineering at 100 scale, dated January 26, 2015. This map shows the "area of concern" that includes the oversteepened slope.

- Corona Clay Grading Exhibit – 1.5:1 Slope Grading, prepared by K &A Engineering at 40 scale, dated February 23, 2015, 2015. This map shows one potential configuration for the finished slope. Steeper or flatter configurations may be utilized for the final slope.

- Black and white orthophoto aerial image of the facility dated October 3, 2014.

The approximate location of the "area of concern" (site) is shown on the attached Geologic Index Map (Enclosure A-1). The results of our evaluation, together with our conclusions and recommendations, are presented in this report.

SCOPE OF SERVICES

The scope of services provided during this slope stability evaluation included the following:

- Review of published geologic mapping
- Examination of Riverside County Flood Control and private source aerial imagery dated 1963, 1974, 1980, 1990, 1995 and 2014
- Examination of Google Earth aerial imagery flown between 1994 and 2015
- Site-specific geologic mapping and collection of geologic structural data
- Collection and laboratory testing of large rock samples
- Evaluation of site seismic setting and development of a suitable design acceleration coefficient
- Geologic (kinematic) evaluation of suitable rock slopes and global slope stability calculations of suitable rock slopes under static and seismic conditions
- Evaluation of geologic hazards including seismic shaking levels
- Evaluation of stability results and preparation of a report summarizing our findings and providing recommendations for final slope reclamation

SITE DESCRIPTION

Corona Clay is located along the east side of Temescal Valley and occupies a portion of the relatively planar valley floor and the adjacent steep hillside terrain. It includes an active clay processing area with screens and other equipment. A large collection of vintage mining equipment is present on the northern portion of the site. The site also includes several clay motorcycle tracks and portable offices. Significant grading has occurred associated with road building and flattening of the processing and track areas. The slope area addressed in this evaluation is located along the north side of the processing area. Review of old topographic mapping (USGS) indicates that the southern end

of a bedrock ridge was removed, enlarging the processing area and resulting in the existing steep slope.

It is our understanding that the site was used as an aggregate mine beginning in the early part of 20th century, decades prior to the inception of SMARA in 1975. Current use of the facility includes processing of recycled clay and does not include mining.

PROJECT CONSIDERATIONS

It is our understanding that the County of Riverside has requested that the facility be entitled under the requirements of SMARA, given its history as a mine and current and future planned uses. Among other things, SMARA requires that reclaimed slopes be "stable." The scope of services included in this report provides calculated factors of safety for the steepest stable reclaimed slope configuration.

The 1.5:1 Slope Grading exhibit shows a reclaimed slope with no benches. It is desired to reduce the footprint of the final slope to the minimum size consistent with a stable SMARA slope. Final slope recommendations for a slope as steep as 1:1 are included in this report.

FIELD INVESTIGATION

A certified engineering geologist mapped existing quarry exposures and native bedrock outcrops on March 3, 2015. Rock exposures within the area include surface cuts. Adjacent undisturbed areas include scattered bedrock outcrops. Our evaluation included examination of existing cut exposures, and outcrops and surface mapping of the mine area. We mapped approximate geologic contacts using aerial imagery. Structural data, including joint, shear and foliation orientations, were measured using a Brunton compass and clinometer. Structural and geologic data were recorded. Our field program focused on rock strength and condition and identification of continuous features that could affect kinematic stability of quarry slope faces. The location and extent of available exposures, including mined cut slopes and road cuts, provided the data necessary to characterize the structural

geology of the site. We used prior mapping by Weber (1977) for geologic unit nomenclature. A Geologic Map (Enclosure A-2), based on data collected during the field investigation and mapping review, is provided in Appendix A. Large samples of representative slope rock were collected and returned to our laboratory for analysis of unconfined compressive strength and unit weight. Geologic structural mapping areas referred to herein are numbered and indicated on the enclosed Geologic Map (Enclosure A-2).

GEOLOGIC SETTING

Corona Clay is located in Temescal Valley, part of the Peninsular Ranges geomorphic province. Temescal Valley is structurally dominated by branches of the Elsinore fault zone, which in this part of the valley consists of two subparallel strands: the Glen Ivy North and Glen Ivy South. This portion of the Peninsular Ranges is not dominated by the batholithic rocks common in much of the province. At the site, the bedrock consists of the Bedford Canyon Formation of Jurassic age. The Bedford Canyon Formation, as mapped by Weber (1977), consists of metasedimentary rocks (slate with lesser quartzite). The Bedford Canyon Formation is present as screens and roof pendants in the Southern California batholith.

Two geologic units were mapped on the site and are described below.

Jbc: Bedford Canyon Formation

Low-grade metamorphic rocks of mixed composition of the Jurassic age Bedford Canyon metasediments comprise all of the bedrock at the site. These rocks are poorly exposed on native slopes but are well exposed in steep cuts. They consist of slate with minor quartzite, with colors varying from gray to brown. Foliation is relatively uniform, inclined at a moderate angle (30 to 60 degrees) toward the northeast. Bedford Canyon rocks are moderately to intensely jointed, producing a blocky fabric. Dark brown to rust-colored staining is present along most of the joint surfaces. Very rare beds of quartzite were observed. In outcrop, relict interbeds of quartzite and slate exhibit distinctive boudinage deformation.

f: Fill

Fill is associated with historical-age grading/mining at the site. Fill was mapped in the processing pad area extending up to the toe of the steep and high, southwest-facing slope. Fill is also associated with two benches/roads oriented in a northeast direction. The fill is considered generally unsuitable for exposure in future cut slopes.

Stream channel deposits of late Holocene age underlie the fill in northeast-trending canyons located on the northwest and southeast sides of the site. Due to the burial by fill and/or surface disturbance, the stream channel deposits are not shown as a mapped unit.

GEOLOGIC STRUCTURE

Foliation in the Bedford Canyon Formation dips uniformly at a moderate angle to the northeast. A prominent joint set dips steeply (60 degrees) to the southwest, roughly normal to the foliation. This feature is prominently exposed in the steep cut. A third, less prominent joint set strikes northeast and dips moderately to the northwest. These three discontinuities form a roughly orthogonal set that dominates the appearance of the cut exposures at the site. All three discontinuities are spaced at approximately 12 inches or less, creating relatively small clasts when the material is mechanically excavated. All joint and foliation surface observed were rough.

Faults or fault-related features were not observed during field mapping. A few apparent shears (apparent gouge a few millimeters thick) were observed parallel to foliation, but no significant gouge or slickensides were observed.

FAULTING AND SEISMICITY

Regional seismic sources were assessed to determine ground motion conditions for evaluation of potential seismic effects on stability of potential finished slopes. We calculated deterministic peak ground accelerations for the regional seismic sources. These data are presented in the following sections.

REGIONAL FAULTS:

The tectonics of Southern California are dominated by the interaction of the North American and Pacific tectonic plates, which slide past each other in transform motion. Although some motion may be accommodated by rotation of crustal blocks such as the western Transverse Ranges (Dickinson, 1996), the San Andreas fault zone is the major surface expression of the tectonic boundary and accommodates most transform slip between the Pacific and North American Plates. Some slip is accommodated by other northwest-trending strike-slip faults related to the San Andreas system, such as the San Jacinto and the Elsinore faults. Local compressional or extensional strain resulting from the transform motion along this boundary is accommodated by left-lateral, normal and reverse faults such as the Cucamonga fault

Elsinore Fault Zone

The Glen Ivy segment of the Elsinore fault zone is the nearest major active fault, about 1-1/2 miles southwest of the site. The Elsinore fault zone is typified by multiple en echelon and diverging faults. To the north, it splays into the Whittier and Chino faults. The Elsinore is primarily a strike-slip fault zone; however, transtentional features such as the graben of the Elsinore and Temecula Valleys also occur. Most Elsinore fault traces are demonstrably active (Holocene) as documented by Saul (1978), Rockwell and others (1986) and Wills (1988).

The southern segment of the northwest-trending Chino-Central Avenue fault, a northern splay of the Elsinore fault zone, is approximately 7 miles northwest of the site and is assigned a 6.8 magnitude by Petersen and others (2008).

The west-to-northwest-trending Whittier fault is approximately 13-1/2 miles northwest of the site. The Whittier fault has almost pure right-lateral strike slip (Rockwell and others, 1986). Evidence for activity includes offset of Holocene sediments (Hannan and Lung, 1979) and historic microseismicity (Yerkes, 1985). The 2014 Working Group on California Earthquake Probabilities (Field and others, 2015) assigned a 5 percent probability of a magnitude ≥ 6.7 earthquake on the Elsinore-Whittier fault for the 30-year interval from 2014 to 2044.

San Jacinto Fault Zone

The San Jacinto fault zone is a system of northwest-trending, right-lateral, strike-slip faults approximately 20 miles northeast of the site. More large historic earthquakes have occurred on the San Jacinto fault than any other fault in Southern California. The 2014 Working Group on California Earthquake Probabilities (Field and others, 2015) assigned a 9 percent probability of a magnitude ≥ 6.7 earthquake on the San Jacinto fault for the 30-year interval from 2014 to 2044.

Based on the data of Matti and others (1992), a portion of the San Jacinto fault may accommodate most of the slip between the Pacific and the North American Plates. Matti and others (1992) suggest this motion is transferred to the San Andreas fault in the Cajon Pass region by "stepping over" to parallel fault strands that include the Glen Helen fault.

San Andreas Fault Zone

The San Andreas fault zone is located along the southwest margin of the San Bernardino Mountains, approximately 29 miles northeast of the site. The mountain front in the San Bernardino area approximately marks the active trace of the San Andreas fault, here characterized by youthful fault scarps, vegetation lineaments, springs and offset drainages. The 2014 Working Group on California Earthquake Probabilities (Field and others, 2015) assigned a 53 percent probability of a magnitude ≥ 6.7 earthquake on the Southern San Andreas fault for the 30-year interval from 2014 to 2044.

Blind Thrust Faults

The San Joaquin Hills fault is an inferred blind thrust beneath the San Joaquin Hills in coastal Orange County, southern California. The vertical surface projection of the San Joaquin Hills blind thrust (SJHT) is approximately 16 miles southwest of the site. The SJHT is southwest dipping and presumably gave rise to uplift of the San Joaquin Hills. Measurement of uplifted back-bay shorelines and fossil dating suggests an uplift rate of 0.24 meter per 1,000 years and an average earthquake recurrence of 2,500 years on the SJHT (Grant and others, 1999). The SJHT has a postulated potential to produce earthquakes with magnitudes up to Mw 7.3. A latest large event may have occurred in 1769 A.D. based on radiocarbon dating of uplifted marsh sediments (Grant and others, 2002).

The Puente Hills Blind-Thrust (PHBT) is a system of buried thrust fault ramps that extend from beneath Los Angeles to the Puente Hills of eastern Los Angeles County and Orange County. The PHBT is identified in the subsurface by seismic reflection profiles, petroleum well data and precisely located seismicity and at the surface by a series of contractional folds. Fault segments of the PHBT are the Los Angeles, Santa Fe Springs and Coyote Hills (Shaw and Shearer, 1999). This buried fault system is capable of producing estimated earthquakes of Mw 6.5 to 6.6 on individual segments or a Mw 7.1 earthquake as a group (Shaw and others, 2002). A study utilizing borehole data collected from sediments overlying the central segment of the PHBT indicates that subtle folding locally extends to the near surface and that four events occurred in the past 11,000 years (Dolan and others, 2003).

LOCAL FAULTS:

No active faults were identified within the site area during our review of published and unpublished literature and maps, stereoscopic aerial photographs or field mapping. Accordingly, ground fault rupture in the slope area is not anticipated.

As shown on Enclosures A-1 and A-2, a northwest-trending aerial photograph lineament was mapped by Weber (1977) through the bedrock ridge. No lineaments related to suspected faulting were observed on the aerial photographs reviewed. A joint surface striking N82W (the same strike as the

Weber lineament) was measured at map location 11, in a bulldozer cut less than 50 feet from the mapped lineament. Weber's lineament may be the expression of this relatively prominent joint set.

Several subparallel northeast-trending vegetational lineaments are visible in the east-facing portion of the native bedrock hillside north of the steep cut area on the site on the 1990 aerial photographs. These exist at a high angle to the foliation and may represent a joint set.

GROUND-SHAKING HAZARD

The ground-shaking hazard at the site was evaluated from a deterministic standpoint for use as a guide to formulate an appropriate seismic coefficient for use in slope stability analyses.

A deterministic evaluation of seismic hazard was performed for the Elsinore fault and other regional faults using the attenuation relations of Boore and Atkinson (2008), Campbell and Bozorgnia (2008) and Chiou and Youngs (2008). These data are summarized in the following table.

Table 1: Summary of Regional Seismic Sources

Fault (segments)	Magnitude	Distance (km)	Peak Ground Acceleration (g)
Elsinore (W+GI)	7.3	2.4	0.49
San Jacinto (SBV+SJV)	7.4	32	0.16
Cucamonga	6.7	43	0.09
San Andreas (SM+NSB+SSB)	7.6	47	0.13
San Joaquin Hills	7.1	28	0.16
Puente Hills	7.1	35	0.13

W=Whittier, GI=Glen Ivy, SBV=San Bernardino Valley, SJV=San Jacinto Valley, SM=South Mojave, NSB=North San Bernardino, SSB=South San Bernardino

We utilized Kh = 0.2 to model the psuedostatic condition for slope stability calculations, consistent with conservative application of methods described by Seed (1979). Seed (1979) considered the size of the sliding mass and earthquake magnitude in selection of Kh. For large slopes, Seed suggested Kh = 0.15 for sites near faults capable of generating magnitude 8.5 earthquakes. The closest fault to the site, the Elsinore fault, is assigned a characteristic magnitude of 7.3 for the Whittier and Glen Ivy segments. Based on the method of Seed (1979) and the seismic setting of the site, our selection of Kh = 0.20 is conservative and appropriate for evaluation of existing site slopes.

GROUNDWATER

We observed no seepage, springs, phreatophytes or other evidence for a groundwater table on or near the site during geologic mapping. The site is not located within an area of mapped liquefaction susceptibility. The area of Temescal Creek and Dawson Canyon are included within areas of "low" liquefaction susceptibility according to the Riverside County Integrated Project (2013). Bedrock underlies the proposed reclaimed slope and is not susceptible to liquefaction.

The site is located in subsection A of Section 35 of Township 4 South, Range 6 West. Groundwater data compiled by Western Municipal Water District (2014) indicate that groundwater occurs along the Temescal Wash channel at shallow depth. Measurements of water level for State Well Nos. 04S/06W-35G002 (located near the site and Temescal Wash) in March 2014, indicated a groundwater elevation at 992 feet above mean sea level (amsl). Since most of the valley bottom portions of Corona Clay are below 1,000 feet elevation, this data point suggests that shallow groundwater (less than 50 feet deep) may exist below the valley bottom at Corona Clay.

Based on the presence of non-liquefiable bedrock, the potential for liquefaction and other shallow groundwater-related hazards at the site is considered to be very low. Groundwater is not anticipated to significantly affect the stability of the proposed slopes; therefore, our evaluation considered dry conditions in the slope stability calculations.

SLOPE STABILITY

The term "landslide," as used in this report, refers to deep-seated slope failures that involve interbench-scale (whole slope) features with a potential to reduce the long-term stability of reclaimed slopes. Landslides are typically related to the structure of the parent material. In contrast surficial failures are shallow and potentially affect limited zones.

The susceptibility of a geologic unit to landsliding depends on various factors, primarily: 1) the presence and orientation of geologic structures, such as joints, fractures, faults or clay beds, 2) the height and steepness of the slope, 3) the presence and quantity of groundwater and 4) the occurrence of strong seismic shaking.

Our geologic mapping of the existing slope included observation of lithologic distribution and measurement of the orientation of bedrock structures that influence kinematic rock slope stability. Enclosure B-1 presents the measured orientation of joints, foliation and shears in tabular format. Data points are indicated by number. These kinematic data were evaluated using the Dips 6.0 software by Rocscience (2013). We performed kinematic analysis using this database (discussed in the section titled "Kinematic Analysis").

Jointing and foliation within the site is generally closely spaced (on the order of 12 inches or less) and moderately continuous (3 to 30 feet). Joint surfaces were generally rough. Our evaluation focused on the more continuous structures as these have a greater potential to define kinematic behavior in rock masses.

We evaluated the kinematic (potential/theoretical failure modes) and global (whole rock) slope stability of the proposed reclamation slope for representative material types.

Three of the largest available rock samples (boulders) with the fewest visible defects were taken from the slope and brought to our laboratory for measurement of unconfined compressive strength and

specific gravity. Two attempts at coring the boulders resulted in fragmentation of the samples. They were not suitable for direct measurement of compressive strength. Therefore, rock strength properties for global stability calculations were modeled using Hoek-Brown criteria and results of back calculation of an existing rock face. A discussion and summary of these analyses are presented below. The slope stability data and calculations are presented in Appendices B and C.

KINEMATIC ANALYSIS:

Kinematic analysis is the evaluation of rock slope stability based on the orientation of structural discontinuities including joints, faults, shear zones, bedding and foliations. Kinematic analysis addresses the potential failure mode(s) and does not consider mass, force, shear strength or cohesion along surfaces as in a limit-equilibrium analysis. Limit-equilibrium of specific structures is addressed by global analyses that were also performed for the proposed slopes. Structurally controlled kinematic failure modes include planar, wedge and topple failures. Circular failure of highly fractured rock masses is also a potential failure mode and is considered in the analysis of global stability (presented in "Global Stability Calculations").

The kinematic evaluation considers the slope azimuth (facing direction), slope angle (slope plane) and frictional sliding angle of a planar surface versus the orientation of individual planar or linear features utilizing a stereonet diagram. Planar features include foliation planes, joints, bedding and/or sheared zones. Linear features include plane intersections that are modeled as dip vectors. The stereonet shows features as points (representing dip vectors or poles to planes) or lines (representing planes at the surface of a sphere). Construction of a critical zone representing a combination of slope azimuth, angle and failure mode for planar, wedge or topple failure types allows evaluation of the relation of a particular discontinuity or discontinuity set to established potential failure criteria. Each plot includes a table that summarizes the number of features within the "critical" zone. The term "critical" refers only to the potential for failure along a given discontinuity based on its orientation relative to a free face surface. Other factors, such as the presence/absence of a releasing surface, roughness/cohesion of a surface or limit-equilibrium-type analysis, are addressed in limit-equilibrium stability analysis.

We evaluated a 205 degree slope azimuth (southwest facing direction) with a 45-degree slope angle. A data set was compiled from the measured discontinuities (Enclosure B-1).

Stereonet analysis for planar sliding and wedge sliding potential for the representative slope was performed utilizing the data from mapped geologic structures (Table B-1) and Dips 6.0 software by Rocscience (2013). Topple was not evaluated due to the fractured character of the rock mass that precludes formation of topple features. We used intersection plots to evaluate the potential for wedge sliding and vector and pole plots to evaluate the potential for planar sliding. Stereonet diagrams are presented as Enclosures B-2.1 through B-2.3.

Planar Sliding

Planar sliding was evaluated using a slope angle of 45 degrees. The stereonet data are depicted with dip vectors (points) and as poles on the stereonet plots (Enclosures B-2.1 and B-2.2). Poles to planes and dip vectors were contoured to identify concentrations of points. The plots include a depiction of lateral limits, friction circle and critical zone.

The results of the planar sliding analysis indicate a low potential for planar sliding for the proposed southwest-facing slope aspect at the modeled 45-degree slope angle. It is expected that excavation of the slope at this or flatter angles will produce stable, finished slopes.

Wedge Sliding

Wedge sliding was evaluated using a slope face angle of 45 degrees. Since wedge geometry is formed by two or more planes, the data were contoured to identify concentrations of intersections. The results indicate a low potential for wedge formation in the southwest-facing aspect of the proposed slope. Field observations suggested clean, wedge-free faces in existing quarry cuts along the dominant joint system; therefore, we do not anticipate the occurrence of large wedge failures in the planned slope exacavation. Scaling of loose material appears to be an effective means to mitigate wedge-type failures in the slope area. Scaling of loose blocks or wedges should be performed during

excavation of the slope. Kinematic plots of these data are presented in Enclosure B-2.3. The overall potential for wedge-type failures is low.

Kinematic Evaluation—Conclusions

A slope angle of 45 degrees or flatter, based on the geometry of dominant discontinuities in the slope area, would result in a kinematically stable configuration.

The results of the planar sliding and wedge sliding analyses indicate low potential for formation of unstable features in the proposed slope. The potential for rock fall or minor slope failure can be mitigated by scaling of the slope during excavation. Use of steel netting, rock bolts, anchors or other mechanical means is not anticipated to be required for the proposed slope construction. The overall slope angle appears to be suitable for the intended use. Scaling of loose or dislodged blocks from slope cuts should be performed near the completion of final slope excavation.

The slope configurations evaluated in this report are expected to produce a suitably configured slope geometry for the proposed slope under SMARA criteria.

GLOBAL STABILITY CALCULATIONS:

Global (rotational) stability was analyzed using Spencer's method under seismic conditions for rotational failures utilizing the SLIDE computer program, version 6.034 (Rocscience, 2015). The seismic stability calculations were performed using a lateral pseudostatic coefficient "Kh" of 0.20 as discussed previously. Slip surface search models were used for both circular and non-circular failure modes. Groundwater was not considered in the global stability evaluation based on the lack of evidence for seepage and regional groundwater table lower than the slope area.

Slope stability back calculation of a 78-degree existing slope face under static conditions was used to estimate minimum unconfined compressive strength (UCS) under Hoek-Brown strength criteria. The location of the back calculation slope is shown on Enclosure A-2. We started with the UCS obtained from the Jbc unit from a nearby site in March 2015 (2.71×10^6 pounds per square foot, similar to on-

site slate) and used a sensitivity analysis to derive the UCS value of factor of safety = 1.0 in consideration of the increased jointing and foliation in the Jbc at Corona Clay. The geometry of the slope used for back calculation is depicted in Enclosure C-1.1. A graph of UCS versus factor of safety is provided as Enclosure C-1.2. It should be understood that the strength obtained from the back calculation is an absolute minimum, constrained by the geometry of the steepest existing slope. Actual UCS is expected to be much higher.

The strength parameters for the Bedford Canyon rock unit (Jbc) were modeled with the Generalized Hoek-Brown criteria (Hoek and Karzulovic, 2000; Hoek, Carranza-Torres and Corkum, 2002), using the results of the back calculation estimate, field strength criteria, such as how easily rock can be broken with a hammer, and the SLIDE program's integrated calculator application. The parameters were modeled using lower than anticipated values to produce a conservative model. Actual values are anticipated to be higher. The strength parameter values are presented in Table 2. Unit weight was obtained by measurement of specific gravity of the three samples returned to the laboratory, for an average of 162 pounds per square foot (psf).

Table 2: Bedford Canyon (Jbc) - Strength Parameters

	Value	Description
Unit Weight (pcf*)	162	Measured by laboratory testing
Intact UCS[1] (psf**)	3.96×10^5	Estimated by back-calculation
Geological Strength Index	40	Blocky/Disturbed/Seamy with fair surface conditions
Intact Rock Constant (mi***)	7	Phyllites
Disturbance Factor	1	Production blasting

[1] Uniaxial Compressive Strength test result
* pcf = pounds per cubic foot
** psf = pounds per square foot
*** mi = unitless constant

The results of our global slope stability analyses are summarized in Table 3. Details of stability calculations including material type boundaries, strength parameters, the minimum factor of safety and critical slip surface are presented in Enclosures C-1.1 through C-2.2.

Table 3: Summary of Global Stability Models and Results

Model	Material	Slope Configuration	Static Factor of Safety	Seismic Factor of Safety (k=0.2)	Enclosure Number
Existing Slope	Jbc	H = 38 Feet 78°	0.99	--	C-1.1
Proposed Slope		H = 56 45°	1.62	1.16	C-2.1 and C-2.2

As shown in Table 3, sufficient static and seismic factors of safety in excess of 1.5 and 1.1, respectively—in conformance with OMR criteria—are indicated for the modeled rock slope configurations for the proposed slope heights and angles. Flatter slopes are anticipated to exhibit equal or greater factor of safety values.

CONCLUSIONS

Based on geologic field observations and evaluation and the results of slope stability calculations, it is the opinion of this firm that reclaimed slopes inclined at 1(h) to 1(v) or flatter are stable with respect to SMARA criteria for slope stability, provided the recommendations contained in this report are implemented.

Based upon our analyses, a 45-degree slope up to approximately 60 feet in height is suitably stable against gross failure for the anticipated long-term conditions, including the effects of seismic shaking. A flatter slope such as a 1.5(h) to 1(v) would be approximately 100 feet in height and is also considered to be stable. Inclusion of benches in a 1(h):1(v) overall slope profile would help mitigate

raveling and/or rockfall. Benches are not considered necessary for a 1.5(h):1(v) slope. Loose material should be scaled from slope faces during grading.

Fill associated with past benching/mining/road building activities is present at the top of the existing steep slope and along existing bench surfaces. This material is susceptible to shallow failure when exposed in slope faces. The proposed reclaimed slope design should provide for removal of this fill where present in reclaimed slopes.

Groundwater seepage, springs or indications of shallow groundwater were not observed and are not known to exist within the site. Neither groundwater nor seepage are expected to occur within the reclaimed slope during the reclamation lifetime.

Active faults with the potential to produce surface rupture are not mapped within the site.

RECOMMENDATIONS

SEISMIC SHAKING HAZARDS:

Moderate to severe seismic shaking of the site can be expected to occur during the lifetime of the proposed reclamation. This potential has been considered in our analyses and evaluation of slope stability.

PROPOSED RECLAIMED SLOPES:

An overall slope angle of 45 degrees or flatter will be suitable for the proposed reclamation plan. Should benches be selected, we recommend a preliminary minimum reclaimed bench width of 15 feet. The design width should be determined by the project engineer to be consistent with the design height and overall finished slope angles. Scaling of loose or dislodged blocks from bench face cuts should be performed near the completion of final slope excavation at any construction level. This is necessary as portions of finished slopes may not be accessible to scaling equipment with progression of excavation.

The rock mass within the proposed slope area is generally hard, competent and capable of forming stable slopes at the proposed gradients for reclamation. The rock structure includes joint systems that have been characterized by mapping and analysis to yield suitably stable rock slopes. We did not observe geologic structures that exhibit exceptional continuity or adverse geometry with regard to the planned slope aspect and that contain significant clay linings, water seepage or other potentially deleterious conditions during site mapping within the slope area.

Geologic mapping of the excavated slope may be performed during construction to identify conditions that may preclude reclamation of the slope in accordance with the approved reclamation plan.

LIMITATIONS

CHJ Consultants has striven to perform our services within the limits prescribed by our client, and in a manner consistent with the usual thoroughness and competence of reputable geotechnical engineers and engineering geologists practicing under similar circumstances. No other representation, expressed or implied, and no warranty or guarantee is included or intended by virtue of the services performed or reports, opinion, documents, or otherwise supplied.

This report reflects the testing and observations conducted on the site as the site existed during the evaluation, which is the subject of this report. However, changes in the conditions of a property can occur with the passage of time, due to natural processes or the works of man on this or adjacent properties. Changes in applicable or appropriate standards may also occur whether as a result of legislation, application or the broadening of knowledge. Therefore, this report is indicative of only those conditions tested and/or observed at the time of the subject evaluation, and the findings of this report may be invalidated fully or partially by changes outside of the control of CHJ Consultants. This report is therefore subject to review and should not be relied upon after a period of one year.

The conclusions and recommendations in this report are based upon observations performed and data collected at separate locations, and interpolation between these locations, carried out for the project and the scope of services described. It is assumed and expected that the conditions between locations

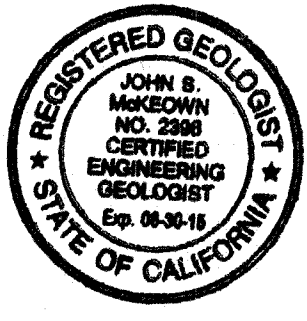
observed and/or sampled are similar to those encountered at the individual locations where observation and sampling was performed. However, conditions between these locations may vary significantly. Should conditions that appear different than those described herein be encountered in the field by the client or any firm performing services for the client or the client's assign, this firm should be contacted immediately in order that we might evaluate their effect.

If this report or portions thereof are provided to contractors or included in specifications, it should be understood by all parties that they are provided for information only and should be used as such.

The report and its contents resulting from this evaluation are not intended or represented to be suitable for reuse on extensions or modifications of the project, or for use on any other project.

CLOSURE

We are pleased to be of service and trust this report provides the information desired at this time. Should questions arise, please do not hesitate to contact this firm at your convenience.



Respectfully submitted,
CHJ CONSULTANTS

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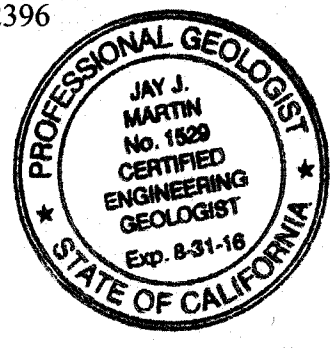

JMc/JJM:lb

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LEGEND:

Qsc - Quaternary stream channel deposits
Qoa - Pleistocene alluvium
Qov - Pleistocene flood plains and valley fill
Ts - Paleocene Silverado Formation
Jb - Jurassic Bedford Canyon Formation-slate with quartzite

geologic contact, relatively well-defined

Aerial photograph lineament suggestive of faults, but not verified

40 Strike and dip of layering/bedding in metasedimentary rocks

N

SCALE: 1" = 2000'

INDEX MAP

FOR: CORONA CLAY	SLOPE STABILITY INVESTIGATION AREA OF CONCERN, CORONA CLAY QUARRY CORONA, CALIFORNIA	ENCLOSURE "A-1"
DATE: MARCH 2015		JOB NUMBER 15112-8

CHJ Consultants

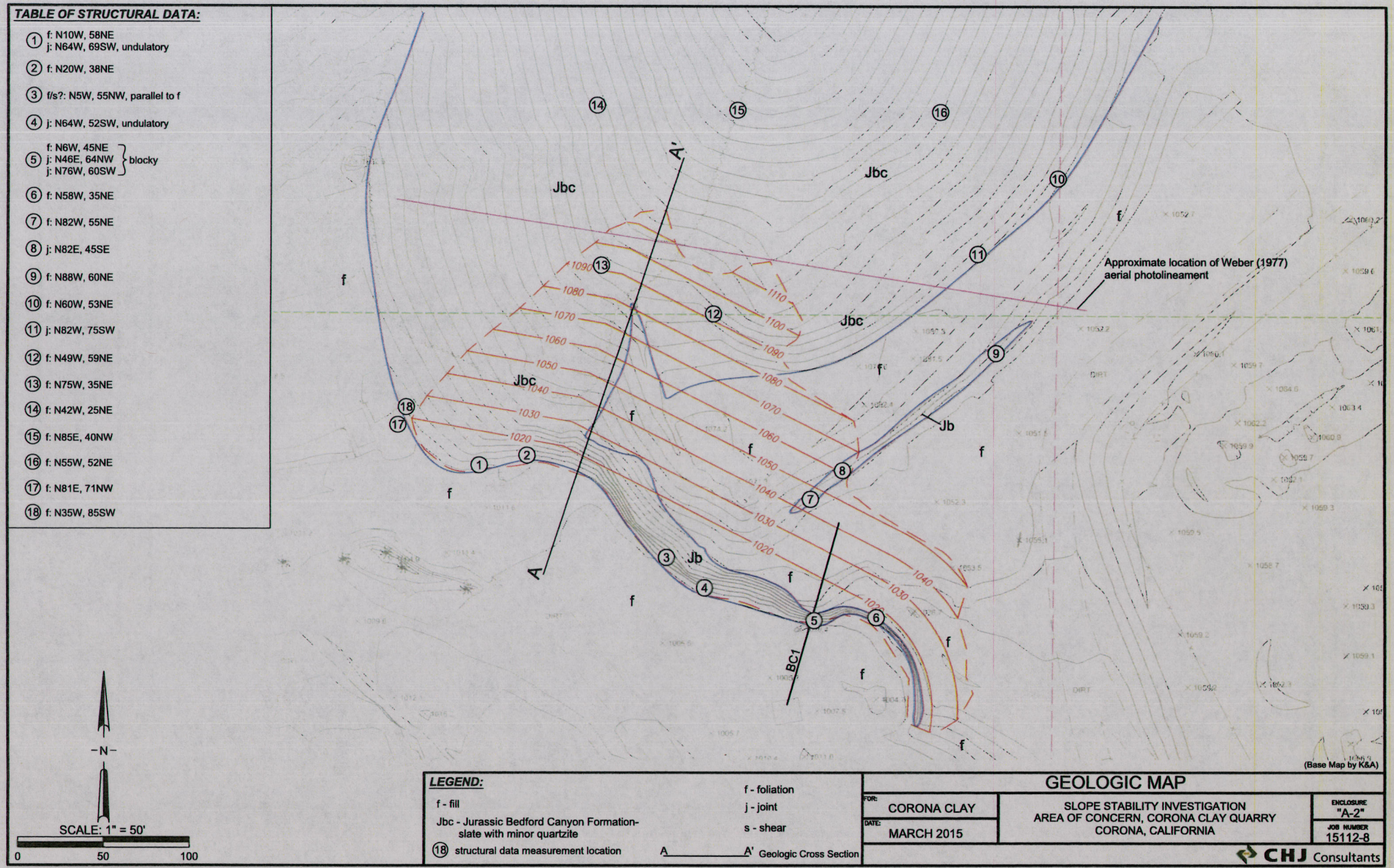


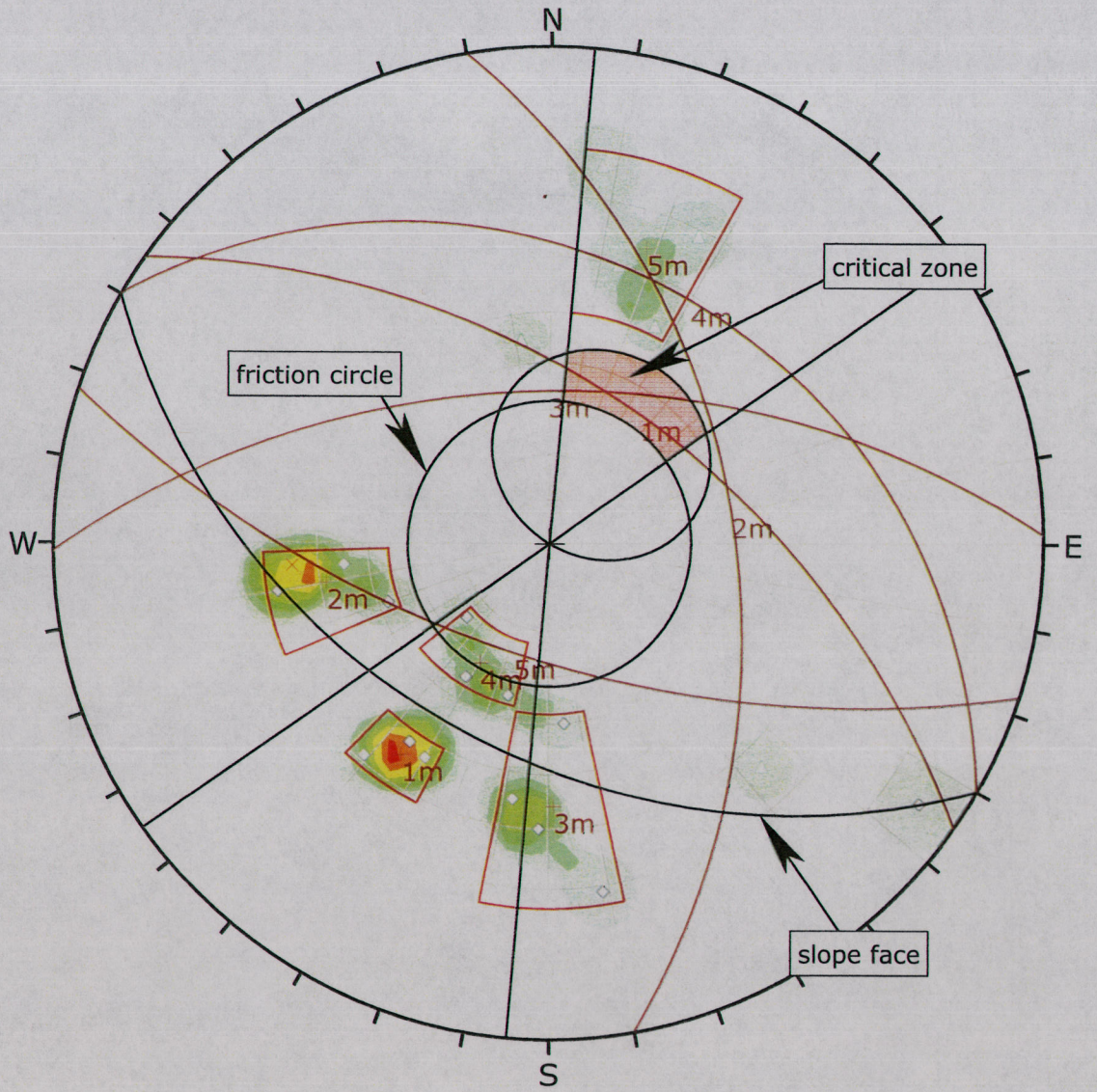
TABLE OF STRUCTURAL DATA:
① f: N10W, 58NE
j: N64W, 69SW, undulatory
② f: N20W, 38NE
③ f/s?: N5W, 55NW, parallel to f
④ j: N64W, 52SW, undulatory
⑤ f: N6W, 45NE
j: N46E, 64NW
j: N76W, 60SW
blocky
⑥ f: N58W, 35NE
⑦ f: N82W, 55NE
⑧ j: N82E, 45SE
⑨ f: N88W, 60NE
⑩ f: N60W, 53NE
⑪ j: N82W, 75SW
⑫ f: N49W, 59NE
⑬ f: N75W, 35NE
⑭ f: N42W, 25NE
⑮ f: N85E, 40NW
⑯ f: N55W, 52NE
⑰ f: N81E, 71NW
⑱ f: N35W, 85SW
Jbc
Jb
f
A
A'
BC1
Approximate location of Weber (1977) aerial photolineament
1090
1080
1070
1060
1050
1040
1030
1020
1110
1100
N
SCALE: 1" = 50'
0
50
100
(Base Map by K&A)
LEGEND:
f - fill
Jbc - Jurassic Bedford Canyon Formation- slate with minor quartzite
⑱ structural data measurement location
f - foliation
j - joint
s - shear
A A' Geologic Cross Section
GEOLOGIC MAP
FOR: CORONA CLAY
DATE: MARCH 2015
SLOPE STABILITY INVESTIGATION
AREA OF CONCERN, CORONA CLAY QUARRY
CORONA, CALIFORNIA
ENCLOSURE "A-2"
JOB NUMBER 15112-8
CHJ Consultants

APPENDIX B

KINEMATIC STABILITY EVALUATION

Table B-1: Corona Clay – Kinematic Data			
Discontinuity	**Dip**	**Dip Direction**	**Type**
1	58	080	f
2	69	206	j
3	38	070	f
4	55	085	fs
5	45	084	f
6	64	316	j
7	60	194	j
8	35	032	f
9	55	008	f
10	45	172	j
11	60	002	f
12	53	030	f
13	75	188	j
14	59	041	f
15	35	015	f
16	25	048	f
17	40	355	f
18	52	035	f
19	71	351	f
20	85	305	f
21	52	206	j

f = foliation j = joint fs = shear



Symbol	TYPE	Quantity
◇	f	14
×	fs	1
	j	6

Color	Density Concentrations
	0.00 - 1.30
	1.30 - 2.60
	2.60 - 3.90
	3.90 - 5.20
	5.20 - 6.50
	6.50 - 7.80
	7.80 - 9.10
	9.10 - 10.40
	10.40 - 11.70
	11.70 - 13.00

Maximum Density	12.15%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

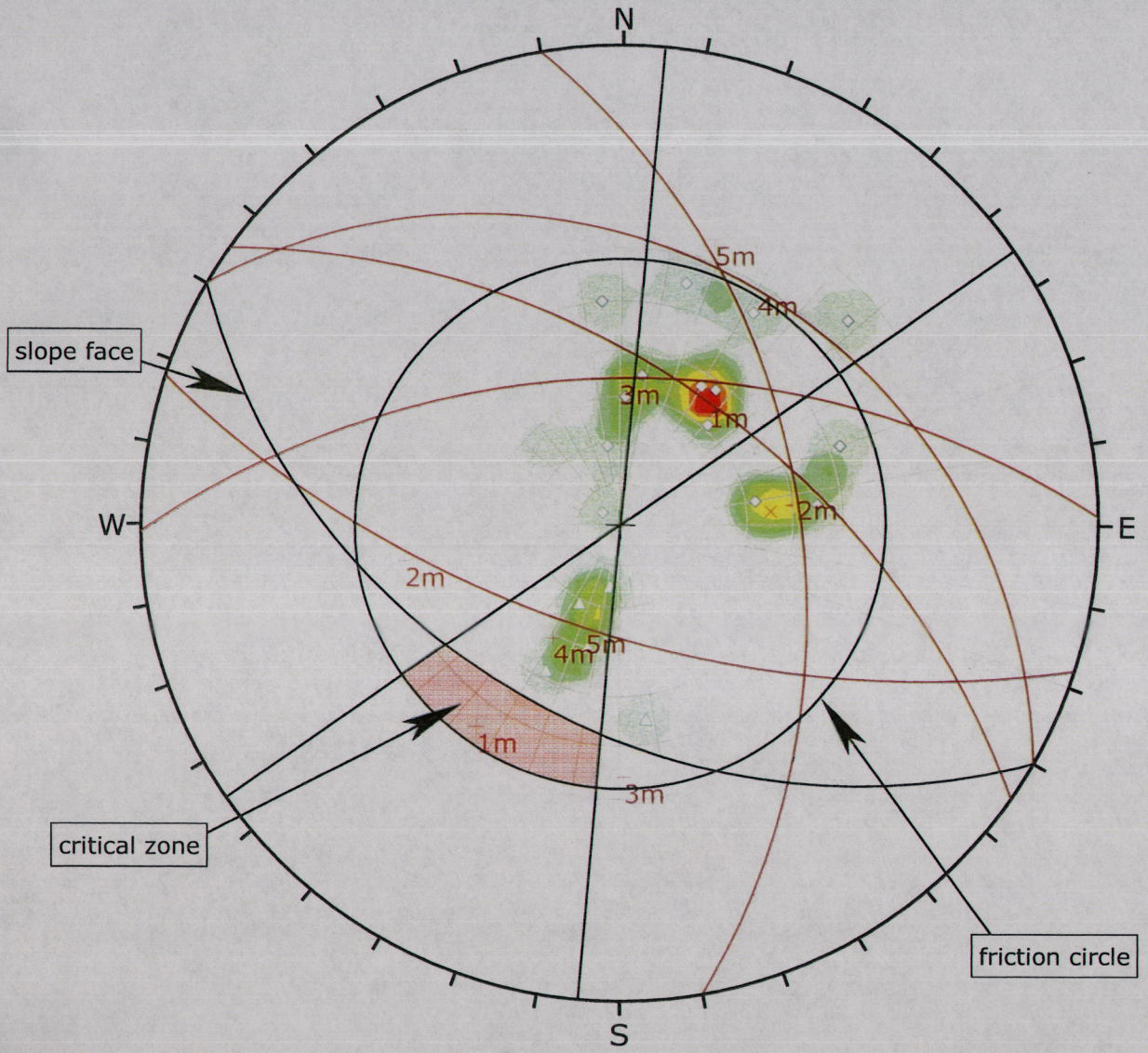
Kinematic Analysis	Planar Sliding
Slope Dip	45
Slope Dip Direction	210
Friction Angle	32°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	0	21	0.00%

Plot Mode	Pole Vectors
Vector Count	21 (21 Entries)
Hemisphere	Lower
Projection	Equal Angle

DIPS 6.008

Project	Corona clay		
Analysis Description	Planar Sliding - Pole Vectors		
Drawn By	CHJ	*Author*	JMc
File Name	A o Concern 205_45 plan pole.dips6	*Date*	3/12/2015
		Enclosure	B-2.1



Symbol	TYPE	Quantity
◇	f	14
×	fs	1
	j	6

Color	Density Concentrations
	0.00 - 1.30
	1.30 - 2.60
	2.60 - 3.90
	3.90 - 5.20
	5.20 - 6.50
	6.50 - 7.80
	7.80 - 9.10
	9.10 - 10.40
	10.40 - 11.70
	11.70 - 13.00

Maximum Density	12.65%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

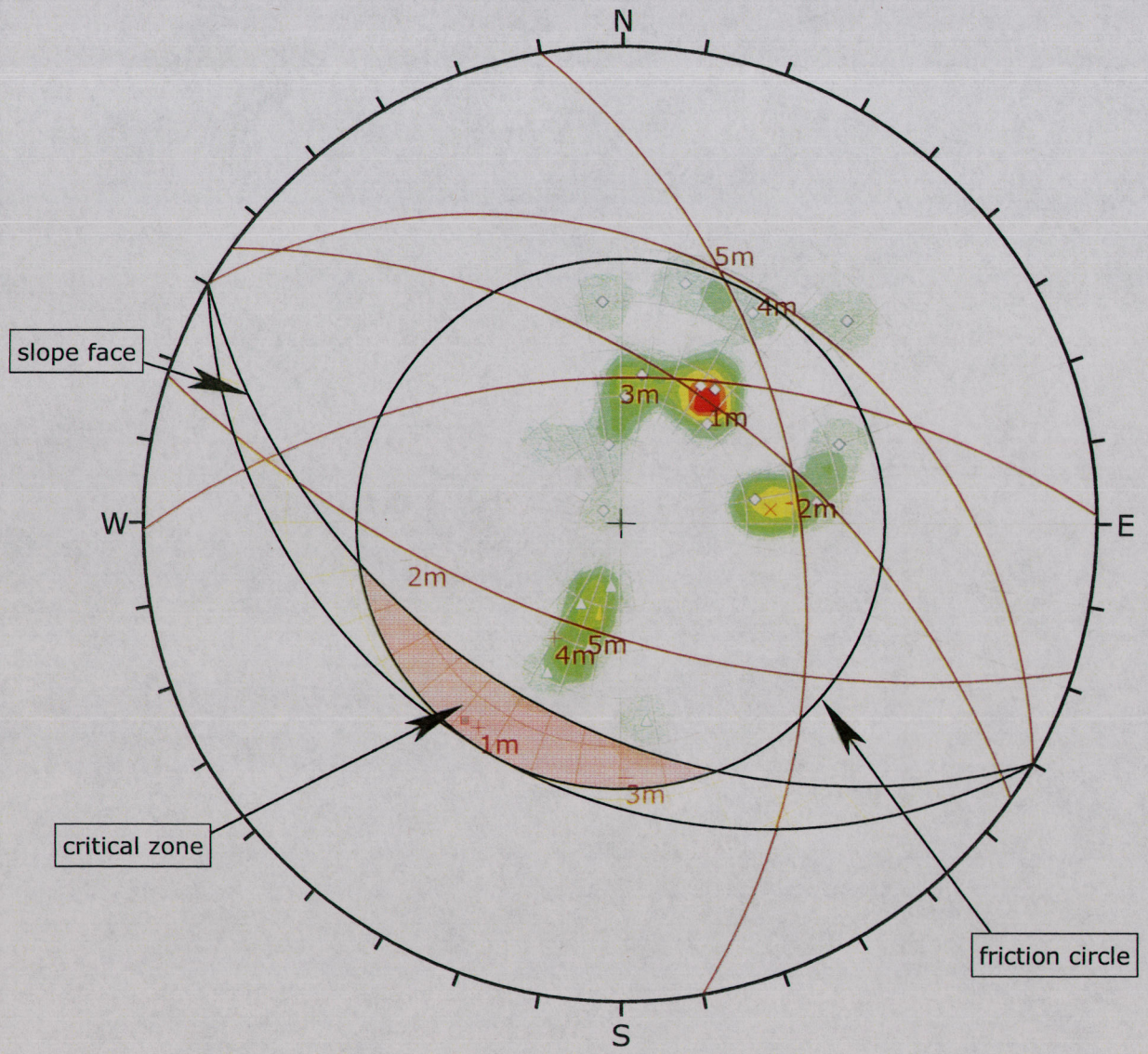
Kinematic Analysis	Planar Sliding
Slope Dip	45
Slope Dip Direction	210
Friction Angle	32°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	0	21	0.00%

Plot Mode	Dip Vectors
Vector Count	21 (21 Entries)
Hemisphere	Lower
Projection	Equal Angle

DIPS 6.008

Project	Corona clay		
Analysis Description	Planar Sliding - Dip Vectors		
Drawn By	CHJ	*Author*	JMc
File Name	A o Concern 205_45 plan dip vectors.dips6	*Date*	3/11/2015
		Enclosure	B-2.2



Symbol	TYPE	Quantity
◇	f	14
×	fs	1
	j	6

Symbol	Feature
	Critical Intersection

Color	Density Concentrations
	0.00 - 1.30
	1.30 - 2.60
	2.60 - 3.90
	3.90 - 5.20
	5.20 - 6.50
	6.50 - 7.80
	7.80 - 9.10
	9.10 - 10.40
	10.40 - 11.70
	11.70 - 13.00

Maximum Density	12.65%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Kinematic Analysis	Wedge Sliding
Slope Dip	45
Slope Dip Direction	210
Friction Angle	32°

	Critical	Total	%
Wedge Sliding	1	210	0.48%

Plot Mode	Dip Vectors
Vector Count	21 (21 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	210
Hemisphere	Lower
Projection	Equal Angle

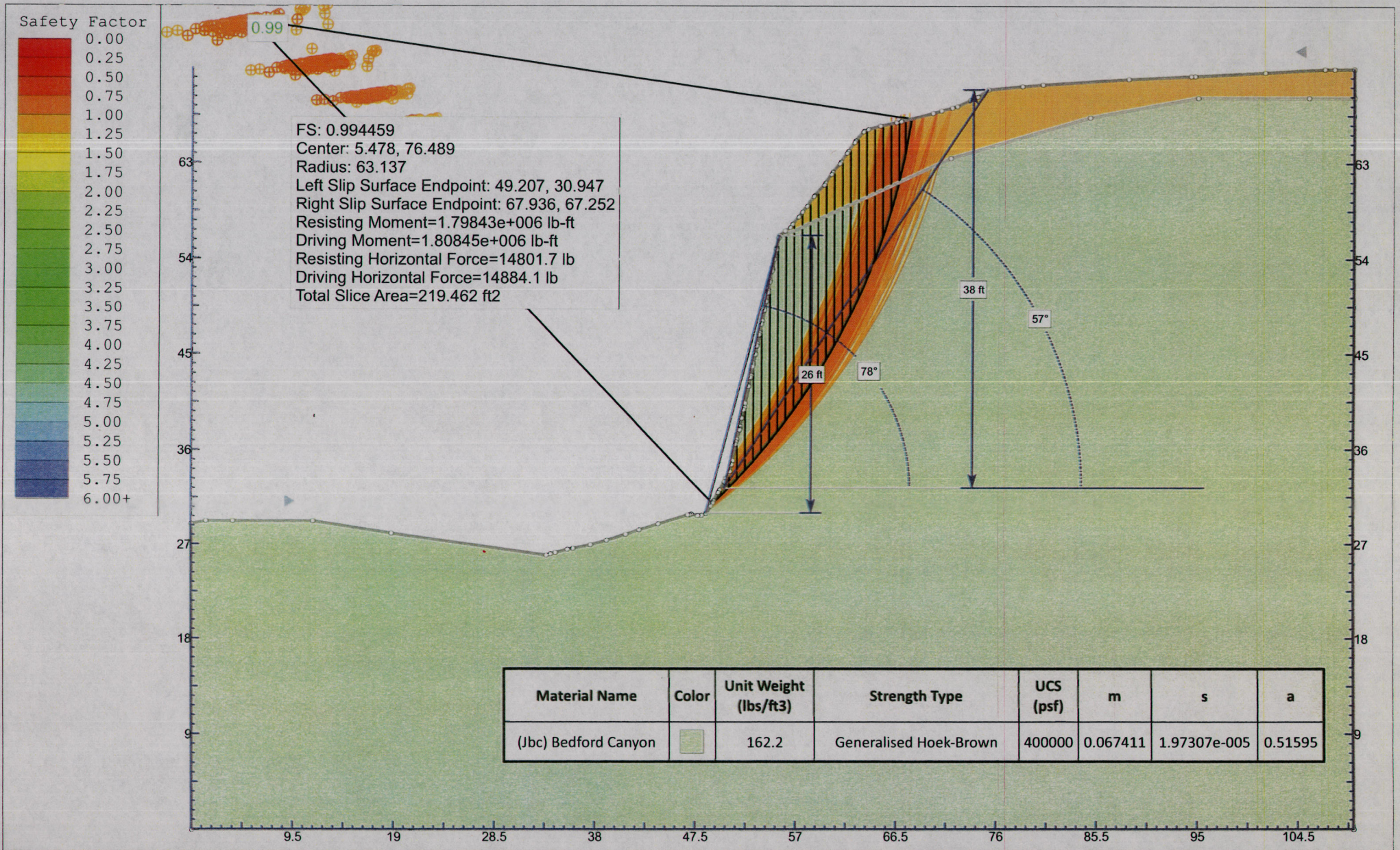
DIPS 6.008

Project	Corona clay		
Analysis Description	Wedge Sliding - Dip Vectors		
Drawn By	CHJ	Author	JMc
File Name	A o Concern 205_45 wedge dip	Date	3/11/2015
		Enclosure	B-2.3

vectors.dips6

APPENDIX C

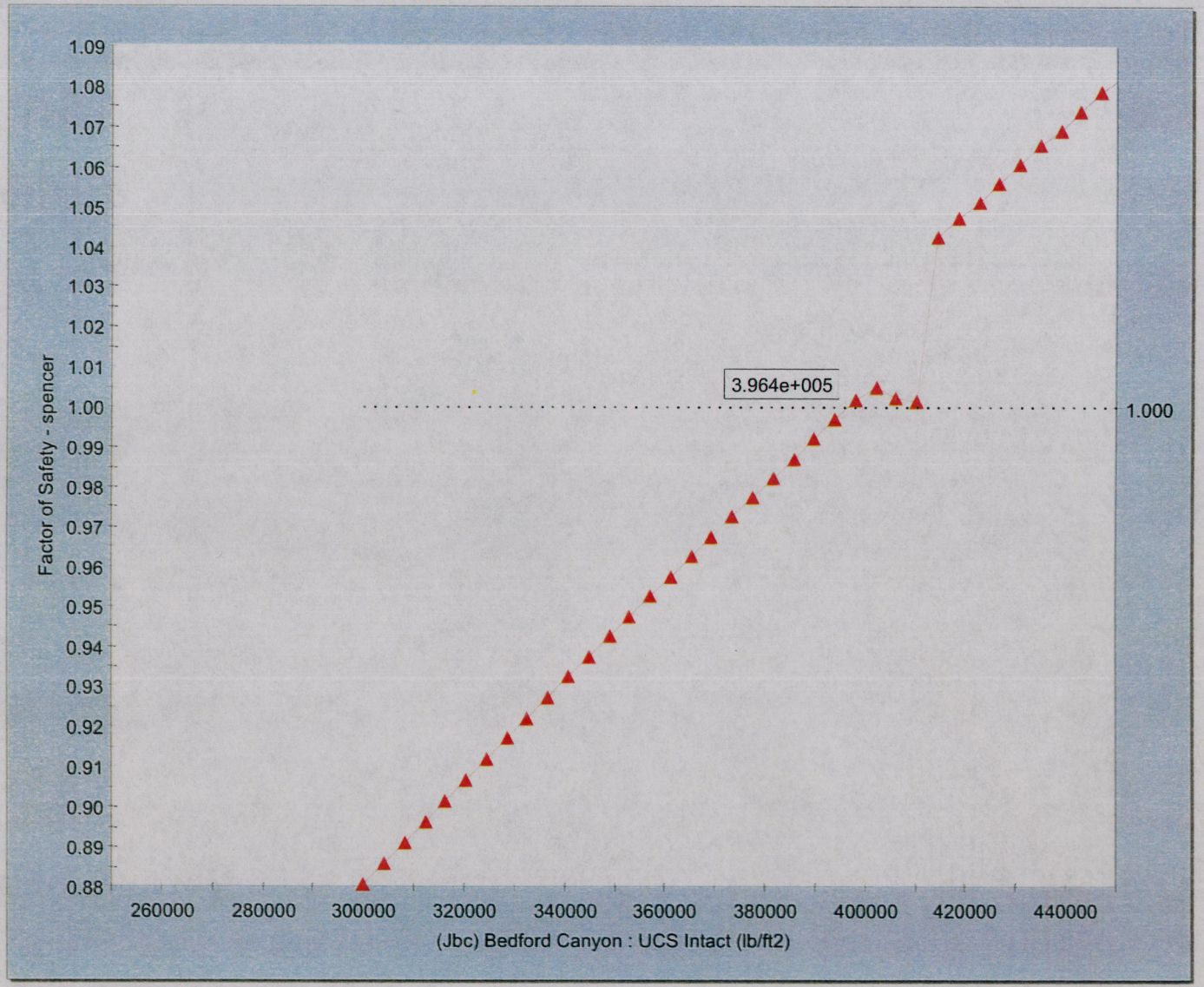
GLOBAL STABILITY CALCULATIONS



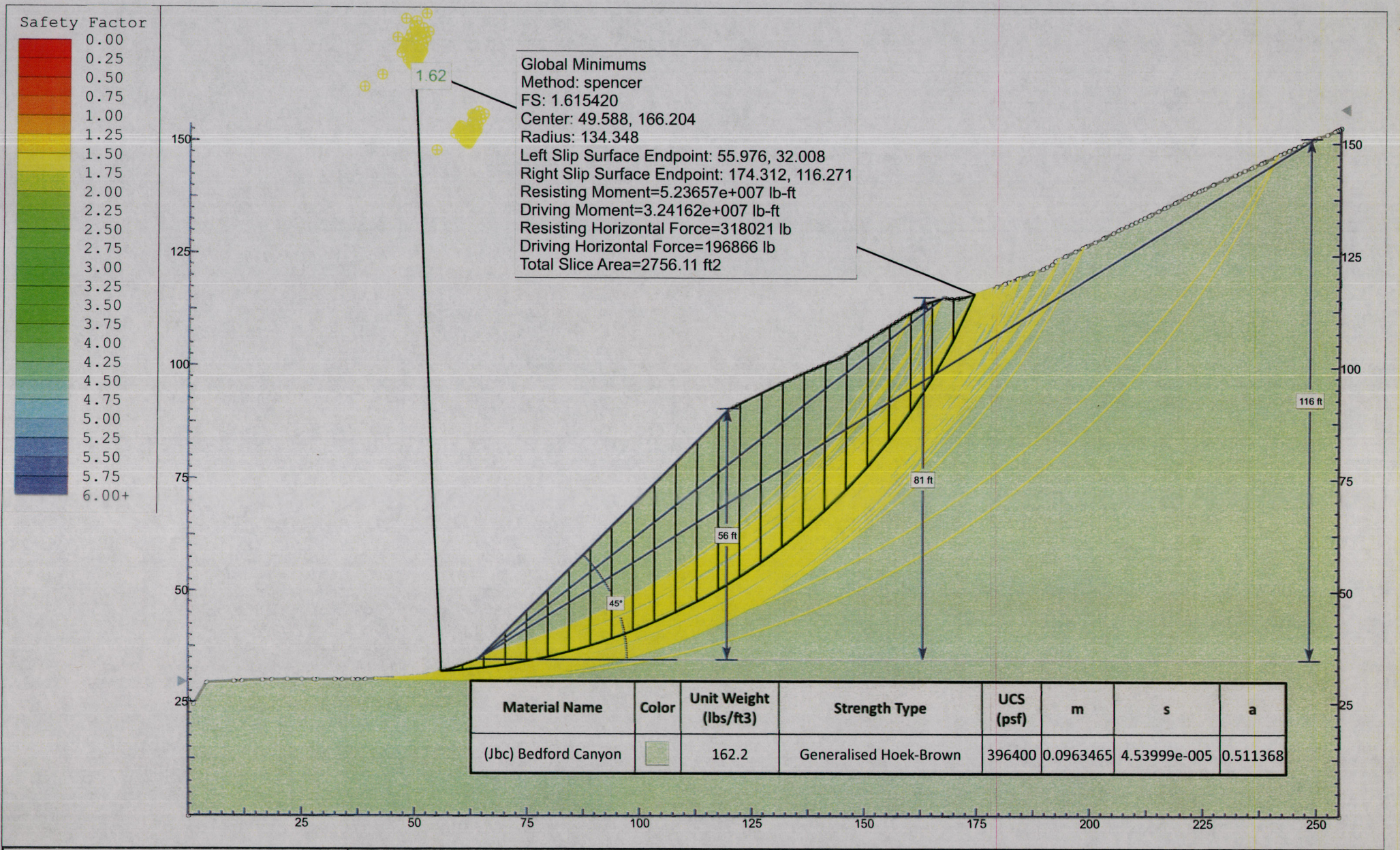
Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	UCS (psf)	m	s	a
(Jbc) Bedford Canyon		162.2	Generalised Hoek-Brown	400000	0.067411	1.97307e-005	0.51595

SLIDEINTERPRET 6.034

Project	Corona Clay				
Analysis Description	Section A				
Drawn By	CHJ	Author	JMc	Scale	1:150
File Name	BC1 Hoek model wi fill.slim	Date	March 2015	Enclosure	C-1.1



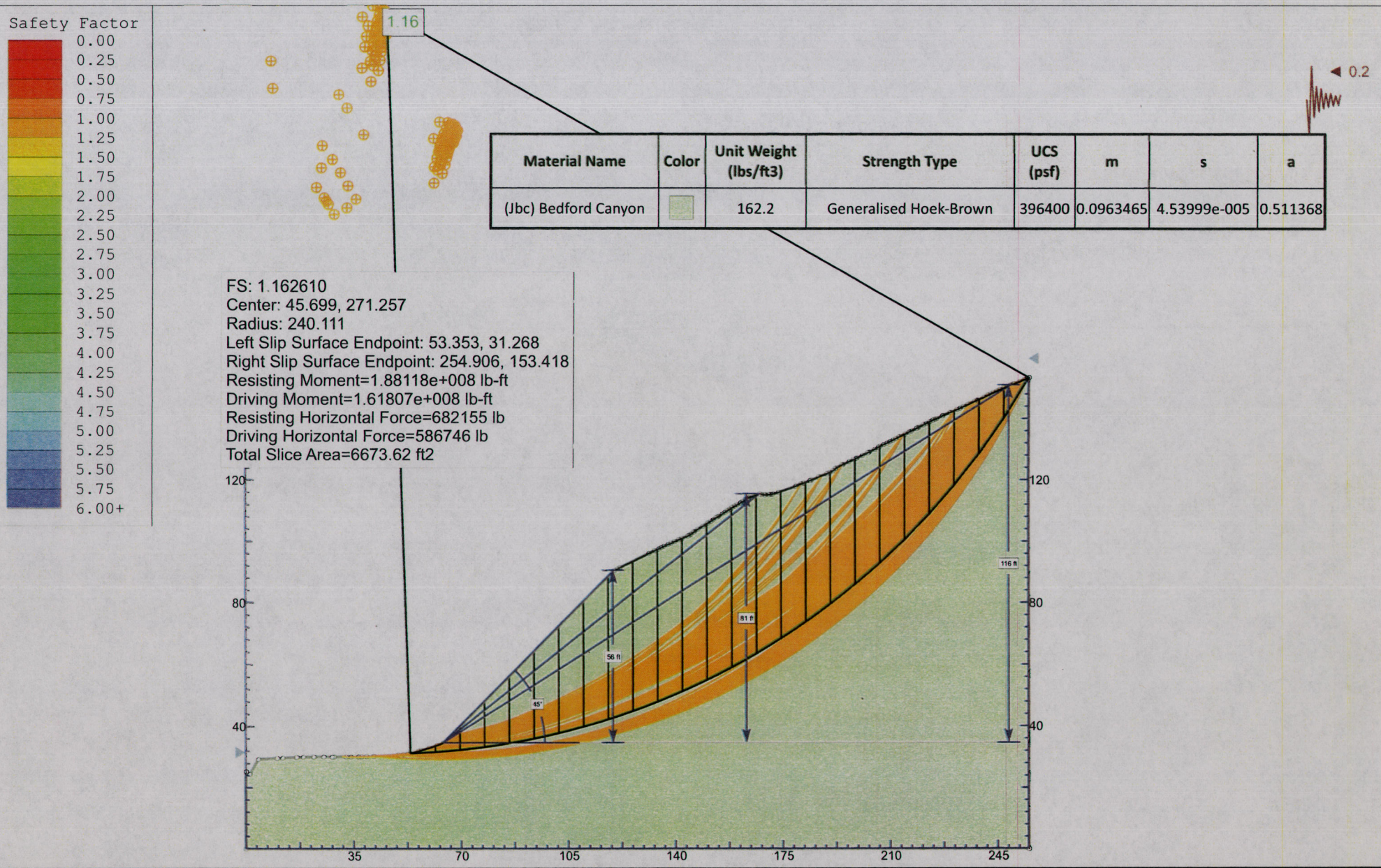
SLIDEINTERPRET 6.034	Project: Corona Clay			
	Analysis Description: Back Calculation 1			
	Drawn By: CHJ	Author: JMc	Scale:	
	File Name: BC1 Hoek model.slim	Date: March 2015	Enclosure: C-1.2	



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	UCS (psf)	m	s	a
(Jbc) Bedford Canyon		162.2	Generalised Hoek-Brown	396400	0.0963465	4.53999e-005	0.511368

SLIDEINTERPRET 6.034

Project	Corona Clay		
Analysis Description	Section A		
Drawn By	CHJ	Author	JMc
File Name	Sect A 1_1slopestat.slim	Date	March 2015
Scale	1:350	Enclosure	C-2.1



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	UCS (psf)	m	s	a
(Jbc) Bedford Canyon		162.2	Generalised Hoek-Brown	396400	0.0963465	4.53999e-005	0.511368

Project	Corona Clay			
Analysis Description	Section A			
Drawn By	CHJ	*Author*	JMc	*Scale* 1:525
File Name	Sect A 1_1slope seis.slim	*Date*	March 2015	*Enclosure* C-2.2

SLIDEINTERPRET 6.034