BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE ORANGE GROVE POWER PLANT PROJECT BY ORANGE GROVE ENERGY, LLC	DOCKET NO. 08-AFC-4 (AFC filed 06/20/08)

ORANGE GROVE ENERGY, L.P.'S STATUS REPORT EXPRESSING CONCERN ABOUT CULTURAL RESOURCES

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November 4, 2008

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Orange Grove Energy, L.P. ("Orange Grove") would like to inform the Committee about Orange Grove's concerns regarding a cultural resources request. Orange Grove notes that there will be no impacts to known cultural resources from construction or operation of the proposed Orange Grove Power Plant. The questions and analysis that are the subject of this request all relate to the low likelihood of finding buried cultural resources. On August 5th California Energy Commission ("Commission") Staff sent data requests to Orange Grove. These requests included Data Request 46, part (c). This request asked for more information about the project site and linear facilities but explicitly gave Orange Grove options for providing the information in the request by using the term "recommends".

> 46. Staff requests that the applicant provide a more thorough analysis of the Orange Grove project site and its linear facilities. Staff **recommends** that the applicant:
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> * * *
>
> c. conduct a geoarchaeological field study that examines the landforms in the project area that may contain archaeological deposits. Staff **recommends** that the geoarchaeological field study of the alluvial contexts along the San Luis Rey River include the:
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> 1) excavation of three backhoe trenches in locations along the proposed alignment of the natural gas pipeline for the project that will provide the opportunity to reliably characterize the alluvial deposits along the length of that alignment to the anticipated depth of the proposed pipeline trench,

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> 1) excavation of three backhoe trenches in locations along the proposed alignment of the natural gas pipeline for the project that will provide the opportunity to reliably characterize the alluvial deposits along the length of that alignment to the anticipated depth of the proposed pipeline trench,

2) complete recordation of one prepared profile from each backhoe trench to include reasonably detailed written descriptions of each lithostratigraphic and pedostratigraphic unit in each profile, a measured profile drawing, and a profile photograph with a metric scale and north arrow,

3) screening of a small (3, 5 gallon buckets) sample of sediment from the major lithostratigraphic units in each profile or from two arbitrary levels in each profile through ¼ inch hardware cloth, and

4) collection and assaying of enough soil humate samples to reliably radiocarbon date the master stratigraphic column for the alluvial deposits along the proposed pipeline route, and

* * * (emphasis added)

Orange Grove considered objecting to part (c) of this request asking Orange Grove to prepare a geoarchaeological field study ("Field Study") but refrained because the request itself simply recommended but did not require Orange Grove to complete the study. In general, Orange Grove believes the extensive Field Study is unnecessary given the known geologic formations along the pipeline route and available cultural resources information. Orange Grove also does not believe the information that would be obtained by the recommended Field Study would provide more reliable information than is already known about the area. There are no locations on the route itself that contain known resources, and there are no known locations from records or surface surveys that would indicate the presence of a buried resource. Therefore, the analysis would be analogous to random sampling for a needle in a haystack when there is no reason to suspect the presence of a needle in the first place, as opposed to a focused investigation of a known or suspected site.

In response to the data request Orange Grove provided an extensive discussion of the known geology in the area and why Orange Grove felt the recommended study was unnecessary based upon the facts in this case. At the September 11 workshop, Commission Staff discussed this issue and acknowledged that the Upland Terrain and Ancient Alluvial Fan landforms that will be disturbed by the Project do not have a significant potential for buried cultural resources to occur, but requested that Orange Grove complete the three trench Field Study in accordance with the **recommendations** contained in Data Request 46(c) at the Flood Plain landform that occurs

along a portion of the gas pipeline route. As described in this status report, Orange Grove has provided extensive information about the geologic and archaeological resources for the portion of the pipeline route that traverses the Flood Plain landform. Furthermore and regardless of Orange Grove's belief no additional information is needed, Orange Grove has taken every opportunity to collect and provide additional information to Commission Staff for the floodplain landform including: existing detailed geologic information in boring logs; detailed examination and photo logging of exposed geologic materials; discussing the absence of cultural resource findings within a nearby sand mine that excavated the same geologic unit; and sending a geologist and an archeologist out to perform geoarchaeological evaluations in conjunction with a geotechnical investigation that required permits applied for months in advanced. Nevertheless, Orange Grove understands that certain members of the Staff are not satisfied with the cultural resources analysis at the Orange Grove site. Orange Grove considers the information which it has submitted thus far to be more than sufficient to address the concerns presented by Data Request 46(c). Orange Grove believes that it is not obligated to perform the Field Study in Data Request 46(c) for two reasons. First, the information requested by Data Request 46(c) is not necessary to make a decision regarding the AFC. Second, there is insufficient time to complete the Field Study requested by Data Request 46(c), as such a study would cause very significant delays to the Orange Grove Power Plant Project (the "Project").

Orange Grove would like the Committee to confirm, as soon as possible and preferably before the evidentiary hearing, that the Field Study is unnecessary. Orange Grove requests that the Committee advise Orange Grove as to whether the Committee plans to resolve this issue before or during the evidentiary hearing.

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I. The Information Requested by Part (c) of Data Request 46 Is Not Necessary to Complete Staff's Analysis or Make a Decision on the AFC

A. Applicable Law Requires Only a Good Faith Effort At Full Disclosure of Potential Impacts

The California Code of Regulations governs the data request process during power plant site certification proceedings. The Regulations provide that "[a]ny party may request from the applicant any information reasonably available to the applicant which is relevant to the notice or application proceedings or reasonably necessary to make any decision on the notice or application."[1]

Although the Commission's siting process is a certified regulatory program under CEQA, CEQA provides guidance for interpreting which information is "relevant" or "reasonably necessary" for purposes of this data request provision. CEQA specifically exempts certain "Certified State Regulatory Programs" from the requirement of preparing an EIR, on the condition that these programs meet the criteria contained in the CEQA code sections.[2] The power plant site certification program of the California Energy Commission (CEC) is one of the certified programs listed under this exemption.[3] Therefore, the Commission can look to the rules and regulations which guide the environmental review process in an Environmental Impact Report (EIR) for guidance in the environmental review process in power plant site certification cases.[4]

As an overarching principle, CEQA directs that an EIR be prepared with "a sufficient degree of analysis to provide decision-makers with information which enables them to make decisions which intelligently take account of environmental consequences."[5] Specifically, the law provides that "an evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably

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[1] 20 C.C.R. § 1716(b).
[2] 14 C.C.R. § 15250.
[3] 14 C.C.R. § 15251(j).
[4] *See, e.g.*, Energy Resources Conservation and Development Committee, Order Denying Petition for Reconsideration, Application for Certification for the Sutter Power Plant Project, June 23, 1999.
[5] 14 C.C.R. § 15151.

feasible."[6] CEQA "does not require a lead agency to conduct every test *or perform all research, study, and experimentation recommended*,"[7] and it does not require that all experts consulted on the matter agree as to the best methods by which to proceed.[8] In upholding EIRs, California courts have looked not for perfection, but for adequacy, completeness, and a good faith effort at full disclosure of impacts.[9] All that is required is that, in substance, the material in the EIR be responsive to the opposition and that it responds to the most significant questions presented.[10] This is all that CEQA demands of the environmental review process, and because data requests are part of that environmental review process, it is all that CEQA demands of the responses to data requests.

The Warren-Alquist Act (the "Act") also addresses the environmental review process, specifically regarding cultural resources information in power plant site certification applications.[11] These regulations do not require trenching such as that requested in Data Request 46(c).

As described further below, more than enough evaluation has been performed and data entered into the record to support an analysis and the determination that there are no reasonably identifiable potentially significant cultural resources that would be impacted by the Project, and that impacts to unanticipated resources, if any are encountered, will be avoided through monitoring and work stoppage, Project modification, or mitigation of impacts to significant cultural resources to a level of less than significant.

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[6] 14 C.C.R. § 15151.

[7] 14 C.C.R. § 15204(a) (emphasis added).

[8] 14 C.C.R. § 15151.

[9] *See Ass'n of Irritated Residents v. County of Madera,* 107 Cal. App. 4th 1383 (2003); *Browning-Ferris Industries v. City Council*, 181 Cal. App. 3d 852 (1986); *Greenbaum v. City of Los Angeles*, 153 Cal. App. 3d 391, 413 (1984).

[10] *Id.*

[11] *See* C.C.R. Title 20, Chapter 5, Appendix B.

B. Orange Grove Has Already Made a Good Faith Effort to Satisfy Data Request 46 and to Fully Disclose Potential Impacts

As described above, an environmental review document must be adequate, complete, and a good faith effort at full disclosure of impacts.[12] CEQA "does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended,"[13] and it does not require that all experts consulted on the matter agree as to the best methods by which to proceed.[14] Orange Grove has been more than willing to conduct studies and provide information regarding cultural resources at the Orange Grove site, and has gone beyond what is required by law. The geology of the Project area is well understood and documented in 7.5 minute quadrangle maps published by the US Geologic Survey and other sources, and the impacts of the Project are also well documented. The multiple studies which have already been done demonstrate that much of the Project's grading will have no potential for encountering buried cultural resources. Furthermore, the Project has committed in the AFC to include cultural resource monitoring for all excavation work. Orange Grove would like to inform the Committee of the evaluations done at the Project site and along the gas pipeline route.

1. Studies done in the AFC reveal no likelihood of buried cultural resources

AFC Sections 6.3 (Geologic Hazards and Resources), 6.4 (Agriculture and Soils), and 6.8 (Paleontologic Resources) contains maps, cross-sections, descriptions and other detailed information regarding the age and nature of the geologic materials present. At least a portion of the Project pipeline will be constructed on each of three landforms of geoarchaeological significance: upland terrain, ancient alluvial fan, and flood plain. The Project will result in surface disturbance of all three of these areas. Of these three landforms, none is likely to yield buried cultural resources.[15] The geologic materials comprising the upland terrain landform were formed from molten extrusions from deep in the earth long before the earliest known occurrence

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[12] *See Ass'n of Irritated Residents v. County of Madera,* 107 Cal. App. 4th 1383 (2003); *Browning-Ferris Industries v. City Council*, 181 Cal. App. 3d 852 (1986); *Greenbaum v. City of Los Angeles*, 153 Cal. App. 3d 391, 413 (1984).

[13] 14 C.C.R. § 15204 (a).

[14] 14 C.C.R. § 15151.

[15] For a detailed discussion of the likelihood of buried cultural resources in each of these landforms, *see* Orange Grove Project, Responses to Data Requests 1-73, pages 31-33.

of humans in North America. The soils overlying this landform are thin, and the placement of the gas pipeline trench mostly along existing graded roads makes the potential to encounter buried cultural deposits very unlikely. The ancient alluvial fan landform is also comprised of geologic materials that predate human presence in North America. While there is a possibility of isolated buried artifacts in soils on the surface of this landform in other areas, it is unlikely that any occur in areas to be disturbed by the Project because the Project disturbance footprint is exclusively on land that has already been substantially graded in past decades. Finally, the flood plain landform, where Staff is recommending additional Field Study, is comprised of Holocene (11,000 years before present to modern time) alluvium, which is of the appropriate age such that it could potentially contain cultural resources, but there is a low likelihood of significant buried cultural resources because, by nature, these deposits are periodically eroded and reworked by flood flows and stream channel meandering. This results in a low likelihood of conditions suitable for preservation of significant buried cultural resources.

Furthermore, comparison of geologic maps in Figures 6.3-2 and 6.3-4 of the AFC with the cultural resource records search in Appendix 6.7-B of the AFC submitted to Staff under confidential cover show that there are no recorded findings of significant cultural resources within the flood plain landform.

Additional relevant geologic and cultural resource information collected for this landform since the AFC was submitted continue to reveal no likelihood of buried cultural resources, as described below.

2. *Geotechnical borings along the pipeline route reveal no likelihood of buried cultural resources*

In addition to the information contained in the AFC, between June 23 and June 25, 2008, four geotechnical borings were completed along the pipeline's route through the flood plain landform to characterize the subsurface materials.[16] The geologic materials encountered by each of these borings were logged in detail and recorded on boring logs by a California-licensed Professional Geologist. Three of these four borings were continuously cored, which means that a

[16] *See* Well Log Submission, Orange Grove Power Plant (August 19, 2008).

relatively undisturbed column of the geologic material representing the entire depth of the boring was brought to the surface for direct observation in a relatively undisturbed state. Direct observation of relatively undisturbed geologic material column, such as that allowed by continuous coring, provides for a very high level of detail and reliability for logging and interpreting subsurface geologic materials. The boring logs show that the subsurface materials are primarily sand, indicative of channel deposits. While Native Americans likely frequented the San Luis Rey riverbed where these materials were deposited, it is unlikely that there are significant buried artifacts within the channel deposits as previously described.

On October 16, 2008, a second set of three geotechnical borings was completed along a different portion of the proposed pipeline route, where it occurs in the Caltrans right-of-way. A California-licensed Professional Geologist continuously logged the cuttings of the geologic materials encountered in these bores. In addition, a Professional Archeologist continuously observed the cuttings of geologic materials from the borings as they were brought to the surface and screened the cuttings with a quarter-inch screen to continuously monitor for the potential presence of cultural materials. The continuous screening of cuttings to monitor for potential cultural materials provides for an extremely high level of reliability that even small bits of cultural material, if present, are not overlooked. In congruence with the findings of previous studies discussed above, this study provided further confirmation of the channel deposits along the pipeline route and produced no indication of cultural resources. These latest three borings in the Caltrans right-of-way provide additional validation of the original response submitted by Orange Grove to Data Request 46. The report from this latest evaluation is attached to this report.

3. *Exposure of Hollocene alluvium revealed no likelihood of buried cultural resources*

In an effort to satisfy Staff's information requests as completely as possible without significant delay to the Project schedule, Orange Grove directed its consultant team to determine whether there are locations available on the flood plain landform where Orange Grove can further characterize the upper portion of the Holocene alluvium with regard to geoarchaeology at locations representative of the gas pipeline route, without the significant Project schedule delays that would occur for the Staff recommended trenching program. After performing a study of the

area, a California Professional Geologist determined that there was one existing outcrop exposing the upper portion of the Holocene alluvium at a representative location.[17] The geologist used hand tools to obtain good exposure for the uppermost approximately six feet of the Holocene alluvium. The exposure allowed for direct and detailed observation of in-place geologic materials representative of that which would be exposed in the excavated trenches by the Staff-recommended Field Study. The exposure found by the geologist did not contain any cultural resources nor any evidence of a likelihood of buried cultural resources. This evaluation confirmed the existing knowledge of the Holocene alluvium geologic unit, which is the only geologic unit that would be disturbed along the gas pipeline route in the flood plain landform area where Staff is requesting additional Field Study. Evaluation of this outcrop provided further support for the conclusion that the likelihood of encountering buried cultural resources along the pipeline route is low.

4. External sources reveal no likelihood of buried cultural resources

Orange Grove has also searched for sources external to the Site that provide any indication of a potential for buried cultural resources in the flood plain landform in the vicinity of the Project. Orange Grove's cultural resource consultant reexamined records of cultural resources that have been found in the area. This effort reaffirmed that no cultural resources are recorded to have ever been found in the flood plain landform in the Project vicinity, as previously described in the response to Data Request 46. Orange Grove's consultants are not aware of any archaeological literature for the region that reports cultural resource findings in flood plain settings similar to those along the San Luis Rey River. Also, Orange Grove's consultants spoke with the former Director of Land Use, Planning and Permitting of the Fenton Sand Mine just south of State Route 76 near the Project site.[18] He stated that in his 20 years associated with this mining operation, no buried cultural resources had been found. This sand mine excavated the same Holocene alluvium geologic unit that comprises the flood plain landform where the Project pipeline will be constructed, to depths of approximately 40 feet. In contrast, the gas pipeline construction will require excavation to a maximum depth of approximately 10 feet.

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[17] This study is detailed in Attachments 5 and 6 to Orange Grove's Responses to Data Requests from the September 11, 2008 Workshop.

[18] Orange Grove Energy AFC Responses to Data Requests From the September 11, 2008 Workshop, page 6.

5. *Staff rejected Orange Grove's offer to perform the trenching work closer to the construction date*

At the September 11, 2008 workshop, Orange Grove offered to perform the trenching requested by Staff within the actual pipeline trench ahead of the pipeline installation so that if a resource were to be encountered there would be additional time to evaluate the resource and create an appropriate mitigation plan. This proposal would have allowed Orange Grove to obtain all of the permits that would be required for construction of the pipeline, which would also allow the investigation requested by Staff. This solution would have addressed both Staff's desire to conduct a Field Study prior to the installation of the pipeline and Orange Grove's concerns that such a study would be infeasible because it would cause substantial Project delays. However, Staff refused Orange Grove's offer. Since that discussion Orange Grove performed the evaluation of the existing Holocene alluvium outcrop, contacted a local gravel mine with two decades of experience excavating in the same Holocene alluvium geologic unit, and had a Professional Geologist and Professional Archaeologist log and evaluate subsurface geologic materials at the second set of geotechnical borings.

6. *A Monitoring plan will ensure that in the unlikely event that cultural resources are encountered along the pipeline route, those resources will be adequately inspected and evaluated*

Additionally, in compliance with the CEQA guidelines, Orange Grove has made provisions for potential unknown cultural resources in the event that any should be accidentally discovered during construction.[19] During the entire period of construction involving excavation of native soil, a designated Cultural Resource Specialist will be available to inspect and evaluate any buried cultural or historically significant resources or human remains that might be encountered.[20] Orange Grove will also implement a pre-construction worker education program and a construction monitoring and unanticipated cultural resources discovery plan. The Project

[19] 14 C.C.R. § 15064.5.
[20] AFC 6.7.3.

will provide for archaeological monitoring of earth-disturbing activities, among other measures to protect cultural resources both known and accidentally discovered during construction.

C. The Requested Field Study Is Not Necessary for the Cultural Resources Staff to Complete Its Analysis of Potential Significant Impacts On Cultural Resources

The applicant's consultants have evaluated Commission Staff's recommendation to complete three backhoe trenches in the alluvium beneath the flood plain, including logging, soil screening, and radiocarbon dating. Due to the low probability that buried cultural resources exist, coupled with the fact that such resources would likely be randomly scattered within the flood plain land form if they do exist, the suggested field program is highly unlikely to provide any new information.

First, it is highly unlikely that cultural resources will be encountered in a small number of randomly placed test pits. As described above, the flood plain landform is of the appropriate age to potentially contain cultural resources, but there is a low likelihood of significant buried deposits because, by nature, these deposits are periodically eroded and reworked by flood flows and stream channel meandering. This results in a low likelihood of conditions suitable for preservation of significant buried cultural resources. Furthermore, the fact that the flood plain land form is composed of a system of braided lenticular deposits means that the distribution of cultural artifacts across the landform, if any, would be generally random. The logs from the borings conducted on this landform confirm the presence of channel deposits which are characteristically layered and braided into complex accumulations of individual sediment lenses.

Second, the geologic and age information that would be obtained by the Field Study is well understood from the studies that have already been done by Orange Grove and others. The entire geologic unit recommended for testing is of adequate age to potentially contain cultural resources, so carbon dating outside the context of an actual cultural resource discovery is merely duplicative. Therefore, the results produced by the Field Study would be largely irrelevant to the technical topic presently at issue - cultural resources, not geology. No cultural resource discoveries are recorded to have ever occurred in the Holocene alluvium in this area, so an encounter in the test pits, in the unlikely event it were to occur, would be random luck. Short of an actual cultural resource finding, the information that would be yielded from the staff-

suggested studies would be purely geological with no relevance to cultural resources. Further, in the unlikely event a random cultural resource discovery were to occur during the proposed trenching, such a finding would have no correlation to the likelihood of resources occurring at other locations on the pipeline route, due to the random nature of individual lenses within the land form. In other words, although it is very unlikely for Orange Grove to discover any cultural resources along the pipeline route, if resources were discovered in one of the three trenches, that discovery would not necessarily indicate the presence of resources at other locations on the route.

Third, as described above, Orange Grove has made provisions for potential unknown cultural resources in the event that any should be accidentally discovered during construction. During the entire period of construction involving excavation of native soil, a designated Cultural Resource Specialist (CRS) will be available to inspect and evaluate any discoveries of buried cultural or historically significant resources or human remains that might be encountered.[21] Orange Grove will also implement a pre-construction worker education program and a construction monitoring and unanticipated cultural resources discovery plan. Orange Grove will provide for archaeological monitoring of earth-disturbing activities, among other measures to protect cultural resources both known and accidentally discovered during construction.

Therefore, the Field Study requested by Data Request 46(c) is not necessary for the Staff's analysis of cultural impacts. Staff presently has available to it all the information it needs to make a determination that the Project will not have a significant impact on cultural resources.

D. The language of Data Request 46 suggests it is a mere recommendation, not a requirement

Data Request 46 seeks "a more thorough analysis of the Project site and its linear facilities." To accomplish this goal, Data Request 46 makes several "recommendations," including documentation of landforms, researching science literature relevant to the landforms in the Project area, and an extensive geoarchaeological Field Study. However, Data Request 46

[21] AFC 6.7.3.

does not indicate that all of these steps are required in order to provide a more thorough analysis of the linear facilities. Indeed, CEQA itself "does not require a lead agency to conduct every test *or perform all research, study, and experimentation recommended*,"[22] and it does not require that all experts consulted on the matter agree as to the best methods by which to proceed.[23] The request is presented as a list of "recommendations," and neither the data request itself nor CEQA requires all recommended research and studies to be made. As described above, not all of these "recommendations" are necessary to provide Staff with a sufficient assessment of the Project's impacts on cultural resources. Staff already has more than enough information to support a determination that the Project will not have a significant impact on cultural resources. Therefore, Orange Grove asks the Committee to confirm that the Field Study recommended by Data Request 46(c) is not necessary.

II. There Is Insufficient Time Remaining to Complete the Field Study Requested by Data Request 46(c)

In addition to the dubious value of the work requested by Staff, it would be impractical to complete the Field Study within a reasonable time frame. CEQA does not require an environmental analysis to provide information which is not reasonably feasible to acquire. As described above, CEQA provides that "an evaluation of the environmental effects of a proposed Project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible."[24] CEQA "does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended,"[25] and it does not require that all experts consulted on the matter agree as to the best methods by which to proceed.[26]

In this case, the Field Study recommended by Staff is additionally not required by CEQA because it would result in significant delays to the current Project timeline. The Field Study is infeasible due to the approvals and permits which would need to be secured and time required before it could be completed. With regard to the Gregory Canyon Property, the Field Study

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[22] 14 C.C.R. § 15204 (a) (emphasis added).
[23] 14 C.C.R. § 15151.
[24] 14 C.C.R. § 15151.
[25] 14 C.C.R. § 15204(a).
[26] 14 C.C.R. § 15151.

would require development of a work plan, permission from Gregory Canyon who requires Orange Grove to obtain prior approval from the United States Fish and Wildlife Service (USFWS), scheduling with the contractor, field work, laboratory analysis, and the development of a final report. Based in part on past experience with this particular site, this would take up to 23 weeks. Furthermore, the required Gregory Canyon and USFWS approval steps are beyond the direct control of Orange Grove. Therefore, these steps would not necessarily be completed according to any timeline. This time estimate is based, in part, on Orange Grove's experience with seeking approval for a set of four geotechnical borings (described above), for which was Gregory Canyon required that Orange Grove obtain USFWS approval before Gregory Canyon would provide a final approval to perform work on their property. The approval that would be required from Gregory Canyon is discretionary; they are under no obligation to provide such approval.

With regard to the Caltrans right of way, the total time required for the Field Study is estimated to be 23 weeks including development of a work plan, preparation and submittal of an encroachment permit application, Caltrans approval, scheduling with the contractor, field work, laboratory analysis and development of a final report. This estimate is based, in part, on Orange Grove's experience with seeking Caltrans approval for 3 geotechnical borings (described above) completed on Caltrans property along the pipeline route. Caltrans took 11 weeks following submittal of an encroachment permit application to approve the permit for these borings. .

As described above, coordination and completion of the recommended backhoe test pits and analysis of data could take months or more to complete. CEQA simply does not require this level of environmental review, considering that the existing analysis of impacts is entirely sufficient and that the information requested by Data Request 46(c) would be highly unlikely to add relevant information to this analysis.

III. Conclusion

For the foregoing reasons, Orange Grove has not adopted the CEC Staff recommendation of carrying out the Field Study work described in Data Request 46(c). Orange Grove has already satisfied the environmental review requirements (including those regarding cultural resources) of CEQA, the Warren-Alquist Act, and the CEC regulations. As described above, the geology of

the Project area is already well understood and documented. In addition, the Field Study requested by Staff is infeasible and has strong potential to delay the Orange Grove Project significantly.

Therefore, Orange Grove would like the Committee to confirm, as soon as possible, that the Field Study described in Data Request 46(c) is unnecessary. Ideally, Orange Grove would like to resolve this issue before the evidentiary hearing.

DATED: November 4, 2008 DOWNEY BRAND LLP

By: Jane Luckhardt
Jane Luckhardt

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION ORANGE GROVE POWER PLANT	DOCKET NO. 08-AFC-4 **PROOF OF SERVICE (Revised 10/23/08)**

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-4
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Sacramento, CA 95814-5512
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Alliance for a Cleaner Tomorrow (ACT) c/o Arthur S. Moreau, Klinedinst, PC 501 West Broadway, Suite 600 San Diego, CA 92101 amoreau@klinedinstlaw.com	Jared Babula Staff Counsel jbabula@energy.state.ca.us Public Adviser's Office pao@energy.state.ca.us
Archie D. McPhee 40482 Gavilan Mountain Road Fallbrook, CA 92028 Archied1@earthlink.net	

DECLARATION OF SERVICE

I, Lois Navarrot, declare that on November 4, 2008, I deposited a copy of the attached Orange Grove's Energy, L.P.'s Status Report Expressing Concern About Cultural Resources in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of the California Code of Regulations, title 20, sections 1209, 1209.5 and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Lois Navarrot

Lois Navarrot

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Los Osos, CA 93402

805.528.6868 Phone
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www.TRCsolutions.com

October 30, 2008

Project No: 125158

Mr. Stephen Thome
Vice President of Development
Orange Grove Energy, L.P.
1900 East Golf Road, Suite 1030
Schaumburg, IL 60173

Subject: Letter-Report of Geoarchaeological Investigation for the Orange Grove Project Gas Pipeline

Dear Mr. Thome:

This letter reports the results of a geoarchaeological investigation conducted by TRC Solutions, Inc. (TRC) at four geotechnical borings completed within the State Route 76 (SR 76) right-of-way along the proposed Orange Grove Project gas pipeline route. The borings, designated as B-3, B-4, B-5 and B-6, were located near the west end of the gas pipeline route near the intersection of Couser Canyon Road and SR 76 at the locations shown in Figure 1. The four borings were each completed to a depth of 20 feet below the ground surface by Tri-County Drilling using a hollow stem auger rig with an 8-inch diameter auger. The drilling was initially planned for purposes of a geotechnical investigation, but Orange Grove Energy, L.P. requested that TRC perform the geoarchaeological investigation while geotechnical work was being performed, since California Energy Commission (CEC) staff requested additional geoarchaeological information along the pipeline route at a September 11, 2008 project workshop. The geotechnical drilling, which had been planned for several months, provided an opportunity to obtain additional geoarchaeological information for the project without delaying the project schedule. An Encroachment Permit application for the drilling was submitted by others on July 16, 2008 and approved by Caltrans on October 2, 2008. Field work occurred on October 16, 2008. Logs of each of the borings are attached.

The geoarchaeological investigation was conducted by Mr. Tracy Stropes, M.A., R.P.A, and Mr. John Nordenstam, P.G.; both are TRC senior staff. Mr. Stropes meets the U.S. Secretary of the Interior's Professional Standards for archaeological investigations and is a Registered Professional Archaeologist (#16283) with eighteen years of experience. Mr. Nordenstam is a California-registered Professional Geologist (#7160) with 20 years of experience including expertise in Quaternary soils and geology investigations. Resumes for Messrs. Stropes and Nordenstam are attached. Prior to conducting field work, available geologic, geomorphic, and cultural resource information for the area was reviewed to facilitate understanding the local stratigraphy and other relevant conditions.

Both cuttings and sediment core samples taken using a California modified split spoon sampler were observed and characterized during drilling to provide continuous logging

for all four borings. Geologic characteristics were recorded and are documented in the attached boring logs. Split spoon core samples were taken in each hole at intervals ranging from one to 3.5 feet, as shown in the attached boring logs. Drill cuttings were continuously sampled and logged from all four borings, and sifted through ¼-inch screen to monitor for the potential presence of cultural materials. Cuttings and samples were observed for the potential presence of paleosoil horizons, cultural horizons or cultural matrices.

Based on the work performed, including continuous observation of cuttings and closely spaced core samples, and sifting of soil cuttings through ¼ inch screen, there is no indication of the presence of cultural resources at any of the four boring locations to the total investigated depth of 20 feet, which is considerably deeper than the maximum gas pipeline trenching depth of approximately ten feet in the SR 76 right-of-way. The work performed found no cultural materials, cultural horizons, paleosoils or any other condition indicating the potential presence of cultural resources. As shown in the attached boring logs, the materials encountered were primarily fine to course sand, with some sandy silt and silt with sand. To the full depth of each boring, these materials are interpreted as Holocene alluvium deposited by the San Luis Rey River. These materials have a low likelihood of containing significant cultural resources. (See the response to CEC staff Data Request 46 for further discussion of the low likelihood of cultural resources in these Holocene alluvium San Luis Rey River deposits.)

Overall, the findings of the geoarchaeological investigation conducted at these four borings are consistent with and the geoarchaeological assessments provided to the CEC to date for this project in the response to CEC staff Data Request 46 and in the Cultural Resources responses to CEC data requests from the September 11, 2008 workshop (workshop responses dated October 2008).

Sincerely,

Joseph L. Stenger

Joseph L. Stenger, P.G. (# 5964)
Project Director
TRC Solutions, Inc.

Attachments:
Figure 1: Location of Geotechnical Borings Evaluated for Geoarchaeology
Boring Logs
Resume for Mr. Tracey Stropes
Resume for Mr. John Nordenstam

G:\Orange_Grove-125158\MXD\Bore Locations.mxd

Boring Location

Proposed Pipeline

1" = 300'

300 150 0 300 600

Feet

Figure 1

Location of Geotechnical Borings Evaluated for Geoarcheaology

Orange Grove Project

TRC

PROJECT NO.: 125158	DATE DRILLED: October 16, 2008
LOCATION: Orange Grove Project	LOGGED BY: J. Nordenstam, P.G.
Pala, California	APPROVED BY: J. Nordenstam, P.G.
	DRILLING CO./RIG: Tri-County/B-61

DRILLING METHOD: 8-inch Hollow Stem Auger
SAMPLER TYPE: 2-inch California Modified Split Spoon and 1.5-inch SPT
TOTAL DEPTH: 20 ft. DEPTH TO WATER: 13.5 ft.

BLOWS PER 6 INCHES	PID (ppmv)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	GRAPHIC LOG	BOREHOLE BACKFILL DETAIL
			0	SILTY SAND: light olive brown (2.5Y 5/3), loose, slightly moist, fine-grained sand, some medium and coarse-grained sand, well rounded.	SM		
			5	Trace fine gravel, well rounded.			
				No gravel.			
			10	SAND: light gray (2.5Y 7/1), loose, slightly moist, fine-grained, some medium-grained sand.	SP		
				Light gray (5Y 7/1), medium-grained, trace coarse-grained sand, some silt, moderate to well rounded.			
			15	Medium dense, wet, medium-grained, some coarse-grained sand, trace silt.			
			20	Boring drilled by others. TRC observed drilling and sampling activities and conducted soil logging based on drill cuttings and samples collected by others.			
			25				
			30				
			35				
			40				

Drill Cuttings

TRC

LOG OF EXPLORATORY BORING

B-3

PROJECT NO.: 125158	DATE DRILLED: October 16, 2008
LOCATION: Orange Grove Project	LOGGED BY: J. Nordenstam, P.G.
Pala, California	APPROVED BY: J. Nordenstam, P.G.
	DRILLING CO./RIG: Tri-County/B-61

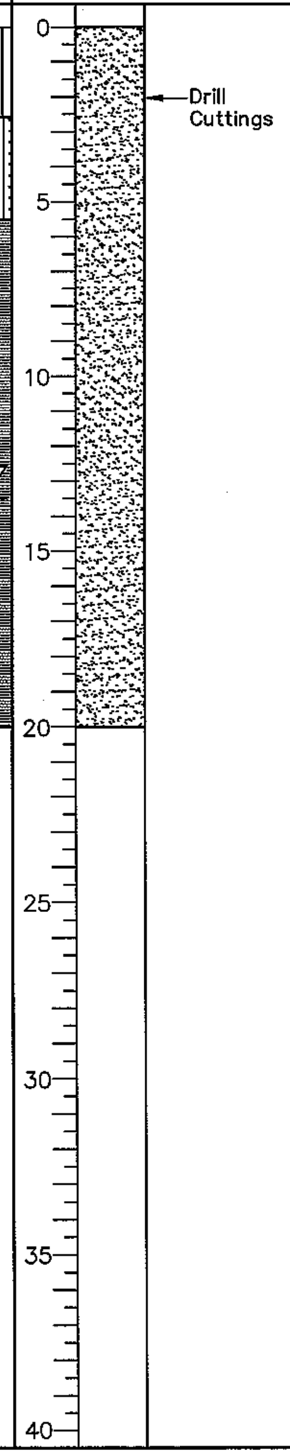
DRILLING METHOD: 8-inch Hollow Stem Auger

SAMPLER TYPE: 2-inch California Modified Split Spoon and 1.5-inch SPT

TOTAL DEPTH: 20 ft. DEPTH TO WATER: 13.5 ft.

DEPTH (feet below grade)	DESCRIPTION	USCS
0–3.5	SANDY SILT: light yellowish brown (2.5Y 6/3), loose, dry, fine-grained sand, trace coarse-grained sand and fine gravel.	ML
3.5–6	SILTY SAND: dark grayish brown (2.5Y 4/2), medium dense, moist, fine-grained sand, trace fine gravel.	SM
6–20	SAND: light brownish gray (2.5Y 6/2), loose, dry, fine- to medium-grained, some silt, trace coarse-grained sand, moderate to well rounded.	SP
	Medium-grained sand.	
	Light gray (5Y 7/1), medium dense, wet, trace coarse-grained sand and silt.	
20	Boring drilled by others. TRC observed drilling and sampling activities and conducted soil logging based on drill cuttings and samples collected by others.	

Column headings: BLOWS PER 6 INCHES; PID (ppmv); SAMPLE; DEPTH (feet below grade); DESCRIPTION; USCS; GRAPHIC LOG; BOREHOLE BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

B-4

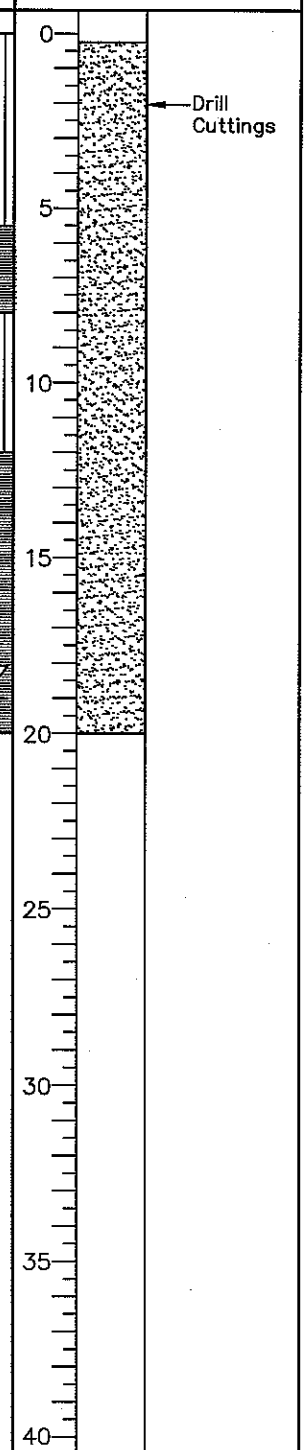
PAGE 1 OF 1

PROJECT NO.: 125158	DATE DRILLED: October 16, 2008
LOCATION: Orange Grove Project	LOGGED BY: J. Nordenstam, P.G.
Pala, California	APPROVED BY: J. Nordenstam, P.G.
	DRILLING CO./RIG: Tri-County/B-61

DRILLING METHOD: 8-inch Hollow Stem Auger
SAMPLER TYPE: 2-inch California Modified Split Spoon and 1.5-inch SPT
TOTAL DEPTH: 20 ft. DEPTH TO WATER: 19 ft.

BLOWS PER 6 INCHES	PID (ppmv)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS	GRAPHIC LOG
			0	SANDY SILT: grayish brown (2.5Y 5/2), loose, dry, fine-grained sand, trace fine gravel.	ML	
			5	SAND: light yellowish brown (2.5Y 6/3), loose, dry, medium- to coarse-grained, some silt, moderate to well rounded.	SP	
			10	SILT: dark grayish brown (2.5Y 4/2), soft, moist, trace fine-grained sand.	ML	
			15	SAND: grayish brown (2.5Y 5/2), loose, slightly moist, fine-grained, some silt, trace medium-grained sand. Light yellowish brown (10YR 6/4), dry, medium-grained, trace coarse-grained sand and silt, sub-angular to moderately rounded.	SP	
			20	Light gray (10YR 7/2), wet, fine-grained, trace clay, sub-angular.		
			25	Boring drilled by others. TRC observed drilling and sampling activities and conducted soil logging based on drill cuttings and samples collected by others.		
			30			
			35			
			40			

BOREHOLE BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

B-5

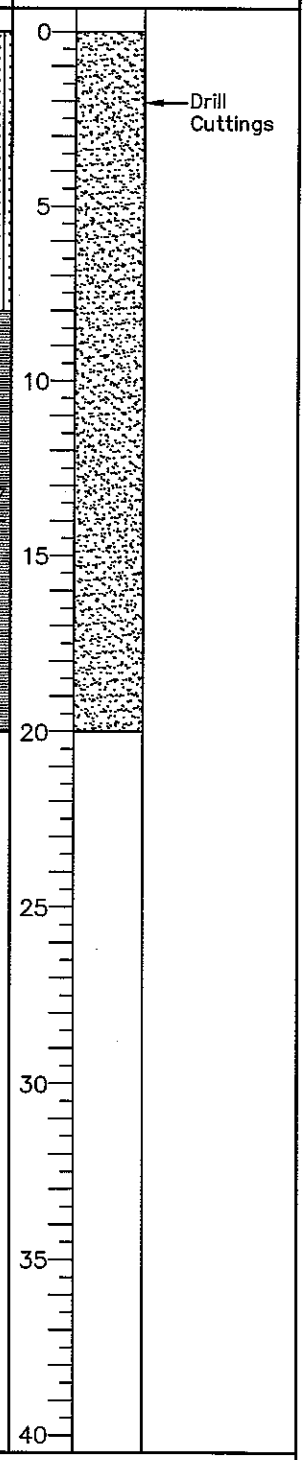
PROJECT NO.: 125158	DATE DRILLED: October 16, 2008
LOCATION: Orange Grove Project	LOGGED BY: J. Nordenstam, P.G.
Pala, California	APPROVED BY: J. Nordenstam, P.G.
	DRILLING CO./RIG: Tri-County/B-61

DRILLING METHOD: 8-inch Hollow Stem Auger
SAMPLER TYPE: 2-inch California Modified Split Spoon and 1.5-inch SPT
TOTAL DEPTH: 20 ft. DEPTH TO WATER: 14 ft.

BLOWS PER 6 INCHES	PID (ppmv)	SAMPLE	DEPTH (feet below grade)	DESCRIPTION	USCS
			0	SILTY SAND: gray (7.5Y 5/1), loose, dry, fine-grained sand.	SM
			5	Gray (7.5Y 6/1).	
				Trace medium and coarse-grained sand.	
			10	SAND: gray (7.5Y 6/1), loose, dry, fine-grained, some medium-grained sand, trace silt.	SP
			15	Brown (7.5YR 5/2), wet, medium-grained, some coarse-grained sand, trace fine-grained sand and silt, moderate to well rounded.	
				Some coarse-grained sand and fine gravel, no fine-grained sand or silt.	
			20	Boring drilled by others. TRC observed drilling and sampling activities and conducted soil logging based on drill cuttings and samples collected by others.	
			25		
			30		
			35		
			40		

GRAPHIC LOG

BOREHOLE BACKFILL DETAIL



TRC

LOG OF EXPLORATORY BORING

B-6

PAGE 1 OF 1

Mr. Tracy A. Stropes, M.A., RPA

EDUCATION

M.A., Anthropology, San Diego State University, 2007
B.S., Anthropology, University of California Riverside, 2000

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Registered Professional Archaeologists, (#16283), 2008
County of Riverside Certified Archaeologist (#257), 2007

AREAS OF EXPERTISE

Mr. Tracy A. Stropes, M.A., RPA has program management and technical expertise in the following general areas:

- Cultural Resource Management
- Survey, Testing, Data Recovery, and Monitoring Programs
- Archaeological Laboratory Management
- Native American Consultation
- Lithic Analyses
- CEQA and Section 106

REPRESENTATIVE EXPERIENCE

Mr. Stropes has eighteen years experience in cultural resource management that includes over ten years in project management, laboratory management, lithic analysis, Native American consultation, report authorship, and editing for several technical reports for numerous projects throughout southern California. Mr. Stropes is a Registered Professional Archaeologist and on the list of archaeological consultants qualified to conduct archaeological investigations in Riverside County, California. He has served as project archaeologist for numerous projects, and composed several data recovery and preservation programs for sites throughout California for both CEQA and NEPA level compliance. He has acted as teaching assistant for archaeological field classes at several sites in Orange (Cypress College), Los Angeles (Cypress College), and San Diego Counties (San Diego State University). In addition, Mr. Stropes was employed to teach discussion sessions for introduction to cultural anthropology classes at SDSU. Internationally Mr. Stropes has acted as field surveyor for the Natural History Foundation of Orange County & Institucion Nacional de Antropologia y Historia surveying and relocating several sites throughout northern Baja California. Mr. Stropes currently serves as the Director of Archaeology for the Natural Sciences and Permitting in Irvine, California.

City of Carlsbad, Carlsbad Municipal Golf Course Data Recovery Program for CA-SDI-8694, and Indexing and Preservation Study for CA-SDI-8303 and CA-SDI-8797 Locus C, City of Carlsbad, California. (Project Manager: 2004 – 2005)

Project Archaeologist and primary author under Gallegos & Associates. This report provided the results of the Carlsbad Municipal Golf Course Data Recovery Program for prehistoric site CA-SDI-8694, and Indexing and Preservation Study for CA-SDI-8303 and CA-SDI-8797 Locus C conducted by Gallegos & Associates. The work was conducted to adequately address mitigation of impacts resulting from the development of the Carlsbad Municipal Golf Course. Mitigation was achieved through the completion of the data recovery program for CA-SDI-8694, and avoidance and capping for CA-SDI-8303 and CA-SDI-8797 Locus C. Prior to avoidance and capping, both CA-SDI-8303 and CA-SDI-8797 Locus C were sampled using six 1x1-m excavation units per site to provide an index sample representing the archaeological deposit being capped and preserved. Sites CA-SDI-8303, CA-SDI-8694, and CA-SDI-8797 Locus C are located within the City of Carlsbad. The data recovery program for CA-SDI-8694 provided for a 2 to 5 percent phased excavation of the primary site area (3,000 sq. m). This program included excavation of 1x1-m sample units, block excavations, feature excavation, analysis of artifacts and ecofacts, radiocarbon dating, and will provide monitoring during construction grading. The research orientation for this study focused on chronology, lithic technology, settlement and subsistence strategy, environmental setting, and trade and travel. The index sample included the excavation of six 1x1-m units at both CA-SDI-8303 and CA-SDI-8797 Locus C. All artifacts and ecofacts recovered were washed, analyzed, and special studies for lithic, shell, bone, radiocarbon dating, obsidian sourcing, ceramic and residue analyses were completed. The portion of sites CA-SDI-8303 and CA-SDI-8797 Locus C within the Open Space Easements, were capped using one inch of clean sand, and a minimum of six inches of clean fill soil. Shallow-rooted plants will be used in the Open Space Easements.

Harbrecht Development, L.P./ County of San Diego, Near the Harris Site Quarry Cultural Resource Data Recovery and Preservation Program for CA-SDI-13028 San Diego County, California. (Project Manager: 2004 – 2005)

Project Manager and primary author. This report provides the results of the Data Recovery and Preservation Program for precontact site CA-SDI-13028. The Data Recovery and Preservation Program for site CA-SDI-13028 was conducted to mitigate impacts through data recovery for the east half of the site and to index sample the west half for site preservation through placement within an open space easement, capping using clean fill, revegetation as needed, and fencing. All work was conducted in compliance with the County of San Diego guidelines and the California Environmental Quality Act (CEQA). The data recovery program for the east portion of CA-SDI-13028 included a phased stratified random sample. The Phase IA sample employed the selection and excavation of

20 1x1-m units from across the 13,000 sq m eastern portion of CA-SDI-13028. This work produced 79 debitage, 1 mano, and 0.1 g of shell. As Phase IA identified the eastern portion as shallow and disturbed by grading and planting avocado trees, Phase II (excavation of an additional 20 1x1-m units in the eastern portion) was not conducted providing tremendous savings to the client. The Phase IB index sample for the western portion, which is planned for avoidance and preservation within an open space easement, included the collection of surface artifacts and the excavation of eight 1x1-m units. This work produced 44 bifaces, 1 core, 4 steep edged unifacial tools, and 8053 debitage. The Phase IB sample identified stone tool production activities that occurred at the western portion of CA-SDI-13028. These activities included the selection of angular to subangular cobble to small boulder size metavolcanic nodules for production of large biface preforms. These biface preforms were then removed from the quarry (CA-SDI-13028) and further reduced at a secondary reduction locality or habitation site, such as CA-SDI-5101 (located on the McCrink Ranch) or CA-SDI-149 (Harris site). The lithic assemblage recovered from CA-SDI-13028 produced a highly-specialized lithic assemblage that suggests the site occupants visited the location for two very specific reasons, lithic resource procurement and biface manufacture. Based on the large number of bifaces recovered, the site occupants of CA-SDI-13028 visited this specific location to procure, and process material for export as biface preforms to another location. Similarities in knapping behavior demonstrated by the lithic reduction continuum started at CA-SDI-13028 and likely continued at sites like the Harris site, suggest that the people(s) that exploited the quarry stone resource at CA-SDI-13028 may be the same people that occupied sites such as the Harris site (CA-SDI-149). The artifact assemblage reflects the use of primarily local metavolcanic materials and provides no evidence of trade. The basal levels of the Harris site have been radiocarbon dated to 8,000 to 9,000 years ago (Warren 1966 and 1968). Given the presence of large bifaces, and radiocarbon dating of the assemblage at the Harris site (and sites with large bifaces), the quarry could have been used during the early to middle Holocene. The data recovery for the eastern portion of CA-SDI-13028 completes the mitigation measure for this portion of CA-SDI-13028. As demonstrated by the results of Phases IA and IB, the primary site area is located on the western two thirds of the area identified as significant. Index sampling of this area provided a representative sample of the quarry and the activities conducted.

California Energy Commission and Otay Mesa Generating Company, LLC, Cultural Resource Inventory, Testing, Data Recovery and Mitigation Monitoring Program for the Otay Mesa Generating Plant. (Project Archaeologist: 2003-2004)

Project Archaeologist and report author. This project produced a number of reports which included the initial literature review and field survey, testing of archaeological sites within the proposed plant site and utility corridors, mitigation of impacts to prehistoric sites CA-SDI-7215 and CA-SDI-9975 through the

completion of data recovery programs, and monitoring during construction. The literature review and field survey identified 20 cultural resources within or immediately adjacent to the proposed plant site and utility corridors. For those sites not previously tested, an evaluation using surface collection of artifacts, and excavation of shovel test pits and 1x1-m units was conducted. As a result of testing, two sites (CA-SDI-10297 and CA-SDI-9975) were identified as significant and eligible to the National Register of Historic Places. Site (CA-SDI-10297) was flagged and monitored to ensure avoidance during construction. For CA-SDI-9975, mitigation of impacts was achieved through the completion of a data recovery program. The cultural resources mitigation and monitoring plan, included assisting in preparing the training manual and video, as well as, training of construction personnel and monitoring during ground disturbing activities. As a result of monitoring, one cultural resource site (CA-SDI-7215, Locus B) was discovered and identified as significant. Mitigation of impacts was achieved through the completion of a data recovery program. Construction monitoring for the Otay Mesa Generating Plant began in August 2001 and ended in March 2002. Locus B was radiocarbon dated to 4,555 years ago and produced steep-edge unifacial tools (SEUTs), battered implements, flaked tools, manos, metates, debitage, and shell. Through the completion of these studies a better understanding of land use patterning, environmental setting, and change through time and chrononlogy for the Otay Mesa region were achieved.

Joseph Wong Design Associates, **Data Recovery Program for PacBell Site CA-SDI-5633 San Marcos, California**. **(Project Manager: 2001-2002)**
Project Manager and primary author for Pacbell Project. This project included a data recovery program and a report of finding for the purpose of mitigating the impacts/effects of the proposed expansion of the existing PacBell facility. Based on previous work completed for the Oceanside–Escondido Rail Project (Gallegos & Pigniolo 1990, Guerrero et al. 2001), site CA-SDI-5633 was recommended as significant and eligible for listing in the California Register of Historical Resources and the National Register of Historic Places (Guerrero et al. 2001). The State Historic Preservation Officer concurred with these recommendations. Native American monitoring was provided by Mark Mojado and Linda Foussat, of the San Luis Rey Band of Mission Indians. The data recovery program included four phases of excavation, followed by data analysis, special studies, and a report of finding. Prior to subsurface excavation, phosphate samples were taken across the site to identify areas of high phosphate, therein identifying areas with higher concentrations of artifacts and ecofacts representing Native American occupation. The Phase I random sample included the excavation of 27 1x1-m units. Using the phosphate and Phase I sample results, areas were defined for the excavation of 25 1x1-m units to complete block exposures. This work was followed by the excavation of 15 rapid recovery units to provide additional diagnostic artifacts to address the research questions posed. The excavation of a total of 67 1x1-m units produced 93 projectile points, 2 battered implements, 2 cores, 2 flake tools, 13,360 debitage, 15 manos, 5 metates, 14 ground stone

fragments, 2 pieces of shaped stone, 1 steatite pendant, 59 ceramic pieces, 1 piece of baked clay, 1 Olivella sp. shell bead, 5 bone tools, 265.57 g of bone, 125.62 g of shell, and 201 historic items (172 glass, 10 metal, 1 square nail, and 18 ceramic fragments). A total of 14 bedrock milling features with 35 elements (22 slicks, 9 saucers, and 4 cupules) were documented through photographs, drawings, and measurements. Special studies included lithic analysis, radiocarbon dating, ceramic analysis (petrographic thin-section), faunal analysis, obsidian sourcing, and residue (immunological) analysis. The question of trade and travel was addressed through the sourcing of obsidian to both the Coso Volcanic Field, approximately 300 miles to the north/northeast of site CA-SDI-5633; and to Obsidian Butte in the Imperial Valley, approximately 100 miles east/northeast of CA-SDI-5633. The majority of stone used for tools was manufactured from local materials. The question of chronology was addressed through the radiocarbon dating of five shell samples. This analysis placed the occupation of site CA-SDI-5633 circa A.D. 1170 to A.D. 1690.

North San Diego County Transit District (NCTD), Cultural Resource Test Report for the Oceanside-Escondido Rail Project, Oceanside. (Project Archaeologist: 2000-2001)

Project author and primary analyst. This test report for the Oceanside-Escondido Rail Project was prepared to satisfy the Federal Transportation Authority's (FTA) Section 106 responsibilities. The report follows the Programmatic Agreement signed by the North San Diego County Transit Development Board, FTA, California State Historic Preservation Officer, and the Advisory Council on Historic Preservation. The project was the construction and establishment of a new passenger rail system from Oceanside to Escondido using 22 miles of existing right-of-way and 1.7 miles of new right of way. In addressing the programmatic agreement and previous SHPO comments, eight cultural resource sites (CA-SDI-5633, CA-SDI-8386, CA-SDI-12095, CA-SDI-12096, CA-SDI-12097, CA-SDI-13212, CA-SDI-14325, and CA-SDI-14340) were tested to determine eligibility for listing in the National Register of Historic Places. Testing included a review of previous work, resurvey of the site area, collection of surface artifacts, excavation of shovel test pits to determine site size and depth, excavation of 1x1-m units to determine content, integrity, and potential to address important research questions. Mitigation of impacts/effects for both CA-SDI-5633 and CA-SDI-12096 was achieved through avoidance. The remaining sites or portions of sites tested (CA-SDI-8386, CA-SDI-12095, southern portion of CA-SDI-12096, CA-SDI-12097, CA-SDI-13212, CA-SDI-14325, and CA-SDI-14340) were recommended as not significant and not eligible for listing in the California Register of Historical Resources nor the National Register of Historic Places.

SPECIALIZED TRAINING

- Riverside County Cultural Sensitivity Training, 2007
- Ten-Hour OSHA Health and Safety Training, January 2008

PROFESSIONAL AFFILIATIONS

- Register of Professional Archaeologists
- Society for California Archaeology
- Archaeological Conservancy
- Society for American Archaeology

SELECTED PUBLICATIONS AND PRESENTATIONS

2008 Cultural Resource Monitoring at 31431 Camino Capistrano, San Juan Capistrano California. Prepared for Herman Weissker, Inc

2008 Cultural Resource Inventory for the Snow White Pumice Mine, Hinkley California. Prepared for U.S. Mining and Minerals Corporation.

2007 Nodule Industries of North Coastal San Diego: Change and Stasis in 10,000 Years of Lithic Technology. Masters Thesis on file, San Diego State University.

2007 Cultural Resource Inventory for Empire Homes (APN 104-180-04), Lake Forest, California. Prepared for Empire Homes.

2007 Phase I Archaeological Assessment for APN 104-200-09, Beumont, California. Prepared for Mary Chan.

2006 Carlsbad Municipal Golf Course Data Recovery Program for CA-SDI-8694, and Indexing and Preservation Program Study for CA-SDI-8303 and CA-SDI-8797 Locus C, City of Carlsbad, CA. Prepared for City of Carlsbad.

2005 Grand Pacific Resorts Data Recovery and Index Sample Program for CA-SDI-8797, Area A, City of Carlsbad, CA. Prepared for Grand Pacific Resorts Inc.

2005 Cultural Resource Survey and Testing for the Star Ranch Property, San Diego, California.

2004 "Near the Harris Site Quarry" Cultural Resource Data Recovery and Preservation Program for CA-SDI-13028, San Diego County, California. Prepared for Harbrecht Development, L.P.

2004 Cultural Resource Test Report for the Palomar Point Project: Site CA-SDI-16205, Carlsbad, California. Prepared for Lanikai Management Corp.

2004 Cultural Resource Survey and Test Report for the Canyon View Project, Carlsbad, California. Prepared for Shapouri & Associates.

2004 Cultural Resource Test Report for the Yamamoto Property: Site SDM-W-2046, Carlsbad, California. Prepared for Cunningham Consultants, Inc.

2004 Cultural Resource Survey and Boundary Test Report for the Lilac Ranch Project, San Diego County, California. Prepared for Empire Companies.

2004 Historical Resources Report for the Kuta and Mascari Properties, Otay Mesa, California. Prepared for Centex Homes.

2004 Cultural Resource Monitor and Test Report for the Encina Power Plant Project, Carlsbad, California. Prepared for Haley & Aldrich, Inc.

2004 Cultural Resource Test Report for Site CA-SDI-16788, Otay Mesa, California. Prepared for Otay Mesa Property, L.P.

2004 Cultural Resource Survey and Test Report for the Lonestar Project, Otay Mesa, San Diego County, California. Prepared for Otay Mesa Property, L.P.

2003 Cultural Resource Mitigation Program for the Torrey Ranch Site CA-SDI-5325, San Diego, California. Prepared for Garden Communities.

2003 Cultural Resource Data Recovery and Preservation Program for CA-SDI-12027, San Diego County, California. Prepared for Harbrecht Development Inc.

2003 Cultural Resource Survey and Test Report for the Johnson Canyon Parcel, Otay Mesa, San Diego County, California. Prepared for Otay Mesa Property, L.P.

2002 Cultural Resource Data Recovery Plan for the Shaw Project: Sites CA-SDI-13025 and CA-SDI-13067, San Diego County, California. Prepared for Shapouri & Associates.

2002 Data Recovery Program for the Pacbell Site CA-SDI-5633, San Marcos, California. Prepared for Joseph Wong Design Associates.

2001 Archaeological Test Program for CA-SDI-14112 Mesa Norte Project, San Diego, California. Prepared for Hunsaker & Associates.

2001 The Vista-Oceanside Cultural Resource Survey and Test Program, Vista, California. Prepared for Shapouri & Associates.

2001 Cultural Resource Test Program for the Wilson Property, Carlsbad, California. Prepared for the City of Carlsbad.

2001 McCrink Ranch Cultural Resource Test Program Additional Information for Selected Sites, San Diego County, California. Prepared for Shapouri & Associates.

2001 The Quail Ridge Project Cultural Resource Test Program, San Diego County, California. Prepared for Helix Environmental Planning, Inc.

2001 Cultural Resource Test Plan for the Oceanside-Escondido Project, County of San Diego, California. Prepared for Dudek & Associates.

2001 Cultural Resource Test Program for the Kramer Junction Expansion Project Adelanto, California. Prepared for AMEC.

2001 Cultural Resource Test Program for CA-SDI-12508 San Diego, California (LDR. No. 99-1331). Prepared for Garden Communities.

2000 Archaeological Testing of Prehistoric Sites CASDI-14115 and CA-SDI-14116 for The Mesa Grande Project, San Diego, California. Prepared for Solana Mesa Partners, LLC.

2000 Cultural Resource Survey and Test Report for the Wetmore Property, Otay Mesa, San Diego County, California. Prepared for Mr. Andy Campbell.

2000 The Torrey Ranch Cultural Resource Test Program, San Diego County, California. Prepared for Garden Communities.

2000 Cultural Resource Test Results for the Otay Mesa Generating Project. Prepared for the California Energy Commission and Otay Mesa Generating Company, LCC.

2000 The Eternal Hills Cultural Resource Survey and Test Program, City of Oceanside, California. Prepared for Eternal Hills Memorial Park.

2000 The Quail Ridge Cultural Resource Test Program, San Diego County, California. Prepared for Helix Environmental Planning Inc.

2000 Cultural Resource Testing Program for CA-SDI-5652/H and CA-SDI-9474H SR 78/Rancho Del Oro Interchange Project, Oceanside, California. Prepared for Tetratech Inc.

2000 Cultural Resource Test Results for a Portion of CA-SDI-8654 (Kuebler Ranch) Otay Mesa, San Diego County, California. Prepared for Shapouri & Associates.

2000 Cultural Resource Survey and Evaluation for the North Sand Sheet Full Buildout Program, Owens Lake, California. Prepared for CH2MHill.

2000 Historical/Archaeological Monitoring and Data Recovery Program for Prehistoric Site CA-SDI-48, Locus C Naval Base Point Loma, San Diego, California. Prepared for Department of the Navy, Southwest Division.

2000 Cultural Resource Evaluation Report for the Palomar College Science Building Project San Marcos, California. Prepared for Parsons Engineering Science Inc.

1999 Cultural Resource Monitoring Report for the Village of Ystagua Water Main Break City of San Diego, California. Prepared for the City of San Diego Water Department.

1999 The Effect of Projectile Point Size on Atlatl Dart Efficiency in Lithic Technology Vol 24, No 1 p (27-37).

1999 Cultural Resource Evaluation Report for the Oceanside-Escondido Bikeway Project, San Marcos, California. Prepared for City of San Marcos.

1999 5000 Years of Occupation: Cultural Resource Inventory and Assessment Program for the Carlsbad Municipal Golf Course Project City of Carlsbad, California. Prepared or Cotton/Beland/Associates, Inc.

1999 Silver Oaks Estates Cultural Resource Enhanced Survey and Test Report for a Portion of CA-SDI-7202 San Diego, California. Prepared for Helix Environmental Planning Inc.

1999 Historical Archaeological Test of a portion of CA-SDI-8303 for the Faraday Road Extension Carlsbad, California. Prepared for the City of Carlsbad.

1999 Cultural Resource Literature Review for the North Coast Transportation Study Arterial Streets Alternative San Diego County, California. Prepared for MLF/San Diego Association of Govt.

1998 Archaeological Test Report for a Portion of CA-SDI-9115/SDM-W-122 Carlsbad, California. Prepared for Industrial Developments International.

1998 Rainforest Ranch Cultural Resource Survey and Significance Test for Prehistoric Sites CA-SDI-14932, CA-SDI-14937, CA-SDI-14938, and CA-SDI-14946 County of San Diego, California. Prepared for Boys and Girls Club of Inland North County.

1998 Cultural Resource Evaluation Report for the Oceanside-Escondido Bikeway Project San Marcos, California.

1998 Final Report: Cultural Resource Survey Report for the Sterling Property, Carlsbad, California. Prepared for SPT Holdings LCC.

1996 Final Report: Archaeological Survey and Test for the Huber Property Carlsbad, California. Prepared for Gene Huber.

1996 Final Report: Results of Phase II Test Excavations and Phase III Data Recovery Excavations at Nine Archaeological Sites Within the Newport Coast Planned Community Phase III Entitlement Area, San Joaquin Hills, Orange County, California. Prepared for Coastal Community Builders, a division of The Irvine Company.

1995 Preliminary Report: Phase II Test Results From Nine Prehistoric Archaeological Sites Within The Proposed Upper Newport Bay Regional County Park. Prepared for EDAW, Inc.

1995 Final Report: A Phase II Test Excavation at CA-ORA-136, Block 800 City of Newport Beach, Orange County California. Prepared for the Irvine Apartment Communities, a division of The Irvine Company.

1995 Final Report: Archaeological Investigations Conducted for the Abalone Cove Dewatering Wells, City of Rancho Palos Verdes Los Angeles County, California. Prepared for the City of Rancho Palos Verdes, Environmental Services.

1995 Final Report: A Class III Intensive Survey of a 100-Acre Sand and Gravel Mining Area, Imperial County, California. Prepared for the Lilburn Corporation.

1994 Final Report: Data Recovery Excavations at Five Late Prehistoric Archaeological Sites Along the Los Trancos Access Road, Newport Coast Planned Community, Orange County, California. Prepared for the Coastal Community Builders, a division of The Irvine Company.

SELECTED PRESENTATIONS

2003 Steep Edge Unifacial Tools of Otay Mesa: An Analysis of Edge Types from CA SDI-7215 SCA Southern California Data Sharing Meetings

2001 Identification of Late Period Behavior Patterns in Elfin Forest: Three Sites in Northern San Diego County. 2001 Society for California Archaeology Data Sharing Meetings, San Luis Obispo, California.

1996 Trans-Tehachapian Lithic Trade at the Canebreak/Sawtooth Transition. Thirteenth Annual Meeting, Society of California Archaeology, Bakersfield, California.

1994 Point Size and Atlatl Dart Efficiency. Twenty Fourth Annual Meeting, Great Basin Anthropological Conference, Elko, Nevada.

JOHN NORDENSTAM, PG

EDUCATION
B.S., Geology, California State University, Long Beach, 1988

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS
Professional Geologist, California, (#7160), 2001

AREAS OF EXPERTISE
Mr. John Nordenstam, PG, has expertise in the following areas:

- Project Management
- Site Assessment
- Feasibility Studies / Remedial Action Plans
- Soil and Groundwater Remediation

REPRESENTATIVE EXPERIENCE
Mr. Nordenstam is a Senior Project Geologist responsible for site characterization and site mitigation activities. He has 20 years of experience in site characterization and groundwater and soil remediation. Mr. Nordenstam's project management experience includes groundwater and soil investigations, remediation system selection and design, and maintenance of project schedules and budgets for underground storage tank and pipeline facilities. Additional responsibilities include oversight of field and office operations, implementation of remedial actions, and interaction with regulatory agencies. He has conducted and managed more than 100 site investigation and remediation projects over the past 20 years.

The Southern California Gas Company/Sempra Energy, Remedial Investigation, Former Aliso Street MGP Site - Los Angeles, CA (Senior Project Geologist: 1999 -2003)
Mr. Nordenstam served as Project Manger for subsurface exploration and remedial investigation performed under the direct supervision of the Department of Toxic Substances Control (DTSC). TRC was contracted to perform subsurface explorations to evaluate the nature and extent of soil, groundwater, and soil vapor contamination at a 52 acre, former manufactured gas plant that had been in operation from 1874 to 1947. The property is currently used for a mixture of commercial, light industrial, public institutions, and transportation land uses. He supervised and implemented a DTSC approved work plan that included drilling and sampling 186 test borings, using hollow-stem auger drilling techniques, for a total footage of 6,773 feet; constructing, developing, and sampling 43 ground water monitoring wells; and installing and sampling 123 soil gas probes. Deep test borings and groundwater monitoring wells were installed in the shallow subsurface and to the alluvium/bedrock interface (i.e., up to 120 feet below ground surface). Mr. Nordenstam also implemented a DTSC-approved site health and safety plan including air monitoring for particulates, volatile organic compounds (VOCs), and hydrogen sulfide and methane. Fieldwork was

conducted in two phases which each lasted approximately five months.

Former Golden Eagle Refinery, Site Assessment - Carson, CA (Project Geologist: 1993)
Mr. Nordenstam conducted a subsurface exploration and remedial investigation of a former refinery facility and adjacent landfill performed under the direct supervision of the Department of Toxic Substances Control (DTSC). He conducted drilling activities in conjunction with remedial excavation activities in a Level C environment. Mr. Nordenstam also supervised installation of two 120-foot wells into the Gage Aquifer using mud rotary drilling techniques; the wells were continuously cored and conductor casing was installed to seal off a shallow, perched water-bearing zone present above the Gage Aquifer. Duties also included drilling and installing six 60-foot-deep groundwater monitoring wells and fifteen 40-foot-deep soil borings using a hollow stem auger, conducting development and sampling of the newly installed and existing monitoring wells at the site (30 total), performing two 24-hour constant rate groundwater pumping tests of the perched water-bearing zone beneath the site, and providing interpretation of geologic and hydrogeologic data collected during site assessment activities.

Mobil Oil Corporation, Crude Oil Pipelines, Site Assessment - Lebec, CA (Project Geologist: 1990 - 1993)
Mr. Nordenstam served as Project Manager for assessment of abandoned 80-year-old crude oil transmission pipelines. The project was conducted through the oversight of the Kern County Department of Health Services and the Central Valley Region of the Regional Water Quality Control Board. The site was located in a mountainous area with shallow unconfined groundwater, deep artesian groundwater, seeps and springs associated with a large landslide/landcreep feature, and sensitive flora and fauna. A total of 13 groundwater monitoring wells and nine soil borings were drilled. Groundwater monitoring wells and soil borings were installed in extremely rocky soil using a hollow stem auger. Several drilling locations involved the cutting of access roads and drilling pads. All areas disturbed by grading activities were restored to prior conditions and reseeded with native flora. Approximately 200 feet of the abandoned pipelines were excavated and removed and soil samples were collected. The excavation was backfilled, restored to prior conditions, and reseeded with native flora. Site assessment activities indicated that liquid-, dissolved-, and adsorbed-phase crude oil plumes were present beneath public roadways, buildings, and adjacent to active crude oil pipelines and fiber optic cables.

ConocoPhillips Company, Charnock Basin - Los Angeles, CA (Site Assessment and Multiple Party Technical Review: 2001- 2005)
Mr. Nordenstam performed site assessment activities at an active gasoline service station property as directed by the United States Environmental Protection Agency and the California Regional Water Quality Control Board, Los Angeles Region for the Charnock Basin methyl tertiary butyl ether (MTBE)

investigation. Soil samples were collected continuously during boring and monitoring well installation activities. Boring and monitoring well locations were geophysically logged using EM induction and natural gamma ray logging tools to confirm lithologic interpretations made during continuous sampling activities. Quality assurance/quality control (QA/QC) procedures in the field included the collection of daily field blanks, source water blanks, trip blanks, temperature blanks, and rinsate samples to verify decontamination procedures. He interfaced with inspection teams from the EPA and RWQCB. Duties also included preparing a comprehensive site assessment report, and Mr. Nordenstam formulated arguments for site closure. Additionally, he provided technical interpretations of other PRP data for use in negotiations with regulators, legal counsel, and other PRPs.

Unocal Corporation, Site Assessment and Excavation - Sunset Beach, CA (Project Geologist: 1994 - 1995)
Mr. Nordenstam served as Project Manager for the assessment and remediation of hydrocarbon-affected soil and groundwater from leaking underground fuel storage tanks at a retail gasoline facility. The project was conducted through the oversight of the Orange County Health Care Agency (OCHCA). A total of 12 groundwater monitoring wells and eight soil borings were installed to assess the vertical and lateral extent of hydrocarbon-affected soil and groundwater. Liquid-phase hydrocarbons were present on tidally influenced groundwater at a depth of three feet below grade. Hydrocarbon-affected soil was restricted to the upper five feet of soil beneath the site. Following removal of the service station facilities, plate shoring was installed, to a depth of approximately 10 feet below grade, along the streets forming two of the site property lines. The site was excavated to a depth of approximately six feet below grade due the limited size of the area.

SPECIALIZED TRAINING

- OSHA 40-Hour Hazardous Waste Operations Training, 29 CFR 1910.120,1988
- OSHA 8-Hour Hazardous Waste Supervisor Training, CCR Title 8, Section 5192, 2005
- OSHA 8-Hour Refresher Safety Training, 29 CFR 1910.120 and CCR Title 8 Section 5192, 2006
- CAL-OSHA Trenching and Excavating Standards of California Competent Person Training, 2004