ATTACHMENT 1: AGREEMENT FOR SERVICES OF INDEPENDENT CONTRACTOR

THIS AGREEMENT (hereafter Agreement) is made by and between the County of Santa Barbara, a political subdivision of the State of California (hereafter COUNTY) and Aspen Environmental Group with an address at 5020 Chesebro, Suite 200, Agoura Hills (hereafter CONTRACTOR) wherein CONTRACTOR agrees to provide and COUNTY agrees to accept the services specified herein.

WHEREAS, CONTRACTOR represents that it is specially trained, skilled, experienced, and competent to perform the special services required by COUNTY and COUNTY desires to retain the services of CONTRACTOR pursuant to the terms, covenants, and conditions herein set forth;

NOW, THEREFORE, in consideration of the mutual covenants and conditions contained herein, the parties agree as follows:

1. DESIGNATED REPRESENTATIVE

Kathryn Lehr, Planner, at phone number (805) 568-3560 is the representative of COUNTY and will administer this Agreement for and on behalf of COUNTY. Vida Strong at phone number (805) 682-2615 is the authorized representative for CONTRACTOR. Changes in designated representatives shall be made only after advance written notice to the other party.

2. NOTICES

Any notice or consent required or permitted to be given under this Agreement shall be given to the respective parties in writing, by personal delivery or facsimile, or with postage prepaid by first class mail, registered or certified mail, or express courier service, as follows:

To COUNTY:	Kathryn Lehr, County of Santa Barbara, Planning & Development Department, 123 E. Anapamu Street, Santa Barbara, CA 93101, Fax (805) 568-2030
To CONTRACTOR:	Vida Strong, Aspen Environmental Group, 5020 Chesebro, Suite 200, Agoura Hills, CA 91301, (805) 682-2615

or at such other address or to such other person that the parties may from time to time designate in accordance with this Notices section. If sent by first class mail, notices and consents under this section shall be deemed to be received five (5) days following their deposit in the U.S. mail. This Notices section shall not be construed as meaning that either party agrees to service of process except as required by applicable law.

3. SCOPE OF SERVICES

CONTRACTOR agrees to provide services to COUNTY in accordance with EXHIBIT A attached hereto and incorporated herein by reference.

4. TERM

CONTRACTOR shall commence performance on September 20, 2016 and end performance upon completion, but no later than September 20, 2018 unless otherwise directed by COUNTY or unless earlier terminated.

5. COMPENSATION OF CONTRACTOR

In full consideration for CONTRACTOR's services, CONTRACTOR shall be paid for performance under this Agreement in accordance with the terms of EXHIBIT B attached hereto and incorporated herein by reference. Billing shall be made by invoice, which shall include the contract number assigned by COUNTY and which is delivered to the address given in Section 2 NOTICES above following completion of the increments identified on EXHIBIT B. Unless otherwise specified on EXHIBIT B, payment shall be net thirty (30) days from presentation of invoice.

6. **INDEPENDENT CONTRACTOR**

It is mutually understood and agreed that CONTRACTOR (including any and all of its officers, agents, and employees), shall perform all of its services under this Agreement as an independent contractor as to COUNTY and not as an officer, agent, servant, employee, joint venturer, partner, or associate of COUNTY. Furthermore, COUNTY shall have no right to control, supervise, or direct the manner or method by which CONTRACTOR shall perform its work and function. However, COUNTY shall retain the right to administer this Agreement so as to verify that CONTRACTOR is performing its obligations in accordance with the terms and conditions hereof. CONTRACTOR understands and acknowledges that it shall not be entitled to any of the benefits of a COUNTY employee, including but not limited to vacation, sick leave, administrative leave, health insurance, disability insurance, retirement, unemployment insurance, workers' compensation and protection of tenure. CONTRACTOR shall be solely liable and responsible for providing to, or on behalf of, its employees all legally-required employee benefits. In addition, CONTRACTOR shall be solely responsible and save COUNTY harmless from all matters relating to payment of CONTRACTOR's employees, including compliance with Social Security withholding and all other regulations governing such matters. It is acknowledged that during the term of this Agreement, CONTRACTOR may be providing services to others unrelated to the COUNTY or to this Agreement.

7. **STANDARD OF PERFORMANCE**

CONTRACTOR represents that it has the skills, expertise, and licenses/permits necessary to perform the services required under this Agreement. Accordingly, CONTRACTOR shall perform all such services in the manner and according to the standards observed by a competent practitioner of the same profession in which CONTRACTOR is engaged. All products of whatsoever nature, which CONTRACTOR delivers to COUNTY pursuant to this Agreement, shall be prepared in a first class and workmanlike manner and shall conform to the standards of quality normally observed by a person practicing in CONTRACTOR's profession. CONTRACTOR shall correct or revise any errors or omissions, at COUNTY'S request without additional compensation. Permits and/or licenses shall be obtained and maintained by CONTRACTOR without additional compensation.

8. **DEBARMENT AND SUSPENSION**

CONTRACTOR certifies to COUNTY that it and its employees and principals are not debarred, suspended, or otherwise excluded from or ineligible for, participation in federal, state, or county government contracts. CONTRACTOR certifies that it shall not contract with a subcontractor that is so debarred or suspended.

9. **TAXES**

CONTRACTOR shall pay all taxes, levies, duties, and assessments of every nature due in connection with any work under this Agreement and shall make any and all payroll deductions required by law. COUNTY shall not be responsible for paying any taxes on CONTRACTOR's behalf, and should COUNTY be required to do so by state, federal, or local taxing agencies, CONTRACTOR agrees to promptly reimburse COUNTY for the full value of such paid taxes plus interest and penalty, if any. These taxes shall include, but not be limited to, the following: FICA (Social Security), unemployment insurance contributions, income tax, disability insurance, and workers' compensation insurance.

10. **CONFLICT OF INTEREST**

CONTRACTOR covenants that CONTRACTOR presently has no employment or interest and shall not acquire any employment or interest, direct or indirect, including any interest in any business, property, or source of income, which would conflict in any manner or degree with the performance of services required to be performed under this Agreement. CONTRACTOR further covenants that in the performance of this Agreement, no person having any such interest shall be employed by CONTRACTOR. CONTRACTOR must promptly disclose to COUNTY, in writing, any potential conflict of interest. COUNTY retains the right to waive a conflict of interest disclosed by CONTRACTOR if COUNTY determines it to be immaterial, and such waiver is only effective if provided by COUNTY to CONTRACTOR in writing.

11. **OWNERSHIP OF DOCUMENTS AND INTELLECTUAL PROPERTY**

COUNTY shall be the owner of the following items incidental to this Agreement upon production, whether or not completed: all data collected, all documents of any type whatsoever, all photos, designs, sound or audiovisual recordings, software code, inventions, technologies, and other materials, and any material necessary for the practical use of such items, from the time of collection and/or production whether or not performance under this Agreement is completed or terminated prior to completion. CONTRACTOR shall not release any of such items to other parties except after prior written approval of COUNTY.

Unless otherwise specified in Exhibit A, CONTRACTOR hereby assigns to COUNTY all copyright, patent, and other intellectual property and proprietary rights to all data, documents, reports, photos, designs, sound or audiovisual recordings, software code, inventions, technologies, and other materials prepared or provided by CONTRACTOR pursuant to this Agreement (collectively referred to as "Copyrightable Works and Inventions"). COUNTY shall have the unrestricted authority to copy, adapt, perform, display, publish, disclose, distribute, create derivative works from, and otherwise use in whole or in part, any Copyrightable Works and Inventions. CONTRACTOR agrees to take such actions and execute and deliver such documents as may be needed to validate, protect and confirm the rights and assignments provided hereunder. CONTRACTOR warrants that any Copyrightable Works and Inventions and other items provided under this Agreement will not infringe upon any intellectual property or proprietary rights of any third party. CONTRACTOR at its own expense shall defend, indemnify, and hold harmless COUNTY against any claim that any Copyrightable Works or Inventions or other items provided by CONTRACTOR hereunder infringe upon intellectual or other proprietary rights of a third party, and CONTRACTOR shall pay any damages, costs, settlement amounts, and fees (including attorneys' fees) that may be incurred by COUNTY in connection with any such claims. This Ownership of Documents and Intellectual Property provision shall survive expiration or termination of this Agreement.

12. NO PUBLICITY OR ENDORSEMENT

CONTRACTOR shall not use COUNTY's name or logo or any variation of such name or logo in any publicity, advertising or promotional materials. CONTRACTOR shall not use COUNTY's name or logo in any manner that would give the appearance that the COUNTY is endorsing CONTRACTOR. CONTRACTOR shall not in any way contract on behalf of or in the name of COUNTY. CONTRACTOR shall not release any informational pamphlets, notices, press releases, research reports, or similar public notices concerning the COUNTY or its projects, without obtaining the prior written approval of COUNTY.

13. **COUNTY PROPERTY AND INFORMATION**

All of COUNTY's property, documents, and information provided for CONTRACTOR's use in connection with the services shall remain COUNTY's property, and CONTRACTOR shall return any such items whenever requested by COUNTY and whenever required according to the Termination section of this Agreement. CONTRACTOR may use such items only in connection with providing the services. CONTRACTOR shall not disseminate any COUNTY property, documents, or information without COUNTY's prior written consent.

14. **RECORDS, AUDIT, AND REVIEW**

CONTRACTOR shall keep such business records pursuant to this Agreement as would be kept by a reasonably prudent practitioner of CONTRACTOR's profession and shall maintain such records for at least four (4) years following the termination of this Agreement. All accounting records shall be kept in accordance with generally accepted accounting principles. COUNTY shall have the right to audit and review all such documents and records at any time during CONTRACTOR's regular business hours or upon reasonable notice. In addition, if this Agreement exceeds ten thousand dollars ($10,000.00), CONTRACTOR shall be subject to the examination and audit of the California State Auditor, at the request of the COUNTY or as part of any audit of the COUNTY, for a period of three (3) years after final payment under the Agreement (Cal. Govt. Code Section 8546.7). CONTRACTOR shall participate in any audits and reviews, whether by COUNTY or the State, at no charge to COUNTY.

If federal, state or COUNTY audit exceptions are made relating to this Agreement, CONTRACTOR shall reimburse all costs incurred by federal, state, and/or COUNTY governments associated with defending against the audit exceptions or performing any audits or follow-up audits, including but not limited to: audit fees, court costs, attorneys' fees based upon a reasonable hourly amount for attorneys in the community, travel costs, penalty assessments and all other costs of whatever nature. Immediately upon notification from COUNTY, CONTRACTOR shall reimburse the amount of the audit exceptions and any other related costs directly to COUNTY as specified by COUNTY in the notification.

15. **INDEMNIFICATION AND INSURANCE**

CONTRACTOR agrees to the indemnification and insurance provisions as set forth in EXHIBIT C attached hereto and incorporated herein by reference.

16. **NONDISCRIMINATION**

COUNTY hereby notifies CONTRACTOR that COUNTY's Unlawful Discrimination Ordinance (Article XIII of Chapter 2 of the Santa Barbara County Code) applies to this Agreement and is incorporated herein by this reference with the same force and effect as if the ordinance were specifically set out herein and CONTRACTOR agrees to comply with said ordinance.

17. **NONEXCLUSIVE AGREEMENT**

CONTRACTOR understands that this is not an exclusive Agreement and that COUNTY shall have the right to negotiate with and enter into contracts with others providing the same or similar services as those provided by CONTRACTOR as the COUNTY desires.

18. **NON-ASSIGNMENT**

CONTRACTOR shall not assign, transfer or subcontract this Agreement or any of its rights or obligations under this Agreement without the prior written consent of COUNTY and any attempt to so assign, subcontract or transfer without such consent shall be void and without legal effect and shall constitute grounds for termination.

19. **TERMINATION**

A. By COUNTY. COUNTY may, by written notice to CONTRACTOR, terminate this Agreement in whole or in part at any time, whether for COUNTY's convenience, for nonappropriation of funds, or because of the failure of CONTRACTOR to fulfill the obligations herein.

1. **For Convenience**. COUNTY may terminate this Agreement in whole or in part upon thirty (30) days written notice. During the thirty (30) day period, CONTRACTOR shall, as directed by COUNTY, wind

down and cease its services as quickly and efficiently as reasonably possible, without performing unnecessary services or activities and by minimizing negative effects on COUNTY from such winding down and cessation of services.

2. **For Nonappropriation of Funds**. Notwithstanding any other provision of this Agreement, in the event that no funds or insufficient funds are appropriated or budgeted by federal, state or COUNTY governments, or funds are not otherwise available for payments in the fiscal year(s) covered by the term of this Agreement, then COUNTY will notify CONTRACTOR of such occurrence and COUNTY may terminate or suspend this Agreement in whole or in part, with or without a prior notice period. Subsequent to termination of this Agreement under this provision, COUNTY shall have no obligation to make payments with regard to the remainder of the term.

3. **For Cause**. Should CONTRACTOR default in the performance of this Agreement or materially breach any of its provisions, COUNTY may, at COUNTY's sole option, terminate or suspend this Agreement in whole or in part by written notice. Upon receipt of notice, CONTRACTOR shall immediately discontinue all services affected (unless the notice directs otherwise) and notify COUNTY as to the status of its performance. The date of termination shall be the date the notice is received by CONTRACTOR, unless the notice directs otherwise.

B. By CONTRACTOR. Should COUNTY fail to pay CONTRACTOR all or any part of the payment set forth in EXHIBIT B, CONTRACTOR may, at CONTRACTOR's option terminate this Agreement if such failure is not remedied by COUNTY within thirty (30) days of written notice to COUNTY of such late payment.

C. Upon termination, CONTRACTOR shall deliver to COUNTY all data, estimates, graphs, summaries, reports, and all other property, records, documents or papers as may have been accumulated or produced by CONTRACTOR in performing this Agreement, whether completed or in process, except such items as COUNTY may, by written permission, permit CONTRACTOR to retain. Notwithstanding any other payment provision of this Agreement, COUNTY shall pay CONTRACTOR for satisfactory services performed to the date of termination to include a prorated amount of compensation due hereunder less payments, if any, previously made. In no event shall CONTRACTOR be paid an amount in excess of the full price under this Agreement nor for profit on unperformed portions of service. CONTRACTOR shall furnish to COUNTY such financial information as in the judgment of COUNTY is necessary to determine the reasonable value of the services rendered by CONTRACTOR. In the event of a dispute as to the reasonable value of the services rendered by CONTRACTOR, the decision of COUNTY shall be final. The foregoing is cumulative and shall not affect any right or remedy which COUNTY may have in law or equity.

20. **SECTION HEADINGS**

The headings of the several sections, and any Table of Contents appended hereto, shall be solely for convenience of reference and shall not affect the meaning, construction or effect hereof.

21. **SEVERABILITY**

If any one or more of the provisions contained herein shall for any reason be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions hereof, and such invalidity, illegality or unenforceability shall not affect any other provision hereof, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

22. **REMEDIES NOT EXCLUSIVE**

No remedy herein conferred upon or reserved to COUNTY is intended to be exclusive of any other remedy or remedies, and each and every such remedy, to the extent permitted by law, shall be cumulative and in addition to any other remedy given hereunder or now or hereafter existing at law or in equity or otherwise.

23. **TIME IS OF THE ESSENCE**

Time is of the essence in this Agreement and each covenant and term is a condition herein.

24. **NO WAIVER OF DEFAULT**

No delay or omission of COUNTY to exercise any right or power arising upon the occurrence of any event of default shall impair any such right or power or shall be construed to be a waiver of any such default or an acquiescence therein; and every power and remedy given by this Agreement to COUNTY shall be exercised from time to time and as often as may be deemed expedient in the sole discretion of COUNTY.

25. **ENTIRE AGREEMENT AND AMENDMENT**

In conjunction with the matters considered herein, this Agreement contains the entire understanding and agreement of the parties and there have been no promises, representations, agreements, warranties or undertakings by any of the parties, either oral or written, of any character or nature hereafter binding except as set forth herein. This Agreement may be altered, amended or modified only by an instrument in writing, executed by the parties to this Agreement and by no other means. Each party waives their future right to claim, contest or assert that this Agreement was modified, canceled, superseded, or changed by any oral agreements, course of conduct, waiver or estoppel.

26. **SUCCESSORS AND ASSIGNS**

All representations, covenants and warranties set forth in this Agreement, by or on behalf of, or for the benefit of any or all of the parties hereto, shall be binding upon and inure to the benefit of such party, its successors and assigns.

27. **COMPLIANCE WITH LAW**

CONTRACTOR shall, at its sole cost and expense, comply with all County, State and Federal ordinances and statutes now in force or which may hereafter be in force with regard to this Agreement. The judgment of any court of competent jurisdiction, or the admission of CONTRACTOR in any action or proceeding against CONTRACTOR, whether COUNTY is a party thereto or not, that CONTRACTOR has violated any such ordinance or statute, shall be conclusive of that fact as between CONTRACTOR and COUNTY.

28. **CALIFORNIA LAW AND JURISDICTION**

This Agreement shall be governed by the laws of the State of California. Any litigation regarding this Agreement or its contents shall be filed in the County of Santa Barbara, if in state court, or in the federal district court nearest to Santa Barbara County, if in federal court.

29. **EXECUTION OF COUNTERPARTS**

This Agreement may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original; and all such counterparts, or as many of them as the parties shall preserve undestroyed, shall together constitute one and the same instrument.

30. **AUTHORITY**

All signatories and parties to this Agreement warrant and represent that they have the power and authority to enter into this Agreement in the names, titles and capacities herein stated and on behalf of any entities, persons, or firms represented or purported to be represented by such entity(ies), person(s), or firm(s) and that all formal requirements necessary or required by any state and/or federal law in order to enter into this Agreement have been fully complied with. Furthermore, by entering into this Agreement, CONTRACTOR hereby warrants that it shall not have breached the terms or conditions of any other contract or agreement to which CONTRACTOR is obligated, which breach would have a material effect hereon.

31. **SURVIVAL**

All provisions of this Agreement which by their nature are intended to survive the termination or expiration of this Agreement shall survive such termination or expiration.

32. **PRECEDENCE**

In the event of conflict between the provisions contained in the numbered sections of this Agreement and the provisions contained in the Exhibits, the provisions of the Exhibits shall prevail over those in the numbered sections.

33. **SUBCONTRACTORS**

CONTRACTOR is authorized to subcontract with subcontractors identified in Contractor's Proposal. CONTRACTOR shall be fully responsible for all services performed by its subcontractor. CONTRACTOR shall secure from its subcontractor all rights for COUNTY in this Agreement, including audit rights.

34. **HANDLING OF PROPRIETARY INFORMATION**

CONTRACTOR understands and agrees that certain materials which may be provided by COUNTY may be classified and conspicuously labeled as proprietary confidential information. That material is to be subject to the following special provisions:

A. All reasonable steps will be taken to prevent disclosure of the material to any person except those personnel of CONTRACTOR working on the project who have a need to use the material.

B. Upon conclusion of CONTRACTOR'S work, CONTRACTOR shall return all copies of the material direct to party providing such material. CONTRACTOR shall contact COUNTY to obtain the name of the specific party authorized to receive the material.

35. **IMMATERIAL CHANGES**

CONTRACTOR and COUNTY agree that immaterial changes to the Statement of Work (time frame and mutually agreeable Statement of Work changes which will not result in a change to the total contract amount) may be authorized by Planning and Development Director, or designee in writing, and will not constitute an amendment to the Agreement.

36. **NEWS RELEASES/INTERVIEWS**

CONTRACTOR agrees for itself, its agents, employees and subcontractors, it will not communicate with representatives of the communications media concerning the subject matter of this Agreement without prior written approval of the COUNTY Project Coordinator. CONTRACTOR further agrees that all media requests for communication will be referred to COUNTY'S responsible personnel.

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Agreement for Services of Independent Contractor between the **County of Santa Barbara** and **Aspen Environmental Group.**

IN WITNESS WHEREOF, the parties have executed this Agreement to be effective on the date executed by COUNTY.

ATTEST:

Mona Miyasato
County Executive Officer
Clerk of the Board

By: _____
Deputy Clerk

COUNTY OF SANTA BARBARA:

By: _____
Chair, Board of Supervisors

Date: _____

RECOMMENDED FOR APPROVAL:

Glenn Russell, Ph.D., Director,
Planning and Development

By: _____
Department Head

CONTRACTOR:

Vida Strong, Project Manager, Aspen Environmental Group

By: _____
Authorized Representative

Name: _____

Title: _____

APPROVED AS TO FORM:

Michael C. Ghizzoni
County Counsel

By: _____
Deputy County Counsel

APPROVED AS TO ACCOUNTING FORM:

Theodore A. Fallati, CPA
Auditor-Controller

By: _____
Deputy

APPROVED AS TO FORM:

Ray Aromatorio
Risk Management

By: _____
Risk Management

ATTACHMENT 1
EXHIBIT A

STATEMENT OF WORK

CONTRACTOR shall render services in accordance with the Proposal for Preparation of the Aera Energy LLC, East Cat Canyon Oil Field Redevelopment Plan Project Environmental Impact Report, as shown in **Appendix 1** and incorporated herein by reference. The Proposal describes the Environmental Impact Report scope of work which includes the following: consultant qualifications and experience, key personnel and project management program, study methodology, document preparation, project schedule, and cost estimate.

Jon Davidson, Vida Strong, Brewster Birdsall, LynneDee Althouse, Jennifer Lancaster, Scott White, Peter Stickles, Robbie Gleason, Diana Dyste, Jim Thurber, Aurie Patterson, Philip Lowe, Scott Debouache, Sue Walker, Hedy Koczwara, Tracy Popiel, Emily Chitiea, and Kati Simpson shall be the individual(s) personally responsible for providing all services hereunder. CONTRACTOR may not substitute other persons without the prior written approval of CONTRACTOR's Designated Representative, as stated in Section 1 of the Agreement.

Suspension for Convenience. COUNTY may, without cause, order CONTRACTOR in writing to suspend, delay, or interrupt the services under this Agreement in whole or in part for up to 30 days. COUNTY shall incur no liability for suspension under this provision and suspension shall not constitute a breach of this Agreement.

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ATTACHMENT 1
EXHIBIT B

PAYMENT ARRANGEMENTS
Periodic Compensation at Selected Milestones (with attached Schedule of Fees)

A. For CONTRACTOR services to be rendered under this Agreement, CONTRACTOR shall be paid a total contract amount, including cost reimbursements, not to exceed $280,440 with a contingency amount of $42,066 for a total contract amount up to $322,506. Contingency expenditures shall be approved in advance by the County.

B. Payment for services and /or reimbursement of costs shall be made upon CONTRACTOR's satisfactory performance, based upon the scope and methodology contained in **EXHIBIT A** as determined by COUNTY. Payment for services and/or reimbursement of costs shall be based upon the costs, expenses, overhead charges and hourly rates for personnel, as defined in **Appendix 2** (Aera Cost Proposal). Invoices submitted for payment that are based upon **Appendix 2** must contain sufficient detail to enable an audit of the charges and provide supporting documentation if so specified in **EXHIBIT A.**

C. Upon completion of the work for each milestone and/or delivery to COUNTY of item(s) specified below, CONTRACTOR shall submit to the COUNTY DESIGNATED REPRESENTATIVE an invoice or certified claim on the County Treasury for the service performed in accomplishing each milestone. These invoices or certified claims must cite the assigned Board Contract Number. COUNTY DESIGNATED REPRESENTATIVE shall evaluate the quality of the service performed and/or item(s) delivered and if found to be satisfactory and within the cost basis of **Appendix 2,** shall initiate payment processing. COUNTY shall pay invoices or claims for satisfactory work within 30 days of receipt of correct and complete invoices or claims from CONTRACTOR.

   The final milestone payment above shall not be made until all services have been completed and item(s) as specified in **EXHIBIT A** have been delivered and found to be satisfactory.

D. COUNTY's failure to discover or object to any unsatisfactory work or billings prior to payment will not constitute a waiver of COUNTY's right to require CONTRACTOR to correct such work or billings or seek any other legal remedy.

ATTACHMENT 1
EXHIBIT C

Indemnification and Insurance Requirements
(For Professional Contracts)

INDEMNIFICATION

CONTRACTOR agrees to indemnify, defend (with counsel reasonably approved by COUNTY) and hold harmless COUNTY and its officers, officials, employees, agents and volunteers from and against any and all claims, actions, losses, damages, judgments and/or liabilities arising out of this Agreement from any cause whatsoever, including the acts, errors or omissions of any person or entity and for any costs or expenses (including but not limited to attorneys' fees) incurred by COUNTY on account of any claim except where such indemnification is prohibited by law. CONTRACTOR's indemnification obligation applies to COUNTY's active as well as passive negligence but does not apply to COUNTY's sole negligence or willful misconduct.

NOTIFICATION OF ACCIDENTS AND SURVIVAL OF INDEMNIFICATION PROVISIONS

CONTRACTOR shall notify COUNTY immediately in the event of any accident or injury arising out of or in connection with this Agreement. The indemnification provisions in this Agreement shall survive any expiration or termination of this Agreement.

INSURANCE

CONTRACTOR shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the CONTRACTOR, his agents, representatives, employees or subcontractors.

A. Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office (ISO) Form CG 00 01 covering CGL on an "occurrence" basis, including products-completed operations, personal & advertising injury, with limits no less than $1,000,000 per occurrence and $2,000,000 in the aggregate.
2. **Automobile Liability**: ISO Form Number CA 00 01 covering any auto (Code 1), or if CONTRACTOR has no owned autos, hired, (Code 8) and non-owned autos (Code 9), with limit no less than $1,000,000 per accident for bodily injury and property damage.
3. **Workers' Compensation**: as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than $1,000,000 per accident for bodily injury or disease.
4. **Professional Liability** (Errors and Omissions) Insurance appropriate to the CONTRACTOR'S profession, with limit of no less than $1,000,000 per occurrence or claim, $2,000,000 aggregate.

If the CONTRACTOR maintains higher limits than the minimums shown above, the COUNTY requires and shall be entitled to coverage for the higher limits maintained by the CONTRACTOR. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the COUNTY.

B. Other Insurance Provisions

The insurance policies are to contain, or be endorsed to contain, the following provisions:

1. **Additional Insured** – COUNTY, its officers, officials, employees, agents and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the CONTRACTOR including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to the CONTRACTOR's insurance at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10 and CG 20 37 if a later edition is used).
2. **Primary Coverage** – For any claims related to this Agreement, the CONTRACTOR's insurance coverage shall be primary insurance as respects the COUNTY, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by the COUNTY, its officers, officials, employees, agents or volunteers shall be excess of the CONTRACTOR's insurance and shall not contribute with it.
3. **Notice of Cancellation** – Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to the COUNTY.
4. **Waiver of Subrogation Rights** – CONTRACTOR hereby grants to COUNTY a waiver of any right to subrogation which any insurer of said CONTRACTOR may acquire against the COUNTY by virtue of the payment of any loss under such insurance. CONTRACTOR agrees to obtain any endorsement that may be necessary to effect this waiver of subrogation, but this provision applies regardless of whether or not the COUNTY has received a waiver of subrogation endorsement from the insurer.
5. **Deductibles and Self-Insured Retention** – Any deductibles or self-insured retentions must be declared to and approved by the COUNTY. The COUNTY may require the CONTRACTOR to purchase coverage with a lower deductible or retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention.
6. **Acceptability of Insurers** – Unless otherwise approved by Risk Management, insurance shall be written by insurers authorized to do business in the State of California and with a minimum A.M. Best's Insurance Guide rating of "A- VII".
7. **Verification of Coverage** – CONTRACTOR shall furnish the COUNTY with proof of insurance, original certificates and amendatory endorsements as required by this Agreement. The proof of insurance, certificates and endorsements are to be received and approved by the COUNTY before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the CONTRACTOR's obligation to provide them. The CONTRACTOR shall furnish evidence of renewal of coverage throughout the term of the Agreement. The COUNTY reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.
8. **Failure to Procure Coverage** – In the event that any policy of insurance required under this Agreement does not comply with the requirements, is not procured, or is canceled and not replaced, COUNTY has the right but not the obligation or duty to terminate the Agreement. Maintenance of required insurance coverage is a material element of the Agreement and failure to maintain or renew such coverage or to provide evidence of renewal may be treated by COUNTY as a material breach of contract.
9. **Subcontractors** – CONTRACTOR shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and CONTRACTOR shall ensure that COUNTY is an additional insured on insurance required from subcontractors.

10. **Claims Made Policies** – If any of the required policies provide coverage on a claims-made basis:
    i. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.
    ii. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work.
    iii. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, the CONTRACTOR must purchase "extended reporting" coverage for a minimum of five (5) years after completion of contract work.

11. **Special Risks or Circumstances** – COUNTY reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

Any change requiring additional types of insurance coverage or higher coverage limits must be made by amendment to this Agreement. CONTRACTOR agrees to execute any such amendment within thirty (30) days of receipt.

Any failure, actual or alleged, on the part of COUNTY to monitor or enforce compliance with any of the insurance and indemnification requirements will not be deemed as a waiver of any rights on the part of COUNTY.

Technical Proposal

To Prepare an

Environmental Impact Report

for the

Aera Energy, LLC
East Cat Canyon Oil Field
Redevelopment Plan

Prepared for:

County of Santa Barbara
Planning and Development

June 17, 2016

Aspen Environmental Group

Santa Barbara County Planning and Development Department RFP: Environmental Impact Report for the Aera East Cat Canyon Oil Field Redevelopment Plan Project

Selection Criteria (RFP Selection Process, Pages 10 & 11)

Aspen Environmental Group

Criterion/Proposal Section	*Compliance with Criterion*	*Demonstrated Experience*
Responsiveness to this Request for Proposals; quality and creativity of proposal *See entire Proposal.*	■ Proposal responds to all RFP requirements. ■ Streamlined proposal, but with sufficient detail. ■ Proposal highlights key information.	**Excellent Client References** ■ County of Santa Barbara, Planning & Development ■ County of San Luis Obispo Planning & Building ■ EDF Renewable Energy ■ sPower, Sustainable Power Group . **Santa Barbara County P&D Oil & Gas and Energy** ■ ERG West Cat Canyon Revitalization Plan Project EIR ■ PXP Tranquillon Ridge Project EIR ■ Gaviota Marine Terminal/Chevron Tankering Project SEIR/EIS ■ Exxon Tankering Application from Gaviota SEIR ■ Molino Gas Project EIR **Other Oil and Gas** ■ BLM Hollister Oil and Gas EIS (Northern California) ■ City of Culver City, Inglewood Oil Field (Los Angeles County) ■ Oil and Gas Well Stimulation Treatments in CA – Programmatic EIR ■ City of Hermosa Beach, Oil and Gas Site Risk analysis ■ CA DOC, CEQA Compliance ■ Cabrillo Port LNG Deepwater Port Project EIR/S review ■ City of Long Beach LNG Import Project EIR/S review ■ Federal Oil & Gas Leases Offshore Santa Barbara, Ventura, and San Luis Obispo Counties ■ Kinder Morgan Concord to Sacramento Pipeline EIR ■ Kinder Morgan Carson to Norwalk Pipeline EIR ■ Pacific Pipeline EIR and EIS/SEIR ■ San Joaquin Refining Company HRA (San Joaquin Refining Co) ■ Kirby Hills Natural Gas Storage Facility (Solano County) ■ PG&E Line 401 Capacity Loops Project Gas Pipeline Installation (Shasta & Modoc Counties) ■ Yellowstone Pipeline, Missoula to Thompson Falls Reroute, EIS (Montana)
Cost effectiveness *See Technical Proposal Sections 3 and 4, and Cost Proposal.*	■ Effective combination of senior and lower-level staff to provide cost effective, compliant document. ■ Team has recent and relevant oil and gas project experience to provide value-added expertise. ■ Experienced team - no "learning curve."	
Commitment and ability to meet or expedite the project schedule specified above *See Technical Proposal Sections 1, 2. 3 and 5.*	■ Right mix of technical expertise and relevant recent experience to meet or improve RFP schedule. ■ Excellent working relationship among team members to successfully complete EIR. ■ Team can begin work immediately.	
Experience of firm and personnel on similar projects *See Technical Proposal Sections 1, 2 and 3.*	■ Aspen has been applying CEQA to oil and gas projects for more than 20 years. ■ Aspen - thorough knowledge of steam injection vs fracking regulations, and recent oil and gas projects. ■ ioMosaic – leading provider of safety and risk management services for oil and gas projects. ■ GTC – worked on ERG West Cat Canyon, PXP Tranquillon Ridge project with Aspen, and City of Culver oil and gas project. ■ A&M – been involved in the restoration of thousands of oaks. ■ Team has worked together on numerous previous projects, including ERG West Cat Canyon.	
Qualifications of project manager and technical personnel *See Proposal Sections 1, 2 & 3, and Appendix A.*	■ Project Manager was County Energy Specialist and has more than 25 years of experience. ■ Team members currently working on environmental review of oil and gas projects, including ERG West Cat Canyon. ■ Technical leads are recognized experts in their respective fields.	
Firm's flexibility and willingness to work closely with P&D and other County staff *See Proposal Sections 2, 3 and 6.*	■ Project Manager is a Santa Barbara local. ■ Aspen has demonstrated flexibility and willingness to work closely with the County through our successful completion of past projects.	

Aspen Environmental Group

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June 17, 2016

County of Santa Barbara Planning and Development Department
Energy & Minerals Division
Attn: Matt Young, Planner
123 East Anapamu Street
Santa Barbara, CA 93101

Subject: Request for Proposal (RFP) to Prepare an Environmental Impact Report (EIR) for the Aera East Cat Canyon Oil Field Redevelopment Plan Project (Case Numbers: 15PPP-00000-00001, 15DVP-00000-00005, and 17TRM-00000-00003)

Dear Mr. Young:

From our past and current work in Santa Barbara County, Aspen Environmental Group is keenly aware of the public interest in and concern over any oil and gas projects that are proposed in the County. We have assembled an experienced and highly knowledgeable project team to ensure a thorough evaluation of the proposed Aera East Cat Canyon Oil Field Redevelopment Plan Project (proposed Project) and preparation of an EIR that clearly explains potential impacts, and that will be fully compliant with applicable laws and regulations.

We are enthusiastic about the opportunity to prepare the EIR for the County. To that end, please find enclosed 3 bound copies and one 1 electronic copy on compact disc of Aspen Environmental Group's Proposal to prepare an EIR for the proposed Project. As requested in the RFP, separate Technical and Cost Proposals are provided.

When reviewing our Proposal, please consider the following strengths of the Aspen Team:

- ✓ ***Aspen's unparalleled record of conducting California Environmental Quality Act (CEQA)* compliance for energy and infrastructure projects.** The Aspen Team is exceptionally well qualified to prepare the East Cat Canyon EIR as a result of our extensive experience conducting both environmental analysis and project monitoring, as well as performing review of local oil and gas projects and production plans, including the ERG West Cat Canyon Revitalization Plan Project and Tranquillon Ridge Oil and Gas Development Project. As demonstrated in Section 2, Qualifications, our oil and gas experience extends throughout the State and includes production, transportation, and storage. We understand the local, State, and federal regulations governing oil and gas development, as well as the clear regulatory and technological distinctions between steam injection and hydraulic fracking.
- ✓ ***Strong, experienced project management.*** The Aspen Team is managed by **Vida Strong**, who brings extensive experience in project management and in working on oil and gas drilling projects for the County of Santa Barbara, including the ERG West Cat Canyon Revitalization Plan Project EIR and the PXP Tranquillon Ridge Oil and Gas Development Project. Her extensive experience in environmental engineering and project management, with an emphasis on impact analysis under CEQA and resultant mitigation monitoring of controversial development projects, will prove invaluable. Prior to joining Aspen, Ms. Strong was an Energy Specialist for the County Energy Division, where she managed the permitting and environmental review of major oil and gas development projects and proposals, and oversaw the implementation of mitigation monitoring plans. Ms. Strong works principally from a home office in Santa Barbara.

- ✓ ***Aspen's expert team.*** Aspen has assembled a project team that includes in-house staff with extensive EIR and oil and gas project experience. (See Proposal Sections 2, 3, and Appendix A.) The team is supplemented with key staff from three subconsultants (Geotechnical Consultants, Inc., Althouse & Meade, and ioMosaic) who have direct experience working on oil and gas development projects. All have previous relevant project experience in Santa Barbara County with oil and gas projects.
- ✓ ***Aspen's proposed project schedule.*** Aspen is thoroughly familiar with the County's environmental review process and believes preparation of the EIR can be completed within the timeframe presented in the RFP. Aspen is willing to work with the County to expedite the schedule, if desired by the County (see Section 5).
- ✓ ***Aspen's excellent responsiveness and client service on previous contracts.*** The quality of our work and our responsiveness is attested to by the client references provided in our proposal (see Section 6).

Aspen's team and approach will successfully assist the County in its consideration of the proposed Project. Our previous work with the County and other agencies and applicants, and the technical approach and cost we have proposed, ensure that we meet or exceed the selection criteria for the RFP:

- ✓ Responsiveness to the RFP; quality and creativity of proposal
- ✓ Cost effectiveness
- ✓ Commitment and ability to meet or expedite the project schedule specified
- ✓ Experience of firm and personnel on similar projects
- ✓ Qualifications of project manager and technical personnel.
- ✓ Firm's flexibility and willingness to work closely with P&D and other County staff.

Hamid Rastegar is authorized to commit the firm. Aspen's technical and cost proposal remain effective for no less than 60 days from June 17, 2016. Mr. Rastegar will represent Aspen during the selection process and any contract negotiations that may result.

Should you need any further information regarding our team, please do not hesitate to contact us at the phone number or email address provided below.

We look forward to your consideration of our proposal and with working with you on the EIR.

Sincerely yours,

ASPEN ENVIRONMENTAL GROUP

Hamid Rastegar
President
(818) 338-6655
hrastegar@aspeneg.com

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1. Introduction

Aspen Environmental Group has an unparalleled record of successfully conducting California Environmental Quality Act (CEQA) compliance for complex and controversial energy and infrastructure projects. For over two decades we have undertaken this type of work for clients throughout the western U.S. and California, including the County of Santa Barbara. Our rich knowledge and experience will be applied on the East Cat Canyon Oil Field Redevelopment Plan EIR, saving both time and money while ensuring the EIR is complete, clear, and legally defensible.

We are particularly well qualified to prepare the East Cat Canyon EIR because of our extensive experience in Santa Barbara County, our history of exceptional environmental analysis and monitoring under CEQA, and our experience with oil and gas projects and production plans. The Aspen Team includes recognized experts in topics of greatest concern regarding the Project, including risk of upset, biological resources, oak restoration, and air quality and greenhouse gas analyses, among others.

Our proposal is organized in the order shown to the right, with the Technical Proposal and Cost Proposal as separate documents. This Introduction (Section 1) discusses our project understanding and project approach, and introduces our highly-qualified team.

PROPOSAL ORGANIZATION

A. Technical Proposal

1. *Introduction*
2. *Qualifications*
3. *Personnel*
4. *Study Methodology*
5. *Schedule*
6. *References*

B. Cost Proposal

(Provided separately)

1.1 Project Understanding

Aera Energy, LLC proposes to implement the East Cat Canyon Oil Field Redevelopment Plan Project in order to reestablish heavy crude oil production in the East Cat Canyon field in northern Santa Barbara County. The Aera program would require new steam injection wells and other facilities to conduct enhanced oil production, which is currently shut down with the exception of 5 ERG wells. The proposed Project would implement enhance oil recovery through cyclic steam injection and pattern steam flooding. These recovery methods are used when crude oil is too viscous to flow under existing conditions. Steam injection and steam flooding are commonly used methods to heat heavy crude oil within the formation; heat changes the oil's viscosity, allowing it to flow. Over time the heated zone cools, production falls, and the steam flooding process is repeated. Almost 20,000 wells in the State produce heavy oils and thermal stimulation of oil reservoirs is used in many California oil fields owing to the highly viscous nature of much of the oil found here. Importantly, the practice differs from hydraulic fracturing in that is does not fracture the existing rock or introduce chemicals and proppants into the formation to increase pore spaces. This will be an important point of understanding to be explained in the EIR.

Aera has filed three separate Applications with the County. These are to: reestablish oil and gas production operations; construct a 14-mile 8-inch Public Utility Commission (PUC) natural gas pipeline and associated facilities; and reconfigure 14 lots into 12 lots.

The proposed Project would involve:

- Development of approximately 72 well pads (including new construction and restoration of existing pads), construction and restoration of over 9 miles of field access roads, and drilling of up to 296 wells. Planned wells include oil/gas production wells (141), steam injection (107), observation wells (24), non-potable water production wells (7), water injection wells (14), and fresh groundwater (3).
- Construction of new processing facilities including:

  - A production group station for bulk separation of produced gas and liquids,
  - A central processing facility for oil cleaning, water cleaning, water softening, oil storage, and oil sales, and
  - A steam generation site (up to six once-through steam generators rated at 85 million British thermal units/hour [mmBTU/hr] each) for production of saturated steam to be used for thermal enhanced oil recovery. An additional 62.5 mmBTU/hr steam generator would be installed to generate steam from the project's produced gas.
- Construction of field systems, including: a production gathering network, a steam distribution network, and electrical power distribution and supervisory control and data acquisition networks.
- Construction of other project infrastructure, including an office building, a multipurpose building, a warehouse and maintenance building, and a facility control building.
- Construction of a 14-mile, 8-inch natural gas pipeline and associated facilities, and an approximate 1,200-foot electric transmission line (8 poles) from PG&E's Sisquoc-Santa Ynez 115 kV power line to a new Aera-owned substation located at the central processing facility.
- As proposed, the Project would be implemented in phases. This would maximize efficiency and help moderate construction and operational peak activity levels over a multi-year field infrastructure program beginning in Year 3 and continuing through Year 30. Year 1 would be the first year of steam injection.
- Peak production of both Project phases would be limited by the central processing facility to approximately 10,000 barrels per day.
- Non-potable brackish water would be used as the primary source of water for steam generation to minimize use of potable groundwater.
- Trucking of light crude from Aera's Belridge Producing Complex (located in Kern County) to East Cat Canyon for blending with the produced oil is proposed, as well as trucking of the blended, produced crude back to the Belridge facility.
- The proposed Project facilities would be focused predominantly on the southwest portion of the oil field property, where a greater density of existing roads, well pads, and previous facility footprints already exist, and would directly affect about 335 acres of the approximate 2,108-acre Project site.

1.1.1 Project Background

The Project site is in Cat Canyon in the Solomon Hills northeast of the Gato Ridge mountain ranges, approximately ten miles southeast of the City of Santa Maria and the community of Orcutt. The Cat Canyon Oil Field has been used for oil production for more than 100 years and includes nearly 1,600 active and idle oil wells. The 26,440-acre field is a State-designated oil field whose boundaries are defined by the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR). DOGGR divides the Cat Canyon Oil Field into four distinct areas: East Area, West Area, Central Area, and Sisquoc Area. The entire Project site lies within the Cat Canyon Oil Field East Area boundaries.

The first well in Cat Canyon was drilled in 1908, with development of the East Area of the field started in 1917. It was in production for 72 years. As the field matured, a thermal enhanced oil recovery operation (cyclic steam stimulation) occurred from 1965 through 1989, and a thermal pilot operation (steam drive) was conducted from 1980 through 1983. Cumulative oil production at the Project site was approximately ten million barrels of oil from 100 wells, which produced oil initially using primary and later thermal recovery methods. In 1989 the East Cat Canyon Oil Field was shut down due to unfavorable economics at that time.

The field's wells were abandoned consistent with DOGGR regulations and nearly all of the surface facilities were removed by 2002. Four non-producing test wells were drilled in 2012 to support reservoir sampling and testing. Access roads and well pads remain intact.

On the County of Santa Barbara Land Use Designation Maps, the Project site designations are Agriculture (Ag-II-100) and Agricultural Commercial (AC). In addition, the Project site is zoned as Agriculture on the County of Santa Barbara Unincorporated Zoning Maps. Oil and gas exploration and production are approved uses in this zone. The Project site currently supports office/warehouse buildings, abandoned oil wells, four non-producing test wells, a system of graded access roads and wells pads, former facility locations, a permitted beneficial reuse site, fresh groundwater wells, firewater and grazing tanks, and cattle grazing. ERG Resources, LLC also currently operates five active oil and production wells within the Project site.

Parcels surrounding the Project site have land use designations of Agriculture (Ag-II-100; A-1-10; and A-II) and Agricultural Commercial (AC). Within 1 mile of the site are 48 known residences, a winery tasting room, and an office. The western portion of the Project site is adjacent to the existing ERG Resources, LLC Cat Canyon development site (active field). In addition, Greka produces oil from the adjacent Bell lease.

1.2 Approach

Aspen's approach (study methodology) for completing the EIR work program is detailed in Section 4. In developing our approach, the Aspen Team reviewed the RFP and Aera's application materials. In addition, Aspen tracks oil and gas development and industry practices throughout the State, including Santa Barbara County, which further helped us frame our approach. Relevant regulatory changes that also inform our approach include 1) the County's greenhouse gas significance threshold (July 2015), 2) the USEPA's New Source Performance Standards (NSPS) for controlling methane and VOC from equipment at oil well sites (40 CFR Part 60, Subpart OOOOa) (finalized on May 12, 2016), and 3) State review of proposed enhancing or replacing the typical traffic Level of Service analysis with a vehicle miles travelled analysis (ongoing).

We understand oil and gas development and transportation issues and regulations, and know the importance of preparing a complete, objective, and legally defensible report under CEQA that identifies and analyzes the environmental consequences of the proposed Project. This knowledge and experience ensure that we meet the intent of the EIR, which is to be thorough and objective informational document for public and County decision-maker consideration.

Before beginning any analysis, a concise but complete project description will be developed. It will include extensive use of graphics and tables to facilitate a reader's understanding of the proposed Project in detail. The EIR analysis will include clear discussions identifying the project setting and affected resources, applicable thresholds of significance for impacts, and anticipated project impacts. Where a particular impact is identified as potentially significant, the EIR will present workable mitigation measures to avoid or reduce the impact to the maximum extent feasible. The Aspen Team has participated in numerous Planning Commission and Board of Supervisors public hearings and we understand the importance of clearly and succinctly presenting the project and the EIR analysis. We know how to answer questions professionally, in a clear and concise manner.

Aera has prepared a comprehensive package of materials with its Applications. Aspen will use the applications and Applicant-prepared supporting materials to the maximum extent feasible when preparing the EIR. If shortcomings or gaps are identified in the information, data requests will be prepared for submittal to the Applicant, in coordination with the County. Aspen assumes that the Applicant will provide requested information in a timely manner.

1.3 Project Team

As discussed in Section 3, Personnel, Aspen has assembled a Team for the proposed Project that includes many staff members who are also working on the ERG West Cat Canyon Revitalization Plan Project EIR. Given the proximity and similarities of both projects, the Aspen Team is already conversant with local and regional resources and infrastructure that could be affected by the proposed East Cat Canyon Project. This knowledge will reduce time and cost involved in preparing the EIR.

Aspen will manage the Aspen Team and be the prime consultant for preparing the EIR. Aspen has assembled its team so we can provide the County of Santa Barbara the most knowledgeable and efficient staff for the Aera East Cat Canyon Oil Field Redevelopment Plan Project EIR analysis. The team will be managed by experienced senior Project Manager, **Vida Strong**, who has over 25 years of experience managing CEQA documents for oil and gas projects and directly relevant experience with both the ERG West Cat Canyon Revitalization Plan Project EIR and the Tranquillon Ridge Project EIR.

Aspen will be supported by three highly experienced subconsultant firms. Geotechnical Consultants, Inc. will assist with preparing the Geology/Geologic Hazards and Groundwater discussions, ioMosaic Corporation will assist with preparing the Risk of Upset discussion, and Althouse & Meade will assist with preparing the oak restoration analysis for the EIR.

1.3.1 Aspen Environmental Group

Aspen Environmental Group is an expert interdisciplinary environmental services firm that is headquartered in Agoura Hills and has additional offices in Sacramento, San Francisco, Inland Empire, Palm Springs, and Phoenix. Aspen was founded in 1990 and incorporated in 1991, and continues to grow, specializing in the management of environmental assessment efforts under CEQA and National Environmental Policy Act (NEPA). This work typically is in support of agency permitting for infrastructure and public works projects, especially energy- and oil and gas-related projects. Aspen also provides a variety of technical services related to environmental assessment, planning, and regulatory compliance. Aspen's staff is comprised of professionals in engineering and the physical, earth, life, and social sciences. In addition to our project management role, Aspen provides a team of experienced resource specialists and engineers in the fields of air quality and greenhouse gas emissions, biological and cultural resources, traffic, water resources, and land use/policy consistency, among others. The experience and qualifications of these individual specialists are described in Section 3 of this proposal, with resumes provided in Appendix A, Resumes of Key Staff.

1.3.2 Geotechnical Consultants, Inc.

Geotechnical Consultants, Inc. (GTC) has provided consulting services in geotechnical engineering, engineering geology, and hydrogeology for over 40 years. The firm has capably supported Aspen for many years, including work on the ERG West Cat Canyon Revitalization Plan Project EIR and PXP Tranquillon Ridge EIR. They have applied their expertise in these disciplines to a wide range of infrastructure projects including oil and gas facilities, pipelines, and pump stations. Their geotechnical work includes: research; geologic field mapping; aerial photo interpretation; subsurface exploration using drilling and trenching methods and cone penetration testing; land and marine geophysical surveys; in-situ and laboratory testing; geologic, engineering, and seismic risk analyses; and construction observation and testing. GTC conducted the geotechnical investigations for the Celeron-All American Pipeline, Pt. Arguello Pipeline alignment, and the Exxon Corral-Los Flores Onshore Facility. In addition, GTC has conducted environmental assessments and prepared documentation for Geology, Geologic Hazards, Groundwater, Soils, and Hazardous Materials sections for numerous EIR's/EIS's, including the Pacific Pipeline Project, Gaviota to Long Beach alignment.

1.3.3 ioMosaic Corporation

ioMosaic Corporation (ioMosaic) is a leading provider of safety and risk management consulting services and will cover the risk of upset analysis for the EIR. Since the early 1970's, ioMosaic has conducted many landmark studies including investigation of the Bhopal disaster, an audit of the Trans-Alaska pipeline brought about by congressional whistle blowers, and the safety of CNG powered vehicles in tunnels. ioMosaic staff has authored more than ten industry guidelines and effective practices for managing process safety and chemical reactivity and they are recognized industry experts in the oil and gas field, especially for LNG and pipeline safety. ioMosaic are the risk of upset specialists for both the ERG West Cat Canyon Revitalization Plan Project EIR and Tranquillon Ridge EIR.

1.3.4 Althouse & Meade

Althouse and Meade, Inc. (A&M) is led by principals LynneDee Althouse and Daniel Meade. The A&M team has extensive experience conducting biological resource surveys, producing reports, applications, and other documents and work products as part of the CEQA process, and obtaining local, state, and federal, agency authorizations. They have expertise, training, and experience regarding ecology, general biology, herpetology, wildlife biology, botany, soil science, water chemistry, wetlands, fisheries, restoration, and rare, threatened and endangered species. They have conducted resource surveys and assisted with conservation planning on over 120,000 acres in California, primarily Santa Barbara, San Luis Obispo, and Kern Counties, including large scale biological surveys on properties of 10,000 acres and 25,000 acres. LynneDee Althouse conducted research on oak regeneration in the Los Padres National Forest that was published in Ecology, a peer-review publication, and conducted post-graduate research in Santa Barbara County oak woodlands. Her work has included preparing restoration plans and conducting replanting programs for thousands of oaks in California.

2. Qualifications

Aspen has assembled a team of experts to meet the specific needs of the Aera East Cat Canyon Oil Field Redevelopment Plan Project EIR assignment. Our carefully selected team combines Aspen's CEQA experience with our subcontractors' specialty experience to address all of the issue areas identified in the RFP. This experience includes oil and gas project experience as well as pipeline, transmission line, and substation experience. Every Aspen Team member has recent and relevant experience and/or are among the most noted experts in their field. Many team members have completed and/or are working on other projects in the region. The team comprises Aspen, as the Prime Contractor, and three specialty subcontractors. This section of our proposal summarizes the qualifications and experience of the Aspen Team.

2.1 Aspen Team

Exhibit 1 identifies the role of each firm on the Aspen Team, along with additional information requested in the RFP.

Exhibit 1. Aspen Team Firms

Firm Name	Project Role	Tax ID Number	Percentage of Contribution
Aspen Environmental Group	Prime Contractor; Project Management; Air Quality, Greenhouse Gases and Climate Change; Biological Resources; Cultural Resources; Water Resources; Noise, Transportation, Land Use/Policy Consistency, Document Production; Technical Oversight; and Quality Assurance	95-4337914	62%
Geotechnical Consultants, Inc.	Geologic Processes/Hazards and Groundwater		15%
ioMosaic	Risk of Upset		18%
Althouse & Meade Inc.	Oak Woodland Replacement Plan Review & Mitigation Development		5%

2.1.1 Aspen Environmental Group

Aspen continues to grow as an expert interdisciplinary environmental consulting firm, specializing in the management of environmental review efforts almost exclusively in support of local, State, and federal agencies. Aspen's staff is comprised of experienced professionals in engineering and the physical, earth, life, and social sciences, representing a broad cross-section of the disciplines required for the project.

Founded in 1990 and incorporated in 1991 in California, Aspen has over 60 employees. The firm continues to be led by its President, Dr. Hamid Rastegar, who is one of the company's original founders. Headquartered in Agoura Hills, California, Aspen has offices in San Francisco, Sacramento, Upland, and Palm Springs, California as well as Phoenix, Arizona. Dr. Rastegar's corporate management is directly supported by three Vice Presidents, located in Agoura Hills, San Francisco, and Sacramento; each is responsible for the daily operation of their respective offices as well as designated satellite offices.

Aspen has successfully completed scores of CEQA documents for local agencies over the last 25 years and is able to provide any assistance required by Santa Barbara County that may be required during the EIR process. We are a full service environmental assessment firm with demonstrated expertise in the effective management of complex, high profile projects.

This involves successful management of subcontractor teams, thorough analyses of complex technical issues, and sensitivity to the nuances of controversial and highly visible projects. Aspen's extensive experience in preparing environmental analyses for projects with elevated levels of public interest has established our reputation for providing high-quality analysis and CEQA documents.

Aspen, Oil & Gas, and the Environment. Aspen is:

- *preparing an **EIR for the ERG West Cat Canyon Revitalization Plan Project** on behalf of Santa Barbara County.*
- *preparing an **RMP Amendment and EIS to guide management of oil and gas resources** on BLM lands.*
- *working with **Culver City on ordinance for Inglewood Oil Field oil and gas drilling**.*
- *working on **many other oil and gas development, transportation & storage projects***

As described in more detail below, Aspen currently is preparing the ***West Cat Canyon Revitalization Plan Project EIR*** for Santa Barbara County. Previous County work includes the ***Tranquillon Ridge Oil and Gas Development Project EIR***, expert review for the County ***GHG threshold-setting process***, ***Lompoc Wind Energy Project EIR***, the ***Gaviota Marine Terminal EIR/EIS and Supplemental EIR/EIS***, and the Air Quality Technical Report for the ***Molino Gas Project***. Other recent work relevant to oil and gas is our work with Culver City in preparing an ordinance that addresses oil and gas drilling in the **Inglewood Oil Field** (County of Los Angeles), where the firm continues to provide consultant support, and preparation of the Resource Management Plan Amendment and associated EIS to guide **management of oil and gas resources on BLM-administered mineral estate** covering twelve California counties.

Aspen CEQA Experience

Aspen has extensive experience in conducting environmental review of projects in accordance with CEQA. We regularly serve in the role of prime contractor to local, State, and federal agencies and applicants, and routinely manages teams of specialists in conducting detailed and comprehensive environmental impact analyses for a wide range of projects. Depending on the needs of a given project, Aspen's project management and CEQA experience are complemented by the expertise and experience of specialized subcontractors.

Aspen's CEQA expertise and experience have been gained over many years and include the full range of CEQA-compliance functions. Aspen has conducted CEQA review for many types of infrastructure, public works, and industrial projects including the following types of CEQA-related activities:

- Preparation of Initial Studies (IS), Negative Declarations, Mitigated Negative Declarations (MND), and Draft and Final EIRs;
- Preparation and distribution of required notices, including Notices of Preparation, Notices of Completion, and Notices of Determination;
- Preparation of project descriptions and formulation of feasible alternatives;
- Field studies and research;
- Engineering evaluation of projects to determine specific impact parameters;
- Feasibility studies of alternatives and mitigation measures;
- Mitigation measure development, evaluation, implementation, and mitigation monitoring; and
- Public participation, including website creation and maintenance, notices for mail and media, public workshops and hearings, fact sheets and brochures, graphic displays, and non-English language materials.

Aspen Oil and Gas Experience

Aspen has significant experience conducting analysis of oil and gas projects, including exploration, transportation, refining, and storage. The following presents a selection of recently completed or ongoing projects that are directly relevant to the proposed East Cat Canyon Project EIR.

- ***ERG West Cat Canyon Revitalization Plan Project EIR.*** Aspen currently is preparing an EIR for the County of Santa Barbara Energy & Minerals Division on ERG's proposed request to allow the development of 233 new thermally enhanced (cyclical steaming) production wells and supporting infrastructure, including the development of 11 new well pads (91 existing pads to be used), the installation and operation of four vested steam generators, expansion of nine existing equipment areas and production facilities to accommodate appurtenant equipment, and construction and operation of various inner-field piping. In addition, the project includes the replacement of an existing 3.5 miles 4-inch diameter Natural Gas Fuel pipeline with an 8-inch pipe. Aspen is analyzing the project for its potential impacts to air quality/GHG, biological and cultural/historic resources, hazardous materials/risk of upset, geology processes/geologic hazards, noise, surface/groundwater, and traffic/transportation. In addition to the proposed project, Aspen is analyzing impacts associated with cumulative development and the reduced project and No Project alternatives. Aspen has also compiled a list of applicable land use policies and is conducting a preliminary policy consistency analysis.
- ***PXP Tranquillon Ridge Oil and Gas Development Project EIR.*** Aspen prepared an EIR for the County of Santa Barbara Energy Division on the proposed PXP Tranquillon Ridge Project, which involved the development of oil and gas wells from Platform Irene into the Tranquillon Ridge Field, located in State waters, using extended reach drilling technology. Platform Irene is located in federal waters and is currently used to develop and produce the Point Pedernales Field also located in federal waters. At Platform Irene, the produced oil and gas from the Tranquillon Ridge Field was proposed to be commingled with the Point Pedernales oil and gas, and sent ashore via existing pipelines from Platform Irene to the Lompoc Oil and Gas Plant (LOGP), located just north of Lompoc. The project description expected a total life of 30 years and as a result, the EIR analysis addressed the extension of life of Platform Irene, existing pipelines, and LOGP, including offshore oil spill impacts. In addition, the EIR included an analysis of an onshore drilling alternative.
- ***Hollister Oil and Gas EIS and RMP Amendment, BLM*** (ongoing). On behalf of the BLM Hollister Field Office (HFO), Aspen is preparing a resource management plan (RMP) Amendment and associated Draft EIS to guide management of oil and gas resources on BLM-administered mineral estate within the HFO. The EIS/RMP Amendment updates the existing 2007 Hollister RMP in order to incorporate new information about well stimulation technologies, natural resource conditions, and socioeconomic trends. The final amended RMP will identify which lands are open or closed to oil and gas leasing and which stipulations would be applied on oil and gas exploration and development activities in order to protect environmental resources. The Planning Area covers twelve counties.
- Review of County of Los Angeles EIR for the Baldwin Hills Community Standards District and Preparation of a City Drilling Ordinance and Review of Culver City's Existing Oil and Gas Requirements and Preparation of a Draft Oi and Gas Drilling Ordinance. Under contract to the City of Culver City, Aspen reviewed the EIR for the Baldwin Hills Community Standards District (CSD) prepared by the County of LA. The EIR considered the preparation and establishment of a CSD for the Inglewood Oil Field, which included standards and measures that would be applied to any future oil and gas drilling project within the 1,000-acre urban oil field. The EIR evaluated existing and future oil operations in the Inglewood Oil Field and identified additional development standards and regulations that should be included in the CSD to mitigate the impacts of drilling on the surrounding communities. Aspen reviewed the EIR for technical accuracy and CEQA compliance, and the results of the EIR review were provided to the City as comments suitable for

submission to the County. In addition, Aspen reviewed the City's existing oil and gas requirements and prepared a draft oil and gas drilling ordinance for the City. Aspen continues to work with the City in the development of an oil and gas drilling ordinance and on other issues or studies related to the portion of the Inglewood oil field within the City's jurisdiction.

In addition to the projects above, Aspen offers extensive other relevant project experience. Exhibit 2 lists examples of other Aspen oil and gas project experience. Note that many of these projects are either pipeline development or include a pipeline component.

Exhibit 2. Examples of Aspen Oil and Gas Experience

Project Name *Lead Agency*	**Key Project Features**
Gaviota Marine Terminal/Chevron Tankering Project Supplemental EIR/EIS *County of Santa Barbara, Energy Division*	▪ Completed a 2,000-page joint EIR/EIS for a Joint Review Panel consisting of the CA State Lands Commission (CSLC), Santa Barbara County, the US Army Corps of Engineers (USACE), and CA EPA. ▪ Evaluated offshore and onshore impacts of converting the Gaviota Transportation Company's Interim Marine Terminal in the western Santa Barbara Channel to permanent status. ▪ Key issues included tanker safety, oil spill scenarios, marine resources impacts, and air quality/air toxics. ▪ Required extensive coordination of Aspen's study team with the Joint Review Panel consisting of the CSLC, USACE, and California Coastal Commission. ▪ Over 100 mitigation measures were developed, along with Mitigation Monitoring Plans.
Exxon Tankering Application from Gaviota (proposal withdrawn), Subsequent EIR *County of Santa Barbara, Energy Division*	▪ Prepared the Initial Study for a Subsequent EIR to the EIR/EIS in support of the County's consideration of an Exxon application to tanker 50,000 barrels of oil per day from Santa Barbara to Los Angeles (LA). ▪ Required extensive air quality and health risk assessment (HRA) modeling, as well as updates to oil spill models and impact analyses. ▪ Work prior to project cancellation included substantial air quality work; completed work elements included development of a detailed air dispersion modeling protocol in coordination with Santa Barbara APCD in order to conduct modeling for worst hour and annual air quality, as well as a comprehensive HRA. ▪ Substantial analysis of the proposed tankers and oceanographic and meteorological conditions in preparation for oil spill modeling and analysis.
CEQA Compliance Assessment *California Department of Conservation, DOGGR*	▪ Prepared a comprehensive assessment of the DOGGR's compliance with CEQA when issuing well drilling permits. ▪ Assessment considered lead and responsible agency roles, applicable regulatory processes, environmental compliance, and oil and gas permitting processes in Kern County. ▪ Report provided program options to the DOGGR regarding measures that could be taken to bring their existing well permitting practices into compliance with CEQA. The assessment included consideration of over 37 plans, regulatory documents, reports; contact with industry groups, environmental organizations, and other interested parties. Also, prepared an extensive Initial Study as part of this assessment project.
Oil and Gas Well Stimulation Treatments in CA – Programmatic EIR *California Department of Conservation, DOGGR*	▪ Prepared a Programmatic EIR assessing oil and gas well stimulation treatments throughout California, as required by Public Resources Code Section 3161 (b)(3) and (4) (Senate Bill 4 [Pavley]), signed into law on September 20, 2013. Section 3161 (b)(3) and (4) required the Division of Oil, Gas and Geothermal Resources (DOGGR) to evaluate the impacts of well stimulation treatments that may occur from either existing or future oil and gas wells, including hydraulic fracturing and acid well stimulation. ▪ The EIR evaluated well stimulation treatments geographically according to DOGGR's six administrative Districts; the evaluation included analysis of the seventeen subject areas provided in Appendix G of the State CEQA Guidelines, as well as risk of upset/worker and public safety, environmental justice, offshore marine biological resources, and coastal processes and marine water quality.
City of Hermosa Beach Oil and Gas Site Risk Analysis	▪ Performed a critical review of the project's Risk Analysis and summarized the latest scientific findings of effects of low concentrations of hydrogen sulfide (H2S) on human health. Aspen (with Bercha Group as our Subconsultant) evaluated the public

Exhibit 2. Examples of Aspen Oil and Gas Experience

Project Name *Lead Agency*	**Key Project Features**
City of Hermosa Beach	risks associated with the Macpherson Oil Project, including a review of the previous risk assessments prepared for the subject project. ▪ Preparation of an Integrated Risk Assessment and preparation of a bibliography and summary of findings of studies on the health effects of chronic, low level H2S exposure. ▪ Document review covered the choice of scenarios, methodologies, level of detail, risk acceptability criteria and their application, and a few individual parameter assessments through comparison with data from other sources.
Cabrillo Port LNG Deepwater Port Project EIR/S Review *City of Oxnard*	▪ Provided expert EIR/EIS review services for Cabrillo Port, for proposed floating storage and regasification unit to be moored in federal waters approximately 14 miles offshore of Ventura County, CA. ▪ Attention was given to issues of concern to the City, including system safety and construction impacts. ▪ Prepared and presented findings of the review to the Oxnard City Council. ▪ Report identified various deficiencies in the Draft EIR/EIS and the need for additional information and analysis; was appended to the City's official comment letter on the Draft EIR/EIS. ▪ Prepared separate report describing how well the Draft EIR/EIS addressed the City's comments submitted in response to NOP/NOI.
City of Long Beach LNG Import Project EIS/R Review *City of Long Beach*	▪ Reviewed the Draft EIS/EIR and provided comments on the adequacy of the Draft EIS/EIR in terms of compliance with the requirements of NEPA and CEQA. ▪ Focused on issues of concern to the City of Long Beach and its citizens, and provided comments on the completeness, accuracy, and technical adequacy of the Draft EIS/EIR evaluation of these issues. ▪ Assisted the City with the review of the General Conformity Determination and Port Master Plan Amendment.
Federal Oil and Gas Leases Offshore Santa Barbara, Ventura and San Luis Obispo Counties *MMS/USDOI*	▪ Multidisciplinary Environmental Information Document and ten Federal Coastal Consistency Determinations for the Minerals Management Service (MMS)/U.S. Department of the Interior (DOI) that evaluated the potential effects of development of the currently undeveloped Federal oil and gas leases offshore Santa Barbara, Ventura, and San Luis Obispo Counties, California. ▪ Addressed both lease-specific potential impacts and cumulative impacts for the period 2006 through 2030. ▪ Technical review and preparation of text regarding near- and long-term activities that may occur on the Pacific Outer Continental Shelf, and provided principal authorship of the CA Coastal Act policy consistency analyses for inclusion in the project's ten Lease/Unit-specific Coastal Consistency Determinations.
Kinder Morgan Concord to Sacramento Pipeline EIR *CSLC*	▪ Prepared an EIR for a proposed 70-mile petroleum products pipeline from Concord (Contra Costa County) to West Sacramento (Yolo County). The EIR included a comprehensive pipeline risk assessment. ▪ Other issues of major importance were hydrological and biological resources, because the pipeline route crossed sensitive habitats near the Sacramento-San Joaquin Delta.
Kinder Morgan Carson to Norwalk Pipeline EIR *CPUC*	▪ Prepared an EIR for the Santa Fe Pacific 13-mile petroleum products pipeline project through urban Los Angeles (including the Cities of Carson, Long Beach, Bellflower, Norwalk, Artesia, and Cerritos). ▪ Seven alternative route segments were fully analyzed within each issue area and compared to the equivalent portions of the proposed pipeline route. ▪ Selected to conduct the Mitigation Monitoring, Compliance, and Reporting Program for construction of the Carson-Norwalk Pipeline.
Pacific Pipeline EIR and EIS/SEIR *CPUC*	▪ Pacific Pipeline Project, Gaviota to Ventura Co., EIR. ▪ Original EIR evaluated an oil pipeline from coastal Santa Barbara County to the LA Basin, via coastal Ventura County and the Santa Clara River Valley. ▪ Monitored compliance with approval and mitigation requirements during construction. ▪ Pacific Pipeline Project, Kern County to Los Angeles Refineries EIS/SEIR ▪ Revised project, evaluated in an EIS and Subsequent EIR, started in the southern San Joaquin Valley and followed Interstate 5 over Tejon Pass and joined the originally proposed route at Castaic Junction in LA County.

Exhibit 2. Examples of Aspen Oil and Gas Experience

Project Name *Lead Agency*	**Key Project Features**
	▪ Required coordination with three counties, 20 cities, and many regional, State, and federal agencies, including the Angeles National Forest and USACE. ▪ Document withstood legal challenge by ARCO and the City of Los Angeles in the CA Supreme Court. ▪ Monitored compliance with approval and mitigation requirements during construction.
San Joaquin Refining Company HRA *San Joaquin Refining Company*	▪ Met San Joaquin Valley Unified Air Pollution Control District requirements. ▪ Created table of maximum calculated risk for 15 sensitive receptors (using ACE2588 model). ▪ Dispersion modeling using ISCST model. ▪ Analyzed emissions and reported the toxicology for each substance. ▪ Risk analysis included pathway specific data files for plant products, animal products, mothers' milk, and water ingestion
Kirby Hills Natural Gas Storage Facility *CPUC*	▪ Prepared the IS/MND which involved the conversion of a depleted gas reservoir into a storage facility for resale of natural gas. Project as proposed had the capacity to temporarily store seven billion cubic feet of natural gas and inject or withdraw up to 100 million cubic feet per day. ▪ Prepared the Subsequent IS/MND for the Kirby Hills Phase II expansion project, which involved the drilling of 15 new wells, and the conversion of four abandoned wells to observation wells. Phase II increased natural gas injection and withdrawal capacity by 350 million cubic feet per day. ▪ Key issues in the environmental review included traffic, risk of upset, wetland communities (Suisun Marsh), and special-status species. ▪ Monitored compliance with approval and mitigation requirements during construction, including monitoring of the development wells.
PG& E Line 401 Capacity Loops Project Gas Pipeline Installation *CPUC*	▪ Aspen implemented the Mitigation Monitoring, Compliance, and Reporting Program for PG&E's Capacity Loops Project in Modoc and Shasta County. ▪ This project was permitted under the PG&E/PGT Project constructed in the early 1990s and involved the installation of a natural gas pipeline within Modoc National Forest and rugged, private lands within Shasta County containing sensitive cultural and biological resources, respectively. Extensive timber harvesting was also conducted as part of the clearing effort for this project. ▪ Numerous federal and State agencies were involved in the permitting of the project.
Molino Gas Project EIR *County of Santa Barbara, Energy Division* (Subconsultant to Arthur D. Little, Inc.)	▪ Subcontractor to Arthur D. Little, Inc. in preparation of an EIR for the Molino Gas Project which proposed to develop offshore gas fields from an onshore drilling location using extended reach drilling techniques. It was the first proposal in Santa Barbara County to drill into offshore reservoirs from an onshore location along the Gaviota coast. ▪ Molino Energy Company proposed to develop the gas resources in two phases. The first phase involved testing of the reservoir to assure that there were sufficient recoverable resources. The second phase involved the full development of the gas reservoir, and was to be pursued only if test results show that the reservoir was capable of supporting full production. ▪ Aspen conducted analyses for air quality, land use, recreation, and public policy consistency for this project and accompanying proposed Coastal Zoning Ordinance amendments.
Yellowstone Pipeline Missoula to Thompson Falls Reroute EIS *National Forest Service/Montana Department of Environmental Quality*	▪ Preparation of an EIS to evaluate the impacts of Yellowstone Pipe Line Company's proposed 67-mile petroleum products pipeline. Project was highly controversial and included an extensive public participation program, including a series of scoping meetings throughout western Montana and northern Idaho. Four alternative pipeline routes were analyzed, as well as the No Action Alternative, which involved use of trains and trucks to transport petroleum products. ▪ Included 23 supporting technical reports (each between 50-500 pages) in issues such as groundwater, fisheries, air quality, and wildlife biology. Each technical report presented detailed mitigation measures and a Mitigation Monitoring Plan. ▪ Issues of concern were biological resources (including sensitive species such as the gray wolf and bald eagle), geologic hazards and erosion, surface and ground water quality, archaeological resources, and pipeline safety.

Aspen Transmission and Substation Experience

The Aera East Cat Canyon Project includes a transmission line and substation that need to be analyzed as part of the project. Aspen has worked extensively with the California Public Utilities Commission (CPUC), Western Area Power Administration (Western), and other agencies analyzing transmission lines and substations. In addition to our CPUC and Western work, we have evaluated the transmission and substation components of projects that have been evaluated under CEQA for San Luis Obispo, Kern, San Benito, and Imperial Counties, as well as several local municipalities. As well, Aspen has evaluated these types of electric infrastructure for BLM and the U.S. Forest Service.

Pacific Gas and Electric Company (PG&E) is subject to the jurisdiction of the CPUC and must comply with CPUC General Order 131-D on the construction, modification, alteration, or addition of all electric transmission facilities (i.e., lines, substations, switchyards, etc.). This includes facilities to be constructed by others and deeded to PG&E. PG&E also must comply with Public Utilities Code Section 851. Among other things, this code provision requires PG&E to obtain CPUC approval of leases and licenses to use PG&E property, including rights-of-way granted to third parties for interconnection facilities.

The Aera East Cat Canyon project will require a new approximate 1,200-foot long 115 kV power line from PG&E's existing Sisquoc-Santa Ynez line to a new Aera-owned 115/12.47 kV substation at the field's central processing facility. To construct the line to the substation, PG&E must submit an application to CPUC, which will need to review and approve the new line. This will involve CEQA. In the past, CPUC has on occasion relied on CEQA documents prepared by other lead agencies to fulfill its CEQA responsibilities. For example, Aspen prepared the California Valley Solar Ranch project EIR for San Luis Obispo. The project included an off-site gen-tie line and switchyard to connect to PG&E's Morro Bay-Midway 230 kV Transmission line. While the gen-tie from the solar project to a new switchyard was not subject to CPUC oversight, the new switchyard and upgrading the PG&E line was. Aspen included the new switchyard and 35 miles of reconductoring as part of the EIR; CPUC used our documentation to approve PG&E's application for the upgrades. The upgrades also served another nearby solar project, Topaz, for which Aspen prepared a separate EIR. Similarly, for the Lompoc Wind Energy Project located in Santa Barbara County, Aspen included the new 8.7 mile, 115 kV PG&E power line from the project wind facility to the PG&E interconnect in the Lompoc area.

Aspen will ensure that the County's EIR for the Aera Cat Canyon project contains the information necessary under General Order 131-D for CPUC to consider and approve the transmission line.

Exhibit 3 lists examples of transmission and substation projects undertaken in California. Additional transmission work for Western is listed following this exhibit.

Exhibit 3. Examples of Aspen Transmission Line and Substation Experience		
Project *Client*	**Location**	**Description**
Environmental Impact Reports & Environmental Impact Statements		
SCE Tehachapi Renewable Transmission Project EIR/EIS *CPUC and Angeles National Forest*	Kern and Los Angeles Counties	Prepared an EIR/EIS for a SCE proposal to construct an extensive series of transmission system improvements across Kern, Los Angeles, and San Bernardino Counties to help deliver electricity from new wind energy projects in eastern Kern County. The project provides the electrical facilities necessary to integrate up to approximately 4,500 MW of new wind generation in the Tehachapi Wind Resource Area. A Supplemental Draft EIR/EIS was published in April 2013.
SCE Antelope-Pardee 500-kV Transmission Project EIR/EIS *CPUC and ANF*	Los Angeles County	Prepared an EIR/EIS for a proposed 500-kV transmission line from the Antelope Substation in the Antelope Valley to the Pardee Substation in the City of Santa Clarita. The new, 25.6-mile line would be between existing substations and would replace an existing 66-kV line that traverses the majority of the route, including approximately 13 miles within the Angeles National Forest.
SCE Antelope Transmission Project Segments 2&3 EIR *CPUC*	Kern and Los Angeles Counties	Prepared an EIR for Segments 2 and 3, which collectively include a series of 220-kilovolt and 500-kV transmission line upgrades between the Tehachapi Wind Resource Area in southern Kern County and Vincent Substation in Los Angeles County, as well as two new substation facilities in Kern County.
SCE Devers-Palo Verde 500-kV No. 2 EIR/EIS *CPUC and BLM*	Southern California and Arizona	Prepared an EIR/EIS for a new 230-mile 500-kV line from the Harquahala Substation (in Arizona, near the Palo Verde nuclear power plant) to Devers Substation (in North Palm Springs, CA). Extensive upgrades would also be built to a 50-mile 230-kV system in the rapidly urbanizing corridor West of Devers (between Palm Springs and San Bernardino). Prepared a Supplemental EIR for an expanded Colorado River Substation.
SCE El Casco System Project *CPUC*	San Bernardino and Riverside Counties	Prepared an EIR for construction of the proposed El Casco Substation site, upgrades to the Zanja and Banning Substations and the SCE's Mill Creek Communications Site, upgrades to a total of 15.4 miles of existing 115-kV subtransmission line and associated structures, and the installation of fiber optic cables within existing conduits in public streets and on existing SCE structures between Redlands and Banning.
SDG&E Sunrise Powerlink Project EIR/EIS *CPUC and BLM*	Imperial and San Diego Counties (alternatives also evaluated for Riverside County)	Prepared an EIR/EIS for a new, approximately 90-mile, 500-kV line from Imperial Valley Substation to a new Central East Substation (in central San Diego County). The project included approximately 60 miles of 230-kV transmission lines from the new Central East Substation to SDG&E's existing Peñasquitos Substation (in San Diego). SDG&E proposed to construct two segments underground. Over 100 alternatives and options were screened for analysis and 30 carried forward for full evaluation.
South San Joaquin Irrigation District (SSJID) Acquisition of PG&E Distribution System *San Joaquin County*	San Joaquin County	Prepared an EIR to evaluate impacts of the potential purchase of transmission assets from PG&E by the SSJID. Considered a wide range of effects on local distributions systems, including re-conductoring, construction of new substations, construction of underground lines, and interconnection with adjacent utility systems.

Exhibit 3. Examples of Aspen Transmission Line and Substation Experience

Project *Client*	Location	Description
SDG&E Miguel-Mission 230-kV #2 Project EIR *CPUC*	San Diego County	Prepared an EIR for a proposed 230-kV circuit within an existing transmission line ROW between Miguel (near Chula Vista) and Mission Substations (Mission Valley) in San Diego County. The Proposed Project would include installing a new 230-kV circuit on existing towers along the 35-mile ROW, as well as relocate 69-kV and 138-kV circuits on approximately 80 new steel pole structures.
North Area Right-of-Way Maintenance *Western Area Power Admin.*	Northern California	Conducting biological and cultural resource field surveys along 800 miles of ROW and 400 miles of legal access roads in support of an Environmental Assessment for proposed changes to operations and maintenance procedures to ensure system reliability and safety. Surveys will be conducted from the Yuba/Sutter County line north to the Oregon border along the California-Oregon Transmission Project.
Sacramento Area Voltage Support *Western Area Power Admin.*	Sacramento and Sutter Counties	Prepared a Supplemental EIS for a new double-circuit, 230-kV transmission line from O'Banion Substation/Sutter Power Plant to Elverta Substation/Natomas Substation, involving survey of a 30-mile corridor. Western has identified up to six routing alternatives for analysis along with the proposal.
PG&E Jefferson-Martin 230-kV *Transmission Project EIR* *CPUC*	San Mateo County	Prepared an EIR for a proposed 27 mile 230-kV transmission line, substation modifications, and upgrades to an existing 60-kV transmission line. The three-volume Final EIR was over 2,700 pages long, with 38 wire and non-wire transmission alternatives and almost 200 graphics. It was a highly controversial project with very active opposition groups and local jurisdictions.
SPPCo Alturas Transmission Line EIR/EIS *CPUC and BLM*	Northern California and Nevada	Prepared an EIR/EIS for a proposed 165 mile 345-kV transmission line, two new substations, and modifications to an existing substation. Aspen evaluated 20 alternatives (totaling over 90 miles) after considering over 50 alternatives in an initial screening process. Coordinated communication between CPUC and the NEPA Lead Agency (BLM), the responsible agencies (including USFS), and numerous state and local agencies in two states.
PG&E Tri-Valley Capacity Increase Project EIR *CPUC*	Alameda and Contra Costa Counties	Prepared an EIR for a proposed approximately 23 mile-underground and overhead 230-kV transmission line, two new distribution substations, and modifications to an existing substation. A total of 27 potential alternatives were evaluated in the EIR.
SCE Lucerne Valley to Big Bear Valley Transmission Line EIR/EIS *CPUC and USFS*	San Bernardino County; San Bernardino National Forest	Provided support to the CPUC in reviewing the EIR/EIS that was prepared by a contractor to SCE. Managed preparation of several EIR/EIS sections and provided a detailed rewrite of mitigation measures.
PG&E Los Banos-Gates 500-kV Transmission SEIR *CPUC*	Central Valley (Merced, Fresno, and Kings Cos.)	Prepared a SEIR for a proposed 84-mile 500-kV transmission line, substation modifications, and upgrades to an existing 230-kV transmission line. The Draft SEIR considered two major transmission corridors and several route variations.
Northeast San Jose Transmission Reinforcement EIR *CPUC*	Alameda and Santa Clara Counties	Prepared an EIR for a proposed 7.3-mile 230-kV transmission line, a new 230/115-kV substation, modifications to an existing substation, and upgrades to an existing distribution line. A total of 22 alternatives were evaluated in the Draft and Supplemental Draft EIR.

Exhibit 3. Examples of Aspen Transmission Line and Substation Experience		
Project *Client*	**Location**	**Description**
Mitigated Negative Declarations		
Embarcadero-Potrero 230-kV Transmission Project *CPUC*	San Francisco City and County	Preparing an IS/MND for the construction of a 3.5-mile under-ground 230-kV transmission line, approximately 2.5 miles would be installed offshore underneath the seafloor of San Francisco Bay.
Cressey-Gallo 115-kV Power Line Project *CPUC*	Livingston (Merced Co.)	Preparing an MND for a new 14.4-mile 115-kV power line.
SCE Riverway Substation Project *CPUC*	Visalia (Tulare Co.)	Prepared a MND and Initial Study for a new 1.7-acre 66/12-kV low-profile substation with two 28 MVA transformers and six 12-kV distribution lines. The project includes approximately 1,200 feet of underground 66-kV lines, as well as new fiber optic cable and communication equipment to connect the substation to SCE's existing telecommunication system.
PG&E Delta DPA Capacity Increase Substation Project *CPUC*	Antioch (Contra Costa Co.)	Prepared a MND and Initial Study for the construction of a new three-bank 230/21-kV distribution substation on a 5.1-acre site in the City of Antioch. In addition, PG&E's proposed project would include a new transmission tower in an existing transmission ROW and a new paved access road, which would require construction of a temporary bridge.
SCE Viejo System-Project *CPUC*	Orange County	Prepared a MND and Initial Study for the construction of a 220/66/12-kV substation (Viejo Substation) on a 12.5-acre site located in the City of Lake Forest and a 3.1-mile 66-kV subtransmission line along the corridor between the proposed Viejo Substation and the existing Chiquita Substation in the City of Mission Viejo, as proposed by SCE.
Banning Substation and Transmission Project *R.W. Beck*	Banning (Riverside Co.)	Prepared MND and Initial Study for the construction of a new substation and 3.5-mile 69-kV transmission line in the City of Banning.
SCE Valley-Auld Power Line CPUC	Southwestern Riverside County	Prepared a MND and Initial Study for construction of 11.5 miles of new 115-kV power lines and minor power line upgrades proposed by SCE. Aspen also performed mitigation monitoring during project construction.
SCE CalNev Power Line & Substation *CPUC*	Colton (San Bernardino Co.)	Prepared a MND and Initial Study for a proposed electrical substation and additional power lines.
SCE Six Flags Power Line & Substation *CPUC*	Valencia (Los Angeles Co.)	Prepared a MND and Initial Study for a proposed electrical substation and additional power lines.
PG&E Atlantic-Del Mar Reinforcement Project *CPUC*	Rocklin and Roseville (Placer Co.)	Prepared a MND and Initial Study for a proposed 4-mile 60-kV power line and modifications to two existing substations. Detailed study of an underground segment to mitigate visual impacts in historic central Rocklin.
PG&E Paradise Area Reinforcement Project *CPUC*	Paradise (Butte Co.)	Prepared a MND, Initial Study, and Mitigation Monitoring Implementation Plan for a proposed 6.1-mile 115-kV power line and 115-kV transformer at an existing substation. Aspen conducted monthly mitigation monitoring visits during construction.

Numerous transmission project environmental analyses have been prepared by Aspen for the **Western Area Power Administration's Desert Southwest Region,** these include:

- ED2-Saguaro #2 115-kV Transmission Line
- Buckskin–Planet Tap 69-kV Transmission Line
- Gila–Gila Valley 34.5-kV Transmission Line
- Mead-Liberty 345-kV Transmission Line
- Davis–Nora McDowell 69-kV Transmission Line
- ED4-ED5 115-kV Transmission Line
- Gila–Wellton Mohawk 161-kV Transmission Line
- ED2-Saguaro #1 115-kV Transmission Line
- Liberty-Parker #2 230-kV Transmission Line
- Prescot–Pinnacle Peak 345-kV Transmission Line
- Parker-Blythe #1 161-kV Transmission Line
- Henderson-Mead 230-kV Transmission Line
- Tucson-Apache 115-kV Transmission Line
- Rattlesnake-DelBac 115-kV Transmission Line
- Blythe-Knob 161-kV Transmission Line
- Parker-Headgate 161-kV Transmission Line
- Gila–North Gila 161-kV Transmission Line
- G.Canyon-Flagstaff 345-kV Transmission Line
- Saguaro-Tucson 115-kV Transmission Line

2.1.2 Geotechnical Consultants

Geotechnical Consultants, Inc. (GTC) will assist the Aspen Team in the area of geology processes, geologic hazards, and groundwater. GTC has provided consulting services in geotechnical engineering, engineering geology, and hydrogeology for 50 years. They have applied their expertise in these disciplines to a wide range of infrastructure projects including oil and gas facilities, pipelines, and pump stations. Their geotechnical work includes research; geologic field mapping; aerial photo interpretation; subsurface exploration using drilling and trenching methods and cone penetration testing; land and marine geophysical surveys; in-situ and laboratory testing; geologic, engineering, and seismic risk analyses; and construction observation and testing.

GTC has provided consulting services in geotechnical engineering, engineering geology, and hydrogeology for 50 years, and is assisting Aspen in the review (geological and water resources) of the ERG West Cat Canyon Revitalization Plan EIR.

Mr. James Thurber, who is part of the Aspen Team on this project, heads up the geologic and hydrogeologic group at GTC. He will be assisted by Aurie Patterson. Both Mr. Thurber and Ms. Patterson conducted the respective geotechnical and groundwater analyze for the ERG West Cat Canyon Revitalization Plan EIR.

GTC Oil and Gas Experience

GTC is assisting Aspen in the review (geological and water resources) of the ERG West Cat Canyon Revitalization Plan EIR. GTC also assisted Aspen in preparation of the PXP Tranquillon Ridge Oil and Gas Development Project EIR and the review of the County of Los Angeles' EIR for the Inglewood Oil Field. For these projects, GTC evaluated the geological resources and water resources section of the EIR. In addition, GTC has conducted environmental assessments and prepared documentation for Geology, Geologic Hazards, and Soils sections for numerous EIRs/EISs including the Pacific Pipeline Project, Santa Fe Pacific Pipeline EIR in Southern California, the Yellowstone Pipeline EIS; the Kinder Morgan Pipeline Replacement Project EIR, and Gaviota to Long Beach alignment. GTC has also conducted the geotechnical investigations for the Celeron-All American Pipeline, Pt. Arguello Pipeline alignment, and the Exxon Corral-Los Flores Onshore Facility.

A selection of GTC's oil and gas experience includes the following:

- ERG West Cat Canyon Revitalization Plan EIR, Santa Barbara County Planning and Development, Energy & Minerals Division
- PXP Tranquillon Ridge Oil & Gas Development Project EIR, Santa Barbara County Planning and Development, Energy Division

- Knights Landing Gas Field Project, *Chevron Pipeline Company*
- Siting Feasibility Study for Pump Station and Tank Farm, *Southern California Pipeline System*
- Celeron-All American Pipeline, *Celeron-All American Pipeline*
- Hueneme Offshore Platform, *Mobil Oil Company*
- Geohazards Investigation for Pt. Arguello, *Chevron, USA, Inc.*
- Corral-Las Flores Onshore Facilities, *Pacific Offshore Pipeline Company*
- CEQA Compliance Assessment, California Department of Conservation, DOGGR

2.1.3 ioMosaic

Founded by former executives and senior staff from Arthur D. Little, Inc., ioMosaic Corporation is a leading provider of safety and risk management consulting services for over 40 years. ioMosaic has the knowledge, experience, and resources to provide pressure relief system design services, quantitative risk assessments (QRA), and onsite training. Expert in safety and risk management, they assist clients in compliance with local, state, and federal proper process safety management regulations. Examples of services provided by ioMosaic include liquefied natural gas (LNG) safety, pipeline safety, process engineering design and support, process hazard analysis (PHA), process safety management, QRA, and fire and explosion dynamics.

***ioMosaic Corporation** is the leading provider of safety and risk management consulting services; they worked with Aspen on the statewide evaluation of well stimulation treatments used in oil and gas well drilling and are working on the ERG West Cat Canyon Revitalization Plan EIR.*

Mr. Peter Stickles, a member of the Aspen Team, is a Senior Partner with ioMosaic. Mr. Stickles has effectively worked with Aspen on several projects, including the ERG West Cat Canyon Revitalization Plan and PXP Tranquillon Ridge Project EIRs for the County of Santa Barbara, and the EIR regarding well stimulation treatments within California for the Department of Conservation.

ioMosaic Oil and Gas Experience

ioMosaic conducts risk analyses for oil and gas-related projects including onshore exploration and offshore drilling, and transport. ioMosaic experts have conducted QRAs and led PHAs for a number of national and international oil companies. Their work has included leading hazard and operability (HAZOP) studies, HAZOP refresher training, PHA revalidation, day-to-day project management and QRA studies. Their QRA and HAZOP studies have covered major U.S. oil and gas fields, including high-risk utility systems (e.g., fuel gas systems, waste heat recovery systems, and low-pressure flare/relief systems).

Examples of California experience include:

- Risk assessments of hazardous liquid pipeline systems for compliance with 49 CFR195.542. The hazardous liquids included petroleum emulsion and treated crude oil, and the produced fluids originated from a sour field. During this assignment, safety engineers reviewed the information management data compiled by the operator, conducted a PHA, interviewed operations and technical staff, then surveyed the pipeline right-of-way and associated high consequence areas.
- Conducted a review and a QRA of a natural gas pipeline for the County of Santa Barbara.
- Conducted a study to define the conditions for approval of re-drill permits for the City of Beverly Hills.
- Conducted a risk of upset and hazardous materials impact study for the Tranquillon Ridge Project in County of Santa Barbara as a subcontractor to Aspen, including the crude oil and sour gas pipelines.

- Will be conducting a risk of upset and hazardous materials impact study for the ERG West Cat Canyon Revitalization Plan Project in County of Santa Barbara as a subcontractor to Aspen when the QRA is submitted; setting prepared.

2.1.4 Althouse and Meade, Inc.

Althouse and Meade, Inc. (A&M) of Paso Robles, California, is led by its highly respected principals LynneDee Althouse and Daniel Meade. The A&M team has extensive experience conducting biological resource surveys, producing reports, applications, and other documents and work products as part of the CEQA process, and obtaining local, state, and federal, agency authorizations. They have expertise, training, and experience regarding ecology, general biology, herpetology, wildlife biology, botany, soil science, water chemistry, wetlands, fisheries, restoration, and rare, threatened and endangered species.

A&M Oak Tree and Woodland Restoration Experience

A&M has conducted resource surveys and assisted with conservation planning on over 120,000 acres in California, primarily Santa Barbara, San Luis Obispo, and Kern Counties, including large scale biological surveys on properties of 10,000 acres and 25,000 acres. LynneDee Althouse conducted research on oak regeneration in the Los Padres National Forest that was published in Ecology, a peer-review publication, and conducted post-graduate research in Santa Barbara County oak woodlands. Her work has included preparing restoration plans and conducting replanting programs for thousands of oaks in California.

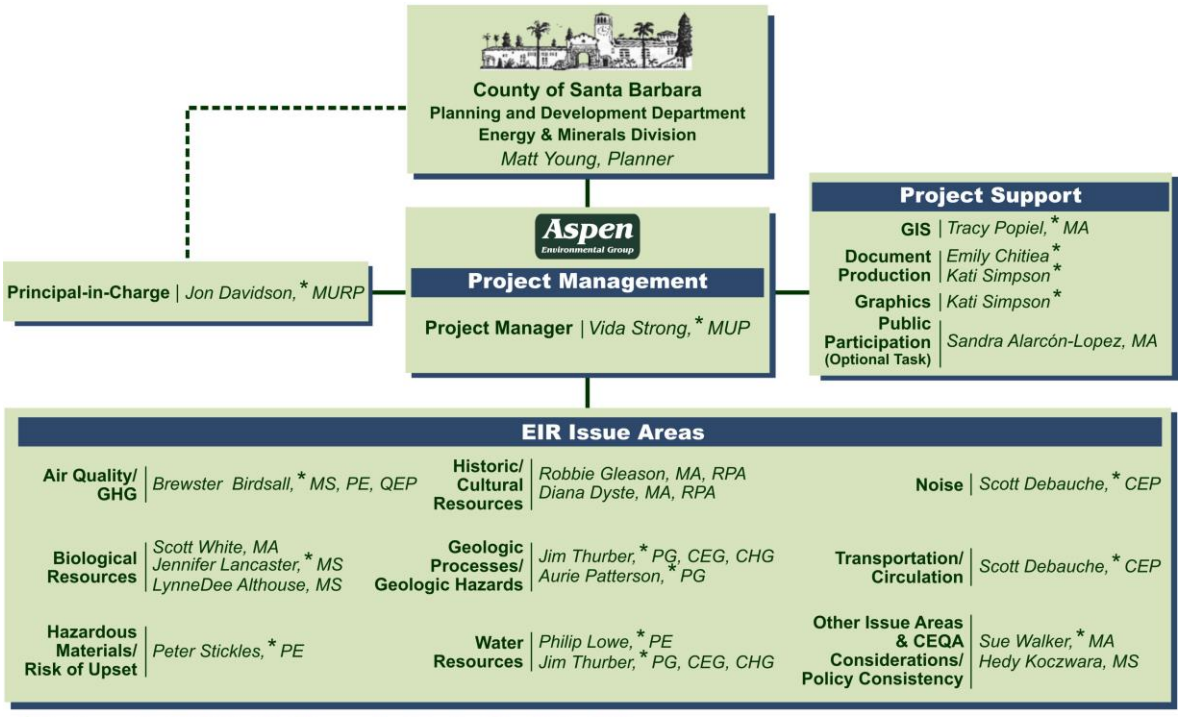
3. Personnel

3.1 Project Management and Coordination

Aspen has assembled a lean and efficient team to prepare the EIR for the Aera East Cat Canyon Oil Field Redevelopment Plan Project (Project). The Aspen Team includes experts in the key areas identified in the RFP and includes staff with directly relevant experience with oil and gas drilling projects at the local and State level. This experience translates into a team that will efficiently prepare the environmental analysis for this project within a streamlined, but comprehensive evaluation format. We will work closely with the County to ensure that the final product is not only well presented, but also legally defensible.

The Aspen Team, Exhibit 4 (Organization Chart), will be managed by **Vida Strong MUP**, who brings extensive experience in project management and in working on oil and gas drilling projects for the County of Santa Barbara, including the ERG West Cat Canyon Revitalization Plan Project and PXP Tranquillon Ridge Project. Ms. Strong is a member of our Agoura Hills office, but primarily works from a home office in Santa Barbara so she is readily available for any project needs. She is a Senior Project Manager and will be the County's primary point of contact during the contract performance period. Mr. **Jon Davidson, MURP**, Vice President of our Agoura Hills office will support Ms. Strong as the Principal-in-Charge. He will ensure that Ms. Strong is provided with all of the resources and staff required to complete all project-related tasks and efforts. In addition to Ms. Strong, as noted on the Organization Chart, many of the proposed Aspen Team members have also worked on the ERG West Cat Canyon Revitalization Plan Project EIR so are currently up to speed on specific and regional resources and infrastructure that relate to Cat Canyon Oil Field. Additional technical staff have been added to address specific resource issues identified for the Aera Project, such as oak tree restoration.

Exhibit 4. Organization Chart



* Working on the ERG West Cat Canyon Revitalization Plan Project EIR.

Ms. Strong will also be supported by the resources available in our Agoura Hills office. This office provides extensive project support, in terms of computers, telecommunications, website service, word processing and editing, document production and distribution, finance and accounting, and contract administration and purchasing. Aspen has established protocols in place for rapid and efficient communication between Aspen Staff, subcontractors, and our clients. Ms. Strong has direct access to all of these support services and works with graphics, document production, and GIS resources effectively to ensure the efficient completion of project deliverables. In addition, Aspen has a dedicated staff of highly experienced GIS and graphics specialists that will work closely with Ms. Strong and the technical specialists for issue-specific information.

3.2 Key Personnel

As requested in the RFP, this section provides a summary of the qualifications of key staff presented on the Aspen Team. Appendix A includes resumes where more detail is provided on staff qualifications. Exhibit 5 presents the percentage of time each key staff has on the Project, as identified in the RFP. Aspen understands that any modifications to our proposed Team during the contract performance period must first be approved by the County Planning and Development Department.

Exhibit 5. Summary of Project Team Roles and Estimated Hours

Issue Area and Labor Category	Personnel	Individual Hours	Percent of Total Hours
Aspen Team			
Project Management			
Principal-in-Charge	Jon Davidson	2	0.1%
Project Manager	Vida Strong	206	11.7%
Associate, Other CEQA	Hedy Koczwara	156	8.9%
Administrative	Administrative	26	1.5%
Billing	Project Management	12	0.7%
Contracts/Document Production	Emily Chitiea	60	3.4%
Graphics	K. Simpson/T. Popiel	76	4.3%
PD/Cumulative/Alternatives			
PD/Cumulative/Alternatives	Vida Strong	23	1.3%
Associate	Hedy Koczwara	23	1.3%
Air Quality/ Greenhouse Gas			
Air Quality/Greenhouse Gas	Brewster Birdsall	124	7.1%
Biological Resources			
Biological Resources	Scott White	25	1.4%
Biological Resources, Oaks	LynneDee Althouse	94	5.4%
Biological Resources	J. Lancaster/M. Schapp	176	10.0%
Geologic Processes, Geologic Hazards, and Paleontology			
Geology and Soils, Groundwater	James Thurber (GTC)	128	7.3%
Geology and Soils, Groundwater	Aurie Patterson (GTC)	126	7.2%
Hazardous Materials/Risk of Upset			
Haz. Materials/Risk of Upset	Peter Stickles (ioMosaic)	200	11.4%
Historic/Cultural Resources			
Historic/Cultural Resources	Diana Dyste	26	1.5%
Historic/Cultural Resources	Robbie Gleaston	60	3.4%
Land Use/Policy Consistency			
Land Use/Policy Consistency	Sue Walker	17	1.0%
Land Use/Policy Consistency	Hedy Koczwara	48	2.7%

Exhibit 5. Summary of Project Team Roles and Estimated Hours

Issue Area and Labor Category	Personnel	Individual Hours	Percent of Total Hours
Noise			
Noise	Scott DeBauche	28	1.6%
Transportation/Circulation			
Transportation/Circulation	Scott DeBauche	66	3.8%
Water Resources			
Water Resources, Surface	Phil Lowe	54	3.1%
Total Hours		**1,756**	***100.00%***

Jon Davidson, MURP, *Principal-in Charge*. Aspen Vice- President Jon Davidson manages the firm's Agoura Hills office. Mr. Davidson will support Ms. Strong as our Principal-in-Charge, a role he also plays for the West Cat Canyon Revitalization Plan Project EIR. He will ensure that Ms. Strong is provided with all of the resources and staff required to complete all project-related tasks and efforts. Mr. Davidson has over 30 years of experience in providing environmental and planning consulting services to government agencies. He has managed or had a major role in preparing more than 135 EIRs, EISs, and EAs.

Vida Strong, MUP, *Project Manager*. Ms. Strong has 27 years of environmental engineering and project management experience. She is thoroughly familiar with issues related to oil and gas in Santa Barbara County. Currently, she is managing the West Cat Canyon Revitalization Project EIR, and is thoroughly familiar with the project area, the oil and gas industry, and the County's expectations.

A mainstay of her work is impact analysis of controversial development projects under both CEQA and NEPA, and subsequent mitigation monitoring to ensure compliance with conditions of approval. Her oil and gas experience includes on- and off-shore development, processing, and transport (pipeline, tinkering, truck and rail). Ms. Strong has been involved in the management and preparation of environmental documents for numerous industrial projects. These have required precise project description development, knowledge of a wide range of issue areas, critical application of alternatives development and screening criteria, cumulative project assessment, and extensive local, State, and federal agency coordination. In addition, on behalf of the permitting agencies she has managed the mitigation monitoring, compliance, and reporting programs for many projects, including oil and gas pipelines, transmission lines, and substations. Ms. Strong's monitoring experience provides her with an in depth knowledge of project construction, effective mitigation implementation, post-construction restoration, and multi-agency coordination.

Prior to joining Aspen Environmental Group, Ms. Strong was an Energy Specialist for the Santa Barbara County Planning and Development Department's Energy Division, where she managed the permitting and environmental review of major oil and gas development projects and proposals, and oversaw the implementation of mitigation monitoring plans.

LynneDee Althouse, MS, [Althouse & Meade], *Biological Resources (Oaks).* LynneDee Althouse is a biologist, watershed ecologist and restoration specialist with over 28 years of experience conducting biological and general environmental surveys and supervising restoration projects. Ms. Althouse conducts surveys and restoration projects primarily in Santa Barbara, San Luis Obispo, Kern, Monterey, and Ventura Counties. She supervises and coordinates surveys and regulatory permit compliance throughout California. She conducted research for her Master's degree on oak regeneration in the Los Padres National Forest that was published in Ecology, a peer-review publication. She conducted post-graduate research in Santa Barbara County oak woodlands, and co-authored a publication in Soil Science Society of America.

Ms. Althouse has conducted replanting and prepared restoration plans for thousands of oaks in California. Ms. Althouse taught Biological Principles of Conservation Planning at UC Santa Barbara in the Environmental Studies Department. She also taught an introductory soils laboratory at California Polytechnic State University, San Luis Obispo, California. Ms. Althouse shares her rich teaching, research, and consulting experiences with clients, students, agencies, and colleagues.

Brewster Birdsall, P.E., QEP, *Air Quality, Greenhouse Gas*. Mr. Birdsall, a senior engineer and environmental scientist at Aspen, is expert in air permitting, dispersion modeling, and greenhouse gas (GHG) emissions assessments for energy infrastructure siting in California. He has 20 years of experience and routinely supports decision-makers on the issues of project siting, energy supply alternatives, and environmental impacts. Recent relevant experience includes providing expert review of the Santa Barbara County threshold-setting process for consideration of GHG in CEQA documents. His work covers a diverse range of proposed actions involving the oil and gas sector, electric transmission, and renewable and conventional power plant development. Mr. Birdsall coordinates planning and engineering reviews within CEQA documents, as needed, and was a co-author of the California Energy Commission's recent landscape-scale feasibility study, *Transmission Options in Southern California* prepared in response to closure of San Onofre Nuclear Generating Station (SONGS).

Scott Debauche, CEP, *Noise, Transportation/Circulation*. Mr. Debauche is a Board Certified Environmental Planner with 20 years of experience serving as technical analyst of environmental impacts under both CEQA and NEPA. Mr. Debauche's areas of expertise include the evaluation of noise and traffic/transportation issues associated with infrastructure development projects of all types. As part of his work, Mr. Debauche has completed over 100 technical analyses in CEQA documents related to projects in California. Recent project experience in Santa Barbara County includes preparation of the noise and transportation analyses for the ERG West Cat Canyon Revitalization Plan Project EIR, currently in preparation. Mr. Debauche has a strong working knowledge of oil field development within Santa Barbara County and the requirements of the County's Environmental Thresholds and Guidelines Manual.

Diana Dyste, MA, RPA, *Historic/Cultural Resources*. Ms. Dyste has 16 years of experience. Her skillset includes federal (Section 106) and state (AB 52) tribal consultation, as well as archaeological research design, survey, and excavation, including supervision of large field crews. She is a Field Director under BLM's Statewide California Cultural Resources Use Permit (CA-14-20). **).** Ms. Dyste is responsible for final review of compliance documents and the cultural section of the ERG West Cat EIR. She also is the main support person to the Energy Commission's Cultural Resources staff. In this role she is responsible for the analysis and co-authorship of Data Adequacy, Data Request, and Issues ID reports. She provides written testimony in Preliminary and Final Staff Assessments (CEQA-equivalent documents), makes presentation at public workshops and EC staff meetings, and queries from staff and Commissioner's Advisors. Ms. Dyste meets the Secretary of the Interior's qualification criteria as an archaeologist. Her experience includes prehistoric and historic archaeology in central and southern California, including Santa Barbara County. Ms. Dyste has taught and participated in numerous courses about Native American environmental law, indigenous research methodologies, and community-based participatory action research with tribal and special interest groups. She is working on her PhD at UCSB and is fluent in Spanish.

Robert S. Gleaton, M.A., RPA, *Historic/Cultural Resources.* Mr. Gleaton has over 15 years of experience writing and performing fieldwork, research, and analysis in archaeology and anthropology. He is responsible for preparing cultural resources portions of environmental documents, field and desktop project reports, and resource eligibility recommendations. He also is experienced in fieldwork, Native American outreach, geographic spatial analysis, and technical editing. Mr. Gleaton has prepared environmental documents pursuant to applicable federal, state, and local regulations in California. He is a Registered Professional Archaeologist who meets the Secretary of the Interior's Professional

Qualifications Standards as an archaeologist and has specialized knowledge in the history, prehistory, and geomorphology of California.

Hedy Koczwara, MS, *Other Issue Areas & CEQA Considerations/Policy Consistency*. Ms. Koczwara has 14 years of experience conducting environmental reviews under CEQA and NEPA, including a range of oil and gas-related projects on behalf of several California agencies. Ms. Koczwara served as Deputy Project Manager for the Analysis of Oil and Gas Well Stimulation Treatments in California EIR prepared for DOGGR/Department of Conservation and was responsible for developing the detailed project description and comparison of alternatives. The work included extensive research and coordination with agency and industry representatives, including a 2-day site visit to Aera Energy LLC's facilities in Belridge, to gather information on oil and gas development and well stimulation practices specific to California. Also on behalf of DOGGR, Ms. Koczwara wrote the population and housing section for an IS/MND to evaluate DOGGR's CEQA Compliance Program for oil and gas well drilling in Kern County, including the revision of DOGGR's CEQA regulations that are applicable statewide. Currently, Ms. Koczwara is managing preparation of the BLM's Hollister Oil and Gas EIS/Resource Management Plan Amendment to update the reasonably foreseeable development scenario and guide management of oil and gas resources on BLM-administered mineral estate within the 12 counties of BLM's Central Coast Field Office. On behalf of the former Mineral Management Service (MMS), Ms. Koczwara assisted with the preparation of an Environmental Information Document to support MMS's Coastal Consistency Determinations of potential new oil and gas exploration and development of remaining leases offshore Santa Barbara, Ventura, and San Luis Obispo Counties. She also wrote several CEQA issue area sections for Kinder Morgan's Concord-Sacramento Pipeline Project EIR on behalf of the California State Lands Commission and for Lodi Gas's Kirby Hills Natural Gas Storage Facility IS/MND on behalf of the CPUC.

Jennifer Lancaster, MS, *Biological Resources.* Ms. Lancaster has 13 years of experience in botanical and wildlife field surveys and report preparation. This includes extensive experience preparing CEQA and NEPA documents, federal and California Endangered Species Acts consultations (including the Section 7 process), and conducting siting assessments for renewable energy projects. Her recent work includes planning-level biological analyses in support of renewable energy opportunities and constraints analyses for local jurisdictions. Her experience includes native habitat restoration, rare plant field studies, laboratory analysis, experimental design, teaching, and logistical support for field surveys. Currently, she is working with Ms. Strong on the ERG West Cat Canyon project EIR, preparing the biological resources portion of the document.

Philip Lowe, P.E., MA, *Water Resources.* Mr. Lowe is a Senior Associate in Water Resources at Aspen. He will be responsible for surface water and surface water quality impact analysis. Mr. Lowe is a registered civil engineer with more than 35 years of experience in surface water resources, drainage, and water quality. More than 25 years of this experience has been in preparing surface water environmental impact analysis under CEQA, with many projects involving oil and gas exploration and production. Mr. Lowe recent work includes preparation of the surface water impact analysis for the ERG West Cat Canyon Revitalization Plan EIR, the surface water statewide programmatic impact analysis of Oil and Gas Well Stimulation Treatments (under SB 4), and the surface water impact analysis for oil development under BLM's Hollister Field Office Draft Resource Management Plan Amendment.

Aurie Patterson, P.G., [Geotechnical Consultants, Inc.], *Geologic Processes/Geologic Hazards*. Ms. Patterson has 21 years of experience managing and preparing technical sections for CEQA and NEPA environmental documents for oil field development, transmission lines, utility-scale solar facilities, public facilities and buildings, power plants, schools, and pipelines. Ms. Patterson has provided peer review of applicant's geologic reports in order to identify data gaps, inadequacies, and deficiencies in the applicant's environmental documents and to ensure the adequacy of the geologic documents for use in preparing EIR

sections. Ms. Patterson has performed data research, aerial photo interpretation, site inspection, and analysis for geologic/geotechnical hazards, faulting and seismic hazards, hazardous materials, groundwater, and mineral resources. Her project experience includes environmental studies for oil field development, solar facilities, wind farms, petroleum and water pipelines, power plants, transmission lines, communications systems, transportation, schools, and redevelopment projects. She has prepared Phase I Environmental Site Assessments for large solar facilities and long linear transmission projects. Recent Santa Barbara County project experience includes working with Aspen on the ERG West Cat Canyon EIR.

Peter Stickles, MS, P.E., [ioMosaic], *Hazardous Materials/Risk of Upset*. Mr. Stickles is a senior partner at ioMosaic Corporation with 45 years of experience in chemical process safety, petroleum refining and petrochemical technology, and process design. Mr. Stickles worked on a risk assessment for well stimulation statewide and he was a major contributor on the risk of upset assessment for the Tranquillon Ridge EIR that was managed by Aspen's Project Manager, Vida Strong. Mr. Stickles also was a major contributor to numerous other relevant risk assessments, including for the Clearwater Port Deepwater Port Project EIS/EIR, for the well stimulation programmatic EIR, and for the Sound Energy Solutions (SES) Long Beach LNG Project. For Santa Barbara County, he prepared a qualitative risk assessment of the proposed extension of the inspection interval for the Hermosa-Gaviota Pt. Arguello Natural Gas Pipeline (PANGL), and prepared the risk of upset section for the ERG West Cat Canyon project EIR. He also prepared the risk of upset section of the Plan Amendment and EIR addressing oil and gas leasing in the Central Coast for BLM's Hollister Field Office.

James Thurber, P.G., G.E.G., C.HG., [Geotechnical Consultants, Inc.], *Geologic Processes/Geologic Hazards*. Mr. Thurber has over 30 years of experience and an in-depth knowledge of the development, protection, and management of municipal groundwater resources and the analysis of environmental issues related to geology, geologic hazards, soil and erosion, surface water and groundwater. He is actively involved in engineering geology, hydrogeology, and hazardous material assessments for the planning and design of new projects. He has conducted environmental assessments and prepared documentation for geology, geologic hazards, soils, seismicity, and hazardous materials sections for many local and regional EIRs and EISs. Mr. Thurber has teamed with other specialists on numerous CEQA/NEPA studies to analyze potential project-related impacts. He has assessed site conditions with regard to past and current use of hazardous materials and environmental contamination. Examples of his project experience include the ERG West Cat Canyon EIR and evaluation of geologic impacts associated with enhanced thermal recovery in the Inglewood Oil Field.

Susan Walker, MA, *Other Issue Areas & CEQA Considerations/Policy Consistency*. Ms. Walker has over 25 years of experience conducting environmental reviews under CEQA and NEPA, including for a range of oil and gas-related projects. Notably, Ms. Walker managed the Analysis of Oil and Gas Well Stimulation Treatments in California EIR. This EIR analyzed the potential impacts from hydraulic fracturing, acid fracturing, and acid matrix stimulation statewide. Ms. Walker is providing senior technical review and guidance for the land use and policy consistency analysis being prepared for the ERG West Cat Canyon EIR. Previously, Ms. Walker managed the Environmental Information Document addressing federal oil and gas leases offshore Santa Barbara, Ventura and San Luis Obispo Counties, and functioned as the senior technical analyst for its 10 Coastal Consistency Determinations. She also served as the Assistant Project Manager and land use and policy principal analyst for the California Offshore Oil and Gas Energy Resources Study, which addressed the potential land-based environmental, engineering, and socioeconomic constraints associated with various levels of offshore oil and gas development in Ventura, Santa Barbara, and San Luis Obispo Counties. Ms. Walker has been a senior technical analyst for a variety of social sciences assessments for the City of Culver City's review of the Baldwin Hills Community Standards District EIR, Santa Barbara County's Tranquillon Ridge Oil and Gas Development Project EIR, DOGGRs' evaluation

and preliminary CEQA review of its regulations for oil and gas drilling and production in Kern County, and the Energy and Minerals Division's North County Siting Study.

Scott White, MA, *Biological Resources.* Mr. White has 28 years of experience. He is an expert with southern California plants, habitats, and natural history. He instructs at field courses for Rancho Santa Ana Botanic Garden, and serves as a peer reviewer for US Fish and Wildlife Service Federal Register notices. Mr. White's extensive experience includes evaluating habitat suitability and project impacts for special-status wildlife species. Mr. White's projects have included CEQA and NEPA analyses for local districts, county, state and federal lead agencies; compliance planning and monitoring for project construction; state and federal Endangered Species Act consultation; state and federal streambed and wetland delineations and permitting; programmatic environmental analyses and conservation plans; and state and federal consultation for Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and state Fish and Game Code nesting bird compliance. He has managed biological resources analyses for large-scale program-level documents, including the statewide analysis of oil and gas well stimulation treatments, and the BLM's NEPA analysis of oil development in the Hollister Planning Area. Mr. White provides expert witness testimony and supports client legal staff in case review and preparation of briefs. He has extensive experience with federal, state and local agency coordination, and he has published a number of studies in the professional literature.

Sandra Alarcón-Lopez, MA, *Optional Task: Public Participation*. Ms. Sandra Alarcón-Lopez has more than 30 years of experience managing environmental projects and programs, including experience in conducting agency and community outreach. She has worked as the Public Involvement Manager for 9 major electrical transmission projects proposed in California and Arizona and on other infrastructure projects, including oil and gas projects. She also has worked on community relations efforts for US Navy and US Air Force remediation programs, where she carried out comprehensive public outreach that included public meetings, workshops, newspaper advertisements, mailings, and community interface. She recently completed the coordination of 10 stakeholder interviews, 2 stakeholder in-person focus group sessions, 5 public workshops, and a webinar for a County of San Bernardino renewable energy project. Ms. Alarcón-Lopez completed the IAP2 Certificate Program in Public Participation and brings significant experience in local agency planning and permitting including experience as a land use planner with the County of Santa Barbara Energy Division.

GIS/Graphics/Production support will be provided **by Tracy Popiel** (GIS), **Kati Simpson** (graphics), and **Emily Chitiea** (document production). The GIS/Graphics group's experience preparing GIS-based maps for linear and renewable energy projects statewide ensures that maps for this effort will be easy to read and understand, and provided at scales that clearly illustrate key resources and geographic elements for each project. Editorial review and production support ensure that work products are clearly written and that they are formatted and their layout is easily reproduced and searched.

4. Study Methodology

Aspen's study methodology includes ten tasks, consistent with the deliverables and schedule provided on pages 8 and 9 of the RFP. Our overall study methodology maximizes use of the Applicant-provided studies and application materials to eliminate any unnecessary or redundant data collection and review. Following review of materials, data inquires will be provided to the Applicant so that they can furnish the additional information required to complete a legally defensible EIR. Aspen's approach also includes attendance at project meetings, the public comment hearing, and Planning Commission and Board of Supervisors hearings.

Aspen will prepare an EIR consistent with the format identified in the RFP. We will provide the County with a streamlined but thorough assessment of the project, one that is legally and technically defensible. Aspen will use site maps and graphics as needed to prepare an easily understood and CEQA-compliant document.

The Aspen Project Manager will be available to attend staff meetings requested by the Energy & Minerals Division staff in Santa Barbara. Given Ms. Strong's Santa Barbara location, she can be readily available on short notice. Six (6) staff meetings are assumed through Final EIR preparation. Our proposed scope also includes participation of our technical team members in up to three meetings each, with participation by conference call. Our accompanying Cost Proposal provides unit costs for additional meetings by our Project Manager and technical specialists. Sections 4.1 and 4.9 of our Study Methodology present assumptions regarding the Aspen Project Manager and technical specialists' attendance at Scoping, Planning Commission, and Board of Supervisors hearings.

4.1 Task 1 – NOP and Scoping Documentation

Working closely with the County, Aspen will prepare the Notice of Preparation (NOP) for the project EIR. The NOP will be consistent with the CEQA Guidelines and will be provided in a format acceptable to the County. This task includes the preparation of a concise project description and an initial assessment of key issues. No Initial Study will be prepared. Consistent with CEQA requirements, if an EIR will be prepared for a project, the NOP does not need to include an Initial Study.

As requested in the RFP, Aspen will submit the NOP to the County within 15 working days of the County's Notice to Proceed. The deliverables will include: one reproducible unbound copy; 15 bound copies and 15 electronic copies on CDs, and an additional electronic copy on CD.

4.2 Task 2 - Written Summary of Comments at the Scoping Meeting

The Aspen Project Manager will attend the project Scoping Meeting. Within 5 working days after the Scoping Meeting, Aspen will provide a written summary of comments received at the meeting. The summary will be provided to the County electronically either by email or on compact disc.

4.3 Task 3 – Project Description, Environmental Setting and Alternatives

A Project Description will be prepared for the proposed East Cat Canyon Oil Field Redevelopment Plan Project with sufficient detail to allow for thorough evaluation in the EIR. The Project Description will identify the Applicant, the Applicant's objectives, and federal, State and County permitting requirements. The description will include the location of the East Cat Canyon Oil Field, including a listing of all affected parcels and their current General Plan land use designations and zoning, and proposed reconfiguration of 14 lots

into 12 lots. Aspen will use the Applicant's application materials and graphics to the maximum extent feasible to prepare the Project Description. A discussion outlining the Applicant's proposed mitigation, as identified in the various technical studies, also will be included to ensure that readers understand what environmental controls have been incorporated into the proposed Project by design.

The Environmental Setting will provide a narrative of the Project area's existing conditions, from which the EIR's "baseline" discussion for each resource/issue area-specific will be built. The text will describe the proposed Project area's geography and topography, climate, transportation network, aesthetic qualities, land use patterns and practices, habitat types, and surface water hydrology. Aspen's Project Manager and issue-area specialists will conduct a site visit, with prior approval of and coordination with the County and Applicant, to confirm site conditions.

Cat Canyon Oil Field

- *2,107.8 acres comprise East Cat Canyon*
- *East Cat Canyon oil production since 1917*
- *Thermal enhanced recovery from 1965-1989*
- *Cumulative oil production approximately 10 million barrels*
- *All existing wells plugged, except for 4 test wells*

As noted in the RFP, the EIR analysis will consider the No Project Alternative, Reduced Alternative(s), and other alternatives as appropriate. Aspen's Project Manager, will work closely with Energy & Minerals Division staff and, based on initial consideration of potential significant impacts, determine if any other alternatives should be considered. Consistent with CEQA, the alternatives will be evaluated in lesser detail than the proposed Project.

The Project Description, Environmental Setting, and description of project alternatives will be submitted to the County within 20 working days after the Scoping Meeting. Aspen will provide this deliverable in electronic format either on compact disc or by email.

4.4 Task 4 – Administrative Draft EIR and Technical Studies

The proposed Aera East Cat Canyon Oil Field Redevelopment Plan Project would include: construction of new well pads; drilling and operation of new wells; construction and operation of associated processing facilities and in-field gathering pipelines and access roads; and construction and operation of a new 14-mile-long, 8-inch gas pipeline from the existing Southern California Gas Line 1010 at Divide Station on Graciosa Road to the proposed Aera onsite central processing facility. In addition, a new, approximate 1,200 foot 115 kV electrical transmission line would be constructed from the existing PG&E Santa Ynez-Sisquoc 115 kV line to the proposed 115/12.47 kV Aera Substation within the onsite central processing facility. As proposed, the Project would be implemented in phases to maximize efficiency and help moderate construction and operational peak activity levels over a multi-year field infrastructure program beginning in Year -3 and continuing through Year 30, with Year 1 being the first year of steam injection.

Aspen will prepare an EIR that will address the eight key issue areas identified by the County in the RFP for the Project as described below in Sections 4.4.1 through 4.4.8. Sections 4.4.9 through 4.4.11 provide our technical approach for cumulative impacts, alternatives, and policy consistency analysis, respectively. In addition, a discussion of less than significant effects and other CEQA considerations is provided in Section 4.4.12. We will address all required elements in the EIR and will prepare an outline consistent with the County's desired format for the EIR as part of this task. We will use available Applicant-provided studies in the EIR, supplemented by responses to data inquires, and we will use the County's "Environmental Thresholds and Guidelines Manual" (2008) and other recently adopted requirements and regulations for the impact evaluation.

Each EIR technical resource analysis section will address existing environmental conditions in the affected area, identify and analyze environmental impacts of construction and operation of the proposed Aera Project, and recommend mitigation measures to reduce or avoid adverse impacts anticipated from Project construction and operation if needed. In addition, existing relevant laws and regulations, and environmental significance thresholds will be described for each issue area. In some cases, compliance with existing laws and regulations may reduce or avoid certain impacts that might otherwise occur from implementation of the Project. The impact analysis also will consider all Applicant proposed mitigation measures and the phased approach to construction and operation, as well as other applicable County standards and conditions of approval.

For adverse and significant impacts, appropriate mitigation measures will be developed to reduce their significance to the degree possible. Mitigation measures will be clearly numbered to correspond to their respective impact criteria. The effectiveness of each mitigation measure will be discussed, and the level of impact significance after mitigation is applied will be identified.

EIR Outline

1. *Executive Summary*
2. *Introduction*
3. *Project Description & Alternatives*
4. *Impact Analysis for each resource]*
   a. *Environmental Setting*
   b. *Regulatory Setting*
   c. *Environmental Thresholds*
   d. *Impacts and Mitigation*
   e. *Alternative Impacts*
   f. *Cumulative Impacts*
5. *Summary of Cumulative Impacts*
6. *Comparison of Alternatives*
7. *Other CEQA Considerations & Not Significant Effects*
8. *Mitigation Monitoring and Reporting*
9. *References*

Appendices

Aspen will submit the Administrative Draft EIR to the County for review and comment as one reproducible unbound copy, three bound copies, and one electronic copy on CD. All printed bound versions of the EIR, including the Administrative Draft EIR, will be printed double-sided on recycled paper and will be spiral bound. All electronic submittals prepared in Adobe Acrobat format will be divided into chapters and files will be in sizes that are compatible with Planning and Development's computers and readily downloadable to the County's website. The Administrative Draft EIR and technical studies will be submitted to the County within 70 working days after the Scoping Meeting.

4.4.1 Air Quality/Greenhouse Gases

Background and Issues

The Air Quality section will include analyses of criteria pollutants, air toxics and potential public health risks, odors and consistency of the project with the regional air quality management plan. These analyses rely on a clear definition of the baseline emissions of existing sources and the net emissions increases that would be caused by the project. The primary criteria air pollutants of concern are ozone, particulate matter (PM10/PM2.5), and the ozone precursors, including nitrogen oxides, volatile organic compounds, and sulfur oxides as PM2.5 precursors.

Emissions increases would be caused by: the site preparation, drilling, and operation of 296 new wells; installation of various facilities for oil and gas processing, offices, roads, power lines, pipelines, and storage vessels; the addition of up to seven new steam generators, one standby generator, and an emergency flare; and the on-highway transport of crude to and from Kern County via heavy-duty vehicles.

The Project includes two proposed phases. The phases require construction of enhanced oil recovery facilities to produce and process relatively heavy crude and the facilities to receive light crude delivered by truck and ship out produced oil by truck. Phase I would construct facilities sufficient to confirm the production forecasts and establish the operations before making additional investments and before developing additional well pads in Phase II. Four of the seven steam generators would be installed in Phase I.

Phasing allows emissions from construction to be spread out over time and for phased expansion of the processing capabilities and additional air pollution sources.

Air Quality

Issue: Potential to Conflict with or Obstruct Implementation of Clean Air Plan

Increasing emissions from oil and gas production beyond the level of activity assumed by the air quality management plan could obstruct implementation of the Clean Air Plan. Historically, the Santa Barbara County APCD has assumed that the County would have gradually decreasing production and activity in the oil and gas sector. However, the 2013 Clean Air Plan that was adopted by the APCD Board on March 19, 2015, noted that the (future) growth factors for oil and gas-related activity County-wide are now set to one, due to growth uncertainty in that sector over the long-term (SBCAPCD, 2015; p. 3-2). This contrasts with the 2007 and 2010 Clean Air Plans, which included assumptions of gradually *decreasing* production and *decreasing* activity in the oil and gas sector. In effect, the current 2013 Clean Air Plan assumes that County-wide oil and gas production in 2020 and 2030 would be equal to baseline (2008) levels of approximately 10,000 barrels per day *for the entire County* (SBCAPCD, 2015); this means any growth in petroleum production and growth in activity through 2030 could be in conflict with the Clean Air Plan.

Peak production of both Project phases would be limited by the central processing facility to approximately 10,000 barrels per day *for the East Cat Canyon project* (Application, p.2-1). Because the new production wells and processing facilities would increase production, the EIR must include a consideration of Clean Air Plan consistency. Increasing production would also be a cumulative concern, in light of projects elsewhere in Cat Canyon, at Orcutt Hill, and elsewhere in the County. Aspen's analysis of air quality plan consistency will identify the APCD's growth assumptions in the EIR and identify feasible controls to mitigate any emissions found to conflict with or obstruct implementation of the Clean Air Plan.

Greenhouse Gases (GHG)

Issue: Thresholds of Significance for GHG in CEQA

The County and the APCD have long recognized the potential for GHG emissions to contribute to long-term global climate change. Aspen has tracked the evolution of CEQA threshold recommendations for many years across the state, and we have advised California's major energy agencies on ways to successfully address GHG in CEQA documents. In 2015, Aspen advised the County and participated in the hearings for setting the current thresholds for determining significance of GHG in the CEQA process. The Santa Barbara County Environmental Thresholds and Guidelines Manual (update of 2015) specifies that: all industrial stationary-source projects shall be subject to a numeric, bright-line threshold of 1,000 MTCO2e per year to determine if greenhouse gas emissions constitute a significant cumulative impact.

Issue: Compliance under Cap and Trade Program and Mitigating Uncovered Emissions

The owner/operator of the oil field must surrender compliance obligations under the ARB Cap and Trade program. The quantity required is based on the level of GHG emissions determined under the statewide reporting requirements. Identifying the applicability of the reporting and Cap and Trade requirements to the various types of project sources will be a focus of our work.

The EIR will detail the types of Project sources that are subject to a Cap and Trade compliance obligation (e.g., stationary sources, point sources) versus those that are not covered (e.g., leaks that are difficult to quantify, mobile sources). The Project would cause GHG emissions increases from covered as well as uncovered sources, and the EIR will disclose those emissions separately. Based on the EIR inventory of GHG emissions, if mitigation is needed beyond compliance with mandatory programs, feasible mitigation will be

identified to reduce, avoid, or offset those emissions that occur over the County's stationary source threshold of 1,000 MTCO2e per year.

Environmental Setting

Aspen will summarize relevant background air quality data and the State and federal ambient air quality attainment status of the air basin. The GHG assessment will provide a summary of the area's climate and the potential long-term impacts of climate change. Specific air quality and meteorological conditions pertinent to the project site, such as prevailing wind direction, also will be summarized as needed.

Aspen will summarize the applicable federal, State and local air quality and GHG regulatory requirements that are applicable to the Project. This will include a summary of the latest CARB and USEPA regulations for the oil and natural gas industry, the latest approved Air District Air Quality Management Plan (the Final 2013 Clean Air Plan), applicable APCD rules and regulations, Statewide regulations and economy-wide programs for GHG, and relevant local plan policies for air quality and GHG relevant to oil field development.

The topic of global climate change and GHG emissions will appear in the EIR in a section separate from air quality. The primary GHG sources are from fuel use that primarily results in carbon dioxide (CO_2) and from leaks and fugitive escape of CO_2 and methane (CH_4), a potent GHG, as a result of oil and gas production. The range of vented and fugitive emissions depends on the specific activities, equipment, and sources occurring with construction, well development, production, storage, transportation, and handling systems. Aspen has the expertise to clearly and correctly analyze the topic of GHG from the proposed oil and gas operation in the CEQA context.

Impacts and Mitigation Measures

Air quality and GHG significance criteria set by County guidance and those recommended by the APCD will be presented. The significance criteria for criteria pollutants address protection of air quality and public health by reviewing regional and localized emissions caused by all project activities; and similarly, the criteria for GHG consider the incremental effects of direct and indirect emissions as they may contribute to global climate change. The potential for odor impacts, namely due to hydrogen sulfide (H_2S), also will be assessed.

Air Quality

Approach:

- Aspen will provide an independent and detailed technical review of the Applicant's emissions inventories, calculation methods, dispersion modeling, and exposure levels. Our review may warrant one round of data requests to obtain information necessary to confirm data and conclusions in the Applicant's material, or if the Applicant's emission factors or activity estimates appear to be unreasonable or unsupportable. Currently, it is not assumed that a new refined air dispersion modeling analysis will be required to confirm the project's air quality impacts or the results of the applicant's Health Risk Assessment (HRA).
- Aspen will summarize relevant background air quality data, state and federal ambient air quality attainment status of the air basin. Specific air quality and meteorological conditions pertinent to the project site, such as prevailing wind direction, also will be summarized as needed.
- Aspen will summarize the applicable federal, State and local air quality regulatory requirements that are applicable to the project and related sources. This will include a summary of the latest approved Air Quality Management Plan (the Final 2013 Clean Air Plan, adopted March 2015) and a summary of applicable APCD and USEPA rules and regulations, including requirements to detect and repair leaks of volatile organic compounds (VOC) from equipment at oil wells.

- Aspen will describe the County's approach (Environmental Thresholds and Guidelines Manual, 2008, updated July 2015), including the significance thresholds for air quality recommended by the APCD (Environmental Review Guidelines, Revised November 2000; Scope and Content of Air Quality Sections, updated March 2014).
- Following the independent review of Applicant materials, Aspen will disclose the levels of emissions increases from all Project activities and compare the increases with the significance thresholds. Aspen will confirm the that emissions quantifications use the latest ARB EMFAC and OFFROAD emissions factors, and other established methodologies, such as the USEPA's Compilation of Air Pollutant Emission Factors (AP-42) and oil and gas industry methodologies. Validation, where necessary, will be calculated by spreadsheet, or with other emissions estimating tools such as the CalEEMod software.
- The impact analysis will address site preparation, including well drilling and pipeline installation, and construction of the processing, production, and office/warehouse facilities for Phase I which will have the potential for short-term criteria pollutant impacts from vehicle and heavy equipment use. Additionally, emissions include odors and air toxics associated with well completion and fugitive leaks. Over the longer-term under Phase II, additional steam generators would be added and greater production-related emissions will occur. Our analysis will include the Phase II increase in emissions from fugitive leaks from piping components and from vented tanks, from transport via truck and pipeline, and from onsite and offsite vehicle travel.
- In addition to the Project's direct and indirect operating emissions there is the issue of the emissions from the downstream end-use of the oil and gas products that would be produced by the Project. This downstream product use issue will be discussed and quantified. Information also will be provided to provide context on the demand for the end-use products that would otherwise need to be met.
- Odor impacts will be assessed based on a description of the potential for the Project to contribute to a change in emissions from sources that may result in odor complaints, namely due to hydrogen sulfide (H_2S). The potential health risks from toxic air contaminants will be characterized with data from dispersion modeling on the concentrations of air pollutants likely to occur at the nearest sensitive receptors.
- Criteria pollutant and toxic air contaminant cumulative impacts will be determined based on the cumulative project list developed for this project. Cumulative localized and air toxics impacts will be evaluated qualitatively, with a review of area-wide effects of other sources including anticipated drilling and oil and gas development elsewhere in the Cat Canyon Oil Field and at Orcutt Hill.
- Should a significant impact be identified, Aspen will identify appropriate mitigation measures, such as recommending additional pollution control systems. The selected mitigation measures will be formulated in a manner that will allow easy incorporation into a subsequent mitigation monitoring plan.

GHG

Approach:

- Aspen will provide an independent and detailed technical review and peer-review of the Applicant's GHG emissions inventories, calculation methods, and characterization of the baseline, site development, and long-term operation scenarios.
- Confirming GHG emissions will be accomplished by following the latest approved methodologies and emissions factors from CARB Mandatory Reporting Program and the USEPA Greenhouse Gas Reporting Program (40 CFR Part 98, Subpart W) requirements.

- Aspen also will identify CARB's progress on rulemaking specific to reduce methane from crude oil and natural gas facilities. The CARB's new oil and gas rule is scheduled for consideration at a CARB public hearing on July 21, 2016. The USEPA's New Source Performance Standards (NSPS) for controlling methane (and VOC) from equipment at oil well sites were finalized on May 12, 2016 (40 CFR Part 60, Subpart OOOOa). Recent research in support of these rulemakings by CARB and USEPA to address CH_4 leakage from oil and gas production will be cited. Confirmation of the applicant's emissions estimates and the associated emissions impacts during development and long-term operation of the production wells and facilities will be a focus of our work.
- Aspen will summarize the applicable federal, State and local GHG regulatory programs that are relevant to the Project and oil field development. This will provide the necessary background on understanding what types of GHG emissions are covered by economy-wide programs such as Cap and Trade or the Low Carbon Fuel Standard, how the emissions are covered, and what emissions are not covered. This setting will address the AB 32 Climate Change Scoping Plan, including the second update and upcoming 2030 Target Scoping Plan, and the CARB's proposed Short-Lived Climate Pollutant Strategy (SLCP) from April 2016. The EIR must review the consistency of the project with these GHG reduction programs.
- The GHG assessment will provide a summary of climate change indicators relevant to the region and the potential long-term impacts of climate change.
- Aspen will describe the GHG significance threshold established by the County (Environmental Thresholds and Guidelines Manual, 2008, updated July 2015), the basis for the threshold, and how the threshold relates to California's regulatory framework for GHG control. Aspen will detail the activities and sources to disclose those that are subject to Cap and Trade or other programs such as Low Carbon Fuel Standard (LCFS).
- The GHG emissions increases will be quantified, including emissions from site preparation, well drilling, well completion, and pipeline installation and the long-term operations, including on-highway truck transport of crude. Emissions will occur from fuel use by vehicles and mobile equipment, steam production, oil and gas equipment venting and leaks, waste handling, and oil and gas production, processing, and transport.
- The GHG quantities from the downstream end-use of the oil and gas products that would be produced by the Project will be discussed, with information on how the Cap and Trade and Low Carbon Fuel Standard regulatory programs apply.
- Should a significant GHG impact be identified, Aspen will identify appropriate mitigation measures. One option may be to achieve reductions through an offset program or by surrendering and retiring surplus offsets from formal carbon offset registries. Other options that may be preferable would provide on-site mitigation for GHG impacts. On-site mitigation includes implementing best performance standards, and setting energy efficiency targets or energy supply specifications, like using electricity from the grid for certain equipment. On-site GHG reductions may be attractive as a way to provide co-benefits that also mitigate air quality or public health impacts.

4.4.2 Biological Resources

Background and Issues

Aspen has reviewed the Biological Resources Survey Reports provided by Aera and we are familiar with extent of Aera's proposed redevelopment plan, including the proposed linear facilities. In addition, Aspen is familiar with the proposed phasing of project construction and operation from Year -3 through Year 30.

Aspen believes that the Applicant's Biological Resources Survey Reports provide a thorough and accurate discussion of the biological resources that may be affected by the Project. The reports summarize the results of thorough literature reviews and extensive field surveys conducted for the proposed Project. In addition, the reports provide thorough mapping of known special-status species occurrences, vegetation, and habitat on the Project oil field site and linear features, and field observations of significant resources made during field work. The field surveys were generally conducted at appropriate times, and detected a wide variety of plants and wildlife.

Aspen's Biological Resources Team is familiar with the project region and is experienced with the biological resources occurring or potentially occurring on the site. In addition, Aspen is familiar with the County of Santa Barbara's Land Use and Development Code and Environmental Thresholds and Guidelines Manual, as well as other local, State, and federal regulations, policies, and standards that would apply to the proposed Project.

Based on our review of the Biological Resources Survey Reports, project description, and regional context, we anticipate that the most important Biological Resources issues will be:

- Temporary and permanent impacts to vegetation and habitat, including special-status species habitat
- Impacts to oak trees and oak woodlands
- Potential impacts to wetlands or jurisdictional waters
- Potential impacts to rare, threatened and endangered species, such as California tiger salamander and California red-legged frog
- Potential impacts to nesting and migratory birds
- Potential direct or indirect effects to wildlife and habitat of spills or oil seepage

The goal of the biological resource section of the EIR is to contribute to a concise, legally defensible document that thoughtfully discloses the environmental setting, the Project's direct and indirect impacts to biological resources, and provides feasible mitigation measures that effectively balance resource protection with development goals. Aspen has prepared impacts analyses for comparable impacts for energy and land use projects throughout California, including oil and gas projects in northern Santa Barbara County, including the ERG West Cat Canyon Revitalization Plan Project and PXP Tranquillon Ridge Oil and Gas Development Project. Many of Aspen's CEQA analyses have addressed controversial or high profile projects, and we have successfully identified potentially significant biological resources impacts, as well as mitigation measures to reduce those impacts to less than significant. Aspen's Senior Biologist Scott White managed and co-authored the biological resources section for the Analysis of Oil and Gas Well Stimulation Treatments in California state-wide Program EIR. Aspen Biologist Jennifer Lancaster authored the biological resources analysis for the nearby West Cat Canyon Revitalization Project ADEIR. Additionally, Aspen Team member LynneDee Althouse is an expert in oak restoration, with several completed restoration planning projects in the Central Coast region.

Environmental Setting

Biological resources of the proposed Aera East Cat Canyon Oil Field Redevelopment Plan Project are described in detail in three Biological Resources Survey Reports, addressing the Project area and two linear facilities. The proposed Project would directly affect about 335 acres of the approximate 2,108-acre Project site. In some cases, the proposed Project would affect disturbed areas where previous oil operations were conducted. Other project development would affect undisturbed areas, including areas for new roads, well pads, and infrastructure sites. Native habitats that would be subject to disturbance include coast live oak

woodland, coastal sage scrub, and annual grassland. Suitable upland habitat for California tiger salamander would be directly affected by the proposed Project.

Aspen will use the Biological Resources Survey Reports as the primary basis for CEQA analysis. Aspen biologists will independently verify the local and regional analysis and on-site conditions to support the conclusions of our CEQA analysis. Aspen's biologists will review the available literature and species databases (e.g., California Natural Diversity Database, California Native Plant Society, herbarium and museum records, U.S. Fish and Wildlife Service (USFWS) critical habitat maps); review available reports and relevant biological technical studies completed in the study area and vicinity; and consult with local experts and resource agency staff. We will then use the existing survey data and conduct a reconnaissance-level survey to verify the information provided in the Biological Resources Survey Reports. If needed, we will provide a memorandum to the Applicant, in coordination with the County, outlining any survey validation discrepancies with the baseline data and if any local special-status species, not addressed in the Biological Resources Survey Report, need to be added.

Aspen biologists will evaluate the potential need for supplemental data to support the CEQA analysis. We note that several follow-up field surveys were scheduled (mentioned in the Biological Resources Survey Reports), and those field results will be incorporated into our analysis. If we determine that additional species-specific surveys are needed, we will provide a memorandum to the Applicant, in coordination with the County, identifying the specific survey types, the expected timing of the surveys, and the rationale for the request. Ultimately, survey protocols and strategies will be determined in coordination with the County and resource agencies, including the CDFW, USFWS and/or the U.S. Army Corps of Engineers (USACE), as appropriate. Aspen assumes that all additional survey work will be completed by the Applicant. However, Aspen is available and qualified to perform any additional survey work that may be required to support the CEQA documentation process as an optional task. Aspen's biological resources staff includes experts in the resources and special-status species known from the region, including jurisdictional waters and wetlands, and all special-status plants and wildlife potentially occurring in the Project area.

Impacts and Mitigation Measures

Aspen will prepare an objective, science-based analysis of the proposed Project's biological resources impacts, including construction of Phases I and II, drilling during Phase II, and potential long-term operation and maintenance impacts throughout the expected life of the Project. Our approach to the impact analysis will be based on the resources present (or potentially present) in the Project area, and the anticipated direct and indirect Project impacts to those resources. We believe that the Biological Resources Survey Reports provide a strong basis for the EIR's impact analysis. The three Biological Resources Survey Reports present a well-developed discussion of the regulatory setting and anticipated Project impacts, including GIS-based analysis of direct impacts to vegetation and habitat. We will independently review the impact analyses, including evaluation whether each impact would be significant, and whether mitigation may be needed to reduce the impact to less than significant. If needed, we will update or revise the impact analysis to ensure a legally robust document and address any new information or changes to regulatory policies.

The Biological Resources Survey Reports also provide recommended mitigation measures to address each of the impacts identified. Examples of key mitigation measures recommend pre-construction field surveys, avoidance measures, oak tree replacement, habitat compensation, and revegetation. Aspen will critically review each of these measures, revise or clarify as needed, or add new measures to develop legally defensible conclusions regarding any potentially significant impacts.

Aspen's approach to biological resources mitigation will be to dovetail CEQA mitigation as closely as possible with other environmental permitting requirements. We are familiar with resource agency regulatory and permitting requirements that may be applicable for the Project, including the following:

- Federal Endangered Species Act (ESA), administered by the USFWS and National Marine Fisheries Service (NMFS)
- California Endangered Species Act (CESA), administered by CDFW
- Federal Clean Water Act, Section 401, administered by the Regional Water Quality Control Board (Central Coast Region)
- Federal Clean Water Act, Section 404, administered by the USACE
- Lake and Streambed Alteration Agreement program, administered by the CDFW

In general, we would expect the measures recommended by Biological Resources Survey Reports to be compatible with environmental permit conditions that may be required. Aspen will coordinate our review of the proposed measures with the County and resource agencies to minimize potential conflicts among the various permit conditions. In addition, certain impacts that may affect biological resources (e.g., dust, erosion, water quality, or spill response) may be mitigated to less than significant through measures recommended in other sections of the EIR, such as Air Quality, Surface Water, or Risk of Upset. Aspen's biologists will coordinate with the other EIR resource section authors to ensure compatibility among mitigation measures, with minimal duplication or overlap.

Aspen is familiar with the County oak tree and oak woodland policies, and the high level of public awareness of and sensitivity to loss of these trees and the habitat values they provide. Aspen Team member LynneDee Althouse is an oak woodland ecology and restoration expert. She has decades of practical experience, as well as research published in the scientific literature. She will independently review the Oak Tree Protection Plan and Oak Tree Replacement Plan provided by Aera, to ensure compliance with County policies and the efficacy and feasibility of the two plans, and will identify any further details or performance criteria that may be needed to ensure a legally defensible CEQA conclusion. Aera's proposed phasing of project construction will be taken into account in consideration of an adaptive restoration approach. Mitigation will be developed to supplement any deficiencies.

Some other key Aspen qualifications for this Project's impact analysis and mitigation recommendations include:

- ***Temporary Vegetation and Habitat Impacts***. Aspen's restoration and revegetation biologists will evaluate the proposed mitigation to revegetate temporarily disturbed areas, to ensure that adequate performance standards have been identified that meet CEQA requirements.
- ***Wetlands or Jurisdictional Waters***. Aspen has worked with numerous projects to avoid, minimize, or mitigate the unexpected effects of directional drilling (e.g., frac-outs) to sensitive resources, including wetlands, jurisdictional streambeds, and rare plants. This mitigation would apply to the proposed directional drilling under Cat Canyon Creek.
- ***Nesting Birds***. Aspen's Biological Resources Group has worked closely with the CDFW and other agencies to develop project-specific measures to avoid take of nesting birds, while minimizing logistic and schedule impacts for the projects.

4.4.3 Hazardous Materials/Risk of Upset

Aspen's approach in preparing the EIR discussion of Hazardous Materials and Risk of Upset will begin with a comprehensive review of the *Quantitative Risk Assessment Update* (dated March 2016 and prepared by Dixon Risk Consulting), County's Environmental Thresholds and Guideline Manual (2008), the Safety Element Supplement, and any supporting documentation provided by the Applicant. The Hazardous Materials and Risk of Upset analyses will be prepared in coordination with other relevant EIR sections (Air Quality, Geologic Hazards/Groundwater, Fire Protection, and Land Use).

Background and Issues

Hazardous Materials: The East Cat Canyon Oil Field was in operation for over 80 years, until 1989. By 2002, wells had been abandoned and the majority of facilities removed in accordance with DOGGR requirements. Given the historic use of the Project site, known contamination exists onsite (legacy fill areas) and grading may encounter additional soil contamination from earlier oil exploration and production activities. Sites with known and potential contamination will be identified to better define where hazardous waste contaminated sites may occur in relation to proposed oil field improvement sites and the pipeline and transmission line alignments. The primary reasons for defining hazardous sites are to protect worker health and safety and to minimize exposure to hazardous materials during construction and waste handling. When they are encountered, contaminated soil may qualify as hazardous waste, requiring handling and disposal according to local, State, and federal regulations. Aera plans to excavate the petroleum hydrocarbon-contained soils (legacy fill areas) within the Project disturbance areas for beneficial reuse either on-site, at other Aera locations, or at the Santa Maria Regional Landfill, in accordance with the Soil Beneficial Re-Use Plan developed for the Project.

Risk of Upset: Risk is the product of two variables: the frequency of an event occurring and the consequences from the event. The proposed Project will introduce risks to the public and environment, primarily due to the unintentional release of natural gas and/or crude oil and the possible subsequent risk of fire and explosion. Drilling operations present a hazard due to the placement of a well-bore through potentially pressurized reservoirs, resulting in possible blowouts and flammable releases. Operation of the natural gas pipeline and transport of light and blended crudes present additional risks. The *Quantitative Risk Assessment Update* addresses the oil field operations and will be reviewed, along with other facility and operations related material, to assess potential risk. As noted in the *Quantitative Risk Assessment Update,* the risks associated with offsite portions of the natural gas pipeline and tanker truck transportation will be addressed by a separate transportation QRA study (not provided with the RFP). This section will assess the potential for risk of fire, explosion, spill and upset, and risks of hydrogen sulfide (H_2S) exposure.

Environmental Setting

Aspen will prepare thorough descriptions of the regional and local setting relevant to the proposed Project, including a discussion of known and suspected contamination sites, soil types, and the presence of shallow groundwater. This section also will discuss the properties of crude oil (light and heavy) and natural gas as they relate to safety impacts, such as spills, explosions, and fires. The Project will be subject to many federal, State, and local regulations pertaining to oil and gas facilities, and associated hazardous material handling and fire protection requirements. These regulations will be concisely presented. CEQA Appendix G and Santa Barbara County's adopted Public Safety Thresholds will be presented as well. The environmental setting will disclose baseline release frequency and consequence data obtained from a literature review of similar facilities. In addition, the environmental setting will describe the well site abandonment and facility removal actions conducted in accordance with DOGGR requirements and completed by 2002.

Impacts and Mitigation Measures

Hazardous Materials. Construction and operation of the proposed Project may potentially result in hazard impacts related to encountering or causing environmental contamination. As previously noted, the applicant has identified disturbance locations with known contamination (legacy fill areas) and has developed a Soil Beneficial Re-Use Plan to address the reuse of contaminated soil either on-site or at other Aera locations, or disposal at the Santa Maria Regional Landfill. Aspen will assess the direct and indirect effects of the Project, review the Soil Beneficial Re-Use Plan, and develop appropriate project-specific mitigation strategies where needed to avoid or reduce adverse impacts. The impacts and mitigation section will include a discussion of

potential impacts from existing contamination or use of hazardous materials during the proposed oil well drilling and site development and operation. The impact analysis will discuss the potential for upset incidents and unintentional releases. Appropriate mitigation measures will be incorporated for identified significant impacts.

Risk of Upset. The EIR will identify potential frequency and consequences/impacts associated with facility failure events during Project operations and will identify appropriate measures to mitigate those impacts. Aspects of the Project that can increase the potential for an accident, or the consequences from an accident, include the existing land uses, pipeline network, seismic faults, terrain, and atmospheric conditions (stability and wind speed). These will be analyzed. The main objectives of the Risk of Upset analysis are to disclose to the public and decision-makers the project's potential for serious accidents, to assess the safety and environmental risks of such events, and to develop mitigation measures that could reduce these risks. This evaluation will consider the potential for risks using existing available information, including the applicant provided *Quantitative Risk Assessment Update* for the oil field (to be supplemented for natural gas pipeline operations and truck transport), other facility and operations related information, and other available risk data identified through literature review. As needed, mitigation will be designed to clearly delineate recommendations for process safety and controls.

The scope of work assumes use of the existing documentation prepared by the Applicant to determine the incremental risk of injury to workers and the public (acute risks) associated with Project facilities. As noted above, the Quantitative Risk Assessment for natural gas pipeline and truck transport is outstanding. During the literature review, if other information is required data inquires will be provided to the Applicant. Facilities of concern include:

- Drilling and operation of 141 oil production and 107 steam injection wells over two phases.
- Operation of the central processing facility and production group station, and associated production gathering network.
- Operation of up to six once-through steam generators rated at 85 million British thermal units/hour each) and additional 62.5 million British thermal units/hour steam generator, and associated steam distribution network.
- 14-mile, 8-inch natural gas pipeline.
- Trucking of light crude for blending with viscous project crude from Aera's Belridge Producing Complex, Bakersfield, California (133.8-mile, one-way trip) to the Project oil field, and trucking of the blended, produced crude back to Aera's Belridge Producing Complex in Bakersfield.

4.4.4 Transportation

Background and Issues

The reestablishment of oil production in the existing Cat Canyon oil field (east) would introduce new traffic volumes that have not been part of local baseline traffic conditions for some time. Therefore, the analysis will focus on the incremental contribution of new traffic volumes from proposed activities (current baseline plus Project construction and operational trips). In addition, construction of a natural gas pipeline, 115 kV transmission line, and substation will create additional temporary traffic volumes.

Aspen's preliminary review of the Applicant's traffic study for the proposed Project found the following regarding its shortcomings for use in preparing the EIR traffic analysis:

- The traffic study does not adequately address truck trips between Aera's Belridge Producing Complex (located in Kern County) and the connecting intersections of U.S 101 at Betteravia Road and Clark

Avenue. Instead, the traffic study focuses only on potential impacts to the local roadway network connecting Cat Canyon Oil Field to these U.S. 101 interchanges. Analysis of adding up to approximately 200 daily truck trips to the 133.8-mile freeway route (which includes U.S. 101, SR 46, and SR 33) is required by Caltrans' "*Guide for the Preparation of Traffic Impact Studies*." This portion of the traffic analysis likely will be closely reviewed by Caltrans during the CEQA process.

Produced crude at Belridge is sold at the facility and transported to Torrance and/or Martinez refineries. It is not known if the new crude supplied from the proposed Project would result in increased truck trips from Aera's Belridge Producing Complex to other locations. Additional information is needed to determine if the proposed Project would replace decreasing production at the Belridge facility or if the proposed Project would result in increased crude oil sales and transport to Torrance and Martinez refineries from the Belridge facility. Also, it needs to be determined if sold crude leaving the Belridge Complex is transported via pipeline, rail, or truck. Aspen will work with the Applicant and County to get clarification for the project description in order to conduct the appropriate project and cumulative analyses.

- The traffic study is based on traffic counts collected in January 2014. While not extremely outdated, Aspen would consult with the County to confirm that these counts are considered adequate as baseline conditions for the EIR.
- The traffic study utilizes the level of service (LOS) methodology. In response to Senate Bill 743, the California Office of Planning and Research (OPR) is currently finalizing updates to its CEQA Guidelines with respect to transportation impact analyses. This update, when completed, will provide new methods of measuring transportation impacts. The draft update has proposed enhancing or replacing the typical LOS analysis with a vehicle miles travelled (VMT) analysis. The proposed Project will include temporary trip generation during construction and long-term operational trips associated with importing light crude for blending (from Bakersfield) and exporting produced, blended crude back to Bakersfield.

  Aspen would work with the County and Applicant's traffic consultant to determine the appropriate traffic impact analysis methodology based on the status of OPR's CEQA traffic analysis updates and the estimated timing of preparation and certifying the EIR. This coordination may result in the need for an updated or additional traffic study.
- The traffic study does not address construction trips associated with the proposed natural gas pipeline, 115 kV transmission line, or substation. Construction of these facilities will produce temporary construction trips, including large truck trips delivering materials and equipment to staging areas and pipeline right-of-way that would result in temporary lane closures (including Clark Avenue through Orcutt). In addition, transmission line and substation construction and staging will introduce additional temporary trips to Cat Canyon Road and require the short-term closure of Cat Canyon Road when conductor stringing occurs.
- The traffic study may require updating with respect to assessing cumulative traffic impacts. Based on a cursory review, the traffic study does not appear to address the potential for the West Cat Canyon Oilfield Expansion Project operating under a condition where the Foxen Petroleum Pipeline was not built or operational. Aspen would work with the County and applicant's traffic consultant to ensure that a "future with project plus cumulative" traffic scenario is adequately analyzed.

According to the Applicant's traffic study, the proposed Project would not generate new traffic volumes and truck movements that could adversely impact LOS of the circulation network. However, as identified above, the proposed Project will include long-term operational trips associated with importing light crude from Bakersfield for blending and exporting produced, blended crude back to Bakersfield. County of Santa

Barbara Land Use and Development Code policies identify pipelines as the preferred method of transporting oil. Therefore, the proposed Project may be in conflict with County policy. This issue may be addressed in either the transportation or land use/policy consistency section of the EIR. Finally, the Project trip routes must be evaluated for compliance with Land Use and Development Code Section 35.52.050.B.1.i: Truck Operation Hours and Routes**,** which prohibits trucks exceeding one and a half tons for use in oil and gas operations to operate between the hours of 9 p.m. and 7 a.m. upon streets within a residential neighborhood.

Environmental Setting

Environmental setting information will be based on the Applicant's traffic study for all study area intersections and roadway segments, either using 2014 data provided or updated. All study area intersections and road segments will be inventoried with regard to characteristics such as number of lanes, types of traffic control devices, driveway/access locations, and presence of any pedestrian/bicycle lanes. County staff will first be consulted to confirm that the study area intersections and roadway segments included in the Applicant's traffic study, environmental setting study area, and analysis appropriately address all transportation locations of concern for the Project. Data inquires will be generated identifying gaps in the intersection and roadway information provided, such as the highways to be used to/from Bakersfield and roadway/lane closures required for pipeline and transmission line construction.

Impacts and Mitigation Measures

Based on Aspen's preliminary review of the Applicant's traffic study, construction and operational traffic associated with the proposed Project may not have a significant impact on existing transportation and traffic conditions, although the traffic report is incomplete at this time as described above. In addition, should a VMT or other analysis be requested or required, conclusions could differ from the LOS analysis. To address the potential for traffic impacts, Aspen will use the County's Environmental Thresholds and Guidelines Manual and will rely on the traffic study, supplemented through data requests, to quantify the maximum (worst-case) number of daily trips generated during both construction and operation, including their trip distribution and travel routes.

The EIR analysis will consider how "with project" traffic will affect conditions on study area roadways and intersections (i.e., describe conditions with and without the proposed Project). Further, Aspen will work with the County to determine the need for evaluating possible truck transport from the Belridge facility to refineries and additional items not included within the County's Environmental Thresholds and Guidelines Manual (e.g., potential increased wear and damage to study area roadway segments and any need for mitigation ensuring fair-share contribution of the project) based on public and agency scoping comments. Additionally, the analysis will consider potential impacts to traffic flow from temporary lane or roadway closures, as well as discuss motorist and bicycle safety related to oversize vehicle and other heavy truck movements, and possible loss of public, on-street parking, especially in Orcutt.

Likely mitigation would include the Applicant preparing a traffic control plan for review and approval by the County and Caltrans to mitigate potential impacts.

4.4.5 Geologic Processes/Geologic Hazards

Background and Issues

The Geologic Processes/Geologic Hazards section will describe effects related to geology, soils, and seismic hazards that have the potential to be caused by implementation of the Aera East Cat Canyon Oil Field Redevelopment Plan Project. Existing geology and soils information from two recent project-specific reports

from the Applicant (*Preliminary Geologic Hazards Evaluation* and *Preliminary Geotechnical Engineering Study*) will be relied on for the Geologic Processes/Geologic Hazards section. Additional research will include local geology and soils information, seismic and geologic hazards, and oil field conditions related to natural oil seeps or oil spills and leaks. Recognizing that all of the old wells in East Cat Canyon field were abandoned per DOGGR requirements in 2002, there is low potential for the cyclic steam and steam flooding enhanced recovery to cause leaks within old wells. Although the anticipated steam injection will not require great pressures and the production zones in the Sisquoc Formation are 3,000 feet deep, seepage pathways could develop along faults. DOGGR will be contacted to research field history, pressure test results, and occurrence of natural seeps. Additional sources of information include, but are not limited to: geologic and seismic reports and maps published by the United States Geological Survey (USGS), California Geological Survey; soil reports and data published by the Natural Resources Conservation Service; and hazardous material and soil contamination data from the RWQCB, DTSC, and DOGGR. Published journal articles and other online sources also will be researched. The literature review will be supplemented by an analysis of aerial photographs and topographic maps of the area to verify geomorphic features associated with geologic hazards, such as landslides.

Environmental Setting

The Cat Canyon Oil Field is located in northern Santa Barbara County in the Solomon Hills. Aera's lease area occurs in the East and Central Areas of the Field as defined by DOGGR. The new well pads, access roads, and well drilling are planned for the East Area. Cat Canyon Oil Field production began following drilling of the discovery well to 3,200 feet in 1908. The topography of the Project area ranges from gently sloping terrain along and near the drainage bottom to moderately to steeply inclined slopes along the canyon walls, with elevations ranging from approximately 600 to 1,000 feet above sea level. The sloping hillside terrain currently is cut by numerous graded well pads and access roads.

The Project area is primarily underlain by the Pleistocene age Paso Robles Formation, Pliocene age Careaga sandstone, and Pliocene-Miocene age Sisquoc Formation, which is in turn underlain by the late Miocene age Monterey formation. Within the East Area of the Cat Canyon Oil Field, petroleum production occurs in structural and sedimentary traps within the Sisquoc and Monterey formations. Extensive grading and ground disturbing activities related to construction of new roads and drilling pads will occur in alluvium, terrace deposits, the Paso Robles Formation, and the Careaga sandstone, all of which are predominantly sandstone and conglomerate with minor claystone. Soils overlying these surface geologic units reflect the character of the underlying sediments and likely will be susceptible to erosion. Areas of clayey soils could exhibit expansive characteristics, which could cause damage to facilities due to shrinking and swelling with changing moisture conditions. Landslides occur locally in the Solomon Hills; small slumps and landslides occur on steeper hillsides. Other unsuitable soil conditions include corrosive soils, erodible soils, and contaminated soils. The historic use of the site as a producing oil field has resulted in soil contamination from oil field activities (legacy fill areas).

The Project area is located in an area of relatively low seismicity in central California. However, the San Andreas Fault Zone is located approximately 38 miles east of the Project area. Additionally, several significant potentially active Quaternary faults are located within the Project vicinity. These are the Hosgri, Nacimiento, Foxen Canyon, East and West Huasna, Casmalia, and Rinconanda faults. Several smaller Quaternary faults, including the Bradley Canyon, Garey, Fuglar, and unnamed faults pass through or very near the Project area. Despite the presence of these faults near the Project, no known active faults cross the oil field site and estimated groundshaking potential is low to moderate.

The proposed 14-mile-long natural gas pipeline traverses valley areas underlain by unconsolidated alluvium and hill areas underlain by colluvium deposits and sandstone and conglomerate of the Pleistocene age Paso

Robles Formation and Pliocene age Careaga sandstone. The natural gas pipeline crosses the potentially active Casmalia fault just north of the substation on Graciosa Road, and passes through potentially liquefiable areas of the Santa Maria Valley. Construction of the pipeline in existing paved roads will avoid unstable slopes and potential soil erosion issues. The 1,200-foot long 115 kV transmission line crosses gentle terrain on both sides of Cat Canyon Road underlain by alluvium and Careaga sandstone. Liquefaction, potentially unstable slopes, and soil erosion are not likely to affect the construction and operation of the transmission line poles

Impacts and Mitigation Measures

Geologic and soil conditions will be evaluated with respect to the impacts the Project could have on local geology, as well as the impact that specific geologic and seismic hazards and soil conditions may have upon the proposed Project. Potential issues in the Project area likely will include geologic hazards such as erosion, slope instability, unsuitable soil conditions, and liquefaction (only along part of the natural gas pipeline). Although seismic hazards such as strong seismic groundshaking are unlikely to occur in the Project area, the potential for these impacts will be addressed to provide a comprehensive discussion of this issue. The Project oil field is located in areas with locally steep canyon sides where grading for new well pads and access roads could cause erosion and slope instability. Historic incidents of oil seeps, pipeline failure, or casing leaks will be evaluated as possible indicators of future incidents that may occur during enhanced recovery. Current DOGGR practices to minimize such incidents from happening will be identified. New or increased flow from natural seeps could result in petroleum discharges at the ground surface, and the spill of other hazardous materials could present ground surface contamination. The proposed excavation, reuse and/or disposal of "legacy fill area" soils will be assessed. Our geotechnical expert will work with our risk of upset specialist to assess resultant spills/seepage concerns related to facility failures and address claims that steam injection pressures could potentially induce seismic activity.

The significance of all impacts will be determined on the basis thresholds of significance in the CEQA guidelines and the County's Thresholds and Guidelines Manual (2008). Geologic, soils, and seismic hazards for the Project will be analyzed based on review of the previous EIRs and supplemental data. Potential effects of the proposed Project will be assessed and compared with effects of Project alternatives. In order to reduce any identified impacts to less than significant, existing Mitigation Measures from earlier current EIRs on steam injection and pipeline or transmission construction and operation, or new measures will be incorporated and modified as appropriate, to mitigate impacts resulting from construction and operation of the proposed Project.

4.4.6 Historic/Cultural Resources

Aspen will prepare the Cultural/Historic Resources section of the EIR based on three cultural resources technical reports provided by the Applicant and supplemental work as necessary. In 2014, Garcia and Associates surveyed the proposed East Cat Development Project site (about 2,091 acres), a natural gas pipeline route (about 68.2 acres), and electric supply route (about 27.5 acres).

Background and Issues

The proposed Project consists of three main areas: (1) Area's 2,108-acre property in the East Area of Cat Canyon Oil field in northern Santa Barbara County; (2) an approximately 14-mile gas pipeline route that starts within East Cat Canyon and continues into the Solomon Hills south of Orcutt, and; (3) an approximately 1,200 foot electric transmission line route located within the Cat Canyon Oil field.

In prehistoric times, these areas were part of the territory of the Purismeno branch of Chumash speaking people. Based on previous research, prehistoric archaeological sites are most often found in close proximity

to water (such as rivers, creeks, lakes, or natural springs), fairly level slopes on mesas or floodplains, marsh/wetland areas, and drainage confluences. Hardened oil from natural seeps, called asphaultum, was mined extensively in the Santa Barbara area in prehistoric times. This material was essential for such tasks as repairing, gluing, and waterproofing. The Orcutt Community Plan EIR (1995) identifies the Solomon Hillsand nearby creek corridors as archaeologically sensitive. Additionally, the 1995 EIR's historic district boundary extends beyond downtown Orcutt, and encompasses a portion of the pipeline project area.

In historic times, the proposed Project areas were first occupied in the 1870s by homesteading families who planted fruit orchards. However, beginning in the early 1900's, the area has been the focus of long-term oil exploration. Cat Canyon Oil Field once included worker housing, a school, and transportation infrastructure, including rail lines. A total of eleven archaeological sites and five isolates were identified within the Project areas, with the majority consisting of historic-era trash scatters. Other research in the vicinity has identified small prehistoric artifact scatters, historic domestic structures and trash associated with both domestic and oilfield contexts. Based on this information, additional buried prehistoric and historic-era archaeological deposits may still be present in the proposed Project area.

Environmental Setting

Aspen will use existing reports to prepare the environmental setting for Historic/Cultural Resources. In addition, Aspen will evaluate, peer-review, and supplement as needed the three Applicant reports. Aspen's initial review of the three reports suggests that some supplementary work may be warranted. Our recommendations are summarized below.

Cultural Resources Record Search: the record searches provided by GANDA are complete, and no additional work is recommended.

Cultural Resources Survey: Cultural resources field surveys of the Project area appear partially complete. It is unclear if three previously recorded cultural resources identified in the record search were revisited during the survey of the proposed 14-mile gas pipeline route, and if they would be impacted by the Project. In addition, Aspen's initial desk top review of historic 20th century maps of the Project area indicate that historic-era built environment resources (i.e., railroad, buildings, and roads) are present in and immediately adjacent to the Project area, but were not included in the provided reports. Some of these resources may be part of the potential historic district identified in the 1995 Orcutt Community Plan EIR.

- Aspen proposes to request site update forms for the three resources based on the results of the survey. Aspen will review the updated forms for completeness. If the Applicant is unable to provide this work, Aspen proposes to revisit the location of these resources to complete the required paperwork. However, the cost of this visit and form update is not included in the current estimate.
- Aspen proposes to request a desktop review for any historic-era built environment resources (i.e., structures and buildings) that are present within the proposed Project area. This will include a review of historic maps (i.e., USGS, Sanborn Insurance Maps, and General Land Office) and other archival documents. If the desktop review identifies any sensitive resources, these resources will need to be recorded and considered for potential impacts from the proposed Project; the necessary site forms will need to be prepared. Aspen will review the report presenting the results of the historic-era built review and analysis. If the Applicant is unable to provide this work, Aspen proposes to conduct the analysis and prepare a report, including any necessary graphics and site recordation forms. However, the cost for Aspen to conduct the desktop review and prepare an historic-era built report is not included in the current estimate.
- **Buried Cultural Site Sensitivity Analysis:** The GANDA reports discuss the local geology and soils of the area, and recommend cultural monitoring for portions of the Project that were not originally surveyed

by Padre/GANDA staff.[1] However, it appears an analysis for the potential for or risk of encountering unknown buried resources has not been conducted, which would help define specific areas that have a higher risk of containing unknown buried resources than others, thus limiting the need for cultural monitoring in areas with low-risk for encountering buried resources. For example, Aspen's initial desktop review suggests that the proposed transmission line route contains Holocene Alluvium deposits situated near a stream. Holocene deposits represent a period of time that humans are known to have lived in, thus the present of Holocene deposits increases the likelihood for the presence of prehistoric or historic-era buried resources. Additionally, the proposed 14-mile gas pipeline route will be excavated to a depth of approximately 42-inches below segments of the existing paved road in an area that is known to contain previously recorded prehistoric and historic resources. However, other areas of the Project area are unlikely to contain prehistoric or historic resources, such as the steep slopes of the oilfield, such that monitoring in these areas would not be required. Aspen proposes to request that a buried sites sensitivity analysis be conducted and a report prepared. Aspen will review the analysis for completeness. If the Applicant is unable to provide this work, Aspen proposes to conduct the analysis and prepare a report, including any necessary graphics. However, the cost for Aspen to conduct this analysis and prepare a cultural site sensitivity report is not included in the current estimate.

Native American Outreach: GANDA contacted the Native American Heritage Commission (NAHC) and other Native American individuals or groups regarding a Sacred Sites file search for the presence of any resources of interest within the proposed 14-mile gas pipeline, thus completing the outreach process for this project component. However, it is unclear if the NAHC and interested individuals or groups were contacted concerning other aspects of the project (i.e., 2,112-acre project site, including the 115 kV transmission line). Aspen will request of the Applicant information to confirm:

- Did the Applicant's consultant contact the NAHC to request a new list of Native Americans who have heritage ties to the study area, specifically the Project oil field site, and who wants to be informed about new development projects
- Letters were sent and call made to the individuals and groups on the list to inform them about the entire project site as a whole, to request information on known cultural resources and traditional cultural properties, and to learn of any concerns Native Americans may have about the proposed project.

If the Applicant unable to confirm these actions and provide appropriate document, Aspen proposes to conduct the necessary outreach. However, the cost for Aspen to conduct this outreach is not included in the current estimate.

Assembly Bill 52: AB 52 will apply to this Project, as AB 52 applies to projects that have a Notice of Preparation for an Environmental Impact Report, Negative Declaration, or Mitigated Negative Declaration filed on or after July 1, 2015. It is assumed that the County will undertake this required consultation. However, Aspen is able to provide the required services as an optional task (see Section 4.11, Optional Tasks).

Impacts and Mitigation Measures

Resources will be analyzed in order to determine their significance based on the State CEQA and Santa Barbara County Guidelines. These Guidelines facilitate the assessment of project impacts based on the

[1] It is not possible to determine from the existing reports what areas remain to be surveyed, because there are no survey maps included in the reports and the textual descriptions are somewhat vague.

significance of resources. The Santa Barbara County Guidelines provides a detailed rating system derived from a three phase process: Phase 1 involves a literature search and a pedestrian survey, Phase 2 consists of a determination of the significance of the resource, and Phase 3 identifies mitigation measures. The criteria considered in Phase 2 are described in the County Environmental Thresholds Manual and consist of features such as age, integrity, and associations of the resource.

This analysis will be used to determine whether the Project may adversely affect the significance of an historical/cultural resource. Project-specific impacts can include direct and indirect impacts. Direct impacts result from land modification caused by the construction, landscaping, operation, or maintenance of a facility. Indirect impacts also occur as a result of a specific project, but do not result from intentional ground disturbance. Common indirect impacts include erosion, unauthorized artifact collecting, and vandalism.

Feasible mitigation will be identified for each resource, based on the type of project impact and the extent to which the proposed improvement may encroach upon the resource. Emphasis will be on avoiding all resources to the extent feasible, such that project redesign will not result in ancillary increased impacts elsewhere (e.g., increased grading of unstable slopes, removal of sensitive biological resources, etc.). Where complete avoidance of cultural resources does not appear to be feasible, additional fieldwork may be identified as mitigation.

The ability to feasibly mitigate potential impacts on each of the cultural resources will be clearly discussed to avoid any perception of "deferring mitigation" to a post-approval timeframe. This will ensure that the mitigation is deemed legally defensible in light of the Madera decision (Madera Oversight Coalition, Inc. v. County of Madera [2011] 199 Cal.App.4th 48).

4.4.7 Noise

Background and Issues

Aspen's approach to noise (and vibration) will begin with a comprehensive review of the noise technical study provided by the Applicant. Our preliminary review of the report identified the applicant's study presents 8 sensitive receptor locations with respect to oil field noise and vibration; as well as 5 sensitive receptor locations with respect traffic noise and vibration. A cursory review of the Applicant's noise study found it to be comprehensive and adequate for use in preparing the EIR noise section related to oil field operations. However, the Applicant's noise study does not address noise associated with construction of the proposed natural gas pipeline, nor does it address construction and operation of the proposed 115 kV transmission line and substation. Permanent transmission corona noise is expected to be minimal from a 115 kV line, but substation operation could exceed ambient levels near the site boundary; however, this noise shouldn't affect any known sensitive receptors. The EIR noise and vibration analysis will focus on potential adverse impacts from temporary construction-type noise (including vehicle noise) and permanent stationary noise sources.

Environmental Setting

The EIR environmental setting will begin by documenting the ambient noise levels of the Project area using those presented within the applicant noise study. Use of these locations and ambient noise and vibration conditions at them would first be confirmed with the County. The environmental setting for noise will also identify all applicable noise performance standards identified in applicable plans and policies. Data inquires will be generated identifying gaps in the noise information provided, such as ambient conditions at sensitive land uses along the pipeline alignment and predicted noise levels from pipeline and transmission line construction vehicle operations.

Impacts and Mitigation Measures

The noise analysis will consider all aspects of construction, from equipment use to project-related traffic along travel routes proximate to the work areas. Vibration impacts will be addressed as well. Before assessing noise impacts from proposed activities, details such as predicted decibel levels and noise duration for each activity will be verified in comparison to the location of adjacent noise sensitive receptors and the noise performance standards identified in the County's Environmental Thresholds and Guidelines Manual. Additionally, the noise and vibration analysis will consider all concerns presented during public scoping.

A preliminary review of the applicant noise study shows:

- Predicted noise during construction of the project would not exceed County noise thresholds, but would exceed 5 dBA over ambient daytime noise conditions at sensitive receptors near two well pad locations.
- Predicted noise levels from drilling operations will exceed the 50 dBA nighttime property line limit at sensitive receptors near four well pads. Additionally, drilling operations are expected to generate noise greater than 3 dBA over ambient nighttime noise conditions at sensitive receptors near two additional well pads.
- Predicted noise from production activities would not exceed County noise thresholds or ambient conditions at any nearby sensitive receptor locations.
- Predicted noise from traffic trips would not exceed County noise thresholds or ambient conditions at any nearby sensitive receptor locations.

As discussed earlier, the EIR noise and vibration analysis will also include a discussion of noise from construction of the proposed natural gas pipeline and construction/operation of the proposed transmission line and substation. Should sensitive receptors be located proximate to these project areas, predicted noise levels from construction and operation will be compared against County thresholds. Feasible mitigation and an assessment of the effectiveness of proposed noise reduction features, monitoring plans, and other noise and vibration attenuation measures will be presented. Specific recommendations and noise mitigation components to reduce adverse impacts to the extent feasible may include ensuring all noise sources have enough distance from receptors to minimize noise and vibration, use of sound walls or other attenuation, and limiting the days and hours of activities.

4.4.8 Water Resources

Background and Issues

Surface Water

By introducing new construction, grading, and facilities, and during the operation of an oil field, the Aera East Cat Canyon Oil Field Redevelopment Plan Project would have the potential to affect surface water drainage patterns, flooding, water quality, and water supplies. Major potential issues include:

- **Surface Water Drainage.** Project features would have the potential to interact with surface water drainage and hydrology to increase peak discharges through the creation of new impervious areas and changing rainfall/runoff characteristics; channelize, divert, or relocate natural drainage ways; and place structures in the floodplain.

  A portion of the Project, including an access road and part of the proposed natural gas pipeline route, would be constructed in the mapped Cat Canyon floodplain. The pipeline would also cross the Orcutt Creek floodplain. The Project would interact with other, smaller, unmapped floodplains associated

with the local streams on the site. Structures constructed in the floodplain could be damaged by flooding. Channelization or diversions could adversely affect other property or riparian values.

- **Surface Water Quality.** Drilling, grading, excavation, and construction could result in erosion and sedimentation across the Project site through grading, disturbance of drainage patterns, and creation of cleared areas for well pads, access roads, and other construction. Known petroleum hydrocarbon-containing soils (legacy fill areas) would be excavated, exposing contaminated soils to potential surface water flows. Heavy equipment and machinery could accidentally release hazardous materials during construction, and there would be a potential for spills of product, produced water, and other material during operations. The associated potential for surface water contamination is of concern for the community and the State, particularly in areas where waters are already contaminated. The proposed natural gas pipeline would cross Bradley Creek, which is listed by the State of California as water-quality impaired. Most of the Project site drains to tributaries of the Santa Maria River, also listed as impaired.

Groundwater

- **Water Supply.** All water used for steam generation would be obtained from non-potable brackish groundwater or the brine water produced by field operations on the Project property. New fresh groundwater wells would be drilled to provide potable water, fire protection supplies, and minor landscape irrigation. An older existing groundwater supply well tested in 2012 is the McCrosky WS-12 well, located on Long Canyon Road along the north boundary of the Aera East Cat Canyon boundary. No fresh water from any source would be used in steam generation. Prior to conversion to steam, brackish groundwater would be treated in a new water cleaning and water softening plant. Once the produced water is converted to steam by the generators, the steam would be transported to various wells via steam pipelines and manifolds. Fresh groundwater would be supplied by one existing well and two to three new wells. Fresh groundwater use on the site would be limited to domestic services such as landscape irrigation, office restrooms, fire protection, dust control, and similar uses. The EIR will assess the project's water requirements and water source, and will recommend project-specific mitigation measures if necessary to reduce or avoid impacts.
- **Groundwater Resources and Quality.** Project drilling and other activities may affect underlying groundwater resources. The water resources section of the EIR will assess the Project's potential to affect groundwater supply and groundwater resources. Local farms rely on fresh groundwater for domestic and irrigation uses. However, several local water supply wells are located less than 4,000 feet from the new oil wells and drilling pads. Generally, water wells are much shallower than the oil well producing zones. However, with the use of cyclic steam injection and pattern steam flood it may be possible for steam and steam-water-oil mixtures to migrate vertically along fractures or faults and reach the freshwater aquifer(s), resulting in potential adverse effects to groundwater quality. For instance, the disruption of contaminated subsurface soil may degrade groundwater quality through re-suspension, and possibly through conveyance to the surface. The water resources section of the EIR will assess all Project activities against existing conditions in the Project area to characterize how groundwater resources and quality could be affected.

Environmental Setting

Aspen will prepare thorough descriptions of the regional and local hydrologic setting relevant to the proposed Project, including watersheds, surface water drainages and runoff patterns, groundwater resources, and surface and subsurface water quality.

Surface Water

Aspen will describe the regional and local surface water hydrologic, water quality, and water use setting. The description will include climate, watersheds, surface water drainages and runoff, floodplains, seasonal flow patterns, existing site conditions, previously-constructed features, downstream and upstream resources, impaired water bodies, and water supply. The *Preliminary Hydrology Report for East Cat Canyon Redevelopment Project* prepared by TJ Cross Engineers will be one of the sources used for gathering background information. Other sources include the Regional Water Quality Control Board, the State Water Resources Control Board, Santa Barbara County, the Federal Emergency Management Agency, aerial photographs, topographic maps, online climate and runoff data, a site visit, and other available sources relevant to surface water.

A variety of federal, State, and local regulations govern activities that may affect surface water drainage, flooding, water quality, and water supply. Aspen will describe the regulatory setting in the context of oil field and pipeline construction and operation. Each regulation will be described as to responsible agency, regulatory intent, general compliance procedures, and relevance to the proposed Project. The surface water environmental setting will use published maps and information to characterize the topography, areas of previous grading and spoils, and the locations of drainages, creeks, and springs.

Groundwater

Local residents and growers rely on groundwater as their sole source of fresh, potable water. Shallow and deep water wells tap aquifers in the Santa Maria Groundwater Basin for domestic and agricultural uses in the Sisquoc Valley and surrounding hills. The Santa Maria Valley Management Area (SMVMA) monitors the Santa Maria Groundwater Basin through a network of shallow and deep monitoring wells. Golden State Water Company supplies water to the community of Sisquoc using locally produced groundwater. SMVMA monitors two deep groundwater wells and three shallow wells in the Sisquoc Valley area. Several irrigation supply wells located in Sisquoc Valley tap the aquifers of the alluvial deposits and Paso Robles Formation. Other private wells located in the hills near the oil field likely intercept sandstone aquifers in the Paso Robles Formation.

Groundwater information, data, and the location of new water wells to be drilled by the Applicant will be reviewed. Well records, water level data, and water quality information will be researched for potable supply wells near Sisquoc and surrounding areas. Santa Maria Valley Management Area, Golden State Water Company, and California Department of Public Health will be contacted to obtain available data, reports, and records.

Impacts and Mitigation Measures

Surface Water

Aspen will assess direct and indirect surface water effects of the proposed Project and develop specific mitigation strategies where needed to avoid adverse impacts. The impact assessment will be based on information collected when developing the baseline environmental setting, a description of the project, proposed project construction and operation practices, and regulatory requirements and compliance. The applicant's *Soil Beneficial Re-Use Plan* will be reviewed with respect to the excavation and reuse of contaminated soils (legacy fill areas). All CEQA Appendix G issues, as well as those outlined in the County of Santa Barbara Environmental Thresholds and Guidelines Manual, will be evaluated to determine how Project features and activities could affect hydrology, drainage, flooding, water supply, and water quality. Aspen surface water resources specialist will coordinate with Aspen Team biologists, groundwater specialists, and hazardous materials specialists to ensure that all potential impacts are appropriately

characterized. Major potential impacts will be described, with discussion of how, where and why the impacts exist, with a rationale for the determination of significance with and without mitigation. Aspen will develop and describe project-specific mitigation measures to avoid adverse impacts.

At this time, it is anticipated that the major focus of the impact analysis will be on the issues raised under Background and Issues above, with a lesser focus on standard CEQA and Santa Barbara issues that clearly are not applicable. Those that are not applicable will be listed with a brief discussion on the rationale for considering them as such.

Groundwater

Hydrogeologic conditions and the local fresh groundwater resources will be evaluated with respect to impacts the Project may have on local water supplies and quality. Recognizing that the Project would not be using fresh groundwater for steam generation. However, it would increase the fresh groundwater pumping by 20 to 25 acre-feet per year for restrooms and showers, fire protection, on-site dust control, and landscape irrigation. Direct impacts to the local groundwater supply near project supply wells may occur. In addition, the proposed Project's fresh water usage could exceed the threshold of significance for the Santa Maria Groundwater Basin of 25 acre-feet per year or the 23 acre-feet per year threshold for the San Antonio Groundwater Basin. Further, nearby farm and domestic wells could be impacted if oil seeps or spills to the ground contaminate stream channels and groundwater recharge areas. In addition, fresh aquifers could be contaminated if steam injection resulted in steam-oil-water mixtures following geologic pathways or leak from damaged oil well casings and seals. Contamination of aquifers could significantly impact water quality and result in loss of the local fresh groundwater resource for growers, ranchers, and nearby residences, as well as the community of Sisquoc.

Aspen will assess potential direct and indirect effects of the Project, and develop appropriate mitigation strategies where needed to avoid adverse impacts. Guidance documents will be reviewed to determine potential impacts to water and hydrology associated with the Project.

The impact assessment will include: review the project description and available studies to determine how Project features and activities could affect hydrology and water quality of the Project area; evaluation of the potential alterations of proposed drainage improvements and drainage patterns; assessment of groundwater supply availability and quality, including evaluation of groundwater depth against project construction and operation practices to determine the likelihood of introducing hazardous materials to groundwater; and close consideration of drilling operations that could adversely affect groundwater resources.

Aspen will develop project-specific mitigation measures as necessary to avoid adverse impacts. Mitigation strategies may include the use of best management practices to ensure site runoff meets water quality requirements, and all produced water is contained and disposed of in accordance with DOGGR regulations. Further, if the analysis demonstrates that the Project well drilling and operations has a potential to impact groundwater resources, mitigation would be developed requiring the implementation of a Groundwater Monitoring and Reporting Plan to ensure the continued integrity of local groundwater supplies.

4.4.9 Cumulative Impacts

As required by CEQA Guidelines Section 15130, cumulative impacts will be discussed for each of the eight primary issue areas identified in the RFP. Similarly, and to ensure consistency with CEQA Guidelines Section 15130(a)(2), the EIR will briefly explain why, for those resources having less than significant impacts or no impacts, the combined and incremental cumulative effects of the Project are not significant. The EIR analysis of cumulative effects will consider a number of variables, such as geographic (spatial) limits, time (temporal)

limits, and the characteristics of the resource being evaluated. The cumulative assessment in the EIR will use similar thresholds of significance to those identified for the project-specific analysis to determine if the Project's incremental effect is cumulatively considerable. In coordination with the County, Aspen will develop a list of past, present, and reasonably foreseeable future projects to be considered in the cumulative analysis, including oil and gas development on other oil and gas leases in the vicinity. If significant impacts are identified, Aspen will develop mitigation to reduce impacts. This assessment will be qualitative except for GHG emissions, which are already evaluated in a context of their cumulative impacts to global climate change.

4.4.10 Alternatives

Alternatives will be designed to avoid or substantially reduce any impacts that cannot otherwise be mitigated to a level below significant. At this time and based on the County's initial evaluation of impacts, Air Quality/GHG, Biological Resources, Hazardous Materials/Risk of Upset, Transportation/Circulation, and Geologic Processes/Geologic Hazards are considered the primary issue areas that may need to be addressed through the development of alternatives. Other potentially significant impacts could be identified during Aspen's independent evaluation of the applicant's Noise, Historic/Cultural Resources, and Water Resources assessments, as well as our EIR analysis of impacts.

The alternatives analysis will include a range of reasonable alternatives to the Project that will be developed in consultation with County staff, and will consider the No Project Alternative, Reduced Project Alternative(s), and other alternatives as appropriate. The alternatives discussion will include an analysis of environmental impacts of each alternative considered, along with a comparative analysis (matrix) to distinguish the relative effects of each alternative and its relationship to project objectives. The alternatives analysis will also identify the "environmentally superior alternative" as required by CEQA Guidelines Sections 15126.6(d) and (e)(2).

4.4.11 Land Use/Policy Consistency

In addition to the technical analyses presented in Sections 4.4.1 through 4.4.8, Aspen will analyze the Project's consistency with plans and policies of the County's adopted Comprehensive Plan and Land Use and Development Code (LUDC). Aspen understands that this analysis will be used to support County Staff during preparation of its Staff Report for decision makers, and would also serve to comply with CEQA Guidelines Section 15125(d). Per CEQA Guidelines Section 15382, an inconsistency with adopted land use policy is only considered significant if that inconsistency would cause an adverse and significant impact on one or more of the physical attributes associated with the area affected by the Project.

Upon completion of the Project Description and establishment of both the Applicant's vested, or permitted rights and baseline conditions, Aspen will collect from the County's website all applicable Elements and related Supplements of the Comprehensive Plan and prepare a two-column table that lists all relevant policies and goals and assess whether the Project can be found consistent with each of them. The assessment will be based upon the conclusions of the EIR's various technical analyses and impact conclusions. Key Elements and Supplements are anticipated to include the following:

- Open Space Element
- Agricultural Element
- Environmental Resource Management Element
- Conservation Element and related Oak Tree Supplement
- Circulation Element
- Energy Element
- Seismic Safety and Safety Element and Safety Element Supplement
- Land Use Element and related Air Quality Supplement

Prior to starting the consistency analysis, Aspen will provide a draft of the table to County Staff to ensure that all applicable Elements and Supplements and their related policies and goals are satisfactorily accounted for. It is assumed that all of the documents needed from the County's website can be readily used to paste into a Word-formatted file.

In addition to consistency with the Comprehensive Plan, an assessment of the Project's consistency with the County's LUDC will be prepared. Aspen understands that all of the parcels associated with the Project are zoned Agriculture (AG-II-100) and that they have Comprehensive Plan land use designations of either Agriculture-II (AG-II) or Agricultural Commercial (AC). In accordance with LUDC Table 2-1, LUDC Sections 35.21 and 35.52, and the Land Use Element, oil and gas extraction is an allowed use within the AG-II zoning district and AC land use designation with appropriate discretionary land use permitting. No change in existing land use designation and/or zone district is proposed as part of the Project.

4.4.12 Other CEQA Considerations & Effects Found Not to be Significant

In addition to the topics noted above, the EIR will address the other environmental topics required by CEQA and will summarize the issue areas identified by the County as being less than significant. As part of this analysis, the Applicant-provided *Environmental Resource Areas Eliminated from Further Consideration* will be reviewed. This section of the EIR will address the following:

- **Significant Environmental Effects Which Cannot Be Avoided if the Project Is Implemented**. This section will briefly describe any significant unavoidable impacts resulting from the EIR analyses. If no significant unavoidable impacts are identified, then this section will include a brief statement regarding the conclusions or findings of the EIR.
- **Significant Irreversible Changes Which Would Be Involved.** Section 15126.2(c) of the CEQA Guidelines requires a discussion of any significant irreversible changes caused by implementation of the project. This section will discuss the use of any non-renewable resources, secondary impacts, and irreversible changes.
- **Growth-Inducing Impacts.** Under CEQA, a project may be growth inducing if it directly or indirectly fosters economic or population growth or the construction of additional housing, removes obstacles to population growth, overtaxes community service facilities, or otherwise facilitates activities that cause significant environmental effects.
- **Effects Found Not to be Significant**. This discussion summarize the effects identified as not being significant. As identified in the RFP, the topics considered in this summary discussion include:
  - **Aesthetics/Visual Resources**. Project activities would take place primarily within an existing oil field, and surrounding topography and vegetation would largely shield the Project site. Construction impacts would be temporary, but the proposed central processing facility and production site office would be visible from portions of Cat Canyon Road. Nighttime lighting would be used during well operations to ensure safe working conditions and the top of the derricks will have red beacons to address potential aviation hazards. The proposed 115kV transmission line will require up to approximately three new poles on the Sisquoc-Santa Ynez 115 kV power line near the point of interconnection and up to approximately eight poles along the new transmission line. These poles will likely be a combination of tubular steel poles and light duty steel poles. Underground installation is proposed for the 8-inch natural gas pipeline.

    To reduce operational visual impacts, the Applicant has included Project-Incorporated Avoidance and Minimization Measures in its application. These relate to design of permanent facilities so as to blend with the natural environment, landscaping (in accordance with the County's Comprehensive Plan), and night lighting and glare. It is anticipated that

implementation of these measures would ensure that visual impacts from the Project would be less than significant. Further, based on the presence of the existing Sisquoc-Santa Ynez 115 kV line and the proposal that the new 115 kV transmission poles be of similar height and only comprised 8 poles, these additional poles and conductor aren't anticipated to create a significant visual impact compared to existing conditions.

- **Agricultural Resources**. The Project site currently is zoned and designated for agricultural uses, and historically has been used concurrently for oil production and agricultural grazing. The Applicant has stated that it plans to continue limited grazing on the property during Project operation. Construction of the new facilities (e.g., processing facilities, well pads, roadways, etc.) would require some permanent conversion of lands, but much of the area proposed for development has been disturbed previously during historic operations of the oil field. The proposed site does not contain any Prime Farmland or other areas identified as farmland of State or Local Importance by the State Farmland Mapping and Monitoring Program or have land under Williamson Act contract. Two parcels are under an Agricultural Preserve Contract, but proposed development on these parcels would be limited to a freshwater supply well. Any potential impacts to agricultural lands along the natural gas pipeline alignment would occur only during construction and would be temporary. Therefore, impacts to agricultural resources are expected to be less than significant.
- **Energy**. The proposed Project is intended to develop remaining recoverable oil resources within the east area of the existing Cat Canyon Oil Field and to provide an in-State supply of oil. Construction and drilling would require use of energy to operate equipment. During field operations, natural gas produced and used onsite would be supplemented via a proposed 8-inch pipeline from Southern California Gas. Electricity would be supplied on PG&E's distribution system via the new 115 kV transmission line and substation. The proposed Project is not expected to result in a substantial increase in energy demand or cause the need for development of new sources of energy. Emissions related to the use of energy will be addressed in the EIR under Air Quality/GHG.
- **Fire Protection**. The Project site is located in a high fire hazard area. In its application, Aera stated that the design and operation of the Project would meet the provisions of the California Fire Code and standards of the National Fire Protection Association, including the requirements for the storage of hazardous materials, the installation and use of fire protection systems and devices, and the implementation of safety measures for employees and emergency responders. The Applicant has prepared a *Master Fire Protection Plan*, and the recommended measures from the Plan have been incorporated into the Project as a Project-Incorporated Avoidance and Minimization Measure in its application to the County. There are four fire stations in close proximity to the Project oil field. The nearest is County Station 23 located in the town of Sisquoc, which is approximately 4 miles from the Project area. Station 21 in Orcutt, Station 22 in Santa Maria, and Station 24 in Los Alamos are further away, but can provide backup capabilities if necessary. Although the proposed Project would be located in a high fire hazard area, with implementation of the measures in the Plan and proximity of County fire fighting facilities, impacts related to fire protection and response times during construction and routine operation are expected to be less than significant. Impacts related to the storage and handling of hazardous materials, including flammable or combustible liquids, and fire resulting from facility failure, including the proposed pipeline, will be discussed in the EIR under Hazardous Materials/Risk of Upset.
- **Land Use/Growth Inducement**. There are 48 known residences, a winery tasting room, and an office within one mile of the Project oil field site in the east area of the Cat Canyon Oil Field.

The proposed well pads would be located primarily on areas previously disturbed and used for this purpose. Given the oil field's rural location surrounded by existing oil and gas development and that the Project would not physically divide an established community, land use impacts associated with the oil field and transmission line operations are expected to be less than significant. The proposed natural gas pipeline would traverse rural, agricultural, commercial, and residential land uses. Temporary, but less than significant impacts would occur to these land uses during construction. Risks associated with the natural gas pipeline during operation will be discussed in the EIR under Hazardous Materials/Risk of Upset. As discussed in Section 4.4.11, the Project's consistency with adopted plans and policies of the County's Comprehensive Plan and LUDC will be analyzed in a Staff Report for the decision makers, but the Draft EIR will contain a preliminary list of County policies, including a consistency analysis.

- **Public Facilities**. In its Permit Application Package (Volume I), the Applicant states that no new significant population would be introduced to the area as a result of the proposed Project. From our review of Chapter 2 of the Permit Application Package (Project Description), Aspen understands that at full build-out (Phases I & II), the proposed Project would require an estimated 40 operating personnel, as well as approximately 75 additional contractor personnel for well and equipment maintenance, on-going new construction activities, infrastructure and operations support, and materials delivery. Assuming that all permanent and contractor personnel can be drawn from the local population and/or areas within a reasonable commuting distance of the Project site, no net-increase in population growth would occur. Therefore, the proposed Project would not be expected to trigger a significant increase in demand for public services, such as fire and police protection, parks, schools, or other public facilities. Aspen will verify the anticipated labor force required for the Project's implementation, whether there is an available local labor force for construction and operation, and whether existing and projected public facilities and services are available.
- **Recreation**. The proposed oil field development area is private property that is not designed or used for public recreation and the proposed natural gas pipeline does not traverse or run adjacent to any public recreation facilities. As discussed under Public Facilities, the proposed redevelopment would not be expected to result in an increase in population that would increase the use or deterioration of existing parks or recreational facilities in the area. Impacts to recreation are anticipated to be less than significant.

4.5 Task 5 – Draft EIR and Technical Appendices

Aspen will obtain all comments on the Administrative Draft EIR from the County's Project Manager, who will compile one set of unified comments for use in revising the document. Aspen will complete revisions to the Administrative Draft EIR in conformance with the County's comments and the agreed-upon scope of services and schedule. As illustrated in Exhibit 6, Aspen will provide the Draft EIR within 25 working days of receiving the County's final comments on the Administrative Draft EIR.

Aspen will provide 1 reproducible unbound copy, 25 bound copies, 25 electronic copies on CD, and 1 electronic copy of the Draft EIR on CD with the document divided into chapters and technical appendices, and in a searchable pdf format.

Aspen assumes that Energy & Minerals Division staff will be responsible for all distribution and noticing of the Draft EIR, including filings with the State Clearinghouse and County Clerk's office, and posting on Planning and Development's website. If the County desires assistance in this effort, Aspen is available to help (see Section 4.11 below).

4.6 Task 6 – Written Summary of Public Hearing Comments

Aspen understands that one Public Comment Hearing on the Draft EIR will be conducted in Santa Maria during the public and agency review period. The Aspen Project Manager will attend this hearing. Aspen assumes that a brief summary presentation of project-related issues, impacts and public and agency comments will be prepared for the hearing, contingent upon further coordination with the Energy & Minerals Division Project Manager.

Aspen will prepare a summary of the comments received on the Draft EIR during the Public Comment Hearing 5 working days after the hearing (see Exhibits 5 and 6 in Section 5). The summary will describe the Public Comment Hearing's date, time, location and duration, as well as summarize the comments that were expressed. Per the County's RFP, Aspen will submit 1 reproducible unbound copy and 1 electronic copy of the summary comments either on CD or emailed to the Energy & Minerals Division.

4.7 Task 7 – Responses to Comments on Draft EIR

Aspen will prepare and submit written responses to comments received on the Draft EIR 25 working days after the close of the public comment period. This will include comments received at the Public Comment Hearing as well as comments otherwise provided to the County during the public review period. Aspen will work closely with the Energy & Minerals Division Project Manager to ensure that all comments received are properly identified and logged as to type of commenter (e.g., agencies, special interest groups, and individuals) in order that they can be easily tracked, retrieved, and referenced. Aspen will organize all of the comment letters received and review them to identify each specific comment contained within each letter. Individual comments will then be categorized according to their resource/issue-specific focus, and the appropriate technical analyst will be provided with the comments that require his or her technical expertise for response. Once the draft responses to comments are complete, Aspen technical staff will submit their responses to the Aspen Project Manager, who will coordinate the compilation of responses and ensure that the responses are consistent and adequately address the comments in a clear, concise, and unbiased manner.

Responses that are within our proposal's scope and budget consist of explanations, elaborations, or clarifications of the data contained in the Draft EIR. If responses to comments result in the need for new analyses, the assessment of additional issues or alternatives, or the evaluation of substantial changes to either the project or the geographic area of study, a commensurate contract amendment and/or schedule revision will likely be requested. No more than 400 individual comments are assumed, including Public Hearing comments.

Consistent with the RFP, Aspen will submit 1 reproducible unbound copy of the responses and 1 electronic copy on CD or emailed to Energy & Minerals Division staff.

4.8 Task 8 – Administrative Final EIR

Aspen will prepare and submit an Administrative Final EIR within 15 working days of receipt of the County's final comments on the written responses to comments received on the Draft EIR. Following receipt of the County's comments, Aspen will revise the text of the Draft EIR as needed, according to public and agency comments. All text revisions will be made in "strike-out and underline" mode so that all text changes between the Draft and Final EIR are readily discernable. The Administrative Final EIR will contain a Mitigation Monitoring and Reporting Program for the project that includes each proposed mitigation measure, the timing of its implementation, and the parties responsible for its implementation and reporting.

Aspen will submit 1 reproducible unbound copy, 3 bound copies and 3 electronic copies of the Administrative Final EIR on CD with the files divided into chapters. As noted under Task 6 (Written Responses to Comments), should preparation of the Administrative Final EIR require substantial new analyses, such as the evaluation of additional alternatives, a greater geographic study area, or new resource-specific/issue areas, a contract and scope amendment and/or schedule revision may be requested.

4.9 Task 9 – Proposed Final EIR

Aspen will prepare and submit the Proposed Final EIR within 10 working days of receipt of all final County comments on the Administrative Draft Final EIR. Aspen will provide 1 reproducible unbound copy, 20 bound copies, and 20 electronic copies on CD and 2 electronic copies of the Proposed Final EIR on CD with files divided into chapters.

Aspen assumes that Energy & Minerals Division staff will be responsible for all document distribution and noticing, including posting on Planning and Development's website. Aspen additionally assumes that Energy & Minerals Division staff will be responsible for preparation of the document's Findings of Fact and Statement of Overriding Considerations (if necessary). We routinely prepare these types of decision-making documents for our clients, and fully understand their legal and technical requirements; we will be happy to complete them for you with approval of a commensurate scope and budget modification (see Section 4.11 below).

Aspen assumes that 2 public hearings for the County Planning Commission/Board of Supervisors on the Project will be conducted in Santa Maria. The Aspen Project Manager will attend these hearing, as well as up to 4 technical specialists as requested by the County. Given the potential for controversial public input, we recommend that our air quality/GHG, risk of upset, geologic hazards/groundwater, and oak tree restoration technical experts attend as appropriate; however, this list can be modified based on project needs. Aspen assumes that a brief summary presentation of project-related issues, impacts and public and agency comments will be prepared for the hearings, contingent upon further coordination with the Energy & Minerals Division Project Manager. The unit costs for the Aspen Project Manager and technical experts to attend additional hearings are provided in the accompanying Cost Proposal.

4.10 Task 10 – Final EIR

Should decision makers recommend revisions to the Proposed Final EIR, Aspen will prepare a Final EIR to reflect those suggestions. Should these recommendations involve additional in-depth analyses, re-analyses or new or expanded alternatives, a commensurate cost amendment may be requested. All modifications to the text of the Proposed Final EIR will be made in "strike-out and underline" mode so that all revisions are readily seen and clearly understood. Per the County's RFP, 1 unbound reproducible copy, 5 bound copies, 1 electronic copy on CD, and 2 electronic copies of the Final EIR on CD with the document divided into chapters will be submitted to the Energy & Minerals Division Project Manager. Aspen will submit the Final EIR within 10 working days after the final decision-maker action.

As noted above, we assume that Energy & Minerals Division will be responsible for all document distribution and noticing, including posting on Planning and Development's website. If the County desires assistance in this effort, Aspen is available to help (see Section 4.11 below).

4.11 Optional Tasks

A number of additional services or tasks may be required during the execution of the EIR Contract. Some are tasks that the County may elect to do, or may request from Aspen, such as community outreach and

AB52 consultation. Also, if information is needed for the EIR analysis and if the County chooses, Aspen can conduct the necessary research and analysis for an unanticipated task. This would need to be scoped, budgeted, and scheduled. These are discussed below.

Community Outreach

As noted in the RFP, the County is "expecting a high level of public interest" in the proposed Project. This section of our Proposal describes how Aspen has successfully managed public involvement programs for highly visible and controversial environmental and planning projects, and we offer this service as an optional task in the event the County determines this assistance would be beneficial.

Aspen routinely manages all aspects of the public notification and outreach process for our major projects. Our trained and experienced staff has supported local and State agency staff at public hearings on many of our controversial and high-profile projects – assisting with notifications, preparing project-specific factsheets, presenting technical information in an easy-to-understand format, and responding to questions. For the County of San Luis Obispo, City of Culver City, California Public Utilities Commission, and DOGGR, we have supported these agencies by conducting public scoping meetings, Draft EIR workshops, and participated in public hearings for a variety of projects. Our proposed Public Participation Liaison, Sandra Alarcon-Lopez, has managed the public participation outreach for dozens of major projects, in coordination with our lead agencies.

Our experience covers the full range of public and agency outreach services, including:

- Preparing and distributing CEQA-compliant public notices and other notices (newspaper ads, poster notices at the project site, posting at county clerk's office).
- Organizing public meetings, workshops, and hearings including live translation services and materials in multiple languages, if necessary.
- Preparing exhibits, PowerPoint presentations, and public information handouts.
- Preparing newsletters, brochures, and factsheets at various points in the project life (including non-English editions) to provide updates or milestones, effectively communicate complex information in concise easy-to-understand text, and respond to frequent questions/comments.
- Developing and maintaining computerized mailing lists for use in a variety of mailings; use database functions to track mailings and project contacts.
- Establishing information repositories (e.g., libraries and government offices) in the project area for public access to documents and information.
- Conducting informational workshops to informally present findings to the public and to assist the public in reviewing and commenting on the project findings.
- Creating and maintaining a project website to display public documents, meeting dates, and project/program status.
- Assisting with decision documents needed for hearings before the Planning Commission and the Board of Supervisors.

Nearly all of Aspen's projects require extensive interagency coordination and public involvement. This begins with the scoping process, continues through the public comment period, and includes developing defensible responses to comments and providing clear information to decision-makers. Our experience comes from work on many types of projects, including oil and gas projects and local agency permitting and long-range planning projects.

If the County would like Aspen's assistance in any of the community and agency outreach services presented above, we can develop the appropriate scope of work and corresponding budget for your consideration.

Native American (AB 52) Consultation

Aspen has successfully assisted various clients in California during the AB 52 consultation process. It is assumed that the County would undertake compliance with AB 52. However, Aspen offers AB 52 support services as an optional task. This support includes the preparation of notification letters, advice and assistance with preparation for two consultation meetings (including presentation materials and logistics), and telephone participation during two consultation meetings.

The scoping and budgeting this optional task requires consultation with the County to determine what aspects of the work County staff would undertake, and what specific services would be required of Aspen.

Paleontological Resources

GANDA has completed a paleontological survey of the Project area; however, it is unclear if a paleontological record search has been completed, or if there is a need for paleontological monitoring to occur in all areas of soil disturbance. If not conducted, a record search can help identify areas that are high-risk for encountering unknown paleontological resources. However, the County has not identified paleontological resources as an issue area requiring consideration in the EIR. If the County deems this assessment necessary, Aspen will work with the County on developing the scoping and budgeting for this optional task, and to determine what aspects of the work the Applicant would undertake and what specific services would be required of Aspen.

Other Services As Needed

During the review of Applicant-provided reports and materials, certain deficiencies may be identified. Typically, the Applicant is requested to remedy this deficiency by providing the requested information. If the County chooses, Aspen has the technical expertise within the Team to provide or develop the needed information as an optional task that would be scoped, budgeted, and scheduled at that time.

5. Schedule

As requested in the RFP, Aspen has prepared a schedule consistent with the Deliverables and Proposed Project Schedule presented in the RFP. Exhibit 6 provides project tasks with the deliverables and timeframes provided for each task. Exhibit 7 provides our estimated schedule for completion and finalization of the EIR in a graphic format.

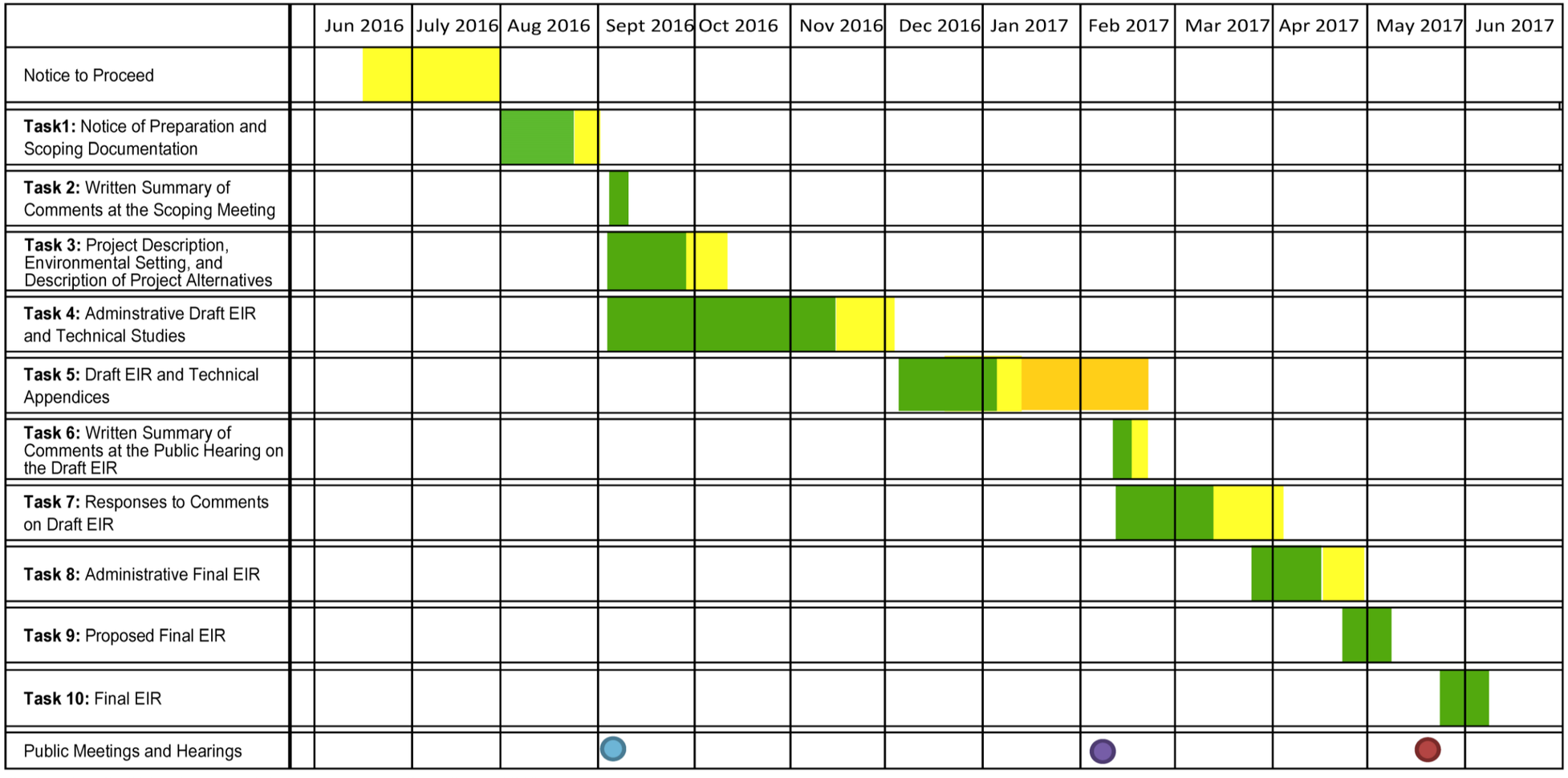
Aspen is fully committed to meeting or expediting this schedule, and will ensure that all Team members and resources are available as identified in this proposal. Aspen often works on expedited schedules, and we can confidently state that we will achieve all project milestones and deliverables on time and within budget.

Exhibit 6. Deliverables and Timeframes

Tasks	Deliverables*	Timeframes
Task 1: Notice of Preparation and Scoping Documentation	1 reproducible unbound 15 bound copies 15 electronic copies on CD 1 electronic copy on CD	15 working days from Notice to Proceed
Task 2: Written Summary of Comments at the Scoping Meeting	1 electronic copy on CD or email	5 working days after scoping meeting
Task 3: Project Description, Environmental Setting, and Description of Project Alternatives	1 electronic copy on CD or email	20 working days after scoping meeting
Task 4: Administrative Draft EIR and Technical Studies	1 reproducible unbound 3 bound copies 1 CD – files divided into chapters	70 working days after scoping meeting
Task 5: Draft EIR and Technical Appendices	1 reproducible unbound 25 bound copies 25 electronic (CDs) 1 CD – files divided into chapters, searchable pdf format	25 working days after final comments on Admin Draft
Task 6: Written Summary of Comments at the Public Hearing on the Draft EIR	1 reproducible unbound 1 electronic copy on CD or email	5 working days after public comment hearing
Task 7: Responses to Comments on Draft EIR	1 reproducible unbound 1 electronic on CD or email	25 working days after close of comment period
Task 8: Administrative Final EIR	1 reproducible unbound 3 bound copies 3 CDs – files divided into chapters	15 working days after receipt of County's final comments on response to comments
Task 9: Proposed Final EIR	1 reproducible unbound 20 bound copies 20 electronic (CDs) 2 CDs – files divided into chapters	10 working days after receipt of the County's final comments on Admin Final EIR
Task 10: Final EIR	1 reproducible unbound 5 bound 1 electronic copy on CD 2 CDs – files divided into chapters	10 working days after final action

* All documents hall be compatible with Microsoft Work 2007. All copies of the EIR must be double-sided, printed in color on recycled paper and spiral-bound. All electronic submittals shall be divided into chapters and file sizes that can be easily published on P&D's website. All electronic submittals shall be in a format that is compatible with P&D's computers.

Exhibit 7 - Schedule



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Schedule Notes

- Scoping Hearing
- Public Comment Hearing
- Planning Commission Hearing
- Aspen Preparation. Working days shown as specified in the RFP
- P&D Review, Comment & Noticing/Distribution
- 45-day public review period for Draft EIR

The Schedule assumes that meetings with P&D staff will be conducted at the request of staff.

The Schedule assumes that the applicant will provide materials requested through data inquiries within 1 to 3 weeks, depending upon complexity.

If the Planning Commission decision is appealed to the Board of Supervisors, then the Final EIR will be prepared after the Board meeting.

6. References

The high quality work performed by the Aspen Team is illustrated in the numerous environmental documents we have completed for our clients throughout the State. This work has been repeatedly recognized by awards from the Association for Environmental Professionals (AEP) and the American Planning Association (APA).

This section provides references who can attest to the performance of Aspen's past work and our project leadership. Aspen has received excellent client feedback on our work and we encourage the County to inquire regarding our performance. We are confident that the responses will be very positive.

Awards from AEP and APA

- ***Outstanding Environmental Analysis Document Award*** Panoche Valley Solar Farm Project EIR (AEP)
- ***Outstanding Environmental Analysis Document Award*** Jefferson-Martin 230-kV Transmission Project EIR (AEP)
- ***Outstanding Environmental Document Award*** New Schools Construction Program EIR (APA)
- ***Outstanding Environmental Analysis Document Award*** Ocotillo Wind Energy Facility

6.1 Client References

Mr. Kevin Drude (retired)
Deputy Director, Energy Division
County of Santa Barbara, Planning and Development
Phone:

- Tranquillon Ridge Oil & Gas Development Project EIR
- Lompoc Wind Energy Project EIR

Mr. Steve McMasters, Senior Planner
Ms. Ellen Carroll, Environmental Coordinator
San Luis Obispo County, Planning and Building Department
976 Osos Street, Room 200
San Luis Obispo, CA 93408
Phone: 805-781-5096 (Mr. McMasters)
Phone: 805-781-5029 (Ms. Carroll)

- California Valley Solar Ranch Project EIR & Monitoring
- Topaz Solar Farm Project EIR & Monitoring

"The County continues to be extremely pleased with the high quality of Aspen's work. The projects they have worked on are large and controversial. Work products, field work, monitoring reports, and other items have all been well done and timely. It is clear that Aspen has an excellent quality control program." *– Ellen Carroll, Environmental Coordinator, County of San Luis Obispo*

Mr. Garret Bean, Director of Permitting
sPower, Sustainable Power Group
5000 East Spring Street, Suite 130
Long Beach, CA 90815
Phone: (562) 348-1130

- Del Sur Solar Project EIR & Monitoring

Mr. John Boccio, CEQA Project Manager
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
Phone: (415) 703-5360

- Tehachapi Renewable Transmission Project (TRTP) EIR/EIS
- TRTP Mitigation Monitoring, Compliance & Reporting

"I would not hesitate to recommend Aspen to other agencies requiring a knowledgeable and responsible environmental consultant, especially for large complex projects that require a consultant with intelligent, responsive and hard-working staff members. Aspen has demonstrated that they can handle a variety of challenging tasks and can be depended on to provide quality products and service." *– John Boccio, CEQA Project Manager, CPUC*

Mr. Ian Black, Senior Solar Developer
EDF Renewable Energy
Phone: (925) 365-3731

- Desert Harvest Solar Project EIS

Appendix A

Resumes of Key Personnel

Team Management
Jon Davidson, MURP
Vida Strong, MUP

Technical Staff
LynneDee Althouse, MS
Brewster Birdsall, MS, PE, QEP
Scott Debauche, CEP
Diana Dyste, MA, RPA
Robert Gleaton, MA, RPA
Hedy Koczwara, MS
Jennifer Lancaster, MS
Philip Lowe, PE
Aurie Patterson, PG
Peter Stickles, PE
Jim Thurber, PG, CEG, CHG
Sue Walker, MA
Scott White, MA
Sandra Alarcón-Lopez, MA

JON K. DAVIDSON
Vice President

Academic Background

Master of Urban and Regional Planning, California State Polytechnic University, Pomona, 1985
BA, Urban Planning, University of Washington, 1981

Professional Experience

Jon Davidson has more than 33 years of experience providing environmental consulting services to public agencies. He is Vice President for Aspen's southern California operations, and has a diverse background in land use planning, policy formulation, environmental review, technical writing, public presentation, and project management. He is particularly adept at CEQA and NEPA compliance, having managed or had a major role in the preparation of more than 135 EIRs, EISs, and EAs. He has prepared over 30 plans and planning studies, including land use studies, general plans, specific plans, redevelopment plans, and site plans. Examples of his work include:

- **Coolwater-Lugo Transmission Project EIR/EIS.** Project manager for an EIR/EIS for the California Public Utilities Commission (CPUC) and Bureau of Land Management for a 64-mile 500-kV and 220-kV transmission line and substation in the upper Mojave Desert.
- **Tehachapi Renewable Transmission Project EIR/EIS.** Project Manager for the preparation of an EIR/EIS for the CPUC and USDA Forest Service for an extensive series of transmission system upgrades spanning Kern, Los Angeles, and San Bernardino Counties. These upgrades increase transmission system capacity and reliability in order to allow wind energy generated in the Tehachapi area to be delivered to California load centers.
- **Antelope-Pardee 500-kV Transmission Project EIR/EIS.** Project Manager for the preparation of a joint EIR/EIS for the CPUC and USDA Forest Service for a 25.6-mile 500-kV transmission line proposed by Southern California Edison to serve wind power projects in the Tehachapi area in Kern County and Antelope Valley in Los Angeles County.
- **Antelope Transmission Project, Segments 2 and 3, EIR.** Project Manager for the preparation of an EIR for the CPUC for a new transmission line project. The project included 46.6 miles of 500-kV line, 9.6 miles of 220-kV line, and two new substations. The project was proposed by Southern California Edison to serve future wind energy projects in the Tehachapi and Mojave areas of Kern County.
- **Deputy Program Manager, California Department of Water Resources (DWR) Contract to Provide Environmental and Technical Support Services for Southern Region Projects.** Deputy Program Manager for a contract to provide on-call environmental assessment, compliance, and monitoring services for projects associated with the State Water Project in southern California. In this role, he developed work programs and budgets for new task orders, made task order manager assignments, and oversaw the quality of products and services to DWR.
- **Program Manager, Los Angeles Department of Water and Power (LADWP) Environmental Assessment Services Contract.** Program Manager for two multi-year contracts to provide CEQA/NEPA compliance, permitting, and mitigation monitoring for LADWP water and power projects.
- **Program Manager, US Army Corps of Engineers Miscellaneous Environmental Services Contracts.** Program Manager for three consecutive multi-year environmental services contract with the Los Angeles District. He also manages environmental impact analyses for flood control, riparian restoration, and water resources projects:

- **San Onofre Nuclear Generating Station (SONGS) Steam Generator Replacement Project EIR.** Project Manager for the preparation of an EIR for the CPUC for a project that would replace the steam generators at SONGS Units 2 and 3. The original steam generators needed to be replaced because they were degraded from stress and corrosion cracking, and other maintenance difficulties. Replacement was necessary to allow the continued operation of the plant through the end of the current NRC license period for each unit.
- **Monterey Accelerated Research System (MARS) Cabled Observatory EIR/EIS.** Project Manager for the preparation of an EIR/EIS for the California State Lands Commission and the Monterey Bay National Marine Sanctuary for an advanced undersea cabled observatory in Monterey Bay that provides researchers with long-term, real-time data access to deep-sea benthic communities and ocean processes. The project consists of a science node located on the sea floor 51 km off the coast of Monterey Bay. The node is connected to shore by a cable that provides electricity to power undersea experiments and a fiber optic cable to transmit data to shore.
- **Yellowstone Pipeline Reroute EIS.** Performed critical review and technical editing of Specialist Reports covering Socioeconomics, Public Services, and Minority and Low-Income Populations in western Montana and northern Idaho for a petroleum products pipeline and related facilities. He also prepared the sections of the EIS relating to these issue areas.
- **Program Manager, Los Angeles Unified School District Environmental Document Contract.** Program Manager for environmental services to the Los Angeles Unified School District. Assisted the District in completing CEQA review for a major new school building program.

Professional Affiliations

- American Planning Association
- Association of Environmental Professionals

VIDA STRONG

Senior Environmental Engineer and Project Manager

Academic Background

Master of Urban Planning, San Jose State University, 1991
BS, Engineering, California Polytechnic State University, San Luis Obispo, 1987

Professional Experience

Ms. Strong has 27 years of experience in environmental engineering and project management, with an emphasis in the application of CEQA and NEPA in project analysis and during the subsequent mitigation monitoring of controversial development projects. She has managed and prepared environmental documents for numerous industrial projects requiring alternatives development, the application of screening criteria, knowledge of a broad range of issue areas, and extensive local, State, and federal agency coordination. In addition, she has managed the mitigation monitoring, compliance, and reporting programs for numerous projects on behalf of the lead agencies. Prior to joining Aspen Environmental Group, Ms. Strong was an Energy Specialist for the Santa Barbara County Planning and Development Department's Energy Division, where she managed the environmental review and permitting of major oil and gas development projects, and oversaw the implementation of mitigation monitoring plans.

- **Project Manager, ERG Operating Company West Cat Canyon Revitalization Plan Project EIR**. Under contract with Santa Barbara County, Energy & Minerals Division, Ms. Strong is managing the preparation of an EIR for ERG's proposed project. The project would result in development and operation of 233 new thermally enhanced (cycle steaming) production wells and associated facility improvements, including the development of 11 new well pads (91 existing pads to be used), the installation and operation of four vested steam generators, expansion of nine existing equipment areas and production facilities to accommodate appurtenant equipment, and construction and operation of various inner-field piping. In addition, the project includes the replacement of an existing 3.5 miles 4-inch diameter Natural Gas Fuel pipeline with a new 8-inch pipe. Issue areas of concern include air quality/GHG, biological resources, hazardous materials/risk of upset, geologic processes/geologic hazards, historic/cultural resources, transportation, noise, and water resources.
- **Project Manager, PXP Tranquillon Ridge Development Project EIR.** Under contract to Santa Barbara County, Energy Division, Ms. Strong managed the preparation of an EIR for the proposed PXP Tranquillon Ridge Development Project. This project involved extended reach drilling from Platform Irene in federal waters into the Tranquillon Ridge Field located in State waters. Oil emulsion and gas production would be transported from Platform Irene in existing pipelines to the Lompoc Oil and Gas Plant (LOGP). The EIR focuses on the potential impacts associated with the extended reach drilling activities and extension of life of Platform Irene, the existing pipelines, and LOGP. The development of an onshore drilling facility and associated pipelines is also being assessed as an alternative. Issue areas of concern include system safety/risk of upset, marine biology and water quality, fisheries, terrestrial biology, hydrological resources, cultural resources, air quality, land use, noise, and traffic.
- **Project Manager, Lompoc Wind Energy Project Final EIR.** Under contract to Santa Barbara County, Energy Division, Ms. Strong managed the preparation of the Final EIR for the proposed Lompoc Wind Energy Project. This project involved the installation of 65 wind turbines and associated facilities, including an approximately 9-mile 115-kV power line, electrical collection and distribution lines, a substation, meteorological towers, onsite access roads and road improvements, a communication system, and an operation and maintenance facility. The EIR focused on the potential impacts associated with project construction and operation. Operational issues of concern included

avian mortality and long-term visual impacts associated with project facilities within a rural environment.

- **Project Manager, San Bernardino County Solar Development**. Under contract with a confidential solar power plant developer, Ms. Strong is managing the preparation of technical reports in support of the developer's Conditional Use Permit application, including biological and cultural resources, drainage, groundwater, air quality/GHG, noise, and visual resources. She also is working with the developer's engineering group to ensure that technical constraints identified during technical report preparation are implemented into the project design.
- **Project Manager, SCE Tehachapi Renewable Transmission Project, Segments 4 through 11.** Under contract to the CPUC, Ms. Strong is managing the mitigation monitoring, compliance, and reporting program for the SCE Tehachapi Renewable Transmission Project, Segments 4–11. This project involves new construction and upgrades of over 170 miles of 500/220/66-kV transmission in Los Angeles, San Bernardino, and Kern Counties, Angeles National Forest, and numerous cities within Los Angeles and San Bernardino Counties. In addition, the construction of a new substation was required, along with the expansion of existing substations. As Project Manager, Ms. Strong is responsible for the field monitoring effort, Notice to Proceed and Variance Request/Final Engineering Concurrence recommendations sent to CPUC, agency coordination, and Weekly Reporting. Construction began in April 2010 and is scheduled to continue through 2016.
- **Project Manager, PG&E Embarcadero-Potrero 230 kV Transmission Project**. Under contract to the CPUC, Ms. Strong is managing the mitigation monitoring, compliance, and reporting program for the PG&E Embarcadero-Potrero 230 kV Transmission Project. This project includes the construction of a new 230 kV transmission line and associated facilities within the City and County of San Francisco that extends from the existing Embarcadero Substation at the corner of Fremont and Folsom Streets to the existing Potrero Switchyard on Illinois Street between 22nd and 23rd Streets. The majority of the transmission line alignment involves submarine cable installation in San Francisco Bay employing land-to-sea horizontal directional drilling. As Project Manager, Ms. Strong is responsible for the field monitoring effort, Notice to Proceed and Minor Project Change recommendations sent to CPUC, and Weekly Reporting. Construction began in September 2014 and is scheduled to continue through 2016.
- **Project Manager, Programmatic Analysis for the Tehachapi Wind Resource Area.** Under contract to the CPUC, Ms. Strong managed the preparation of the Programmatic Analysis for development of approximately 4,500 MW of wind generation within the Tehachapi Wind Resource Area (TWRA), as part of the Tehachapi Renewable Transmission Project (TRTP) EIR/EIS. The TWRA is in Kern County and is considered the largest wind resource area in California, situated at the southern end of the San Joaquin Valley and extending south into the adjacent Mojave Desert. The TWRA study area was established using the Kern County Zoning Ordinance, the locations of existing transmission systems and wind farms, the CEC annual wind power density map, land uses and flight restriction zones in the area, and assistance from Kern County. A programmatic analysis was then conducted for wind development within the TWRA boundary using the Kern County Significance Criteria, the Kern County General Plan, and information from existing and proposed wind farms in the area.
- **Project Manager, Lodi Gas Kirby Hills Natural Gas Storage Facility Project.** Under contract to the CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for Lodi Gas' natural gas storage project, Phases 1 and 2, in Solano County. Phase 1 construction was completed from May 2006 through October 2007, and involved the installation of necessary piping and compression and metering facilities to utilize a depleted underground gas reservoir for natural gas storage. Phase 2 construction, which allows for additional well development and associated

facility enhancements, was conducted from May 2008 through August 2009. As Project Manager, Ms. Strong was responsible for the field monitoring effort, Notice to Proceed and Variance Request recommendations sent to CPUC, agency coordination, and Weekly Reporting.

- **Deputy Program Manager, PG&E Line 401 Capacity Loops Project.** Under Aspen's environmental services contract with CPUC, Ms. Strong managed the mitigation monitoring, compliance, and reporting program for PG&E's Capacity Loops Project in Modoc and Shasta County. This project was permitted under the PG&E/PGT Project constructed in the early 1990s and involved the installation of a 14-mile natural gas pipeline within Modoc National Forest and rugged, private lands within Shasta County containing sensitive cultural and biological resources, respectively. Extensive timber harvesting also was conducted as part of the clearing effort for this project. Given the federal lands and sensitive resources present, numerous federal and State agencies were involved in permitting of the project. Ms. Strong analyzed and prepared the recommendations for Notices to Proceed and Variance Requests, and maintained communications with CPUC and other interested agencies, including Weekly Report submittals pager for this monitoring and compliance project for construction of Phase I of a 27-mile natural gas pipeline and distribution system in a rural residential area of Calaveras County. Ms. Strong's responsibilities include management of environmental monitor(s) and coordination with lead agencies and pipeline owner/contractors.
- **Kinder Morgan Carson-Norwalk Pipeline Mitigation Monitoring, Compliance, and Reporting Program.** Ms. Strong served as Deputy Project Manager for this monitoring and compliance project for construction of a 14-mile products pipeline in southern California, under contract to the CPUC. She managed construction compliance issues, coordinated with the environmental manager for Kinder Morgan Energy Partners, and prepared monthly reports for the project's Internet web site.
- **Pacific Pipeline Mitigation Monitoring, Compliance, and Reporting Program.** Ms. Strong served as Deputy Program Manager for this monitoring and compliance project for construction of a 132-mile crude oil pipeline in southern California, which included the installation of a parallel fiber optic network, under contract to the CPUC and the Angeles National Forest. This pipeline was constructed by separate crews at seven pipeline sub-segments and eight stations. Her primary responsibilities on this program included estimation of budgetary and monitor requirements; coordination of technical mental monitors; and coordination with lead agencies and pipeline owner/contractors.
- **Alturas Transmission Line Project EIR/EIS.** Ms. Strong served as Deputy Project Manager for the EIR/EIS on Sierra Pacific Power Company's Alturas Transmission Line Project. This EIR/EIS, completed for the CPUC and the US Bureau of Land Management in November 1995, addressed the impacts of a proposed 165-mile, 345 kV intertie between Alturas, California, and Reno, Nevada. It included consideration of numerous route alternatives in northeastern California and northwestern Nevada as well as other electric power transmission, generation and conservation alternatives. Ms. Strong's responsibilities included description of the proposed project and alternatives, characterization of project parameters for impact analysis, definition of controversial energy supply and demand issues, coordination with electrical power transmission experts, assistance in management of team subcontractors, and document preparation and production coordination.
- **MacPherson Oil Project Integrated Risk Assessment, City of Hermosa Beach.** Ms. Strong served as Project Manager for the preparation of an Integrated Risk Assessment for the MacPherson Oil Project, under contract to the City of Hermosa Beach. Under this contract, she managed the critique of system safety studies completed for the project. As a result of the critique, an Integrated Risk Assessment was prepared to fully analyze the potential public safety impacts resulting from the project.

Previous Employment..... 1991-1994

Ms. Strong was an Energy Specialist for the Santa Barbara County Planning and Development Department, Energy Division, Santa Barbara (1991-1994). In this position, she managed various permitting and CEQA/ NEPA related reviews, and Operation and Condition Compliance Monitoring. Her projects included:

- **Mobil Clearview.** Worked directly with Mobil Oil Co. on development of a project description to meet County application processing needs (environmental review, policy consistency determination, etc.) during the initial pre-application review.
- **Mobil Ellwood Oil and Gas Processing Plant/Marine Terminal.** Ms. Strong managed permitting and environmental review of proposed facility modifications and sites designated as legal nonconforming uses within recreational and residential zoning districts; she coordinated multi-agency review as required. She also monitored compliance with County permit conditions and worked with Mobil and various County agencies on plan updates (Emergency Response Plan, Fire Protection Plan).
- **Marine Tanker Transport Review.** Managed permitting and environmental review of offshore oil producers' request to tanker Point Arguello crude oil from Gaviota to Los Angeles.
- **Emergency Tankering Application Review.** Managed review and analysis of crude oil transportation options (mode, route, destinations) versus Local Coastal Program/Coastal Zoning Ordinance definitions of emergency, and regional and statewide needs.
- **Gas Re-Injection Feasibility Analysis.** In support of the Tri-Party Agreement between Chevron, US Minerals Management Service (MMS), and Santa Barbara County on the limitation of pipeline transport of sour gas, Ms. Strong provided consultation to Chevron on behalf of the County on study preparation.
- **Oil and Gas Processing Facility Permitting.** Ms. Strong monitored compliance with County permit conditions for Chevron's Pt. Arguello oil and gas processing facility, including coordination with the System Safety and Reliability Review Committee in its review of facility and operational modifications.

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES
1602 Spring Street, Paso Robles, CA 93446
(805) 237-9626 Fax (805) 237-9181

LynneDee Althouse, M.S.

President/Principal Scientist

Areas of Expertise

- Resource Agency Permits/Authorizations
- Botany/Plant Taxonomy
- Rare Plant Surveys
- Water Quality/Aquatic Habitat
- Wetland Delineation/Jurisdictional Delineation of Wetlands and Waters
- Conservation Plans
- Habitat Restoration Plans
- Mitigation Plans
- Biological Reports
- Botanical Reports

Years of Experience

- With A&M: 16 years
- With other firms: 13 years

Education

- Post-graduate research in Ecology, Evolution, and Marine Biology, 1999
- M.S., Biology, Ecological Studies, 1987
- B.S., Biology, 1979

Overview

LynneDee Althouse, M.S. is a biologist, watershed ecologist, and restoration specialist with over 28 years of experience conducting biological and general environmental surveys and supervising restoration projects. She owned and operated her own consulting business for 13 years, and merged her business with Daniel E. Meade, consulting biologist, to form Althouse and Meade, Inc. Biological and Environmental Services in 1999. Ms. Althouse conducts surveys and restoration projects primarily in Santa Barbara, San Luis Obispo, Kern, Monterey, and Ventura Counties. She supervises and coordinates surveys and regulatory permit compliance throughout California. She conducted research for her Master's degree on oak regeneration in the Los Padres National Forest that was published in Ecology, a peer-review publication. She conducted post-graduate research in Santa Barbara County oak woodlands, and co-authored a publication in Soil Science Society of America (citations below). Ms. Althouse has conducted replanting and prepared restoration plans for thousands of oaks in California. Ms. Althouse taught Biological Principles of Conservation Planning at UC Santa Barbara in the Environmental Studies Department. She also taught an introductory soils laboratory at California Polytechnic State University, San Luis Obispo, California. Ms. Althouse shares her rich teaching, research, and consulting experiences with clients, students, agencies, and colleagues.

Professional Work Experience

President/Principal Scientist 1999 – present
Althouse and Meade, Inc. Paso Robles, CA

Consultant to agencies, private firms and individuals who govern, own, or manage properties in California. Develop habitat restoration plans, water quality plans, riparian enhancement installations, biofilters, intercrop soil protection, and wildlife corridor enhancement plans. Conduct biological surveys for sensitive plant and animal species and supervise preparation of biological reports. Coordinate and process permit applications packages for state and federal regulatory agencies such as the State Water Resources Control Board, Regional Water Quality Control Board, California Department of Fish and Wildlife, U.S. Army Corps of Engineers. Work with U.S. Fish and Wildlife Service and National Marine Fisheries to facilitate preparation of Biological Opinions during their consultation process with the Corps of Engineers. Facilitate environmental compliance. Supervise permit compliance monitoring (especially CEQA and NEPA).

Oak Tree Restoration Project Examples

- Ms. Althouse was the primary author on a "Tree Mitigation and Riparian Restoration Mitigation and Monitoring Plan; Madsen Residence, 3626 San Remo Drive, Santa Barbara California. That was submitted in 2004, revised in 2010 and again in 2014 based on project revisions and input from the City of Santa Barbara. The plan included recommendations to group coast live oak plants to mimic natural conditions. Groups of trees were to be planted three to four feet apart with groups spaced 30-feet on center. The planting plan included other native trees and shrubs to blend with and complement adjacent riparian habitat conditions. Worked closely with the Urban Creeks Council, the City's biologist, and the project developer and landscape architect on a design that mitigated for oak tree impacts and provided a sustainable habitat adjacent to mature open space. The plan was implemented by Capital Pacific Development Group Inc. in 2015.
- Ms. Althouse wrote the tree mitigation plan for Providence Landing, a 140-acre residential development (by Capital Pacific Homes) in northern Santa Barbara County, adjacent to Vandenberg Village. Recommendations in 2005 included protection of all trees to be impacted and fully protected in the vicinity of work areas and protection, monitoring, and maintenance of newly planted trees for at least five years. In 2008, reviewed landscape plans and provide recommendations to the County of Santa Barbara (Analise Merlot and Melissa Mooney) for supplemental planting and tree maintenance. Recommendations included grouping young oak trees to mimic ancient stump sprouts, seen after fire events in coastal oak woodlands. The young trees would be kept shrub-like for the first 10 years to mimic native tree forms on the adjacent Burton Mesa, and to provide excellent habitat for native songbirds.
- Union Pacific Railroad (UPRR) and Caltrain (a Caltrans rail group) collaborated on a railroad siding project between Highway 101 and the railroad main line in Goleta. In this area, coast live oaks and other native trees impacted by the project were replaced according to a plan developed in 2001 by Ms. Althouse in cooperation with UPRR design engineers, Caltrans landscape architects, and the County of Santa Barbara's Planning and Development Department. The project involved creation of wetland and adjacent upland habitat where the oaks were planted among native trees and shrubs. The project was successfully implemented in 2002 and retains its habitat functions in 2016.
- Research Assistant and Doctoral Student, *U.C. Santa Barbara, CA:* Topic "The Fate of Nitrate in an Oak Savanna", a watershed ecology project involving non-point source pollutants. Primary research tools include Flow injection analysis for NH4, NO3, PO4 using Lachat

Autoanalyzer (AE System); Shimadzu Gas Chromatography for CO2, N2O, CH4; C&N analysis using Fisson Instruments (Carlo-Erba) machine; AA Spectroscopy for elemental analysis of water samples; Infra-red gas analysis (IRGA) field system for determining ecosystem gas flux; TDR (time domain reflectometry) to determine percent soil moisture in the field; remote lysimetry for collecting soil water samples; stream, well, spring water sampling techniques; general lab wet chemistry for soil and water sample analysis; and grassland clip plot techniques to study ecosystem processes controlled by microbial activity; Digital Elevation Modeling techniques using GPS (global positioning system), GIS (geographic information system) and Arc-Info (software) presentations for spatial data analysis. Completed first chapter of dissertation, advanced to candidacy, and did not complete her dissertation due to consulting commitments.

Additional Restoration Plans and Projects – partial list

Revegetation Plan, Creek Bank Restoration, 2380 Main St., Cambria - 1991
Oak Tree Mitigation Plan, Davis, Templeton, CA - 1992
Blacklake, The Oaks, Tentative Tract 2151, Nipomo, CA., co-author V.L. Holland. – 1994-1998
Cuesta Ridge Vineyard, Mondavi, Oak tree planting habitat restoration, Taco Creek 2000-2002
Santa Ysabel Ranch Residential Development, Paso Robles, San Luis Obispo County 2000-2007
Spanish Lakes Oak Tree Mitigation and Monitoring Plan 2001-2009
Prefumo Canyon, Bennent, Rare plant salvage and restoration – 2001-2003
Dove Creek Residential Development, Atascadero, San Luis Obispo County 2005-2010
Cold Canyon Landfill, San Luis Obispo County, 2006 to present
Comprehensive Wetland Mitigation Basin, Margarita Area, San Luis Obispo, CA 2007- present
Tract 1990 Commercial Development, Heritage Ranch, San Luis Obispo County 2008-2012
Plannett Ranch, Post-fire restoration planning, Monterey County 2010
Flamm, Private Residence Development, San Luis Obispo County, 2010 – 2011
City of Atascadero Oak Mitigation Areas, Atascadero, San Luis Obispo County 2010-present
Topaz Solar Farms, Habitat Restoration and Revegetation Plan 2011
UPRR - El Capitan, Restoration and Monitoring Plan – 2009-2010
UPRR - S Bar sub, MP 386-389 Seacliff, Coastal scrub vegetation restoration, Ventura Co. 2011
UPRR – Suisun Bay, wetland site restoration for UP bridges, Martinez sub MP 45.13 and 45.98
Vandenberg Village Community Services District (VVCSD) Burton Mesa Restoration Plan 2011
UPRR Yuma sub 540.24 Riverside I.L. Restoration Plan and monitoring. 2006-2009.
Seashell Estates, Habitat Mitigation and Monitoring Plan, Morro Bay, 2011-2016
Lagunitas Restoration Plan monitoring, Carpinteria - 2012
Feldman, Sand Point Road Restoration Plan - 2013
Vina Robles Amphitheater, Paso Robles, San Luis Obispo County - 2014
VVCSD Davis Creek Restoration - 2015
Cypress Glenn, Cayucos, Restoration Plan and CDFW SAA for riparian restoration - 2015

Publications

Gessler, P.E. O.A. Chadwick, F. Chamran, L. Althouse, and K. Holmes. 2000. Modeling soil-landscape and ecosystem properties using terrain attributes. Soil Science Society of America Journal 64:2046-2056.

Borchert, M.A., F.W. Davis, J. Michaelsen, and L.D. Oyler [Althouse]. 1989. Interactions of factors affecting seedling recruitment of blue oak *(Quercus douglasii)* in California. Ecology: 70(2) 389-404.

Oyler [Althouse], L.D. 1987. Factors Affecting Establishment and Survival of *Quercus douglasii* [Blue Oak] Seedlings. Master's Thesis, California Polytechnic State University, San Luis Obispo.

Althouse, L.D. R. A. Oyler, S. B. Stark. 1977. Factors Affecting Chironomid [Midge] Abundance in Laguna Lake. Senior Thesis, California Polytechnic State University, San Luis Obispo.

Honors and Fellowships

Excellence in Research Award, recognizing work on carbon and nitrogen analysis in soils, Ecology Evolution and Marine Biology Department, UCSB, August 1997.

Storke Award: Dissertation Support Fellowship, Ecology, Evolution, and Marine Biology Department, UCSB, December 1998.

Departmental Regents Fellowship: Department of Ecology, Evolution and Marine Biology, UCSB, May 1999.

Grant Support

Effects of Grazing on Water Quality: Microbes as Indicators and Mediators of Disturbance. Grant from the Integrated Hardwood Range Management Program, UC Berkeley.

Soil Observatories Project: Study of vadose zone microbial and nutrient flux patterns and processes, National Science Foundation, tuition support.

BREWSTER BIRDSALL, P.E., QEP
Senior Associate, Air Quality and Engineering

Academic Background

MS, Civil Engineering, Colorado State University, 1993
BS with High Honors, Mechanical Engineering, Lehigh University, 1991

Professional Experience

Mr. Birdsall has over 20 years of experience as an engineer and environmental scientist specializing in air quality and greenhouse gas (GHG) analyses for energy infrastructure and land development projects. His consulting experience focuses on technical oversight, climate change, air resources, and air quality and noise-impact modeling, and project assessment under CEQA, NEPA, and the Clean Air Act. He provides senior-level analysis for resource planning decisions related to energy facility siting, energy supply alternatives, including power procurement and transmission planning, and offsetting impacts. His expertise includes the interrelationships of conventional and renewable energy supply and delivery as they affect emissions. Examples of his work include:

- **ERG West Cat Canyon Revitalization Plan Project EIR, Santa Barbara County, Energy Division (Current)**. Mr. Birdsall is currently helping prepare the EIR for this project, and will be providing two sections of the document: Air Quality and Climate Change/Greenhouse Gases.
- **Greenhouse Gas Emissions Threshold of Significance, Santa Barbara County, Energy Division (2015).** Expert review to support the Planning Commission and Board of Supervisors formal adoption of a new significance threshold, guidelines, and potential mitigation strategies for the CEQA treatment of GHG emissions caused by industrial stationary sources in the unincorporated areas of Santa Barbara County.
- **Analysis of Oil and Gas Well Stimulation Treatments in California EIR, Department of Conservation (2013-2015).** Mr. Birdsall prepared the air quality and GHG impact assessments in the EIR evaluating oil and gas well stimulation treatments throughout California, as required by Public Resources Code Section 3161 (b)(3) and (4) (Senate Bill 4 [Pavley]), as signed into law on September 20, 2013. Section 3161 (b)(3) and (4) requires the Division of Oil, Gas and Geothermal Resources (DOGGR) to evaluate the impacts of well stimulation treatments that may occur from either existing or future oil and gas wells, including hydraulic fracturing, acid fracturing and acid matrix stimulation.
- **Oil and Gas Leasing and Development, Draft Resource Management Plan Amendment and Environmental Impact Statement, BLM (2015).** Developed background information on reasonably foreseeable oil and gas development trends in the BLM Hollister Field Office territory of Monterey County, San Benito County, and Fresno County, and prepared impact analyses for air quality, atmospheric conditions, greenhouse gas emissions, and climate change.
- **Desert Renewable Energy Conservation Plan EIR/EIS, California Energy Commission (2014-2015).** Mr. Birdsall provided senior review and analysis of the climate change and air quality topics, and he prepared responses to comments from the public and reviewing agencies and organizations.
- **Siting Cases for CEC – Review of Applications to Construct Power Plants.** Mr. Birdsall assists the California Energy Commission (CEC) as a technical specialist by reviewing and providing testimony on Applications for Certification (AFC) for new power plants throughout California, including natural gas-fired combined cycle, peaking, solar, and geothermal facilities. As a contractor for the Engineering Office of the Siting, Transmission, and Environmental Protection Division, he has provided precedent-setting testimony for the CEC on the implementation of the California Global Warming Solutions Act of 2006 (AB 32) in the electricity sector. These assessments cover the potential effects of new power

plants on overall electricity system operation, achieving California goals in reducing greenhouse gas emissions, avoiding deterioration of air resources, and developing plans to offset emissions.

- **Technical Studies for CEC.** Mr. Birdsall is also an author or contributor on special studies of energy issues.
  - **Transmission Options in Southern California (2013-2015).** Prepared an environmental feasibility study for electric transmission options and potential corridor designations from Imperial County and Riverside County to Orange County and San Diego in response to closure of San Onofre Nuclear Generating Station (SONGS). Documented potential overland transmission line corridors and the feasibility of building offshore submarine high voltage direct current (HVDC) cable corridors in the Pacific Ocean to connect the Southern California Edison (SCE) and San Diego Gas and Electric (SDG&E) electrical transmission systems.
  - **Biomethane Additionality Study (2012).** Developed comparisons of landfill gas, digester gas, and other biogas emission factors in various applications as an alternative to pipeline quality gas.
  - **California Credit Policies: Lowering the Effective Cost of Capital for Generation Projects (2006).** Prepared workshop report exploring policy options for transforming power procurement and credit policies to encourage power plant development in California and manage the risk of project failure.
- **For the California Public Utilities Commission:**
  - **West of Devers Upgrade (2013-2015).** Coordinator for transmission planning and engineering alternatives in the environmental review of network improvements to interconnect desert-area generation to the Los Angeles basin. Directing the independent power flow modeling work and structural design review with the goal of identifying feasible alternatives to partially rebuild the corridor, develop the project in longer term phases, or provide a plan of service to replace the project altogether. Assessing air quality and GHG impacts.
  - **Embarcadero-Potrero 230 kV Transmission Project (2012-2014).** Deputy Project Manager and coordinator of transmission planning and engineering alternatives in the environmental review of this underground and submarine transmission line in the San Francisco Bay for improving reliability in downtown San Francisco. Conducted the review of health effects, noise, air quality, and GHG.
  - **Long-Term Procurement Plan Guidelines and Renewable Portfolio Standard Implementation (2008-2011).** Developed timelines of permitting and identified barriers to implementing the 33 percent Renewable Portfolio Standard (RPS), including ranking and screening of available energy resources. Surveyed historical transmission build-out timelines, based on experiences of the California Independent System Operator (CAISO), CPUC, and other cooperating agencies. Mapped and scored renewable resources from the Renewable Energy Transmission Initiative (RETI) process and CPUC Energy Division database for environmental concern and permitting risk based on location to sensitive resources and agency requirements.
  - **Sunrise Powerlink 500 kV Transmission Line (2006-2011).** Coordinator for transmission planning and engineering alternatives in the environmental review of this major new transmission line between Imperial Valley and San Diego County. Assessed GHG results of production cost modeling and analyzed net GHG emissions and climate change effects for multiple renewable and conventional generation and transmission scenarios. Developed mitigating actions and carbon offset strategies that were adopted in advance of AB 32 implementation.

- **Western Area Power Administration/San Luis & Delta Mendota Water Authority – San Luis Transmission Project EIS/EIR (2015).** Air quality, GHG, and noise analyses for construction and operation of 95 miles of new transmission lines in western San Joaquin Valley, to serve pumping and generating facilities along the California Aqueduct and the Delta-Mendota Canal.
- **South San Joaquin Irrigation District (SSJID), Plan to Provide Retail Electric Service (2005-2006, 2010-2014).** Project manager for full environmental analyses for new provider of electric distribution service. Topics of assessment include how GHG emissions and energy conservation programs could be affected by change in system ownership, assessment of concurrent Municipal Services Review and Sphere of Influence, and analysis of Community Choice Aggregation (CCA) and as an alternative to allowing a change in retail electric service provider in southern San Joaquin County.
- **San Luis Obispo County, Santa Margarita Quarry Expansion Project EIR (2014-2015).** Reviewed public records and baseline activities in order to prepare an emissions inventory and impact analysis for air quality and greenhouse gas emissions to expand the aggregate products quarry and add reserves.
- **San Luis Obispo County, Renewable Energy Streamlining Program and EIR (2013).** Analysis of electric transmission and distribution systems and interconnection processes for a county-wide Opportunities and Constraints Technical Study to determine Renewable Energy Development Areas for siting of small-scale renewable energy. The analysis would be used for updating or establishing renewable energy policies, a Renewable Energy Combining Designation for the County General Plan Open Space Element, and a Renewable Energy Ordinance in a process funded by the CEC.
- **Burning Man 2012-2016 Environmental Assessment, BLM (2011-2012).** Developed technical memoranda on community noise, air quality, and a greenhouse gas emissions inventory for the annual Burning Man Event for the five-year review conducted by the BLM Winnemucca Field Office and Black Rock City LLC.
- **Northern Sonoma County Air Pollution Control District and Sonoma County, Wildhorse and Buckeye Geothermal Power Plant Projects (2011-2012).** Assessed GHG impacts of new renewable energy facilities and air quality effects of two new geothermal power plants in the Geysers resource area, with complex dispersion modeling.
- **Kern County Waste Management Department (2011-2012).** Analyses of municipal solid waste facilities alternatives and energy conservation assessments for landfills in the CEQA process.
- **Santa Barbara County, Energy Division, Lompoc Wind Energy Project (2008-2009).** Peer-review of noise analysis and control plan for new 97 MW wind energy facility in rural Santa Barbara County.
- **Santa Barbara County, Energy Division, PXP Tranquillon Ridge Development Project (2006-2009).** Air quality, noise, and energy use assessment for extended reach drilling into the Tranquillon Ridge Field in State waters including oil emulsion and gas processing at the Lompoc Oil and Gas Plant.
- **City of Richmond, Department of Planning and Building, Review of Environmental Documents (2006-2009).** Peer-review services and technical support to city planners on refinery upgrades and replacement projects, primarily for air quality, health risks, energy use, and mitigation of greenhouse gases and climate change. Identified strategies to inventory refinery emissions and mitigating actions to offset project-related emissions, with a goal of no net increase.
- **Kern County, Alta–Oak Creek Mojave Project (2008-2009).** Analyzed air quality and noise effects for construction and operation of new wind energy generation facility in the Tehachapi area.
- **City of Long Beach, Department of Planning and Building, Review of LNG Import Facility (2005-2006).** Coordinated a critical review and provided technical support for review of the environmental impact

assessments related to a proposed liquefied natural gas import facility within the Port of Long Beach.

- **California State Lands Commission, Monterey Accelerated Research System Cabled Observatory (2004-2005).** Provided technical analysis of air quality and noise effects of installing new underwater equipment in Monterey Bay. Provided marine biologists with analysis of underwater sounds in the Monterey Bay National Marine Sanctuary.
- **California State Lands Commission, Concord-Sacramento Pipeline (2002-2003).** Provided technical analysis of air quality and noise effects of constructing a new 20-inch, 70-mile petroleum products pipeline, including upgrades to storage tank facilities in Concord and distribution systems in West Sacramento.

Additional Training and Courses

- Panelist, Offsets for Environmental Mitigation, Navigating the American Carbon World 2014
- Climate Change, A New Age for Land Use Planning, U.C. Davis Extension
- Fundamentals of Noise and Vibration for the California Energy Commission
- Expert Witness Training, California Energy Commission
- Co-Instructor, Air Permitting Issues for Municipal Solid Waste Landfills, Trinity Consultants
- Fundamentals of New Source Review Workshop, Air and Waste Management Association
- Title V and Compliance Assurance Monitoring Workshops, Air and Waste Management Association
- NATO Advanced Studies Institute, Wind Climates in Cities
- Graduate-level Coursework: Solar Energy Conversion, Wind Engineering, Reciprocating and Centrifugal Engines, Computational Fluid Dynamics, Scalar Transport

Professional Affiliations and Awards

- Professional Engineer (Mechanical, California #32565)
- Qualified Environmental Professional, Institute of Professional Environmental Practice (#03030005)
- 2001 Outstanding Performance Award presented by the California Energy Commission
- Air and Waste Management Association since 1994
- Tau Beta Pi, National Engineering Honor Society

SCOTT DEBAUCHE, CEP
Environmental Planner

Academic Background and Credentials

BS, Urban Planning and Design, University of Minnesota, 1995

Board Certified Environmental Planner (CEP) #12040973
U.S. Council of Engineering & Scientific Specialty Boards/ABCEP

Professional Experience

Mr. Debauche is an environmental planner with 20 years of experience preparing CEQA and NEPA documents, planning reports, and technical analyses for a variety of large-scale infrastructure and civil projects. Mr. Debauche is a technical specialist for noise and transportation issues, among other topics. The projects described below briefly highlight his experience relevant to evaluating these issues in the Aera East Cat Canyon Oil Field Redevelopment Plan Project EIR.

Oil and Gas Projects

- **ERG West Cat Canyon Revitalization Plan Project EIR, Santa Barbara County, CA.** Mr. Debauche is the noise and transportation analysts for this project, which will expand development of the existing West Cat Canyon Oilfield in northern Santa Barbara County with the addition of 233 new thermally enhanced production wells, development of 11 new pad locations of expanded use of 91 existing pad locations, reactivation of four steam generations, replacement of 3.5 miles of natural gas pipeline, and construction of various inner-field piping infrastructure to service existing and proposed wells.
- **Evaluation of Oil and Gas Well Stimulation Treatments in California, California Department of Conservation (2013 – 2015).** Under contract to the California Division of Oil, Gas, and Geothermal Resources (DOGGR), Mr. Debauche was part of a small team of specialists evaluating the environmental impacts and effectiveness of proposed permanent regulations to govern oil and gas well stimulation treatment throughout the State. This effort included the preparation of a programmatic EIR for statewide well stimulation practice. Mr. Debauche was the analyst for utilities and service systems, public services, population and housing, and environmental justice issues.
- **Hollister Field Office Oil and Gas Resource Management Plan Amendment Project, Bureau of Land Management, California.** The RMP Amendment will guide leasing and management of oil and gas resources on BLM-administered mineral estate within the Hollister Field office and incorporate new information about well stimulation technologies and reasonably foreseeable development of federal minerals to analyze the effects of alternative management strategies on the environment Mr. Debauche served as the analyst for transportation and access, socioeconomics, and environmental justice issues.
- **Los Angeles County Baldwin Hills Oil Field Community Standards District EIR Review and Noise Ordinance Preparation, Los Angeles County, CA**. Served as the City of Culver City Technical Specialist reviewing the Los Angeles County Baldwin Hills Oils Field Community Standards District EIR Noise analysis and policy mechanisms which guided the expansion and future operations of the existing Baldwin Hills Oil Field. Upon completion of environmental review, Mr. Debauche then prepared the Noise section of the newly enacted City of Culver City Community Standards District overlay zone restricting noise generation by the Baldwin Hills Oil Field on the residents of Culver City.
- **Hydrogen Energy California Power Plant Project, California Energy Commission.** Mr. Debauche is the alternatives and transportation/traffic technical specialist analyzing the proposed HECA project in Kern County. It includes a 400-megawatt (MW) power plant that would produce hydrogen to fuel a combustion turbine. The gasification component of the plant would capture carbon dioxide, which would be transported and used for enhanced oil recovery (EOR) and sequestration in the adjacent Elk

Hills Oil Field. The project would also capture and harness the remaining hydrogen to produce approximately 1 million tons of fertilizer for domestic use.

Noise Analyses for:

- **Port of Long Beach Liquid Natural Gas (LNG) Import Project, Los Angeles County, CA.** Under contract to the City of Long Beach, Mr. Debauche prepared the EIR analyses for the proposed construction and operation of this new onshore LNG facility.
- **Lake Gregory Dam Rehabilitation Project, San Bernardino County, CA.** The project included dam stabilization including the removal of existing rock on the downstream slope, removal of foundation material at the base of the dam, and construction of a new 25-foot thick earthen buttress extending beyond the current toe of the embankment, installation of a drainage system to pick up water moving through the liquefaction zone, and placement of new slope protection.
- **Coolwater Lugo Transmission Project, Riverside and San Bernardino Counties, CA.** Under contract to the CPUC, Mr. Debauche analyzed noise impacts of Southern California Edison's (SCE's) proposed 75-miles of new 500- and 220-kilovolt (kV) transmission line.
- **Alta East Wind Project EIS/EIR, Kern County, CA.** Prepared the noise analysis for 120 wind turbine generators, their ancillary facilities, and approximately 20 miles of supporting transmission line infrastructure located on both Kern County and BLM lands.
- **Donnell Basin Flood Control Project, San Bernardino County, CA.** For the San Bernardino County Department of Public Works, this project included the construction and maintenance of a series of improvements to the existing Donnell Basin to increase its capacity and provide downstream flood hazard protection.

Transportation and Traffic Analyses for:

- **Santa Margarita Quarry Expansion Project, San Luis Obispo County, CA.** This project expands the existing surface mine by adding an additional 369 acres to the existing entitled mining footprint and buffer area and extends the estimated duration of mining activities by approximately 59 years.
- **Littlerock Reservoir Sediment Removal Project, Los Angeles County, CA.** Construction of an upstream grade control structure and removal of 1.5 million cubic yards of sediment to restore the Reservoir to design capacity. The Reservoir and dam are operated by Palmdale Water District and located on US Forest Service lands in the Angeles National Forest.
- **Port of Long Beach Eagle Rock Terminal Project, Los Angeles County, CA.** Under contract to the Port of Long Beach (in cooperation with the Army Corps of Engineers), the project included a sand, gravel and granite aggregate receiving, storage and distribution terminal.
- **Dola and Lanzit Bridge Replacement Project, San Bernardino County, CA**. For the County of San Bernardino Department of Public Works, this project includes the replacement of both the Dola and Lanzit trestle bridges with new bridges on U.S. Highway 66/National Trails Highway.
- **Tehachapi Renewable Transmission Project (TRTP Segments 4 through 11), Kern, Los Angeles, and San Bernardino Counties, CA**. Under contract to the CPUC, this project evaluated SCE's 173-miles (of which 42-miles traversed US Forest Service lands) of new 500 kV electric transmission lines and substations to deliver electricity to Los Angeles from new wind energy projects developed in the Tehachapi Mountain area in eastern Kern County.

DIANA T. DYSTE, MA, RPA

Senior Cultural Resources Specialist

Academic Background

MA, Archaeology, University of California, Santa Barbara, 2010
BA, Anthropology, University of California, Santa Barbara, 2002

Professional Experience

Ms. Dyste is a Senior Cultural Resources Specialist with over 16 years of experience in cultural resources management. She is responsible for ensuring the accurateness and adequacy of final reports related to cultural resources projects, including recommendations for the avoidance, treatment, or mitigation of cultural resources and determination-of-eligibility recommendations. Her work includes the review of EA, EIS and cultural resources Class I, II and III reports, including public and tribal comment and response; development of research designs; design and implementation of Phase I, II and III cultural resources plans including the supervision of small to large sized field crews. Mrs. Dyste is qualified to conduct zooarchaeological, paleoethnobotanical, and ethnographic analyses. She also is able to analyze cultural spatial patterns using GIS and Total Station (a digital laser theodolite used to survey and 3D modeling of the landscape). Ms. Dyste meets the Secretary of the Interior's qualification criteria as an archaeologist and has extensive experience preparing environmental documents pursuant to applicable federal, state and local regulations. She is highly effective in managing projects in compliance with the California Environmental Quality Act (CEQA) and Assembly Bill 52 (AB 52). Ms. Dyste has received formal training in Section 106 and 110 compliance of NHPA, NEPA, and the Archaeological Resources Protection Act (ARPA), and has completed several courses in Native American environmental law, Indigenous research methodologies, and Community-based Participatory Action Research with tribal and special interest groups. She is fluent in Spanish.

Aspen Environmental Group 2015-Present

- **ERG West Cat Canyon Revitalization Plan EIR, Santa Barbara County (2015-2016).** Ms. Dyste is responsible for final review of compliance documents and the cultural section of the EIR. ERG plans to expand oil and gas production on their property and lease holdings within West Cat Canyon Oilfield located in the Santa Maria Basin. Activities associated with the project include the development, operation, or expansion of two-hundred and thirty three (233) new production wells; one-hundred and two (102) well and equipment pads; nine (9) production facilities; and the replacement of a Public Utility Commission (PUC) natural gas pipeline within ERG's 8,054-acres property.
- **Mission Rock Energy Center, California Energy Commission (2016-present).** Ms. Dyste provides ongoing support to CEC Staff in response to an application for a proposed natural gas-fired, simple-cycle combustion turbine electrical generating facility located in Santa Paula, CA. Ms. Dyste supervises junior staff, and co-authored Data Adequacy, Data Request, and Issues ID reports. She also conducted analyses pertaining to potential adverse impacts to cultural resources located within and adjacent to the proposed project area. This work included the identification, review and evaluation of data provided by the Applicant and the Applicant's contractor. Ms. Dyste contributes to a critical assessment of project documentation through 1st person archival research at local historical museums and societies, as well as by conducting literature reviews at the California Historical Resources South Central Coastal Information Center (SCCIC) and Native American Heritage Commission (NAHC). Upcoming project work will include recordation and evaluation of historical district elements dating to the late 19th and early 20th century, and assessing potential visual impacts on the historical landscape in and surrounding the proposed project area in order to write Preliminary and Final Staff Assessments (PSA/FSA). Ms. Dyste has applied spatial analytical skills (GIS) in order to understand the

relationships that may exist between numerous historical resources, prehistoric resources, and historical districts, and applies ESRI software in assessing the completeness of prior pedestrian surveys.

- **Sonoran Energy Project, California Energy Commission (2015-present).** The proposed project is a modification of the approved Blythe Energy Project Phase II, which is an existing natural gas 520 MW combined-cycle power plant in Blythe, CA. Ms. Dyste provides written testimony as co-author of the Preliminary Staff Assessment and Final Staff Assessment, and is primarily responsible for staff analysis of potential project impacts to known cultural resources, including historical canals in and adjacent to the project area, as well as identifying and evaluating the applicability of federal, state, and local laws, ordinances, and regulations (LORs). Ms. Dyste is responsible for the coordination of the California State Office of Historic Preservation and relevant federal agencies in support of a Memorandum of Agreement stipulating mitigation measures for resources listed as eligible for the National Register of Historic Places and possibly contributing to the Desert Training Center Cultural Landscape (DTCCL) identified during the 2010-2013 Blythe/Genesis/Palen solar projects. Ms. Dyste attends and participates in in the presentation of finding related to cultural resources at public Workshops and Staff meetings. She provides timely responses to Staff and Commissioner's Advisors' questions related to cultural and tribal resources located within the proposed project area.
- **Confidential Client Third-Party Reviewer and Supplemental Technical Report Support (2015 - present).** Ms. Dyste conducted a third party review of the project cultural resources report and prepared a supplemental report providing compliance with CEQA laws and regulations in support of a small photovoltaic solar project in the southern desert region of California.
- **Confidential Client, Worker Environmental Awareness Program (WEAP) (2015).** Ms. Dyste provided a review of WEAP support documents related to the construction of a small photovoltaic solar energy facility located on private land in southern California. Ms. Dyste subsequently became lead author of the cultural resources section of the WEAP training brochure.
- **San Bernardino County, Institution Road Reconstruction and Maintenance Project, Initial Study/Mitigated Negative Declaration, Cultural Resources Record Search and Technical Report (2016-present).** Ms. Dyste provides oversight to junior staff in conducting a cultural resources record search and drafting a technical report to fulfill CEQA requirements related to cultural resources for the reconstruction of Institution Road, and acts as a reviewer for the cultural resources and paleontology IS/MND sections.

Los Padres National Forest, U.S. Forest Service 2000-2008

Ms. Dyste has extensive experience managing NHPA Section 106 and NEPA cultural resources projects, including the identification and evaluation of historic and prehistoric cultural resources located in historic oil fields, electrical transmission line projects, telecommunications tower projects, large multi-District grazing allotment permitting, Special Use Permitting (SUPs), Emergency Relief for Federally Owned Roads (ERFO), Off-Highway Vehicles (OHV) Special Use, historic Lookout Tower and historic Cabin assessments, and California Conservation Corps (CCC) era resources assessments. She is an experienced member of interdisciplinary federal Burn Area Emergency Response (BAER) teams, and has worked as a Fire Suppression and Rehabilitation team archaeologist for areas of controversial tribal/public resources. Ms. Dyste was author of annual end-of-year Department of the Interior audits for cultural resources projects related to Section 106 and 110 compliance.

- **Phase II/III – Built Environments** Ms. Dyste was a core member of Phase II and Phase III cultural-biological teams that provided guidance and recommendations for avoidance or mitigation of potential impacts to sensitive cultural resources and endangered plant and animal species. These

federal projects focused on the development of sustainable environments for wildlife and other biological species in tandem with the renovation or new construction of federal buildings, roads, bridges, and public use areas such as campgrounds. Key projects that exemplify work related to the construction or modification of built environments include: Lion Campground Closure, Rehabilitation and Restructuring project; Los Prietos Office Expansion project; Wheeler Gorge Well Installation; Wild and Scenic River Suitability and Comprehensive River Management Plans; SCE Electrical Poles and Archaeological Monitoring project; and the Croteau Water Transmission Line Special Use Permit.

- **Project Management, Phase II** Ms. Dyste was responsible for both the design of projects and final report writing, as well as performing review and quality checks to ensure the accurate reporting of cultural resources impacts, mitigation measures, and determinations of eligibility proposed by contract archaeologists and Forest junior archaeologists. In addition, she provided oversight to contract crews (4-9 person crews) in terms of arranging logistics, providing safety training, and assisting crews with the editing and finalizing of Heritage Resources Reports, cultural sections of EIS documents, and state DPR resources forms. This work included 23 trails projects related to the rehabilitation of natural environments and mitigation of ongoing impacts to cultural resources caused by off-road bike and pedestrian traffic. Also included are 45 Emergency Relief for Federally Owned Roads (ERFO) projects that involved the re-routing and re-construction of washed out backcountry access roads critical to fire control and general oil, gas, mineral and timber extraction purposes.
- **Phase I – Federal Information Requests** As a GS-7 and GS-9, Ms. Dyste managed over 3,000 cultural resources reports, approx. 1,300 site records and approximately 600 historic newspaper articles related to Forest history. She performed all in-house and contract-based Phase I data requests (similar to CHRIS info requests) for the presence of cultural resources or previous surveys in project areas located on the Forest. This work entailed use of primary historic maps and rosters, genealogical sources, as well as print and GIS data. A few examples include: SCE Cachuma Electrical Distribution System: Operation, Maintenance, and Use; Black Bob Quarry Site Cleanup; Sunshine Springs Norman SUP; and the American Towers Electrical Installation.
- **Burned Area Emergency Response Team (BAER dates)** As a GS-9, Ms. Dyste served as a member of the U.S. Department of Agriculture BAER Teams, involving archaeologists, biologists, GIS specialists, hydrologists, botanists, and fire experts. Ms. Dyste itemized all cultural sites damaged during fire activity and suppression efforts, performing site visits as needed, and made final recommendations for site rehabilitation or emergency mitigation (i.e., excavation).

AB 52 Tribal Outreach & Section 106 Tribal Consultation 2000-Present

- **Confidential Client, Archaeological and Tribal Outreach Services (2015-present).** The proposed project is a solar photovoltaic (PV) generation project on Bureau of Land Management (BLM) managed land in southern California. As a Senior Cultural Resources Specialist at Aspen, Ms. Dyste assists with providing California AB 52 and NHPA Section 106 tribal outreach support.
- **Co-Principal Investigator, Wind Wolves Preserve, CA (2015-Present).** Ms. Dyste is investigating diachronic patterns of use at prehistoric and proto-historic Chumash fertility sites. Her ethno-archaeological work is in its early stages of development and includes outreach to both federally recognized and non-federally recognized tribes, including the Tejon Indian Tribe, Santa Ynez Band of Chumash Indians and other Chumash descendant groups. Research will include zooarchaeological, lithics, groundstone, Total Station/GIS, and XRF Laser Scanning technology studies and will complement ongoing landscape studies by Dr. Robinson of University of Central Lancashire.
- **Confidential Client, Tribal Liaison Services (2015).** As part of advance planning for a proposed solar project on BLM land in southern California, Ms. Dyste acts as a supporting tribal liaison and is

responsible for drafting outreach letters, and coordinating planning meetings inclusive of federal, state, public interest groups, and both federally recognized and non-federally recognized tribal groups.

- **Los Padres National Forest, Government-to-government Tribal Consultation (2000-2008).** Ms. Dyste co-managed numerous Section 106 government-to-government tribal consultation meetings concerning the preservation and restoration of Chumash spiritual places of importance, including highly politicized locations such as Pool Rock and Painted Cave. Consultation also focused on broad landscape needs of tribal members and the preservation of ancestral botanical gathering areas located in Monterey, San Luis Obispo, Ventura, Kern, and Los Angeles Counties. Ms. Dyste was the chief Recorder for all tribal consultation meetings, mediations, and oral interview events, per request of the tribal elders and Forest Service Tribal Liaison. Additional duties included establishing meeting itineraries, arranging meeting venues, providing technical support to Forest Service Staff and Tribal Elders, arranging food services, establishing positive rapport with tribal members, as well as the public presentation of project aspects and related Q&A, and the creation of official meeting transcripts.

- **Los Padres National Forest, Native American Graves Repatriation Act (NAGPRA) Compliance (2006-2008).** Ms. Dyste assisted with NAGPRA compliance for the Los Padres National Forest by drafting outreach letters, as well as assisting with logistics and technological needs of meetings. Ms. Dyste was responsible for recording and responding to tribal concerns regarding the possible repatriation of Forest artifact and burial collections. Meetings involved members of the federally recognized Santa Ynez Band of Chumash Indians, as well as non-federally recognized groups such as the Salinan Tribe, Salinan Nation, Esselen Tribe of Monterey County, Tejon Indian Tribe of California, and non-federally recognized Chumash descendants.

Professional Training

- Cultural Resources Management Project Budget Management Training, with American Cultural Resources Association (ACRA) (2016).
- "The Section 106 Essentials," with the Advisory Council on Historic Preservation (2005)
- Archaeological Resources Protection Act (ARPA), US Forest Service Intra-agency training (2005)
- Workshop titled, "Negotiation Skills," American Anthropological Association Annual Conference (2005)

Selected Publications and Reports

- "Archaeological Resources Protection Act: A Programmatic Assessment of the Los Padres National Forest's Implementation of the Law," UC Santa Barbara (2010)
- "Preliminary Staff Assessment for the Sonoran Energy Project," Cultural Resources section, co-author, California Energy Commission (2016)

ROBERT S. GLEATON, MA, RPA

Cultural Resources Specialist

Academic Background

MA, Cultural Resources Management, Sonoma State University, 2015
BA, Anthropology, Sonoma State University, 2007
AS, Archaeological Technology, Cabrillo College, 2004

Professional Experience

Mr. Gleaton has over 15 years of experience performing fieldwork, research, analysis, and writing about archaeology and anthropology. He is responsible for preparing cultural resources portions of environmental documents, field and desktop project reports, and resource eligibility recommendations, as well as organizing and performing fieldwork, performing Native American-outreach, geographic spatial analysis, and technical editing. Mr. Gleaton is experienced in preparing environmental documents pursuant to applicable federal, state, and local regulations in California. These documents emphasize compliance with CEQA, NEPA, Section 106 and Section 110 of the National Historic Preservation Act (NHPA), and Federal Land Policy and Management Act (FLPMA. Mr. Gleaton is a Registered Professional Archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards as an archaeologist and has specialized knowledge in the history, prehistory, and geomorphology of California.

- **West Cat Canyon Revitalization Plan EIR, Santa Barbra County (2015-2016).** Mr. Gleaton is responsible for reviewing CEQA compliance documents and preparing the cultural section of the EIR based on subcontracted technical reports and performing a buried site sensitivity analysis. ERG Operating Company is planning to expand development on its property and lease holdings within the Western portion of the State Designated Cat Canyon Oilfield to an active state of oil and gas production located in the Santa Maria Basin. Activities associated with the project include the development, operation, or expansion of 233 new production wells, 102 well and equipment pads, and 9 production facilities, and the replacement of a natural gas pipeline within an 8,054-acre property.
- **E-Screen Projects (2014-2015):** PG&E, in a programmatic agreement throughout California, replaced a large amount of its utility poles. Mr. Gleaton's duties included writing and reviewing Cultural Resource Constraint Reports (CRCRs) for over 300 utility pole locations. The evaluation included a formal records search of the California Historical Resources Information System (CHRIS), PG&E's MapGuide cultural resource GIS layer, historic maps and aerials, ethnographic literature, and soils and geological maps. The desktop reviews included a buried site sensitivity analysis and risk assessment for any potential cultural resources that might be impacted by the endeavor. Mr Gleaton also was tasked with the monitoring of pole replacements.
- **Lake Pillsbury West Shore Projects (2015):** For PG&E, Mr. Gleaton conducted the cultural resources survey that included recording a historic-era site. The projects involved the West Shore Campers Association proposal to replace their current water lines due to the age and general fatigue of the pipes, and the placement of a boat ramp located on PG&E's Lake Pillsbury Campers Lease area lands within Lake Pillsbury, Lake County, California.
- **Valley Fire Emergency Response (2015):** For in the rapid emergency response of the Valley Fire that burned 76,067-acres and 1,958 structures in southern Lake County, California. Mr. Gleaton assisted the PG&E and local Native American tribal representatives in identifying and mitigating impacts to known cultural and tribal cultural resources affected by the fire. Specifically, the work involved monitoring of emergency work to utility poles, power lines, and damaged trees.

- **SURGE Projects (2013-2014):** For the replacement of numerous utility poles throughout its service area, Mr. Gleaton wrote and reviewed Cultural Resource Constraint Reports (CRCRs) for over 300 utility pole locations. This evaluation included a formal records search of the California Historical Resources Information System (CHRIS), PG&E's MapGuide cultural resource GIS layer, historic maps and aerials, ethnographic literature, and soils and geological maps. The desktop reviews conducted by Mr. Gleaton included a buried site sensitivity analysis and risk assessment for any potential cultural resources that might be impacted by the endeavor.
- **Sanborn Slough 3-D Seismic Survey Project (2008):** The seismic survey project, located in Colusa County, California, included locating and marking boreholes and geophone locations for the discovery of natural gas. At each source point, a hole was drilled, and explosive charges were placed in each hole and detonated. To implement the recommendations made in a prior initial cultural resources evaluation report, and to meet the requirements placed on the project by the Colusa County Department of Planning and Building and the Army Corps of Engineers. Mr. Gleaton provided supervisor and worker education about cultural resources, construction monitoring, and a field survey for the identification of any potential cultural resources of all source points in an approximate 23-square mile area.
- **Mission Rock Energy Center, Cultural Resources Staff Assessment, Ventura County (2016-present).** The proposed MREC will be a natural gas-fired, simple-cycle combustion turbine electrical generating facility with generating capacity of 275 megawatts (MW), co-located with battery units that can deliver an additional 25 MW. The project is located in unincorporated Ventura County, west of the City of Santa Paula. Mr. Gleaton is part of the Aspen technical staff analyzing the impacts to cultural resources.
- **Sonoran Energy Project, Cultural Resources Assessment, Riverside County (2016-present).** The proposed project is an addition to the approved Blythe Energy Project Phase II which is an existing natural gas 520 MW combined-cycle power plant in Blythe, California. The amendment proposes a new point of electrical interconnection via transmission line, the replacement of two combustion turbines and a turbine single-shaft, an increase the size of an existing boiler, and a decrease the size of an existing cooling tower and emergency diesel fire pump engine. Mr. Gleaton serves as a technical reviewer for the cultural resources section of this document.
- **Rancho Murieta Standards District Solar Photovoltaic Project IS/MND and AB 52 Support Services (2016-present).** The Rancho Murieta Community Standards District (District) is proposing to install two (2) ground mounted solar photovoltaic (PV) electrical generating facilities on District-owned property for the generation of solar power. These solar power facilities are to be adjacent to the District Wastewater Treatment Facility within the community of Rancho Murieta in Sacramento County and combined are to be 5 - 6 acres in size. Mr. Gleaton is co-authoring the cultural resources, tribal cultural resources, and paleontology sections of the IS/MNDs and providing support for the District during AB 52 consultation meetings.
- **Three Small Solar Power Facilities IS/MND and AB 52 Support Services (2015).** The proposed project includes the construction of three small solar power facilities. Mr. Gleaton is responsible for providing support during AB 52 tribal representatives. Support includes memos summarizing the history and prehistory of the project areas and a study determining the sensitivity of the project areas for buried resources. Mr. Gleaton is also an author of the cultural resources, tribal cultural resources, and paleontology sections of two IS/MNDs for the project.
- **100-Acre Solar Power Project (2015-present).** The proposed project is a 20 MW alternating current photovoltaic solar electric power generating facility on approximately 100 acres of private land in southern California. Aspen is providing a supplemental cultural resources report in support of CEQA

compliance efforts, for which Mr. Gleaton conducted a third party review, assessment of previous cultural resources technical reports, and is co-authoring the supplemental report.

- **Priest Rapids Hydroelectric Project, Excavation and Evaluation Report, Grant County, WA. (2010-2011)** On behalf of the Grant County Public Utility District, NRHP evaluative test excavations were conducted on over 300 prehistoric and historic sites located along the Columbia River as part of the Federal Energy Regulatory Commission (FERC) operating license. Mr. Gleaton's duties included leading a crew of up to ten (10) people for the subsurface archaeological testing of historic and prehistoric sites and isolates, construction monitoring, and co-authoring a National Register test excavation evaluation report for thirteen prehistoric and historic sites.

Other Projects for CEQA Lead Agencies

- **Institution Road Reconstruction and Maintenance Project, Initial Study/Mitigated Negative Declaration, Cultural Resources Record Search and Technical Report (2016-present).** The San Bernardino County Department of Public Works plans the reconstruction of Institution Road over a distance of approximately 5,400 feet to a uniform 26 foot paved width and a maximum 10 foot temporary disturbance at the shoulder areas (total of 20 feet). The Project is to provide improvements and maintenance to Institution Road, which is the primary access route to the San Bernardino County Sheriff Training Facilities and Rehabilitation Center, the Glen Helen Off-road Vehicle recreation area, and County Fire facilities. Mr. Gleaton is preparing a cultural resources record search and technical report, and cultural resources and paleontology IS/MND sections.
- **The Calistoga Village Project (2015):** The project consisted of building seven duplexes, two residences and the moving of an existing residence on 2.23-acres within the City of Santa Rosa, California. The project occurred within the boundaries of a known prehistoric archaeological site. Mr. Gleaton's duties included co-authoring a cultural resources report regarding the evaluation of the site for its determination of eligibility for listing on the CRHR.
- **The Ascher Rideout Forsythe Creek Road Upgrade Project (2013):** The Mendocino County Resource Conservation District proposed project involved the cultural resources inventory for forty-eight specific areas to be developed and altered within private properties situated along and near Reeves Canyon Road and within the surrounding hills located in Mendocino County, California. Proposed development and alteration included the removal and replacement of culverts, the installment and grading of rolling reliefs, and the installment of rock armored fill and corrugated metal pipes at various locations within the subject properties. Mr Gleaton duties included acting as the sole cultural resources surveyor that identified and recorded several prehistoric-era cultural resources, conducted archeological monitoring, and was the author of the technical report.
- **The Marina Bay Parkway Grade Separation Project (2013-2015):** The Marina Bay Parkway Grade Separation Project is an estimated $37.5 million project with redevelopment funding from the California Department of Finance and others. The project involves the development of an underpass within the City of Richmond, California, on a known prehistoric archaeological site and an archeological district. Mr. Gleaton's duties include conducting subsurface excavation and testing on the prehistoric site, construction monitoring, and is a contributing author to the technical report that complies with CEQA and the City of Richmond's Historic Structures Code.
- **Bogle Wind Turbine Project EIR (2015-present).** Bogle Vineyards is proposing to construct a single large wind turbine that would generate 1.85 megawatts (MW) of electricity, to be used to power the Bogle winery production facility near Clarksburg, California. Mr. Gleaton serves as a technical reviewer and co-author of the cultural resources EIR section.

- **Thousand Palms Flood Control Project, SEIR/SEIS (2016).** The Coachella Valley Water District (CVWD) proposes to construct the Thousand Palms Flood Control Project. The proposed Project includes a series of flood control improvements to minimize flooding hazards in the Thousand Palms area, located in the Coachella Valley, Riverside County, California. Components of the proposed Project include the development of levees, channels, and energy dissipating structures. Mr. Gleaton served as co-author for the SEIR/SEIS cultural resources sections.

Professional Affiliations and Memberships

- Registered Professional Archaeologist (RPA) # 35258064
- Society for American Archaeology (SAA)
- Society for California Archaeology (SCA)
- Santa Cruz Archaeological Society (SCAS)

HEDY B. KOCZWARA
Senior Associate

Academic Background

MS, Earth Systems, Stanford University, 2001
BS, Earth Systems, Stanford University, 2000

Professional Experience

Ms. Koczwara is an environmental scientist with management and technical experience preparing federal, state and local environmental, planning, and analytical documents under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). Her project experience includes both linear and site-specific projects such as oil and gas development, transmission lines, pipelines, renewable and gas-fired power plants, and infrastructure development and improvement projects. She prepares technical analyses and coordinates with specialty subcontractors, and she manages and provides management support in client interaction, public involvement, and overall document coordination and production.

- **Analysis of Oil and Gas Well Stimulation Treatments in California EIR, Department of Conservation (2013-2015).** Ms. Koczwara served as Deputy Project Manager and was responsible for developing the project description and comparison of alternatives for an extremely controversial EIR evaluating oil and gas well stimulation treatments throughout California, as required by Public Resources Code Section 3161 (b)(3) and (4) (Senate Bill 4 [Pavley]). The law required the Division of Oil, Gas and Geothermal Resources (DOGGR) to evaluate the impacts of well stimulation treatments that may occur from either existing or future oil and gas wells, including hydraulic fracturing, acid fracturing and acid matrix stimulation. The Project Description involved extensive research and coordination with agency and industry representatives, including a site visit to Aera Energy LLC's facilities in Belridge, to gather well stimulation information specific to California.

  The EIR evaluates well stimulation treatments geographically according to study regions encompassing DOGGR's six administrative Districts at a programmatic level of analysis. The EIR includes analysis of the 17 subject areas provided in Appendix G of the CEQA Guidelines, as well as risk of upset/worker and public safety, environmental justice, offshore marine biological resources, and coastal processes and marine water quality. Due to high level of public concern about hydraulic fracturing, Ms. Koczwara presented preliminary findings and EIR conclusions to Governor Jerry Brown both before and after publication of the Draft EIR.

  In addition to preparation of the EIR, Aspen assisted the Department of Conservation with the coordination and facilitation of public workshops, as well as project-related public and agency noticing. The Final EIR was certified in June 2015 on a highly accelerated schedule. In February 2016, the Association of Environmental Professionals presented to Aspen a Merit Award for the EIR, based on the document's unprecedented breath of geographic coverage and the scope of its subject-specific analyses. The Awards Jury said that the EIR will be used for years to come to inform downstream CEQA documents, as a source of potential mitigation measures, and also to comply with regulatory processes required by SB 4.

- **US Department of Interior, Minerals Management Service (MMS), Environmental Information Document (2004-2005).** Ms. Koczwara assisted with the preparation of a comprehensive summary of environmental effects of potential new southern California's offshore oil and gas exploration and development, including a cumulative impact assessment. The Department of Interior's MMS used the EID to support Coastal Consistency Determinations for the remaining undeveloped leases off-shore Santa Barbara, Ventura, and San Luis Obispo Counties. Ms. Koczwara generated and updated

the list of cumulative projects in the study area to 2030, edited and streamlined the impact assessments, responded to agency comments, and organized and compiled the list of references.

- **Hollister Oil and Gas EIS and RMP Amendment, BLM (2014-present).** On behalf of the BLM Hollister Field Office (HFO, now called Central Coast Field Office), Ms. Koczwara is Project Manager for the preparation of a resource management plan (RMP) Amendment and associated EIS to guide management of oil and gas resources on BLM-administered mineral estate within the HFO. The EIS/RMP Amendment analyzes the effects of alternative oil and gas management approaches to update the reasonably foreseeable development scenario (RFD) and the existing 2007 Hollister RMP in order to incorporate new information about well stimulation technologies, natural resource conditions, and socioeconomic trends. The final amended RMP will identify which lands are open or closed to oil and gas leasing and which stipulations would be applied on oil and gas exploration and development activities in order to protect environmental resources. The Planning Area covers twelve counties: Alameda, Contra Costa, Fresno, Merced, Monterey, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, and Stanislaus Counties. Ms. Koczwara was author of the RFD update, Introduction and Project Description. The Draft EIS/RMPA is scheduled to be published in June 2016 with Aspen to coordinate 3 public workshops during its 90-day comment period.
- **Division of Oil, Gas, and Geothermal Resources (DOGGR), CEQA Compliance Program (2002).** The intent of the Initial Study was to evaluate DOGGR's CEQA Compliance Program for oil and gas well drilling in Kern County, including the revision of DOGGR's CEQA regulations that are applicable state-wide and the assessment of environmental issues associated with oil and gas well drilling in Kern County. Ms. Koczwara researched and wrote the Population and Housing section of the Initial Study.
- **Concord-Sacramento Pipeline Project EIR, California State Lands Commission (CSLC) (2002-2003).** Ms. Koczwara wrote the Project Description and the Land Use baseline setting, as well as acted as the Project Manager's assistant for this CSLC project evaluating a proposed 70-mile petroleum products pipeline through Contra Costa, Solano, and Yolo Counties. She distributed data to the section authors, coordinated maps for the routes, and prepared the cumulative impact scenario section based on a compilation of projects gathered from local planning agency representatives. Ms. Koczwara also responded to comments on the Draft EIR, assisted in preparation of the Final EIR, and helped compile and write the Findings of Significance based on the Final EIR.
- **Kirby Hills Natural Gas Storage Facility IS/MND, California Public Utilities Commission (CPUC) (2005-2006).** As Deputy Project Manager, Ms. Koczwara was responsible for the research and writing of the Aesthetics, Agricultural Resources, Population and Housing, Public Services, and Utilities and Service Systems sections of the IS/MND for the proposed use of a depleted gas reservoir in Solano County, for the temporary storage of natural gas by Lodi Gas. The CPUC granted a CPCN on March 2, 2006.
- **California Energy Commission (CEC) (2002-present).** Ms. Koczwara is an author and technical specialist in the environmental review of power plant applications. She also researches and writes planning and siting reports in compliance with CEQA and NEPA. Ms. Koczwara has written the alternatives analyses for over 10 power plant siting projects and has been the project manager and analyst of 4 socioeconomics analyses as well, including the Chevron Richmond Power Plant Replacement Project, which was ultimately suspended. In addition, she served as project manager and writer of the Transmission System Engineering Assessments for Ivanpah Solar Electric Generating Station and Colusa Generating Station, which analyzed the indirect impacts of transmission upgrades that would be necessary with construction of the power plants. Likewise, she was the writer of the project description and cumulative analysis of the 65-mile SCE Lugo-Pisgah transmission line upgrades,

which were analyzed for each issue area as a reasonably foreseeable future action of the new Calico Solar Project.

- **SONGS/Diablo Canyon Steam Generator Replacement Project EIRs, CPUC (2004-2005).** Provided assistance to the Project Managers and helped to organize the public participation process during the preparation of two EIRs for projects proposing to replace the steam generators at SCE's San Onofre Nuclear Generating Station (SONGS) near San Clemente in San Diego County, as well as at the PG&E Diablo Canyon nuclear power plant near San Luis Obispo. Ms Koczwara wrote the alternatives section for the SONGS EIR. She also arranged two public scoping meetings in October 2004 and wrote the Notice of Preparation for the SONGS project, wrote and organized the publication of newspaper notices for both projects, and wrote the content for the projects websites. She also assisted in editing and document production of the Draft EIRs. Read and bracketed comment letters and created a comment table to manage responses for the Final EIR.
- **Devers–Palo Verde No. 2 Transmission Line Project EIR/EIS, CPUC and BLM (2005-2014).** Ms. Koczwara served on the project management team for the EIR/EIS, which evaluated a proposed 280-mile 500 kV and 230 kV transmission line between the Palo Verde generating hub in Arizona and SCE's system in Riverside County. Among other responsibilities, she managed preparation of the 100-page Alternatives Screening Report, which evaluated and screened over 30 alternatives. The Environmentally Superior Alternative in the EIR/EIS, which incorporated three of the route segment alternatives, was approved by the CPUC on January 25, 2007.
- **Other CPUC Projects (2002-present).** In addition to the CPUC projects above, Ms. Koczwara has also managed, prepared technical analyses, and worked on the following 16 projects since 2002:
  - *SCE West of Devers Upgrade Project*, CPUC and BLM (2013-present).
  - *SCE Banducci 66 kV/12 kV Substation Project IS/MND* (2012-present)
  - *PG&E Embarcadero-Potrero 230 kV Transmission Project IS/MND* (2013-2014)
  - *PG&E Cressey-Gallo 115 kV Powerline Project Draft IS/MND* (2012-2014)
  - *PG&E Seventh Standard 115 kV/21 kV Substation IS/MND* (2008-2009)
  - *SCE Riverway Substation Project IS/MND* (2007)
  - *SCE Colorado River Substation Expansion Project Supplemental EIR* (2010-2015).
  - *SDG&E Sunrise Powerlink Project EIR/EIS*, CPUC and BLM (2006-2013).
  - *Indian Springs Telecomm Project IS/MND* (2009-2010)
  - *SCE Antelope-Pardee 500 kV Transmission Line Project EIS/EIR*, CPUC and USFS (2005-2007)
  - *PG&E Jefferson-Martin 230 kV Transmission Line Project EIR* (2002-2004)
  - *SDG&E Miguel-Mission 230 kV #2 Transmission Project EIR* (2003-2004)
  - *Looking Glass Network Fiber Optics Project* (2002-2003)
  - *Williams Communications Sentry Marysville Project IS/MND* (2002-2003)
  - *SCE Viejo System Project IS/MND* (2003-2004)
  - *PG&E Paradise Mitigation Implementation and Monitoring Report* (2002)
- **California Valley Solar Ranch EIR, San Luis Obispo County (2009-2011).** Ms. Koczwara was Deputy Project Manager for the Draft EIR of this proposed 250 MW photovoltaic (PV) solar power plant in the unincorporated portion of eastern San Luis Obispo County. A 3.5-acre substation and approximately 2.8 miles of 230 kV transmission line would be required to connect to the existing PG&E Midway to Morro Bay 230 kV transmission line and an aggregate mine has also been proposed as part of the project. Major issues of concern included a range of listed biological resources, location of a large industrial facility in a scenic and undeveloped area, and loss of agricultural resources. In addition, Ms. Koczwara reviewed the analysis of reconductoring of the 34-mile PG&E Solar-Midway 230 kV transmission line, which would be required for interconnection of the solar

projects in the Carrizo Plain and was included as an appendix to the EIR. The Draft EIR was published in August 2010 and the Final EIR in January 2011.

- **South San Joaquin Irrigation District's (SSJID) Acquisition of the Pacific Gas and Electric Company System, San Joaquin County (2005-2006).** On behalf of San Joaquin County Aspen prepared an application and an EIR on SSJID's proposal to acquire specific electric distribution assets currently owned and operated by PG&E within southeastern San Joaquin County and including the Cities of Manteca, Ripon, and Escalon. The acquisition would result in the construction of some new facilities, including a new substation, and some changes in operation of existing facilities. Ms. Koczwara was responsible for researching and writing the Socioeconomics, Visual Resources, Cultural Resources, Land Use, Public Services and Utilities, Agricultural Resources, and Recreation sections for the application and prepared the same sections for the EIR. The EIR was certified in June 2006.

Awards and Training

- 2016 Association of Environmental Professionals, Outstanding Environmental Analysis Document Merit Award, Analysis of Oil and Gas Well Stimulation Treatments in California EIR
- 2014 National Association of Environmental Professionals, NEPA Excellence Award, Burning Man 2012-2016 Special Recreation Permit Environmental Assessment
- 2009 Association of Environmental Professionals, Outstanding Environmental Analysis Document Merit Award, Sunrise Powerlink Transmission Project EIR/EIS
- Received Aspen Environmental Group colleague recognition award of excellent performance (2008)
- 2008 Community Resources "Dream Team" from the California Energy Commission
- 2006 Environmental Award for Los Angeles Unified School District's New School Construction Program EIR (certified in June 2004), American Planning Association (APA), Los Angeles Section
- 2004 Association of Environmental Professionals, Outstanding Environmental Analysis Document, Jefferson-Martin Final EIR
- *Extension Course*s *Attended*: Project Management Bootcamp; Planning in California: An Overview and Update; GIS for Resource Managers and Professionals; National Environmental Policy Act (NEPA) Overview and Refresher, Making Effective Use of Mitigated Negative Declarations (MND), and California Environmental Quality Act (CEQA) Two-Day Workshop.

Aspen Environmental Group

JENNIFER LANCASTER
Senior Biologist

Academic Background

MS, Biology, California State University, Northridge, 2005
BS, Biology, University of California, Riverside, 2002

Professional Experience

Ms. Lancaster has nine years of experience at Aspen Environmental Group preparing documents in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), as well as NEPA/CEQA joint documents. She is also experienced with supporting agency clients through the Section 7 process and compliance with the federal and California Endangered Species Acts, as well as participating in environmental policy working groups on behalf of agency clients. She has 13 years of experience in botanical and wildlife field surveys and report preparation. Her biological background includes native habitat restoration, rare plant field studies, laboratory analysis, experimental design, teaching, and logistical support for field surveys. Select project experience includes:

- **ERG West Cat Canyon Revitalization Plan Project EIR, Santa Barbara County, Energy Division (Current).** Ms. Lancaster currently is helping prepare the EIR for this project, and will be providing the Biological Resources analysis.
- **Analysis of Oil and Gas Well Stimulation Treatments in California EIR, Department of Conservation (2013-2015).** Ms. Lancaster was one of the authors of the biological analysis for the well stimulation EIR. The EIR evaluates well stimulation treatments geographically according to study regions encompassing DOGGR's six administrative Districts at a programmatic level of analysis. In February 2016, the Association of Environmental Professionals presented to Aspen a Merit Award for the EIR, based on the document's unprecedented breath of geographic coverage and the scope of its subject-specific analyses. The Awards Jury said that the EIR will be used for years to come to inform downstream CEQA documents, as a source of potential mitigation measures, and also to comply with regulatory processes required by SB 4.
- **Hollister Oil and Gas EIS and RMP Amendment, BLM (2014-present).** Ms. Lancaster co-authored the biological resources analysis for a resource management plan (RMP) Amendment and associated EIS to guide management of oil and gas resources on BLM-administered mineral estate within the HFO. The EIS/RMP Amendment analyzes the effects of alternative oil and gas management approaches to update the reasonably foreseeable development scenario (RFD) and the existing 2007 Hollister RMP in order to incorporate new information about well stimulation technologies, natural resource conditions, and socioeconomic trends. The Planning Area covers twelve counties: Alameda, Contra Costa, Fresno, Merced, Monterey, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, and Stanislaus Counties.
- **Lake Gregory Dam Rehabilitation Project, San Bernardino County Special Districts Department, Deputy Project Manager (2014-present).** Ms. Lancaster is serving as Deputy Project Manager for this project. Lake Gregory is located in the San Bernardino Mountains approximately 14 miles north of the City of San Bernardino in the community of Crestline. The Lake Gregory Dam Rehabilitation Project consists of the construction of physical improvements to the dam, earthen material hauling and processing, relocation of utilities on Lake Drive, and interim traffic detour routes. Four project alternatives will be analyzed; the proposed project is the option approved by the State of California, Department of Water Resources, Division of Safety of Dams. Aspen is preparing an EIR, MMRP, and supporting technical studies.

- **Santa Margarita Quarry Expansion Project, County of San Luis Obispo Department of Planning and Building, Biologist (2013 – Present).** Ms. Lancaster is preparing the biological resources analysis for the EIR for this mining expansion project.
- **Huntington Beach Energy Project, California Energy Commission (CEC), Biologist (2013 – present).** Ms. Lancaster is preparing the biological resources impacts assessment for this 939 MW natural gas-fired power plant in coastal Orange County that will replace the existing Huntington Beach Generating Station. Important biological issues for this project include indirect impacts to nearby wetlands and preserves, including noise and vibration impacts to listed birds (e.g., clapper rail).
- **Alamitos Energy Center, CEC, Biologist (2014 – present).** Ms. Lancaster is preparing the biological resources impacts assessment for this 1,936 MW natural gas-fired power plant in Long Beach, CA that will replace the existing Alamitos Generating Station. Important biological issues for this project include indirect impacts to nearby wetlands and preserves, including noise and vibration impacts to listed birds and green sea turtles.
- **San Luis Obispo Renewable Energy Streamlining Program (RESP), San Luis Obispo County, Biologist (2013-present).** Ms. Lancaster is leading the assessment of biological resources for this project. The RESP involves analyzing and mapping opportunities and constraints for renewable energy siting and revising County plans and policies to streamline development of appropriately sited renewable energy facilities.
- **Alta-Oak Creek Mojave Supplement, Kern County, Biologist (2011).** Ms. Lancaster prepared the biological resources analysis of the SEIR for a proposed infill to the existing Alta Oak Cree-Mojave Project, a wind energy development in the Mojave region of Kern County. Key issues included potential impacts to birds and bats from the wind turbines as well as potential impacts to desert tortoise, Mohave ground squirrel, California condor, and golden eagle.
- **Morgan Hills Wind Energy Project, Kern County, Biologist (2011).** Ms. Lancaster prepared the biological resources analysis of the EIR for a proposed 230-MW wind energy generation facility in the Mojave region of Kern County. Key issues included potential impacts to birds and bats from the wind turbines as well as potential impacts to California condor and golden eagle.
- **North Sky River Wind Project and Jawbone Wind Energy Project, Kern County, Biologist (2010-2011).** Ms. Lancaster prepared the biological resources analysis of the EIR for a proposed 250-MW wind energy generation facility in the Mojave region of Kern County. Key issues included potential impacts to birds and bats from the wind turbines as well as potential impacts to desert tortoise, Mohave ground squirrel, California condor, and golden eagle.
- **Alta–Oak Creek Mojave Project, Kern County, Issue Area Coordinator (2008-2009).** Ms. Lancaster was Issue Area Coordinator for Natural Resources and prepared the biological resources analysis of this Initial Study and EIR evaluating a proposed 800 MW wind development in the Tehachapi Wind Resource Area. Key issues included potential impacts to birds and bats from the wind turbines as well as potential impacts to desert tortoise, California condor, Swainson's hawk, golden eagle, and Bakersfield cactus.

Biology Instructor, Los Angeles and Ventura Community College Districts 2005-2007

Biological Science Technician, National Park Service, Santa Monica Mountains 2002-2003

Restoration Intern, Sedgwick Reserve, Santa Barbara County 2001

PHILIP LOWE, P.E.

Senior Associate, Hydrology and Earth Sciences

Academic Background

Master's Degree in Watershed Management, University of Arizona, 1976
BA, Wildlife Management, University of Arizona, 1973

Professional Registration

Registered Civil Engineer, California, #55258.
Registered Civil Engineer, Arizona, #21699.

Professional Experience

Mr. Lowe is a senior civil engineer and project manager with over 35 years experience in civil engineering, hydrology and hydraulics, floodplain analysis, analysis and design of hydraulic structures, and channel erosion and sedimentation analysis. He has experience in stream restoration, watershed analysis, drainage master planning, environmental impact analysis under CEQA and NEPA, and environmental permitting. His experience includes:

- **ERG West Cat Canyon Revitalization Plan, Santa Barbara County, California.** Mr. Lowe prepared the surface water resources environmental impact analysis for the development of 233 new thermally-enhanced oil production wells, including eleven new well pads, four steam generators, and the expansion of equipment facilities, with associated pipelines and other infrastructure in the West Cat Canyon oil field in Santa Barbara County.
- **BLM, Hollister Field Office Draft Resource Management Plan Amendment (RMPA) and Environmental Impact Statement (EIS).** Mr. Lowe prepared the surface water resources analysis to evaluate the effects of alternative oil and gas management approaches oil and gas development on public lands and split mineral estate lands administered by the United States Bureau of Land Management (BLM) Hollister Field Office. The surface water evaluation included evaluation of potential impacts to water quality, flooding, erosion, and water supply.
- **Analysis of Oil and Gas Well Stimulation Treatments in California (Senate Bill 4 Programmatic Environmental Impact Report).** Mr. Lowe prepared the surface water resources analysis for oil and gas stimulation treatments in California under contract to the Department of Conservation, Division of Oil, Gas and Geothermal Resources, The Programmatic EIR for this controversial project examined the impacts of well stimulation treatments that may occur from hydraulic fracturing, acid fracturing and acid matrix stimulation on existing and future oil and gas wells, including impacts from future production from areas opened to exploration by the stimulation technology. The EIR, prepared on an accelerated schedule pursuant to the deadlines mandated by Senate Bill 4, covered all of DOGGR's six administrative Districts in California. The surface water evaluation included evaluation of potential impacts to water quality, flooding, erosion, and water supply.
- **Jefferson-Martin Transmission Line EIR, California Public Utilities Commission**. Mr. Lowe prepared the hydrology and water resources section of this EIR evaluating a proposed 27-mile transmission line in San Mateo County.
- **Kinder Morgan Concord-Sacramento Pipeline EIR, California Public Utilities Commission**. Mr. Lowe prepared the hydrology and water resources section of an EIR evaluating a proposed 70-mile petroleum products pipeline. Analysis includes consideration of the potential for pipeline accidents to contaminate surface and groundwater in Contra Costa, Solano, and Yolo Counties.
- **Yellowstone Pipeline Environmental Impact Statement Hydrologic Analysis, Lolo National Forest.** Mr. Lowe was responsible for preparation of the hydrologic and hydraulic analysis in support of the

Yellowstone Pipeline Environmental Impact Statement under NEPA for the Lolo National Forest in Montana. The 10-inch pipeline carries gasoline, diesel, and jet fuel between Missoula, Montana, and Cataldo, Idaho. Six alternative routes totaling approximately 300 miles in length are being investigated in detail. Mr. Lowe evaluated hydrologic, hydraulic, sediment, groundwater, and water quality impacts along each alternative and at each stream crossing. Secondary impacts such as oil spills, rupture, or exposure of pipe through erosion or other impacts related to the stream were also evaluated. He assessed the severity of potential impacts, developing mitigation measures and prepared a report consistent with the format and guidelines required by NEPA.

- **Hydrologic Analysis for the Pacific Pipeline Environmental Impact Report, Santa Barbara County, Ventura County and Los Angeles County, California Public Utilities Commission.** Mr. Lowe was responsible for the preparation of the hydrology section in support of an environmental impact report under CEQA for a 170-mile pipeline route originating from Gaviota, Santa Barbara County and terminating at Long Beach, Los Angeles County. The project included hydrologic, hydraulic, groundwater, water quality, erosion, and sedimentation evaluation for approximately 150 stream crossings. Mr. Lowe prepared the hydrology section of the EIR consisting of impacts analysis, cumulative impacts, mitigation measures, and the alternatives analysis.
- **Miguel-Mission Transmission Line EIR, California Public Utilities Commission**. Mr. Lowe prepared the hydrology and water resources section of this EIR, prepared on behalf of the California Public Utilities Commission, evaluating a proposed 35-mile transmission line in San Diego County. Work included preparation of an initial study prior to preparation of the EIR document.
- **Sonoma Marin Area Rail Transit EA, Sonoma Marin Area Rail Transit.** Mr. Lowe prepared the water resources section of an Environmental Assessment for a 70-mile rail line proposed by the Sonoma Marin Area Rail Transit, in California. The evaluation included assessment of water quality, groundwater and flooding impacts, potential global warming effects, and development of mitigation measures.
- **San Antonio Creek Hydraulic and Sediment Analysis, Vandenberg Air Force Base, U.S. Army Corps of Engineers Los Angeles District**. Project manager for a hydrologic, hydraulic and sediment transport analysis to determine sources and rate of sediment accumulation, and development of long-term crossing solutions in an area of San Antonio Creek where severe accumulation of fine sediments resulted in loss of critical roadway access across the creek.
- **Dola/Lanzit Bridge Replacement Location Hydraulic Studies and Water Quality Assessment Reports, San Bernardino County.** Mr. Lowe prepared Caltrans Location Hydraulic Studies, Summary Encroachment Reports, and Water Quality Assessment Reports for replacement of the Dola and Lanzit bridges on Highway 66 in San Bernardino County.
- **Institution Road Technical Studies and Mitigated Negative Declaration (MND), San Bernardino County.** Mr. Lowe prepared a split flow hydraulic analysis using the U.S. Army Corps of Engineers HEC-RAS program to evaluate the distribution of Cajon Wash flows at Institution Road. The analysis included development of a sediment-transport model for the same reach. Mr. Lowe also prepared the water resources environmental analysis in support of an MND for replacement of Institution Road.
- **Rimforest Hydrologic Analysis, San Bernardino County**. Mr. Lowe prepared hydrologic analysis in support of a biological and water resources environmental impact analysis for proposed drainage improvements in the Rimforest community of San Bernardino County. The analysis involved assessment of probable impacts to local stream flow rates resulting from the redirection of flows from the Strawberry Creek watershed to the Little Bear Creek watershed.

- **Devers-Palo Verde Transmission Line EIR, California Public Utilities Commission**. Mr. Lowe prepared the water resources section of an EIR/EIS for the Devers-Palo Verde transmission line project extending from the Palo Verde Nuclear Power Plant in Arizona to San Bernardino, California. One route alternative evaluated passed through the San Bernardino National Forest near Palm Springs, California.
- **Los Angeles River Alternatives Study (LARAS), Los Angeles County, California.** Mr. Lowe was project manager for the LARAS study initiated by Los Angeles County to investigate alternatives to the U.S. Army Corps of Engineers Drainage Area feasibility plan for flood protection along the lower Los Angeles River. The LARAS Study involved engineering and environmental feasibility investigations of channel widening, use of existing sand and gravel mines as detention basins, re-operation of Whittier Narrows, Santa Fe and other reservoirs, raising Whittier Narrows Dam, watershed management solutions, detention in groundwater spreading basins, habitat restoration, water supply, and recreation.
- **Palmdale Water District, Littlerock Reservoir Sediment Transport Analysis, Angeles National Forest, California.** Mr. Lowe performed a hydraulic and sediment transport analysis for the Littlerock Reservoir in the Angeles National Forest near Palmdale, California, for the purpose of evaluating environmental impacts associated with reservoir dredging. Mr. Lowe developed sediment dredging alternatives and evaluated potential upstream impacts from the alternatives using sediment transport analysis.
- **Program Environmental Impact Report SCE West of Devers Upgrade Project.** Mr. Lowe prepared the surface water resources evaluation for the Draft Environmental Impact Report/Environmental Impact Statement for the Southern California Edison (SCE) West of Devers Upgrade transmission line project on behalf of the California Public Utilities Commission and BLM. The project upgrades an existing 220 kilovolt transmission line extending approximately 45 miles from the Devers substation near Desert Hot Springs to San Bernardino, California. The surface water evaluation included evaluation of potential impacts to water quality, flooding, and erosion.
- **San Antonio Parkway Bridge Scour Analysis, Orange County, California.** Mr. Lowe conducted river geomorphology, hydraulic and sediment modeling studies to determine scour depths, long-term degradation and lateral erosion potential for design of a major bridge over San Juan Creek in Orange County, California.
- **San Antonio Creek Reconnaissance and Feasibility Studies, San Bernardino County, California: U.S. Army Corps of Engineers Los Angeles District.** Mr. Lowe was Project Manager of reconnaissance and feasibility studies to reduce the flood potential along San Antonio Creek in San Bernardino County. The study included a detailed hydraulic capacity analysis, floodplain analysis, general inventory of and valuation of floodplain structures, determination of potential without-project flood control and water supply benefits and development of potential flood control and water supply solutions along an 11-mile, urbanized reach of the San Antonio Creek flood control channel.
- **Lake Gregory Rehabilitation Environmental Impact Report, San Bernardino County.** Mr. Lowe prepared the hydrology and water quality analysis for the Environmental Impact Report for the Lake Gregory Dam Rehabilitation Project at Crestline in the San Bernardino Mountains.
- **Simulation of Natural Flows in Middle Piru Creek, Los Angeles County, California.** Mr. Lowe prepared hydrologic, hydraulic and sediment transport analysis to evaluate the effects of natural flow simulation on Piru Creek through modification of releases into the creek from Pyramid Lake by the California Department of Water Resources. The purpose of the simulation is to preserve and restore a natural hydrologic and hydraulic regime for the endangered arroyo toad. The hydraulic and sediment

transport analysis assesses the effect of the modified releases on flow velocities, depths, and bed sediment conditions.

- **San Juan Creek River Management Plan, City of San Juan Capistrano.** Mr. Lowe was project manager for reconnaissance-level development of a comprehensive plan for erosion control, flood reduction, riparian vegetation, and wetland restoration and comprehensive management of San Juan Creek in Orange County. Long-term aggregate mining, agricultural use, urban runoff, channelization and piece-meal bank protection have caused significant degradation of the channel system, impacting water quality, beach sand supplies, and the functions and values of the ecosystem. The river management plan includes the removal of large drop structures and levee impoundments to facilitate movement of fish, re-establishment of a riffle-pool sequence with frequent, gentle low drops protected by riprap, re-establishment of riparian and wetland vegetation between riffles, and construction of gabion, riprap or articulated revetment bank protection to protect existing infrastructure.
- **Program Environmental Impact Report for New School Construction, Los Angeles Unified School District.** Mr. Lowe prepared the water resources section for a program EIR for a new school construction program for the Los Angeles Unified School District. The purpose of the Program EIR was to establish a consistent process for CEQA review of future LAUSD projects proposed in the New School Construction program.
- **Sulphur Creek Ecosystem Restoration, U.S. Army Corps of Engineers, Los Angeles District.** Mr. Lowe was project manager for a Detailed Project Report for ecological restoration of approximately one half mile of Sulphur Creek in the City of Laguna Niguel, California. The project involved hydrologic and hydraulic analysis of the creek, hydrogeomorphic analysis of stream functional capacity, and development of a plan to restore stream functional capacity lost through urban development and encroachment.
- **Dominguez Watershed Management Master Plan, Los Angeles County Department of Public Works.** Mr. Lowe was a contributing author on hydrology and water quality action plan issues in the Dominguez Channel Watershed Management Master Plan in Los Angeles County.
- **Environmental Impact Statement (EIS) for the Eufaula Reservoir Shoreline Management Plan Update and Project Master Plan Supplement, U.S. Army Corps of Engineers Tulsa District, Tulsa, Oklahoma.** Project manager for the Environmental Impact Statement for the updated Shoreline Master Plan and Master Plan for the 160-square-mile Eufaula Reservoir located in the upper Arkansas River basin in Oklahoma. The EIS conformed to requirements of the National Environmental Policy Act, and identified environmental impacts of proposed actions at Eufaula Reservoir on the physical, biological, and cultural environment. The study included extensive investigations of recreational use at the lake, visual analysis, and vegetation change analysis.

AURIE PATTERSON, P.G.

GEOTECHNICAL CONSULTANTS, INC.

Geotechnical Engineering • Geology • Hydrogeology

Statement of Qualifications

Ms. Patterson has performed data research, aerial photo interpretation, site inspection, and analysis for the preparation of EIR, EIS, and IS/MND technical sections for the issue areas of geologic/geotechnical hazards, faulting and seismic hazards, hazardous materials, groundwater, and mineral resources. Ms. Patterson's project experience includes environmental studies for oil field redevelopment plans, solar facilities, wind farms, petroleum and water pipelines, power plants, transmission lines, communications systems, transportation, schools, and redevelopment projects. She has prepared Phase I Environmental Site Assessments for large solar facilities and long linear transmission projects. Her experience also includes hydrogeologic studies to determine aquifer parameters, water well planning and siting, well design, and management of well construction for municipal water supplies and monitoring of groundwater. Ms. Patterson has conducted research, data review, soil sampling, geologic logging of exploratory borings, fault logging and evaluation, installation and sampling of monitoring wells, and formation logging of deep water supply wells.

EDUCATION AND REGISTRATION

San Jose State University, B.A., Geology, 1989

San Diego State University, Graduate Study in Geology, 1990-1993

Professional Geologist No. 7083, State of California

EXPERIENCE

GEOTECHNICAL CONSULTANTS, INC. Ms. Patterson joined the firm in 1995 and works in GTC's Lake Forest office.

• **ERG West Cat Canyon Production Plan and Development Plan EIR, Santa Barbara County, California.** Aurie conducted the environmental impacts analysis and prepared the EIR section for geologic process, geologic hazards, and soils addressing 233 new steam production wells, 11 new well pads and equipment yards, a new 3.5-mile long natural gas line, and new access roads. Analysis addressed oil seeps, seismicity and seismic hazards, slope stability and landslides, soil erosion, and expansive and corrosive soils. Mitigation was developed for grading of new well pads and access roads, slope instability, unsuitable soils, seismic shaking, and induced seismicity related to steam injection/thermally enhanced recovery.

• **SCE Tehachapi Renewable Transmission Project EIR/EIS, Kern, Los Angeles, and San Bernardino Counties, California.** Aurie conducted the environmental impacts analysis and prepared the corresponding EIR sections for the issue areas of environmental contamination, geology, soils, and seismic issues for the proposed 159-mile long 500kV transmission line and several alternative alignments extending from Tehachapi across Antelope Valley, across the San Gabriel Mountains and San Gabriel Valley to Mesa Substation in Montebello, and then east across the Montebello, Puente, and Chino Hills to Mira Loma Substation in the City of Ontario. Aurie also prepared the Supplemental EIS sections related to changes in the project description and the occurrence of the Station Fire for the portions of the project within the Angeles National Forest.

• **Devers-Palo Verde No. 2 Transmission Line Project EIR/EIS, southwestern Arizona to San Bernardino County, California.** Conducted analysis of geology, soils, seismic, and environmental contamination issues for the proposed project and several alignment alternatives. The project consisted of approximately 230 miles of new transmission line, 48 miles of upgraded transmission line, and one new substation. Prepared EIR/EIS sections for the project which discussed setting, potential impacts, and provided mitigation measures. Provide support during construction to review compliance with mitigation measures.

• **Kinder Morgan Concord to Sacramento Pipeline EIR.** Prepared the geology, soils, and seismic hazards sections of an EIR evaluating a proposed 70-mile long refined petroleum products pipeline for the California State Lands Commission. Analysis included consideration of potential impacts from active fault crossings, landslides, liquefaction, existing soil and groundwater contamination, and from potential pipeline accidents in Contra Costa, Solano, and Yolo Counties.

• **Santa Fe Pacific Pipeline, Carson to Norwalk Pipeline EIR.** Prepared the geology, soils, seismic hazards, and hazardous material environmental analysis along three alternative routes of a 14-mile petroleum products pipeline. The project included major storage and pumping facilities at the Watson Station in Carson and the Norwalk Station. The pipeline alignment traversed numerous environmental contamination sites that required identification and screening to identify reasonable alignment alternatives. Crossings at Compton Creek, the Los Angeles River and San Gabriel River presented geotechnical issues related to liquefaction and constructability. Seismic hazards related to ground

shaking and surface rupture of the Newport-Inglewood fault were analyzed.

• **Sespe Creek Flood Control Improvements Project, Santa Paula, California.** Researched and analyzed geology, soils, seismic hazards, and paleontologic resources to evaluate impacts related to the planned flood control improvements along the lower Sespe Creek. Geologic and seismic hazards include erosion, fault rupture, ground shaking, and liquefaction. Paleontologic resource potential is moderate for the alluvium and alluvial terrace deposits in the project area.

• **California Rivers Parkway Project, Ventura River, Meiners Oaks, California.** Researched and analyzed geology, soils, and paleontologic resources to evaluate impacts related to the planned flood control improvements along the Ventura River. Geologic and seismic hazards include erosion, fault rupture, ground shaking, and liquefaction. Paleontologic resource potential is high for the Sespe Formation which underlies the alluvial deposits in the project area**.**

• **California Valley Solar Ranch, San Luis Obispo County, California.** Analyzed geology, soil, and seismic hazards for a 2,000 acre photovoltaic solar plant located adjacent to the San Andreas fault, with transmission tie-line crossing the fault zone.

• **Panoche Valley Solar Farm Project, San Benito County, California.** Analyzed geology, soils, mineral resources, erosion, and seismic hazards for a 420MW utility-scale solar photovoltaic facility located on 4,800 acres of valley land surrounded by the Panoche Hills and San Benito Mountain.

• **Topaz Solar Farm Project, San Luis Obispo County, California.** Analyzed geology, soil, and seismic hazards and prepared EIR section for an approximately 5,300 acre photovoltaic (PV) solar farm in the California Valley area in unincorporated eastern San Luis Obispo County.

• **Valley Oak Solar Farm, Kings County, California.** Prepared a Phase I Environmental Site Assessment for a 3,000 acre photovoltaic solar facility located on active farmland with intensive historic pesticide use, air strip, and farm equipment maintenance areas.

• **Sunrise Powerlink Project EIR/EIS, Imperial and San Diego Counties, California.** Conducted the environmental impacts analysis and prepared the corresponding EIR/EIS sections for the issue areas of geology, soils, seismicity and environmental contamination for the 150-mile long transmission line that extends from the Salton trough, over the Peninsula Ranges and into the Coastal terraces. The environmental analysis is evaluating five alternatives and potential new in-area power generation. Hazardous materials and unexploded military ordinance sites are also being identified and evaluated for project impacts.

• **SCE Antelope-Pardee Transmission Segment 1, Los Angeles County, California.** We analyzed geology, soils, and seismic issues for five alternative alignments, each measuring about 25 miles long. In addition, we are evaluating environmental contamination along these alignments, particularly the underground portions. These alignments traverse high desert, and mountainous areas, and the San Andreas rift zone.

• **California Public Utility Commission, Sunrise Powerlink EIR/EIS.** Geotechnical Consultants conducted the analysis of the environmental impacts of geology, soils, seismicity and environmental contamination for the 80-mile long 230 and 500kV transmission line project. The project alignment crosses the Superstition Hills, Earthquake Valley and Elsinore fault zones in Imperial and San Diego counties.

• **Miguel-Mission 230 kV #2 EIR.** Ms. Patterson prepared the geology and environmental contamination sections of the project EIR. The project EIR evaluated a 35 mile long 230 kV circuit within an existing transmission line ROW between Miguel and Mission substations in San Diego County. In addition, the Miguel Substation and Mission Substation would be modified to accommodate the new 230 kV transmission circuit.

• **Bolsa Chica Water Line EIR.** Prepared geology, seismicity, and hazardous materials sections of the Bolsa Chica Water Line EIR. This project was prepared for the CPUC to evaluate a proposed water transmission line through the City of Huntington Beach for use by Southern California Water Company. Provided analysis of significant impacts from geologic hazards, hazardous materials, use of groundwater resources, and developed mitigation measures.

AURIE PATTERSON, P.G.

Environmental Impact Technical Studies

Adelante Eastside Redevelopment Project, Los Angeles, California
Level 3 Communications Network, California Public Utilities Commission, Ca
Isabel Avenue Extension, Livermore, California
North County Landfill Siting Study, San Diego County, California
Imperial Redevelopment Project, San Diego, California
Cajon Pipeline, San Bernardino and Los Angeles Counties, California
Pacific Pipeline, Santa Barbara, Ventura and Los Angeles Counties, Ca
North Park Redevelopment Project, San Diego, Ca
San Ysidro Redevelopment Project, San Diego, Ca

Municipal Water Wells

Well Nos. 6 and 8, City of San Clemente, California
Well Nos. 14 and 15, 99th Street Well Field, City of Los Angeles, California
Well Nos.19, 20, 21, 22, 23, 24 and 25, Orange, California
Well Nos.1B, 8, 9 and 11, Mesa Water District, Costa Mesa, Ca.
Water Well Rehabilitation, Mesa Water District, Well Nos.4, 7, 8 and 9, Costa Mesa, California
Vandenberg Well, City of Tustin, California
Wells IDP-1 through IDP-4, Irvine Desalter Project, Orange County Water District, Irvine, California
Sebastopol Road and Occidental Road Wells, Santa Rosa, California
Ball and Boisseranc Wells, Buena Park, California
Well 2363 and 2201, USMC Camp Pendleton Air Base, Oceanside, California

Injection/Recharge Wells

Injection Wells I24 and I25, Well Development and Aquifer Testing, Talbert Seawater Barrier, Orange County Water District, Fountain Valley, California
Injection Well Clusters I26, I27 and I28, Talbert Seawater Barrier, Orange County Water District, Fountain Valley, California

Groundwater Monitoring, Site Characterization Studies

Nested Monitoring Wells, Sunset Gap, Orange County Water District, Seal Beach, California
Nested Monitoring Wells, Sonoma County Water Agency, Windsor, California
Nested Monitoring Wells, Orange County Water District, Newport Mesa, Orange County, California
West Waterman Canyon Portal, Inland Feeder Tunnel, San Bernardino, Ca.
San Pasqual Valley, San Diego, California
Mesa Consolidated Water District/Orange County Water District, Deep Multi-Port Monitoring Well, Costa Mesa, California
Calabasas Landfill, Calabasas, California
Puente Hills Landfill, Whittier, California
Los Alamitos AFRC Landfill, Los Alamitos, Ca
Domtar Gypsum, Inc., Vernon, California
Culver City Motor Clinic, Culver City, California
Norwalk Dump, Norwalk, California
Stinnes-Western Chemical Corporation, Vernon, California
Cooper Drum Company, South El Monte, California
George Air Force Base, Adelanto, California
Palomar Airport Landfill, Carlsbad, California

PUBLICATIONS

Patterson, A.C. and T.K. Rockwell, 1993, Paleoseismology of the Whittier Fault based on 3-Dimensional Trenching at Olinda Oil Field, Orange County, Southern California: GSA Abstracts with Programs, Cordilleran Section, v. 25, no. 5, p. 131.

Patterson, A.C. and T.K. Rockwell, in preparation, Timing of Past Earthquakes on the Whittier Fault, Olinda Oil Field, Orange County, California: to be submitted to GSA Bulletin.

ioMosaic
Minimizing risk. Maximizing potential.™

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R. Peter Stickles, P.E.

Senior Partner

Summary

Mr. Stickles is a senior partner at ioMosaic Corporation and has over 50 years experience in the fields of chemical process safety, petroleum refining and petrochemical technology, and process design having previously worked for Arthur D. Little, Inc., and Stone & Webster Engineering. Prior to joining ioMosaic Corporation, Mr. Stickles' roles in the process safety field have included facilitation of process hazard analyses, quantitative risk assessment, fault tree analysis, process safety management training course development, reliability analysis, and management of the process safety management business area for Arthur D. Little, Inc.

Pressure Relief and Flare System Design

Mr. Stickles' assignments include various studies in the chemical, petrochemical and petroleum refining industries. He is experienced with the concepts behind pressure relief and flare system design, as well as relevant codes and practices. His knowledge ranges from relief system data gathering, isometric sketching, emergency relief system contingency analysis and flare system evaluation. He has also analyzed maximizing existing flare and vent header systems utilizing risk-based applications of high integrity pressure protection systems (HIPPS).

Fault Tree and Quantitative Risk Analysis

Mr. Stickles' expertise encompasses quantitative risk analysis techniques including consequence and fault tree analysis (FTA) and quantitative risk assessment (QRA). These skills have recently been applied to:

- Leading a QRA study of an LNG storage and re-vaporization facility located in Canada
- Preparing a FTA of dust explosions in a flour storage bin
- Conducting a FTA of deflagration potential in a polystyrene solvent recovery system
- Performs SIL validations for safety instrumented systems (SIS) using FT methodology as recommended in ANSI/ISA 84.00.01-2004
- Evaluated the incident frequency of tube failures in black liquor boilers to assess the risk of boiler explosion

Hazard Identification

Mr. Stickles has facilitated numerous process hazard analyses (PHAs) using various hazard identification techniques, including hazard and operability (HAZOP), failure mode and effects analysis (FMEA), and What-if technique. Some examples include the following:

- What-if PHA of dust handling systems at two food processing plants
- HAZOP PHA of a nitric acid/ammonium nitrate plant
- HAZOP PHA of a Gulf Coast LNG receiving and re-vaporizing terminal
- HAZOP review of a sodium vaporization system
- HAZOP PHA of a carbon black test furnace setup
- Mr. Stickles is also an instructor for PHA courses offered by ioMosaic Corporation

Process Safety Management Auditing

Mr. Stickles has participated in many process safety management (PSM) audits on a variety of chemical, petroleum, and metal processing facilities to ensure compliance with OSHA 1910.119 regulations. Recent audits included facilities producing polystyrene, ethylene dichloride (EDC)/polyvinyl chloride (PVC), primary aluminum, steel and coke making, and refined petroleum products. On most compliance audits, one of the elements he reviews is the implementation of the company's mechanical integrity program.

Upstream Experience

- Lead PHAs of oil/gas processing facilities for exploration/production division of major international petroleum company
- Member of internal investigative team reviewing company implementation of Operations Integrity Management Systems (OIMS)
- Review of well safety shutoff valve (SSOV) mechanical integrity (MI) and state mandatory testing program of production company
- Team leader for Alyaska Pipeline Co. environmental and safety performance review initiated by whistle blowers to US Congress
- Risk surveys of oil/gas processing facilities in Western Canada
- Lead PHA of GasFracTM fracturing technology for reservoir stimulation
- Process Hazard Analysis of onshore and offshore oil and gas facilities
- Major contributor on risk assessment for proposed Tranquillon Ridge reservoir development EIR in California State waters
- Major contributor on risk assessment for well stimulation Senate Bill 4 EIR in the state of California
- For the Santa Barbara county, prepared qualitative risk assessment of the proposed extension of the inspection interval (Continuance of Departure) for the Hermosa-Gaviota Pt. Arguello Natural Gas Pipeline (PANGL), operated by Plains Exploration and Production Co. (PXP)
- Participant on oil transportation alternatives study for California (Arthur D. Little)
- Major contributor on risk assessment of the Environmental Impact Report (EIR) Risk of Upset Analysis for the Santa Barbara County West Cat Canyon
- Major contributor on risk assessment of the Environmental Impact Report Risk of Upset Analysis for the Bureau of Land Management (BLM), to address oil and gas leasing and development on public lands and federal mineral estate in the Hollister Field Office (HFO).

Other Engineering Experience

Mr. Stickles had eight years experience with Stone & Webster Engineering Corporation as a process engineer. His responsibilities included detailed design of chemical plants based on the thermal cracking of hydrocarbons. A major portion of his experience was associated with the design of high-temperature cracking furnaces including effluent heat recovery and quenching systems. This required a basic knowledge of cracking mechanisms, kinetics, and heat transfer. His responsibility in this area included specification of fired heaters, heat exchangers,

and high-pressure steam generating equipment. As a pyrolysis specialist, he evaluated cracking operations at ethylene plants of several major oil companies.

While at Stone & Webster Engineering Corporation, Mr. Stickles was also responsible for startup of the pyrolysis furnace section of a heavy liquids cracker at Gulf Oil's olefin plant in Verenne, Quebec. He participated in the design and startup of a first of its kind alpha olefin plant based on a process developed by Gulf. As part of the Ultra Selective Cracking (USC) process development team, he supervised the analytical work associated with a semi-commercial development unit in England.

Litigation Support

- In two separate cases, Mr. Stickles developed expert opinions and was deposed on matters relating to the applicability of OSHA Process Safety Management regulation 29CFR 1910.119 and the extent to which failure to follow all provisions contributed to industrial accidents involving fire and explosion.
- He has also developed and provided expert testimony on behalf of a major energy company before the Australian Royal Commission investigating the Longford Gas Plant explosion.
- He participated in a case involving a local gas distribution company (LDC) and Fleet Bank, by assessing the condition of the equipment at two liquefied natural gas (LNG) storage and send-out terminals operated by the LDC. He performed a visual external inspection of the facilities and reviewed maintenance and decommissioning activities to assess the asset value. The law firm was Ropes and Gray.
- Mr. Stickles helped prepare defense arguments for contractor M.W. Kellogg, when they were implicated in the explosion of the polyethylene plant of Phillips Petroleum in Deer Park, Texas. Kellogg was eventually dropped as a defendant in the case.
- In the aftermath of an explosion at a nitroparaffins plant, he worked for the operating company side in preparing arguments to show that the owner was deficient in implementing its responsibility under the company's responsible care program.
- In a rate adjustment case involving a mid-west LDC, Mr. Stickles performed a reliability analysis of the LDC's different gas supply options and prepared rebuttal testimony regarding the appropriateness of use of their existing peak shaving facilities. He testified regarding the unreliability of natural gas transmission pipelines.
- He participated in the discovery and analysis of the root causes of the explosion of an H-Oil® unit at a New Jersey refinery. The analysis eventually led to a settlement between the owner and the industrial insurer.

Committee Participation

- Mr. Stickles participated in the development of the Center for Chemical Process Safety (CCPS) concept book regarding layer of protection analysis (LOPA) by providing technical guidance for the conceptual phase of the book and a peer review of the final draft. He was also a chapter author for several other CCPS PSM guideline books.
- He is a former member of the National Research Council's Board on Army Science & Technology (BAST), during which time BAST was advising the U.S. Army of the demilitarization of non-stockpile nerve agents.

Publications and Speaking Engagements

- Co-author, “Portfolio Risk Management for Process Safety,” Proceedings of the 7th Global Congress on Process Safety, AIChE, Chicago (March 2011)
- Co-author, “Conducting Process Hazard Analyses for Dust-Handling Operations,” CEP (February 2009)
- Co-author, “Multiple Safeguarding Selection Criteria: How Much Safety is Enough?,” International Conference on Risk Analysis in Process Safety, Atlanta, Georgia (October 1997)
- Co-author, “Enhancing Safety Through Risk Management,” Chemical Engineering (October 1997)
- Co-author, “Emergency Relief Systems under Fire Exposure,” Chemical Engineering Progress, Vol. 91/No. 11 (1995)
- Co-author, “Risk-Based Pre-Release Mitigation,” MIACC Paper 1995, Toronto, Canada (November 1995)
- Co-author, “Risk-Based Environmental Auditing and Assessment,” IRR Process Safety and Loss Management Conference, Toronto, Canada (June 1995)
- Co-author, “Select Design Bases for Emergency Relief and Other Process Safety Systems Based on Risk,” International Symposium on Runaway Reactions and Pressure Relief Design, Boston, Massachusetts (August 1995)
- Co-author and co-presenter, “ERS Design Under Fire: When and What?,” AIChE National Meeting, Denver, Colorado (August 1994)
- Co-author, “What to do About Process Safety Audits,” Chemical Engineering, pp. 173–178 (September 1992)
- September 1992, “Crisis Communications in the Era of ‘Right to Know’,” TAPPI Environmental Conference (April 1992)
- Co-author, “Prioritization of Safety Related Plant Modifications Using Cost-Risk Benefit Analysis,” International Conference on Hazard Identification and Risk Analysis, Human Factors and Human Reliability in Process Safety, Orlando, Florida (1992)
- Author and presenter, “Facility Major Risk Survey,” AIChE National Meeting, Orlando, Florida (1990)
- Co-author, “Facility Risk Management in Developing Countries,” Risk Management (October 1990)
- Author and presenter, “Plant Safety: A Total Company Effort,” AIChE National Meeting, Denver, Colorado (1988)
- Author and presenter, “World-Wide Developments and Trends in Coal Conversion,” IEA Conference on New Energy Conservation Technologies, Berlin, Germany (April 1981)

Books

- Author, Guidelines for Design Solutions for Process Equipment Failures, Chapter 2, Center for Chemical Process Safety (CCPS) (1998)
- Author, Guidelines for Postrelease Mitigation in the Chemical Process Industry, Chapters 3 and 5, Center for Chemical Process Safety (CCPS) (1997)
- Author, Cost-Effective Risk Assessment for Process Design, Chapter 3: Measuring Engineering Effectiveness: How Much Study is Enough?, McGraw-Hill (1995)

- Author, Guidelines for Technical Management of Chemical Process Safety, Chapters 4 and 5, Center for Chemical Process Safety (CCPS) (1989)
- Author, Guidelines for Safe Storage and Handling of High Toxic Hazard Materials, Chapters 5, 6, and 7, Center for Chemical Process Safety (CCPS) (1988)

Professional Affiliations

Fellow, American Institute of Chemical Engineers (AIChE)

Education and Licensing

- Registered Professional Engineer, Commonwealth of Massachusetts (1968)
- M.S., Mechanical Engineering, Northeastern University (1971)
- B.S., Chemical Engineering, Northeastern University (1964)

JAMES E. THURBER, P.G., C.E.G., C.HG.

GEOTECHNICAL CONSULTANTS, INC.

Geotechnical Engineering • Geology • Hydrogeology

Statement of Qualifications

James Thurber leads Geotechnical Consultants, Inc.'s geologic and hydrogeologic efforts. He brings with him over 25 years of experience and an in-depth knowledge of the development, protection, and management of municipal groundwater resources. Mr. Thurber is actively involved engineering geology, hydrogeology and hazardous material assessments for numerous local and regional environmental impact reports. Mr. Thurber's EIR experience includes long linear pipelines and transmission lines, thermal and solar power plants, highways, dams, new schools, and large redevelopment projects. He is experienced with hazardous waste investigations and site characterization for leaking underground fuel tanks, industrial facilities and solid waste landfills. Mr. Thurber is a highly qualified geologist and hydrogeologist, experienced in the assessment of site conditions related to past and current use of hazardous materials and environmental contamination. Mr. Thurber is experienced in the impact analysis of hazardous materials for large planning projects and preparing appropriate and applicable mitigation measures. Mr. Thurber has performed hazardous material assessments, for redevelopment projects, schools, long pipeline projects, and highways. Mr. Thurber is also experienced in characterizing geologic and seismic settings for planning and design of new projects.

EDUCATION AND REGISTRATION

Colorado State University, M.S., Geology, 1982

California State University, Northridge,
B.S., Geology, 1978

California State University, Northridge,
B.A., Geography, 1976

Professional Geologist No.4197, State of California

Certified Engineering Geologist No.1458,
State of California

Certified Hydrogeologist No.162, State of California

MEMBERSHIP

National Ground Water Association

American Water Works Association

EXPERIENCE

GEOTECHNICAL CONSULTANTS, INC. Mr. Thurber joined the firm in 1985 and works in GTC's Lake Forest office.

• **ERG West Cat Canyon Production Plan and Development Plan EIR, Santa Barbara County, California.** Conducted the environmental impacts analysis and prepared the EIR section for groundwater resources addressing the drilling and operation of 233 new steam production wells, 11 new well pads and equipment yards, a new 3.5-mile long natural gas line, and new access roads. Analysis addressed reuse of saline produced water to create steam for injection and thermally enhanced oil production and avoid water quality impacts to the overlying fresh groundwater resources in the Santa Maria and San Antonio Creek groundwater basins. Local farms and communities are solely dependent on groundwater for water supply. Mitigation was developed for avoidance and cleanup of spills and leaks of contaminants during grading, construction, and drilling, as well as a long term groundwater monitoring plan as required by new SB4 and DOGGR regulations.

• **Initial Study to Evaluate the Division of Oil, Gas, and Geothermal Resources' California Environmental Quality Act (CEQA) Compliance Program.** Assisted with the evaluation of the existing CEQA compliance process related to the drilling of new oil, gas and injection wells. This Initial Study evaluated the DOGGR CEQA Compliance Program (Program) for oil and gas well drilling in Kern County. The Program includes the revision of DOGGR's CEQA regulations that are applicable statewide and the assessment of environmental issues associated with oil and gas well drilling in Kern County. We provided analysis of the impacts related to geology, soils and seismic hazards; hazardous materials; and groundwater resources. The potential impacts considered included drilling, operation and maintenance of new oil and gas wells and the drilling and destruction of non-producing wells.

• **California Energy Commission, Staff Assessments Technical Assistance in Application for Certification Review.** Geotechnical Consultants Inc. is assisting Aspen Environmental Group and CEC in evaluation of new power plant applications throughout the State. Mr. Thurber is serving as a Project Hydrogeologist for the issue area of groundwater for cooling and potable supply.

• **Kinder Morgan Concord to Sacramento Pipeline EIR.** Project manager for the geology and environmental contamination sections of an EIR evaluating a proposed

70-mile long refined petroleum products pipeline for the California State Lands Commission. Analysis included consideration of potential impacts from active fault crossings, landslides, liquefaction, existing soil and groundwater contamination, and from potential pipeline accidents in Contra Costa, Solano, and Yolo Counties.

• **SCE Antelope-Pardee Transmission Segment 1, Los Angeles County, California.** We are analyzing geology, soils, and seismic issues for five alternative alignments, each measuring about 25 miles long. In addition, we are evaluating environmental contamination along these alignments, particularly the underground portions. These alignments traverse high desert, and mountainous areas, and the San Andreas rift zone.

• **Santa Fe Pacific Pipeline, Carson to Norwalk Pipeline EIR.** Prepared the geology, soils, seismic hazards, and hazardous material environmental analysis along three alternative routes of a 14-mile petroleum products pipeline. The project included major storage and pumping facilities at the Watson Station in Carson and the Norwalk Station. The pipeline alignment traversed numerous environmental contamination sites that required identification and screening to identify reasonable alignment alternatives. Crossings at Compton Creek, the Los Angeles River and San Gabriel River presented geotechnical issues related to liquefaction and constructability. Seismic hazards related to ground shaking and surface rupture of the Newport-Inglewood fault were analyzed.

• **California Public Utility Commission, Sunrise Powerlink EIR/EIS.** Geotechnical Consultants is conducting the analysis of the environmental impacts of geology, soils, seismicity and environmental contamination for the 80-mile long 230 and 500kV transmission line project. The project alignment crosses the Superstition Hills, Earthquake Valley and Elsinore fault zones in Imperial and San Diego counties.

• **Groundwater Staff Assessment.** Conducted the analyses of groundwater issues for domestic supply and cooling at the Morro Bay Power Plant (MBPP) and the San Joaquin Valley Energy Center (SJVEC). Provided written testimony for the staff assessments of MBPP and SJVEC, and provided oral testimony at the MBPP hearings.

• **Compliance Review.** Provided support for CEC staff evaluating preliminary well design and estimates of groundwater production and aquifer storage and recovery for the High Desert Power Plant. As Project Hydrogeologist, assisted with review of aquifer test planning, analysis of aquifer test results, and well interference calculations for the Blythe Energy Power Plant.

• **Jefferson-Martin 230 kV Transmission Line EIR**. Mr. Thurber is the Associate Geologist overseeing preparation of the geology and environmental contamination sections of the EIR. This EIR is being prepared for the California Public Utilities Commission (CPUC) to evaluate a proposed 27-mile 230 kV transmission line in San Mateo County. The project will also include construction of a new transition station and modifications to two existing substations.

• **Miguel-Mission 230 kV #2 EIR.** Mr. Thurber is the Associate Geologist overseeing preparation of the geology and environmental contamination sections of the EIR. The project is being prepared for the California Public Utilities Commission (CPUC) to evaluate a proposed 35 mile lone 230 kV circuit within an existing transmission line ROW between Miguel and Mission substations in San Diego County. In addition, the Miguel Substation and Mission Substation would be modified to accommodate the new 230 kV transmission circuit.

• **Bolsa Chica Water Line EIR.** Prepared geology, seismicity, groundwater resources and hazardous materials sections of the Bolsa Chica Water Line Environmental Impact Report. This project was prepared for the CPUC to evaluate a proposed water transmission line through the City of Huntington Beach for use by Southern California Water Company. Provided analysis of significant impacts from geologic hazards, hazardous materials, use of groundwater resources, and developed mitigation measures.

Environmental Impact Technical Studies

Adelante Eastside Redevelopment Project, Los Angeles, California
Level 3 Communications Network, California Public Utilities Commission, Ca
Isabel Avenue Extension, Livermore, California
North County Landfill Siting Study, San Diego County, California
Imperial Redevelopment Project, San Diego, California
Cajon Pipeline, San Bernardino and Los Angeles Counties, California
Pacific Pipeline, Santa Barbara, Ventura and Los Angeles Counties, Ca
North Park Redevelopment Project, San Diego, Ca
San Ysidro Redevelopment Project, San Diego, Ca

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Well Nos. 6 and 8, City of San Clemente, California
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Calabasas Landfill, Calabasas, California
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Los Alamitos AFRC Landfill, Los Alamitos, Ca
Domtar Gypsum, Inc., Vernon, California
Culver City Motor Clinic, Culver City, California
Norwalk Dump, Norwalk, California
Stinnes-Western Chemical Corporation, Vernon, California
Cooper Drum Company, South El Monte, California
George Air Force Base, Adelanto, California
Palomar Airport Landfill, Carlsbad, California

SUSAN S. WALKER
Senior Associate, Environmental Planning

Academic Background

MA, Applied Geography, City University of New York, 1988
BA, Physical Geography, University of Colorado at Boulder, 1983

Professional Experience

Ms. Walker has over 25 years of experience in environmental consulting. Ms. Walker often serves as a Project Manager for both large- and small-scale multidisciplinary environmental review documents under CEQA and NEPA. Ms. Walker additionally is a Senior Analyst and Issue Area Coordinator for land use and public policy analyses and related social science analyses. A selection of Ms. Walker's project-specific efforts is provided below.

- **West Cat Canyon Revitalization Plan Project, County of Santa Barbara, Senior Technical Reviewer (2015 – Present).** Ms. Walker currently is serving as the senior technical reviewer for the land use and public policy section of the EIR addressing a proposal to increase production an existing oil and gas field located in northern Santa Barbara County. The project includes: the development and operation of 233 new thermally enhanced (cyclic steaming) production wells; development of new well pads and the expansion of existing well pad; reactivation existing steam generators; expansion of existing equipment areas and production facilities; and replacement of an existing natural gas pipeline. Ms. Walker has guided and reviewed the baseline and regulatory setting for the analysis, its impact criteria and preliminary impact assessment. She will additionally supervise the preparation of the EIR's public policy consistency analysis.
- **Evaluation of Oil and Gas Well Stimulation Treatments in California, California Department of Conservation, Project Manager (2013 – 2015).** Ms. Walker served as the Project Manager for an EIR evaluating oil and gas well stimulation treatments throughout California, as required by Public Resources Code Section 3161 (b)(3) and (4) ("Senate Bill 4"). Section 3161 (b)(3) and (4) required the evaluation of impacts associated with well stimulation treatments that could occur from either existing or future oil and gas wells, including hydraulic fracturing, acid fracturing and acid matrix stimulation. The EIR provided a programmatic evaluation of well stimulation treatments geographically according to the Division of Oil, Gas and Geothermal Resources' six administrative Districts both onshore and in State waters, as well as three specific oil and gas fields located in Los Angeles and Ventura Counties. The EIR included the analysis of 24 subject areas and six alternatives. The EIR is considered to be precedent setting, if not unique, to any type of environmental review documentation prepared under CEQA prior to its publication, and received a Merit Award from the Association of Environmental Professionals in April of 2016.
- **Baldwin Hills Community Standards District, City of Culver City, Senior Analyst (2008-2009).** Ms. Walker served as a senior analyst for technical review of an EIR addressing a proposed Community Standards District for onshore oil well drilling and production in the Baldwin Hills area of Los Angeles County. Ms. Walker was responsible for review and comment on the Draft EIR's Project Description, land use, recreation and environmental justice sections, and preparing responses to the Final EIR's responses to comments on the Draft EIR. She additionally prepared a stand-alone "white paper" on the onshore oil well drilling and operational regulations, permits, bonds and taxes required by the State and local jurisdictions (incorporated cities and counties) within southern California. She is currently providing senior review during the City of Culver City's development of a separate Community Standards District and permitting process for oil well drilling and operation within its jurisdictional boundaries.

- **Tranquillon Ridge Oil and Gas Development Project, County Santa Barbara, Senior Analyst (2006-2008).** Ms. Walker served as a senior technical analyst for an EIR addressing proposed oil and gas development of the Tranquillon Ridge oil and gas field, located in State waters offshore northern Santa Barbara County. Ms. Walker completed the EIR's analyses for visual resources/aesthetics, land use and public policy, and recreation. Ms. Walker additionally assisted with development of the EIR's off- and on-shore cumulative project listings and descriptions, as well as completion of multiple resource/issue-specific technical analyses for the EIR's cumulative impacts assessment.
- **Environmental Information Document and Coastal Consistency Determinations for Federal Oil and Gas Leases Offshore Santa Barbara, Ventura and San Luis Obispo Counties, US Department of the Interior, Minerals Management Service, Project Manager (2004-2005).** Ms. Walker served as the Project Manager for preparation of a multidisciplinary Environmental Information Document (EID) and ten federal Coastal Consistency Determinations that evaluated the potential effects of future development of the undeveloped federal oil and gas leases offshore Santa Barbara, Ventura and San Luis Obispo Counties. The documents addressed both lease-specific and cumulative impacts for the period 2006 through 2030. In addition to overall project management and coordination, Ms. Walker was responsible for senior technical review and the preparation of text regarding near- and long-term activities that may occur on the Pacific Outer Continental Shelf, and was a principal author of the California Coastal Act policy consistency analyses prepared for each of the project's Lease/Unit-specific Coastal Consistency Determinations.
- **Kern County Oil and Gas Development Permitting Evaluation, California Division of Oil, Gas and Geothermal Resources (DOGGR), Senior Analyst (2001-2003).** Ms. Walker served as a senior analyst for an evaluation of the local and State permitting processes for new oil and gas development projects within Kern County. Ms. Walker provided technical analyses of various regulatory, policy, and resource-specific issues, and also assisted with overall facilitation of the project during agency, industry, and special interest group meetings and workshops.
- **DOGGR Regulatory Compliance Initial Study (2003).** Ms. Walker served as a senior analyst for an Initial Study evaluating the California Division of Oil, Gas and Geothermal Resources' (DOGGR) proposed program for compliance with CEQA for oil and gas drilling in Kern County. Ms. Walker revised DOGGR's regulations for CEQA compliance for review by DOGGR counsel and the Deputy Attorney General, and prepared the agricultural resources and land use and planning analyses of the project's Initial Study. Ms. Walker also assisted with overall project management, and provided senior technical review for several of the Initial Study's resource/issue-specific analyses.

Prior to joining Aspen Ms. Walker served as a Project Manager, Assistant Project Manager and analyst at Dames & Moore (1989-1997), and as a contract planner with the Energy & Minerals Division of the County of Santa Barbara's Planning and Development Department (1997-1999). A selection of the projects she worked on during this period is provided below.

- **Point Pedernales Hydrogen Sulfide Increase Modification.** Ms. Walker was responsible for completion of an Initial Study and EIR Addendum, and coordination of a Quantitative Risk Analysis for a proposed hydrogen sulfide concentration increase in the 23-mile off- to onshore natural gas pipeline of the Point Pedernales Project located in northern Santa Barbara County.
- **Mobil M-70 Pipeline Replacement.** Ms. Walker assisted with the overall coordination and preparation of an EIS/EIR addressing the replacement of a 92-mile crude oil pipeline located between Lebec and Torrance. She additionally prepared the documents land use and policy consistency analysis.
- **California Offshore Oil and Gas Energy Resources Study.** Ms. Walker served as the Assistant Project Manager for the preparation of an extensive inter-disciplinary study evaluating the potential environ-

mental, engineering, and socioeconomic constraints associated with various levels of offshore oil and gas development in Ventura, Santa Barbara, and San Luis Obispo Counties. She additionally prepared the document's land use and policy analysis, and was also responsible for oversight and supervision of the Study's Geographic Information System (GIS) implementation.

- **Point Pedernales Project Condition Effectiveness Review.** Ms. Walker completed a comprehensive Preliminary Screening Analysis assessing the effectiveness of the 192 conditions associated with the Santa Barbara County Final Development Plan for the Pt. Pedernales Project, an on- and offshore oil and gas development project.
- **Point Pedernales Project Permit Modifications.** Ms. Walker completed the analysis and regulatory processing of Final Development Plan Substantial Conformity Determinations and a Final Development Plan Director's Amendment for proposed modifications to the Pt. Pedernales Project's oil and gas processing facility located in northern Santa Barbara County.
- **Point Pedernales Project Regulatory Compliance.** Ms. Walker was responsible for the compliance tracking and enforcement of the 192 Final Development Plan conditions associated with the Pt. Pedernales Project, an on- and offshore oil and gas development project located in northern Santa Barbara County.
- **Torch Lompoc Gas Processing Facility.** Ms. Walker was responsible for the oversight and coordination of the final regulatory technical reviews and approvals required for commissioning and operation of a natural gas processing plant located in northern Santa Barbara County.
- **Kern River Natural Gas Pipeline.** Ms. Walker served as a Principal Investigator during the pre-construction preparation of compliance implementation plans, as well as construction-phase development and implementation of multiple databases tracking the environmental monitoring and regulatory permit compliance of a 904-mile natural gas pipeline traversing the states of Wyoming, Utah, Nevada, and California.
- **Hercules Remediation Project.** Ms. Walker assessed the federal, State, and local regulatory permit acquisition requirements for the remedial clean-up of an extensive petrochemical spill associated with the Hercules Oil and Gas Development Project located in Santa Barbara County.
- **Santa Barbara North County Siting Study.** Ms. Walker completed the land use analysis and oil and gas facility infrastructure "baseline" section for a siting and constraints study focused on the potential alternatives available for the construction and operation of a new consolidated oil and gas processing facility in northern Santa Barbara County.

Professional Affiliations

- Association of Environmental Professionals

Certificates/Awards

- Association of Environmental Professionals' 2016 Merit Award: Project Manager of the Analysis of Oil and Gas Well Stimulation Treatments in California Environmental Impact Report.
- Darkenwald Award for outstanding academic achievement by a first year graduate student (City University of New York, Department of Geography and Geology, 1987).

SCOTT D. WHITE
Senior Associate/Senior Biologist

Academic Background

MA, Biology, Humboldt State University, 1992
BA, Biology, Humboldt State University, 1981

Professional Experience

Scott White is a Senior Biologist at Aspen and has 28 years of experience managing and writing field survey reports, impact assessments, and mitigation plans. He is an expert with southern California plants, habitats, and natural history. He is a coauthor of *Vascular Plants of Western Riverside County*, instructs field courses for Rancho Santa Ana Botanic Garden, and serves as a peer reviewer for US Fish and Wildlife Service Federal Register notices. As a community ecologist, he has extensive experience evaluating habitat suitability and project impacts for special-status wildlife species. At Aspen his projects have included CEQA and NEPA analyses for local districts, county, state and federal lead agencies; compliance planning and monitoring for project construction; state and federal Endangered Species Act consultation; state and federal streambed and wetland delineations and permitting; programmatic environmental analyses and conservation plans; and state and federal consultation for Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and state Fish and Game Code nesting bird compliance. Other projects have included land management planning; focused surveys for rare plants and wildlife; revegetation planning and monitoring; and long-term land use planning on public and private lands. Mr. White provides expert witness testimony and supports client legal staff in case review and preparation of briefs. He has extensive experience with federal, state and local agency coordination, and he has published a number of studies in professional literature.

- **Evaluation of Oil and Gas Well Stimulation Treatments in California, California Department of Conservation (2013-2015).** Managed and coauthored biological resources analysis for an EIR evaluating oil and gas well stimulation treatments throughout California, as required by Senate Bill 4, as signed into law in 2013. The EIR is a programmatic evaluation of well stimulation treatments geographically according to the Department of Oil, Gas and Geothermal Resources (DOGGR) six administrative Districts.
- **Hollister Oil and Gas Facilities Leasing and Development (2015).** Managed and coauthored biological resources analysis for BLM's EIS evaluating oil and gas leasing and development on lands managed by the Hollister Field Office. The EIS is a programmatic evaluation of anticipated oil and gas activities that may be located in existing fields or new leases.
- **California Energy Commission Power Plant Siting Projects.** Prepares biological resources CEQA analyses for CEC's Staff Assessments. In addition to CEQA requirements, each project analysis addresses state-jurisdictional streambed impacts and state-listed threatened or endangered species take, to support CEC's permitting authority under the Warren-Alquist Act. Each project includes coordination with CEC project management, technical specialists, and legal staff; data requests; coordination among project applicants, intervenors, and resource agencies including CDFW, BLM, and USFWS in public workshops; assessing project impacts and preparing conditions of certification; reviewing CEC proposed decisions. Several project assignments also include expert witness testimony in Evidentiary Hearings. Project include:
    - **Huntington Beach Energy Project (2013-ongoing).** Staff Assessment, Workshops, and Evidentiary Hearing (pending revised application). The project would replace water-cooled generating facilities with new air-cooled generators. Adjacent wetlands habitat supporting listed birds may be affected by project-related noise and disturbance.
    - **Alamitos Energy Center (2013-ongoing).** Draft Staff Assessment (pending redesign). The project would replace existing water-cooled generating facilities with new air-cooled generators.

Federally listed Pacific green sea turtles occupy adjacent aquatic habitat, and nearby wetlands habitat supporting listed birds may be affected by project-related noise and disturbance.

- **Rio Mesa Solar Electric Generating Facility (2011-2013).** Draft Staff Assessment, workshops, extensive review of technology hazard to birds (application withdrawn). The project would have developed approximately 3,960 acres in eastern Riverside County, using "power tower" solar thermal generators. Biological resources issues included listed wildlife (desert tortoise, Gila woodpecker); technology hazard for migratory birds; and desert dry wash woodland. The applicant suspended the project in January 2013.
- **Calico Solar Project (2009-2011).** Final Staff Assessment, extensive series of workshops and Evidentiary Hearings, including extensive revisions to FSA following project redesign. The project would develop Sterling "SunCatcher" generators on approximately 4,200 acres in the central Mojave Desert, San Bernardino County. Important biological resources issues included desert tortoise, rare plant species, and wildlife habitat connectivity. Following project authorization, Mr. White prepared responses for CEC legal staff response to California Supreme Court filings by Sierra Club and California Unions for Reliable Energy.
- **Rice Solar Energy Project (2009-2010).** Staff Assessment/DEIS with Western Area Power Administration as the NEPA lead agency, Final Staff Assessment, workshops. The project would develop a "power tower" solar thermal generator on approximately 1,500 acres in the Colorado Desert, in eastern Riverside County. Important biological resources issues included the threatened desert tortoise and migratory birds.

- **California Public Utilities Commission projects include:**
  - **West of Devers Upgrade Project (2013-ongoing).** Lead biologist for joint CEQA/NEPA analysis, with CPUC and BLM as lead agencies. Responsible for review and verification of SCE's biological field surveys and reports, data requests, authorship of EIR/EIS Biological Resources analysis, and coordination among CDFW, USFWS, and BLM. Lead CPUC biologist on multi-agency / SCE working group to develop Nesting Bird Management Plan to ensure compliance with California Fish and Game Code and federal Migratory Bird Treaty Act. Following completion of the FEIR, provided extensive decision support to the CPUC Administrative Law Judge. The transmission line route crosses two Multiple Species Habitat Conservation Plan areas (Coachella Valley MSHCP and Western Riverside MSHCP), designated California gnatcatcher critical habitat in San Bernardino County, and occupied desert tortoise habitat.
  - **Devers – Palo Verde II Transmission Project (2010-2014).** Reviewed, evaluated, and revised mitigation plans, activities, and reports for EIR/EIS compliance, and state and federal ESA incidental take permits. Coordinated extensively with CPUC, SCE, CDFW, BLM, and USFWS staff.
  - **Colorado River Substation (2011-2013).** Co-authored biological impacts analysis and mitigation for the CPUC's Supplemental EIR evaluating substation redesign and relocation; coordinated with CPUC, SCE, CDFW, BLM, and USFWS regarding substation siting to reduce impacts to windblown sand habitat; and evaluated mitigation plans, activities, and reports for EIR/EIS compliance. The substation is located near Blythe in eastern Riverside County.
  - **Desert Sunlight Solar Farm / Red Bluff Substation EIS (2011).** Extensively revised the Administrative FEIS Biological Resources analysis immediately before its publication, in coordination with CPUC project management and legal staff, to address CEQA adequacy under CEQA Guidelines §15221. The Desert Sunlight Solar Farm and Red Bluff Substation are in eastern Riverside County. Important biological resource issues include desert tortoise and wildlife habitat connectivity.

- **Tehachapi Renewable Transmission Project EIR/EIS (2008-ongoing).** Managed field crews and surveyed the right-of-way and alternate routes for rare plants in the Chino Hills (including the State Park), Puente Hills, San Gabriel Mountains (Angeles National Forest), Los Angeles Basin, and Inland Empire areas, Los Angeles, Orange, San Bernardino, and Riverside Counties to support the EIR/EIS. Reviewed resource management plans, mitigation implementation, and ongoing compliance reports to support CPUC's mitigation monitoring and state and federal waters and Endangered Species Act incidental take authorization. Coordinates among CPUC, SCE, CDFW, USFWS, and Angeles National Forest staff.

- **Western Area Power Administration Desert Southwest Region.** Managed or prepared biological resources analysis, QA/QC review, and prepared ESA Section 7 Biological Assessments for multiple transmission and related projects in California, Arizona, and Nevada, under Aspen's on-call contract to Western's Desert Southwest Region.

- **San Bernardino County Department of Public Works.** Under Aspen's contract with the Department, Mr. White manages biological resources technical staff for public works project CEQA documentation and regulatory permitting, including state and federal jurisdictional waters and Endangered Species Acts for multiple flood control projects in the valley, mountain, and desert regions of San Bernardino County.

Other Projects

- **White Knob Quarry (2015).** Revised Administrative EIR analysis of listed limestone-endemic plant impacts and mitigation for CEQA adequacy and conformance with Carbonate Habitat Management Strategy; managed field surveys of mitigation claims proposed by Omya, Inc., to evaluate suitability as compensation for listed plant impacts. San Bernardino County.

- **Desert Harvest Solar Project EIS (2010-2014).** Prepared the Biological Resources sections and supporting documents for BLM's EIS analyzing enXco's 1,200 acre photovoltaic project in Riverside County. Managed staff and subcontractors to conduct field surveys and compile data; managed consultation and permitting for state and federal Endangered Species Acts, CDFW Lake and Streambed Alteration Agreement, and federal Bald and Golden Eagle Protection Act, in coordination with BLM, CDFW, and USFWS. Some of the documents Mr. White managed or prepared were: (1) Biological Resources Technical Report, (2) Desert Tortoise Translocation Plan and Biological Assessment to support Section 7 consultation, (3) Jurisdictional Delineation to support streambed permitting, (4) Bird and Bat Conservation Strategy to support consultation with USFWS, and (5) Integrated Weed Management Plan to support BLM's NEPA review.

- **California Valley Solar Ranch (2011-2014).** Under Aspen's contract to San Luis Obispo County Mr. White coordinated with the County Planning staff and applicant to review and approve field survey reports and mitigation plans to ensure conformance with the project's Conditions of Approval. Major issues of concern included planning and mitigation for listed threatened or endangered species (giant kangaroo rat, San Joaquin kit fox), other special-status species, and timely completion of approvals to meet the developer's construction schedule. Mr. White coordinates ongoing compliance report reviews, and coordinates among the County, resource agencies, and applicant regarding bird mortality. The project is a 250 MW photovoltaic power plant on the Carrizo Plain in rural San Luis Obispo County.

- **Alta–Oak Creek Mojave Project EIR, Kern County, Biological Resources Data Review, Vegetation Mapping, Rare Plant Surveys and Impacts Analysis (2008-2009).** Mr. White managed field work and authored reports to review and update the applicant's botanical surveys and vegetation maps and descriptions. Mr. White also analyzed project impacts to rare plants including the endangered

Bakersfield cactus. Aspen was under contract to Kern County to prepare an EIR for the proposed 800 MW wind energy facility.

- **Newhall Ranch CEQA Consultation Services, California Department of Fish and Wildlife (CDFW), Biological Resources Analysis and CDFW CEQA review (2006-2010).** Supported CDFW staff in reviewing and revising analyses of biological resources the Newhall Ranch Specific Plan in the preparation of an EIR/EIS with CDFW and the USACE as lead agencies. Reviewed and revised the project's supporting documents for state and federal wetlands and streambed permitting and incidental take authorization for listed threatened and endangered species, including San Fernando Valley spineflower. The Specific Plan covers approximately 12,000 acres in northwestern Los Angeles County near the City of Santa Clarita.

Previous Consulting Experience 1989-2009

Prior to joining Aspen, Mr. White provided consulting services that included **b**iological surveys, report preparation (to meet requirements of CEQA, NEPA, SMARA, Clean Water Act, State waters requirements (1600), and local planning policies), client contact, and agency coordination. Specialties include rare plant surveys, wetlands delineations, vegetation sampling and description, habitat characterization (e.g., suitability for rare wildlife species), revegetation planning, and mitigation design.

- **Fort Irwin Gas Pipeline (2004 – 2005):** Managed and conducted field surveys, prepared Biological Resources Technical Report and impacts analysis for rare, threatened, and endangered plants and animals (including desert tortoise, Lane Mountain milk vetch, and others) on proposed pipeline alignments totaling 66 linear miles near Barstow, San Bernardino County.
- **Carbonate Habitat Management Strategy (1999 – 2004):** Coordination among agencies and industry in preparation of a management plan to balance land use conflicts among mining and listed limestone-endemic plants in the San Bernardino Mountains. Plan participants included US Forest Service, USFWS, CDFW, San Bernardino County, and several claimholders and industry interests. On its completion, the Plan supported federal Section 7 consultation, leading to a Biological Opinion for future and ongoing mining operations. Scott White Biological Consulting was contracted to three limestone quarry operators (Specialty Minerals, Omya, and Mitsubishi Cement).
- **Foothill Transportation Corridor South (2003):** Field surveys for special status plants including thread-leaved brodiaea on proposed alternate road alignments, Santa Ana Mountain foothills, Orange County.
- **Los Angeles County Department of Public Works Rare Plant Surveys (2002 – 2003):** Managed and conducted field surveys for threatened or endangered plants in existing and proposed flood control channels and debris basins, Santa Clarita Valley and San Gabriel Mountain foothills, Los Angeles County. Scott White Biological Consulting worked under a subcontract to prepare baseline data for the DPW in support of state and federal wetlands permitting requirements.
- **Biological Evaluation/Assessment for the South Coast Resource Management Plan and Record of Decision, BLM (2000).** Wrote Biological Evaluation addressing potential effects of BLM's South Coast Resource Management Plan on all federally listed threatened or endangered species.

Botanist: San Bernardino National Forest 1987-1989

Mr. White was team leader for data collection; analyzed data for chaparral ecosystem classification; mapped vegetation and recommended prescribed burn activities and other habitat management projects; conducted vegetation sampling of California spotted owl territories; prepared Environmental Assessments in compliance with NEPA.

SANDRA ALARCÓN-LOPEZ
Senior Associate

Academic Background

MA, Architecture and Urban Planning, University of California, Los Angeles, 1982
BA, Speech and Hearing Sciences, University of California, Santa Barbara, 1980

Professional Experience

Ms. Alarcón-Lopez has more than 30 years of experience managing environmental projects and programs, including experience conducting agency and community outreach to support the CEQA and NEPA review processes. She has effectively facilitated public meetings and technical working groups that involved stakeholders, government and resource agencies, and environmental interest groups.

- **SPARC Phase 2, Benefits and Costs Assessment, County of San Bernardino.** Managed the stakeholder and community outreach component of this project. Worked closely with Aspen's Project Manager and the County to design stakeholder interview questions to poll 10 renewable energy leaders. Assisted with the design and participated in two in-person focus groups sessions with renewable energy industry, conservation group, and government agency representatives to more closely evaluate the environmental, social, and economic benefits and costs of renewable energy. Prepared a report that summarized the results of and key findings from the stakeholder interviews and focus groups. Completed five public workshops/meetings in San Bernardino County. The community outreach meetings were conducted in a workshop format and focused on consumer needs and options (tools) that could be used to implement renewable energy projects and programs in the County. Coordinated the format and content of a webinar to further support community outreach on this project. Prepared report summarizing the results of the meetings and webinar.
- **Avila Point Project - Staff Support and EIR, County of San Luis Obispo.** Project Manager for this remediation and redevelopment project at the former (Unocal) Avila Tank Farm property in the coastal area of San Luis Obispo County. Ms. Alarcón-Lopez prepared the Notice of Preparation and Initial Study for this project and coordinated the setup and content of the scoping meeting conducted for this project. The scoping meeting was well-attended by members of the public, agency representatives, and Native American and environmental interest groups. This project is high profile and includes extensive coordination with Native American groups as part of the SB 18 consultation (land use amendments) and AB 52 consultation (EIR process). Ms. Alarcón-Lopez participates in the ATCAT (Avila Tank Farm Collaborative Assessment Team) meetings, which is an applicant and agency group that has been overseeing the geologic and groundwater studies being conducted on the project site. She has worked with the County and the ATCAT agencies in updating them on the key environmental issues that will be addressed on the project and in providing an overall project status. The project includes review of remediation options for existing soil and groundwater contamination and consideration of a tentative tract map to establish site infrastructure and subdivide the project site.
- **Topaz Solar Farm Project, Environmental Impact Report and Condition Compliance Review, County of San Luis Obispo.** As Project Manager for the EIR, Ms. Alarcón-Lopez assisted the County with the extensive outreach effort for this project including scoping meetings, public meetings on the draft document, and participating and presenting at the decision hearings before the County of San Luis Obispo Planning Commission and the Board of Supervisors. This project was highly controversial and required extensive coordination with resource and responsible agencies as well as residents near the proposed solar facility.

- **Environmental Impact Reports/Environmental Impact Statements, CPUC.** Ms. Alarcón-Lopez has managed the public outreach effort on nine electrical transmission projects for the CPUC. Public and agency involvement on these transmission projects involved comprehensive outreach to residents, affected businesses, environmental groups, resources agencies, and other interested parties. A detailed mailing list (3,000 to over 15,000 entries) was prepared for each project, which was updated after each major event. Project-related information was made available through different avenues such as a project-specific websites and at local repository sites, and at agency offices. In addition, a dedicated email address and phone/fax line was established to provide other avenues for the public and agencies to ask questions or submit formal comments. These projects required the preparation of very detailed scoping reports to document the numerous comments received both in writing and orally at public meetings. She managed all aspects of the public involvement program from scoping through to the Draft EIR public meetings and also provided support with the preparation of the CEQA findings.

  Ms. Alarcón-Lopez facilitated some of the public meetings and assisted with focused meetings to address specific technical issues. For instance, she recently facilitated four in-person meetings and two conference calls for the Nesting Bird Management Plan Technical Working Group for the West of Devers Upgrade Project. The working group included the applicant, resource agencies, and agency representatives, and resulted in a nesting bird plan for the project as well as future projects.

  Ms. Alarcón-Lopez worked on the public and community outreach for the following projects:

  - Valley South Subtransmission Project
  - West of Devers Upgrade Project
  - Coolwater Lugo Transmission Project
  - Tehachapi Renewable Transmission Project
  - Sunrise Powerlink Project
  - El Casco System Project
  - Devers–Palo Verde Transmission Project
  - Antelope Pardee Transmission Project
  - Antelope Transmission Project

- **Baldwin Hills Community Standards District (CSD), City of Culver City, Project Manager.** Project manager for the review of a County of Los Angeles environmental document and preparation of an oil and gas drilling ordinance for the City of Culver City in Los Angeles County. Ms. Alarcón-Lopez managed the preparation of technical comments on the Baldwin Hills Community Standards District EIR prepared by the County of Los Angeles for the Inglewood Oil Field. Working with a technical team of in-house and subcontractor staff, Ms. Alarcón-Lopez prepared a detailed evaluation of the County EIR on behalf of the City. The technical review included the evaluation of the County's proposed CSD (drilling ordinance), which the County revised based on public comments. The City used the review comments as part of their formal comments submitted on the County's EIR and CSD. In addition, Ms. Alarcón-Lopez managed the preparation of a draft well drilling ordinance for the portion of the Inglewood Oil Field within the City's jurisdiction and prepared a draft application form and application submittal requirements for use by the City. A preliminary review of bond, insurance, and application fees used by other cities within the County was also completed to support the proposed ordinance and application requirements.

- **Assessment of Well Permitting Practices and Administrative Draft Initial Study CEQA Compliance Program, Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR), Project Manager.** Project Manager for the preparation of an assessment report that analyzed DOGGR's compliance with CEQA. The assessment considered lead and responsible agency roles, applicable regulatory processes, environmental compliance, and oil and gas well permitting processes in Kern County. The report provided program options to DOGGR regarding measures that could be taken to bring their existing well permitting practices into compliance with CEQA. This assessment included consideration of over 37 plans, regulatory documents, and reports; contact with industry groups, environmental organizations, and other interested parties; and five workshop-type

meetings with interested parties to obtain input into the report and its conclusions. This was a highly controversial project with significant concern from interest groups and the oil and gas industry. Phase II included an evaluation of regulatory changes needed to bring DOGGR's program into compliance with CEQA and a comprehensive preliminary environmental assessment (Initial Study) to identify potential environmental impacts of revising existing DOGGR regulations. This preliminary environmental analysis included a data gap assessment that evaluated the applicability of 30 existing local and regional agency reports and presented what additional information would be needed to complete a subsequent environmental review.

- **Cabrillo Port Liquefied Natural Gas (LNG) Deepwater Port Project EIR/EIS Document Review, City of Oxnard, Project Manager.** Managed the technical and procedural review of the Cabrillo Port LNG Deepwater Port Project EIR/EIS. The scope of work involved reviewing all issue areas addressed in the draft documents and preparing comments regarding the adequacy of the document for the City of Oxnard. Aspen's senior technical staff provided input to this review. All comments for were consolidated into a review/comment white paper. The City used this information as part of their formal comments submitted on the Draft EIR/EIS and Revised Draft EIR (the EIS was not recirculated).
- **Detailed Project Report (Ecosystem Restoration Report) and Environmental Assessment of Old San Jose Creek, Santa Barbara County, USACE, Project Manager.** Project Manager for the preparation of the Baseline Conditions Report, Detailed Project Report and Environmental Assessment. This project included vegetation mapping and soil sampling to assess the suitability of soil for restoration of the creek, and an historical evaluation of how the creek has changed over time through the use of aerial photography. The EA of the Recommended Plan addressed the environmental impacts associated with the restoration project. The EA, part of the Detailed Project Report, was prepared to describe the costs and benefits associated with the restoration project. In addition, Ms. Alarcón-Lopez prepared a Coastal Consistency Determination to address the Federal Coastal Zone Management Act of 1972, which was included as an appendix to the Detailed Project Report.
- **New School Construction Program – Program EIR, Los Angeles Unified School District (LAUSD).** As Project Manager, Ms. Alarcón-Lopez managed the public involvement effort for the Program EIR. This EIR assessed the program-wide impacts of implementing the district's new school construction program across a highly urbanized and diverse area covering 704 square miles in Los Angeles County and across several cities. Because of the diverse nature of the school district population, Ms. Alarcón-Lopez conducted an extensive public involvement program that included an extensive community and agency outreach and the provision of public information materials in seven different languages. Public and agency involvement included 14 public meetings throughout the district to solicit public comment during scoping and on the draft document, multiple advertisements in 22 local newspapers and in different languages, distribution of public notices to approximately 2,100 interested parties, placement of reports in 29 public repository sites, preparation of a detailed scoping report, and participation in multiple certification hearings. This project also required extensive coordination with different district departments to ensure accurate school-related information and coordination with multiple elected local and State officials regarding the status and direction of the programmatic document.

Jacobs Engineering Group Inc. 1990-1999

Ms. Alarcón-Lopez managed community relations for restoration projects at two military bases in California. Conducted interviews of residents for community relations plans, prepared public information materials, and coordinated open houses/meetings to provide information on restoration efforts.

Planning Consultants Research 1989-1990

As Manager of Waste Management Services for Planning Consultants Research**,** Ms. Alarcón-Lopez worked on several planning and environmental projects. Managed a permitting and environmental review effort for the Lopez Canyon landfill in the City of Los Angeles. Prepared a hazardous material management plan for the Lockheed Company in Burbank. Completed a site feasibility study that evaluated three candidate sites for an autoclave facility for Waste Management of North America.

Independent Consultant (County of San Bernardino) 1988-1989

As an independent consultant, Ms. Alarcón-Lopez was the primary author of the draft county Hazardous Waste Management Plan (HWMP) for the **County of San Bernardino**. As primary author of the San Bernardino County HWMP, work involved analyzing and writing about issues regarding hazardous waste management such as siting hazardous waste facilities, transportation, summary of legislation, policy development, and preparation of other documents related to the plan, as well as taking the plan before public bodies for their review and consideration. The development of the HWMP involved coordination with 23 cities (at the time) in the County, coordination with multiple County departments and agencies, and multiple focused meetings throughout the development of the HWMP to receive stakeholder input.

County of Santa Barbara 1983-1988

As a Land Use Planner for the County of Santa Barbara Resource Management Department, Ms. Alarcón-Lopez prepared the county's Draft Hazardous Waste Management Plan. She prepared, managed, and/or contributed to several major NEPA and CEQA documents including offshore oil and gas projects, hazardous waste management plans/facilities, and other industrial, commercial, and recreational projects. She made presentations before the Planning Commission and Board of Supervisors and responded to questions from decision makers, other departments, and the public.

Special Training

Planning, Communication and Techniques for Effective Public Participation, International Association of Public Participation (IAP2)

Civic Role

City of Whittier Planning Commissioner 1990-1998

Ms. Alarcón-Lopez served two four-year terms as a Planning Commissioner with the City of Whittier (appointed by the City Council). She made decisions on controversial projects, assessed the long-term impacts of project developments, and ensured that mitigation reduced or eliminated any project impacts. She served as the Chair of the Commission from 1993 through 1995.

Appendix B

Aspen Insurance Certificate

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 7/26/2016

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER
Risk Strategies Company
500 N. Brand Blvd, Suite 1600
Glendale CA 91203

CONTACT NAME: Peggy Scamaldo
PHONE (A/C, No, Ext): (818)857-5360 FAX (A/C, No): (818)274-0325
E-MAIL ADDRESS: pscamaldo@risk-strategies.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Evanston Ins Co	
INSURER B : Philadelphia Indemnity Insurance	
INSURER C : Travelers Insurance Co	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
Aspen Environmental Group
5020 Chesebro Road #200
Agoura Hills CA 91301

COVERAGES **CERTIFICATE NUMBER:** CL1662815839 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC OTHER: $2,500 ded.			15PKGWE00220	9/27/2015	9/27/2016	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG Contractors Pollution Liab eac	$ 1,000,000 $ 500,000 $ 25,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $ 1,000,000
B	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS			PHPK1397820	9/27/2015	9/27/2016	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
A	UMBRELLA LIAB X OCCUR X EXCESS LIAB CLAIMS-MADE DED RETENTION $			15EFXWE00065	9/27/2015	9/27/2016	EACH OCCURRENCE AGGREGATE	$ 4,000,000 $ 4,000,000
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		UB3932T02A	7/1/2016	7/1/2017	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ 1,000,000 $ 1,000,000 $ 1,000,000
A	Professional Liability			15PKGWE00220	9/27/2015	9/27/2016	Claims Made $1,000,000	$2,000,000 agg
A	Pollution Liability			15PKGWE00220	9/27/2015	9/27/2016	Occurrence	$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Aera East Cat Cyn - 15PPP-00000-00001
Certificate Holder is included as an Additional Insured as required by written contract.

CERTIFICATE HOLDER
County of Santa Barbara
Planning Division
Planning and Development
123 E. Anapamu Street
Santa Barbara, CA 93101

CANCELLATION
SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Michael Christian/MAS

Appendix C

Exceptions to Services Contract

C. Exceptions to Services Contract

Aspen has reviewed the services contract included with the RFP in its entirety. If Aspen is awarded the contract to prepare an EIR for the Aera Energy East Cat Canyon Oil Field Redevelopment Plan Project, Aspen would like the County to consider the following exceptions (requested insertions are provided in ***bold, italicized*** text and deletions are displayed in ~~strikethrough~~ text) to Exhibit C of the proposed services contract (Standard Indemnification and Insurance Provisions). We will be open to negotiate with the County regarding modified language:

INDEMNIFICATION

Indemnification pertaining to other than Professional Services:

CONTRACTOR shall defend, indemnify and save harmless the COUNTY, its officers, agents and employees from any and all claims, demands, damages, costs, expenses (including attorney's fees), judgments or liabilities arising out of negligent ~~this Agreement or occasioned by the~~ performance or attempted performance of the provisions hereof ; including, ~~but not limited to,~~ any ~~act~~ errors or omissions ~~to act on the part~~ or willful misconduct of the CONTRACTOR or his agents or employees or other independent contractors directly responsible to him; except those claims, demands, damages, costs, expenses (including attorney's fees), judgments or liabilities resulting from the sole negligence or willful misconduct of the COUNTY. CONTRACTOR shall notify the COUNTY immediately in the event of any accident or injury arising out of or in connection with this Agreement.

Indemnification pertaining to Professional Services:

CONTRACTOR shall indemnify and save harmless the COUNTY, its officers, agents and employees from any and all claims, demands, damages, costs, expenses (including attorney's fees), judgments or liabilities arising out of the negligent performance or attempted performance of the provisions hereof; including any willful or negligent act or omission to act on the part of the CONTRACTOR or his agents or employees or other independent contractors directly responsible to him to the fullest extent allowable by law.

In no case shall the amount of damages or expenses found to be the responsibility of the CONTRACTOR exceed the contractor's errors and omission insurance coverage limits.

CONTRACTOR shall notify the COUNTY immediately in the event of any accident or injury arising out of or in connection with this Agreement.

COST PROPOSAL

to Prepare an Environmental Impact Report
for the

Aera East Cat Canyon Oil Field Redevelopment Plan Project

15PPP-00000-00001
15DVP-00000-00005
15TRM-00000-00003

Presented to:

County of Santa Barbara
Planning and Development
Energy & Minerals Division

Prepared by:

Aspen Environmental Group
5020 Chesebro Road, Suite 200
Agoura Hills, CA 91301

July 19, 2016

Cost Proposal

Aspen Environmental Group (Aspen) has prepared this cost proposal consistent with the April 28, 2016 Request for Proposals (RFP) issued by the County of Santa Barbara. As specified in the RFP, it is presented separate from the Technical Proposal and presents the costs associated with preparation of the Environmental Impact Report (EIR) for the East Cat Canyon Oil Field Redevelopment Plan Project (Project) proposed by Aera Energy, LLP (Aera). The costs were developed taking into account the background reports prepared by Aera for this Project and past work conducted on the Project site.

Aspen's Technical Proposal, Exhibit 4, provides the total hours per team member and their percentage of project hours on the project. Our estimated not-to-exceed cost for completion of our proposed scope of work is $280,440 or $322,506 with a fifteen percent contingency included, as requested. Exhibit 1 summarizes our meeting costs, Exhibit 2 summarizes the total cost by task, and Exhibit 3 provides a summary of total labor cost by task and issue area.

Our estimated cost is based on the following assumptions:

- Exhibit 1 presents our meeting and hearing costs for Ms. Strong, our proposed Project Manager, and issue area experts. Being located in Santa Barbara, Ms. Strong is readily available for meetings with Planning and Development staff and there are no associated travel expenses. We have also assumed that each of our issue-area experts will be available by phone to participateen in up to three, one hour meetings. The unit cost for additional meetings with Planning and Development is presented in Exhibit 1.

  We also understand that, if selected, Aspen will be expected to attend and participate in the scoping meeting, one public comment hearing on the Draft EIR in the Santa Maria area, and two public hearings before the County Planning Commission and Board of Supervisors in Santa Maria. Our cost assumes that Ms. Strong will attend all of the noted public meetings/hearings. In addition, we have included the cost for up to four issue-area experts to participate in the Planning Commission and Board of Supervisor hearings (estimated at this time to be air quality/GHG, risk of upset, geologic hazards/groundwater and oak restoration, although the issue area specialists to be brought to the hearings will depend on project needs at the time). We have estimated that each hearing could be up to four hours in length. Our costs include travel and overnight stay for our issue-area experts, and minimal travel costs for Ms. Strong. Unit costs for additional hearing attendance by Ms. Strong and our issue area experts is presented in Exhibit 1.

Exhibit 1. Aspen Team P&D Meeting and Public Meeting/Hearing Participation

Aspen Team Participant	Meetings with Planning & Development		Public Meetings & Hearings	
	# of 1-hour Meetings Assumed[1]	Additional Meeting Unit Cost[2]	# of Public Meetings & Hearings Assumed	Additional Hearing Attendance Unit Cost[3]
Vida Strong, Project Manager	5	$170	4	$1,200
Brewster Birdsall, Air Quality/GHG	3	$180	2	$2,700
LynneDee Althouse, Oak Restoration	3	$140	2	$1,200
Scott White, Other Biological Resources	1	$180	-	$2,600
Peter Stickles, Risk of Upset	3	$250	2	$5,000
Diana Dyste, Cultural Resources	1	$105	-	$1,750
Jim Thurber, Geology Haz/Groundwater	3	$180	2	$2,800
Philip Lowe, Surface Water	1	$140	-	$2,450
Scott Debauche, Traffic & Noise	1	$110	-	$1,350
Sue Walker, Land Use & Policy	1	$170	-	$1,200

1. With the exception of Ms. Strong and Ms. Walker, meeting attendance will be via conference call.
2. Additional meeting costs assume 1-hour conference call, with the exception of Ms. Strong and Ms. Walker who are based in Santa Barbara and therefore will attend in person.
3. Public hearing costs assumes hearings would be 4 hours in length and include travel time and expenses.

- Our costs assume the Applicant will provide all required background studies for use in the EIR. We have reviewed the available studies submitted along with the RFP. Therefore, this estimate is based on receiving any additional information from the Applicant and timely response to data requests or clarifications. If resolution of outstanding data needs cannot be readily corrected and additional research, field investigation or other analyses are needed beyond what is outlined in our technical scope of work (Technical Proposal, Section 4 Study Methodology), a commensurate cost modification may be requested.
- Energy & Minerals Division staff will provide all applicable planning documents and ordinances if they are not readily available on the Planning and Development Department's website.
- Our cost estimate is based on review and comment by Planning and Development staff and one unified set of review comments to respond to on the Administrative Draft EIR and Administrative Final EIR.
- Our cost estimate assumes that no more than 400 individual comments (public and agency) will be responded to, including Public Hearing comments. Responses will be within our proposal's scope and budget consist of explanations, elaborations, or clarifications of the data contained in the Draft EIR. If responses to comments result in the need for new analyses, the assessment of additional issues or alternatives, or the evaluation of substantial changes to either the project or the geographic area of study, a commensurate contract amendment and/or schedule revision will likely be requested.
- Energy & Minerals Division staff will be responsible for distributing/mailing of all CEQA-related notices and postings, Draft and Final EIR distribution and circulation, preparing the Final EIR's Findings of Facts and Statement of Overriding Considerations (if necessary).
- Our cost assumes that the deliverables to be submitted to the Energy & Minerals Division are those outlined in Section 4 of our Technical Proposal, which reflects the specifications of the RFP. Our costs also assume that the EIR will not exceed a total of 150 pages (with appendices on a CD) for printing and publication costs.
- Aspen understands that the project payment will be established at no more than once monthly and will be based on satisfactory progress and the submission of invoices. Reimbursement will be on a Time and Materials basis (page 11, 6th bullet of the RFP). Aspen understands that partial payment of the not-to-exceed amount will be contingent upon product delivery roughly as follows: 50% upon acceptance of Administrative Draft EIR, 20% on Draft EIR, 20% on Final EIR, and 10% upon satisfactory completion of all contract duties, including public hearing attendance. The final 10% of the not-to-exceed amount will under no circumstances be authorized by the County for payment until all products and contract duties are completed satisfactorily.

Exhibit 2. Summary of Cost by Task

Category	Task 1 NOP and Scoping	Task 2 Written Summary of Comments	Task 3 Proj Desc., Setting, Alternatives	Task 4 ADEIR and Tech Appendices	Task 5 DEIR and Technical Appendices	Task 6 Hearing and Comment Summary	Task 7 Resp to Comments	Task 8 Admin Final EIR	Task 9 Draft FEIR and Hearings	Task 10 Final EIR	TOTAL
Aspen Labor Costs	$2,815	$3,455	$16,805	$67,895	$17,745	$6,165	$17,955	$11,150	$12,275	$3,015	$159,275
Subcontractor Labor costs			$5,400	$59,789	$13,133	$540	$14,126	$4,234	$16,286		$113,508
Non-Labor Costs		$129.60	$81.00	$324.00	$1,026.00	$183.60	$27.00	$270.00	$5,562.00	$54.00	$7,657
Total	$2,815	$3,585	$22,286	$128,008	$31,904	$6,889	$32,108	$15,654	$34,123	$3,069	$280,440
Total with 15% contingency	**$3,237**	**$4,122**	**$25,629**	**$147,209**	**$36,689**	**$7,922**	**$36,925**	**$18,002**	**$39,242**	**$3,529**	**$322,506**
Percentage of Total Cost	1%	1%	8%	46%	11%	2%	11%	6%	12%	1%	**100%**

Exhibit 3. Labor Cost By Task and Issue Area

Issue Area and Labor Category	Personnel	Hourly Rate	Task 1		Task 2		Task 3		Task 4		Task 5		Task 6		Task 7		Task 8		Task 9		Task 10		Total Labor	
			NOP and Scoping		Written Summary of Comments		Proj Desc., Setting, Alternatives		ADEIR and Tech Appendices		DEIR and Technical Appendices		Hearing and Comment Summary		Resp to Comments		Admin Final EIR		Draft FEIR and Hearings		Final EIR		Hours	Budget
Aspen Team																								
Project Management																								
Principal-in-Charge	Jon Davidson	$195					2	$390															2	$390
Project Manager	Vida Strong	$170	6	$1,020	12	$2,040	20	$3,400	72	$12,240	20	$3,400	12	$2,040	20	$3,400	16	$2,720	20	$3,400	8	$1,360	206	$35,020
Associate, Other CEQA	Hedy Koczwara	$135	10	$1,350	10	$1,350	12	$1,620	36	$4,860	24	$3,240	20	$2,700	12	$1,620	12	$1,620	12	$1,620	8	$1,080	156	$21,060
Administrative	Administrative	$65					4	$260	6	$390	4	$260	2	$130	2	$130	4	$260	2	$130	2	$130	26	$1,690
Project Management	Billing	$65	1	$65	1	$65	1	$65	3	$195	1	$65	1	$65	1	$65	1	$65	1	$65	1	$65	12	$780
Contracts/Document Production	Emily Chitiea	$95					4	$380	16	$1,520	12	$1,140	2	$190	8	$760	8	$760	6	$570	4	$380	60	$5,700
Graphics	K. Simpson/T. Popiel	$95	4	$380			20	$1,900	20	$1,900	8	$760	8	$760	4	$380	4	$380	8	$760			76	$7,220
PD/Cumulative/Alternatives																								
PD/Cumulative/Alternatives	Vida Strong	$170					6	$1,020	8	$1,360	2	$340			4	$680	2	$340	1	$170			23	$3,910
Associate	Hedy Koczwara	$135					6	$810	8	$1,080	2	$270			4	$540	2	$270	1	$135			23	$3,105
Air Quality/ Greenhouse Gas																								
Air Quality/Greenhouse Gas	Brewster Birdsall	$180					4	$720	60	$10,800	16	$2,880			16	$2,880	8	$1,440	20	$3,600			124	$22,320
Biological Resources																								
Biological Resources	Scott White	$180					2	$360	12	$2,160	2	$360			6	$1,080	2	$360	1	$180			25	$4,500
Biological Resources, Oaks	LynneDee Althouse	$140					12	$1,814	54	$8,165	4	$605			8	$1,210	2	$302	14	$2,117			94	$14,213
Biological Resources	J. Lancaster/M. Schapp	$105					12	$1,260	130	$13,650	8	$840			16	$1,680	8	$840	2	$210			176	$18,480
Geologic Processes, Geologic Hazards, and Paleontology																								
Geology and Soils, Groundwater	James Thurber (GTC)	$180					4	$778	60	$11,664	20	$3,888			12	$2,333	8	$1,555	24	$4,666			128	$24,883
Geology and Soils, Groundwater	Aurie Patterson (GTC)	$150					4	$648	80	$12,960	20	$3,240			12	$1,944	8	$1,296	2	$324			126	$20,412
Hazardous Materials/Risk of Upset																								
Haz. Materials/Risk of Upset	Peter Stickles (ioMosaic)	$250					8	$2,160	100	$27,000	20	$5,400	2	$540	32	$8,640	4	$1,080	34	$9,180			200	$54,000
Historic/Cultural Resources																								
Historic/Cultural Resources	Diana Dyste	$105					2	$210	16	$1,680	2	$210			4	$420	1	$105	1	$105			26	$2,730
Historic/Cultural Resources	Robbie Gleaton	$85					12	$1,020	28	$2,380	8	$680			8	$680	2	$170	2	$170			60	$5,100
Land Use/Policy Consistency																								
Land Use/Policy Consistency	Sue Walker	$170					2	$340	8	$1,360	2	$340			2	$340	2	$340	1	$170			17	$2,890
Land Use/Policy Consistency	Hedy Koczwara	$135					2	$270	24	$3,240	8	$1,080			8	$1,080	4	$540	2	$270			48	$6,480
Noise																								
Noise	Scott DeBauche	$110					2	$220	16	$1,760	4	$440			2	$220	2	$220	2	$220			28	$3,080
Transportation/Circulation																								
Transportation/Circulation	Scott DeBauche	$110					8	$880	36	$3,960	8	$880			8	$880	4	$440	2	$220			66	$7,260
Water Resources																								
Water Resources, Surface	Phil Lowe	$140					12	$1,680	24	$3,360	4	$560	2	$280	8	$1,120	2	$280	2	$280			54	$7,560

Exhibit 3. Labor Cost By Task and Issue Area

Issue Area and Labor Category	Personnel	Hourly Rate	Task 1 NOP and Scoping	Task 2 Written Summary of Comments	Task 3 Proj Desc., Setting, Alternatives	Task 4 ADEIR and Tech Appendices	Task 5 DEIR and Technical Appendices	Task 6 Hearing and Comment Summary	Task 7 Resp to Comments	Task 8 Admin Final EIR	Task 9 Draft FEIR and Hearings	Task 10 Final EIR	Total Labor Hours	Total Labor Budget
Other Direct Costs														
Travel, Per Diem				$120				$120			$4,000			$4,240
Copies and CDs					$50		$900	$25		$200	$1,100			$2,275
Shipping							$50			$50	$50	$50		$200
Phone (Conference calls only)					$25			$25	$25					$75
Other (Miscellaneous)						$300								$300
Total Aspen Non-Labor Costs				**$120**	**$75**	**$300**	**$950**	**$170**	**$25**	**$250**	**$5,150**	**$50**		$7,090
(with Aspen Fee 8%)				**$130**	**$81**	**$324**	**$1,026**	**$184**	**$27**	**$270**	**$5,562**	**$54**		$7,657
Total Cost Per Issue Area			***$2,815***	***$3,585***	***$22,286***	***$128,008***	***$31,904***	***$6,889***	***$32,108***	***$15,654***	***$34,123***	***$3,069***		***$280,440***
Contingency Fee 15%			***$422***	***$538***	***$3,343***	***$19,201***	***$4,786***	***$1,033***	***$4,816***	***$2,348***	***$5,119***	***$460***		***$42,066***
Total Cost Per Issue Area			***$3,237***	***$4,122***	***$25,629***	***$147,209***	***$36,689***	***$7,922***	***$36,925***	***$18,002***	***$39,242***	***$3,529***	***1756***	***$322,506***