

Allen Matkins

Environmental
Resources
Management

Allen Matkins Leck Gamble Mallory & Natsis LLP
Attorneys at Law
Three Embarcadero Center, 12th Floor | San Francisco, CA 94111-4074
Telephone: 415.837.1515 | Facsimile: 415.837.1516
www.allenmatkins.com

1277 Treat Boulevard
Suite 500
Walnut Creek, CA 94597
(925) 946-0455
(925) 946-9968 (fax)

Robert D. Wyatt
E-mail: rwyatt@allenmatkins.com
Direct Dial: 415.273.7420 File Number: 999903-14000/SF796775.02



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Via Messenger and Electronic Mail

November 4, 2010

Heather McLaughlin, City Attorney
City of Benicia
250 East L Street
Benicia, CA 94510

**Re: Response to Request for Qualifications for Project Management and
Legal Services for the Benicia Arsenal Investigation and Cleanup
Project Submitted Jointly by Allen Matkins Leck Gamble Mallory
& Natsis LLP and Environmental Resources Management**

Dear Ms. McLaughlin:

On behalf of Allen Matkins Leck Gamble Mallory & Natsis LLP (Allen Matkins) and ERM-West, Inc. (ERM), we are pleased to respond to the City of Benicia's (City) October 25, 2010 Request for Qualifications (RFQ) for the above-referenced project. The teaming of Allen Matkins with ERM provides the full scope of services that the City is seeking for the Benicia Arsenal Investigation and Cleanup Project ("Benicia Arsenal").

- Allen Matkins is a prominent California law firm with more than 200 attorneys located in San Francisco, Walnut Creek, Los Angeles, Century City, Orange County, San Diego and Del Mar Heights, including more than 30 who specialize in the area of environmental law and related litigation.
- ERM is a global environmental consulting firm with 137 offices in 39 countries, approximately 3300 staff, and a local office of over 80 staff in Walnut Creek. ERM has substantial experience in the scope of services that the City has requested. As well, ERM features Peter Russell of Russell Resources, Inc., as a subconsultant who will provide knowledge of and history with the Benicia Arsenal project.

Attorneys and environmental professionals from these two firms have known each other and worked on projects together for over 25 years. As you will note from the materials enclosed in the appendices to this proposal, both firms have extensive experience in representing public agencies

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and meeting their complex needs related to contaminated properties. In addition, Peter Russell has worked with Mark Ransom and ERM since 1989 on the Sacramento Railyards state Superfund site as a consultant to the City of Sacramento and coordinating efforts with ERM, the lead consultant for this showcase project. ERM has also worked with Dr. Russell who represented the City of Alameda during the Alameda Fleet and Industrial Supply Center cleanup and redevelopment project (see attachments).

Project Understanding and the Allen Matkins/ERM Team

Based on the RFQ and our understanding of the project, the City is seeking legal and technical representation related to environmental issues associated with the Benicia Arsenal that are expected to include:

- Developing a strategy that best meets the City's goals and objectives;
- Possibly negotiating among potentially responsible parties (PRPs) and the California Department of Toxic Substances Control (DTSC) voluntary cleanup agreements ("VCAs") for site characterization, remedy selection, and implementation; and
- Project management and legal services to support the City in the Benicia Arsenal matter.

The Allen Matkins/ERM team provides comprehensive, relevant expertise to assist the City with all aspects of this complex environmental project. This response provides information summarizing the exceptional legal and technical capabilities of the team that will meet all the challenges associated with delivering a successful outcome to the City. Our experience and expertise includes:

- The team has negotiated all aspects of Consent Orders ("COs") and VCAs with DTSC including recent projects throughout Northern California. In addition, we have successfully carried out all work elements identified in these COs and VCAs (and those elements listed in the draft Imminent and Substantial Endangerment Order circulated by the DTSC for the Benicia Arsenal). These work elements include: site remediation strategy, RI/FS activities, risk assessments, feasibility studies, remedial design and implementation, operation and maintenance, site closure, and binding legal agreements.
- The team has represented municipalities, both individually and as part of PRP groups, in environmental matters related to site investigation, characterization, remedy selection and implementation, public participation, redevelopment, and negotiations with local, state, and federal regulators (including DTSC, RWQCB, and USEPA).

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- o We have direct experience with all public participation requirements, including public relations, developing public participation plans, mailing lists, fact sheets, and public mailings; preparing for and leading public meetings, addressing public comments; and conducting door-to-door outreach.
- o The team has direct experience integrating environmental issues and redevelopment. We have strong legal and technical expertise related to ordnance and munitions, solvents, perchlorate, and heavy metals, including arsenic and chromium in soil and groundwater media.
- o Allen Matkins has been representing for the past 9 years an alleged former subsidiary of Black & Decker at a former WW II Department of Defense ammunition and storage facility where the contaminants of concern are solvents and perchlorate. The Department of Defense is a defendant in these actions along with 22 other defendants. Allen Matkins has been successful in defeating two municipalities in their respective Superfund claims; these municipalities have spent over \$30 million in attorneys' fees which they are unable to recover because of errors in litigation strategies.
- o ERM has particularly relevant long-term experience with the City of Fresno on a very similar project that incorporates all of the relevant elements with which the City of Benicia is seeking assistance, as well as our long-term projects with the developer for the investigation and cleanup of the former Alameda Naval Air Station and Alameda Fleet and Industrial Supply Center and the investigation, cleanup, and redevelopment of the 240-acre State Superfund Sacramento Railyards former railroad maintenance yard, which is one of the largest Brownfields redevelopment in North America.
- o ERM's subconsultant, Peter Russell has institutional knowledge of and experience with the Benicia Arsenal as Project Director for the investigation and remediation project that resulted in California's first former ordnance site to be approved for unrestricted residential use.

Representative matters that specifically illustrate our capabilities are described in more detail in Section VI of this proposal and Appendices C and D.

I. FIRST PRINCIPLES

The attorneys and environmental professionals who are proposed to assist the City in this matter are uniformly of the view that client needs and expectations are best fulfilled when City decision-makers and outside professionals work as a team in establishing goals, objectives, and strategies.

To this end, there should be regular meetings to review progress on tasks, budgets and identification of new tasks, timing and appropriate resource allocations. Such a process will be critical in a matter

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such as the Benicia Arsenal where there are multiple parties, --some of which are potentially aligned with the City on some issues, and some that are adverse -- and where there is such a complex environmental history affecting properties with diverse land uses.

II. APPROACH: KEY PRELIMINARY TASKS AND PROPOSED ENTITY

Before a fully considered scope of work, schedule, and budget can be defined, the Allen Matkins/ERM team believes that the following preliminary tasks should be conducted to facilitate subsequent development of a focused strategy and action items to better lead to successful accomplishment of the City's goals and objectives. This preliminary review and research will result in a more focused and efficient work plan to accomplish the City's objectives for this project.

The Allen Matkins/ERM team proposes the following preliminary actions:

- Review of Site Investigation and Remediation Conducted by All Parties to Date – ERM.
- Review of DTSC Draft Imminent & Substantial Endangerment Order to identify those locations which DTSC has marked for additional characterization and potential remediation – ERM.
- Review of existing Health Risk Assessments to evaluate relative adequacy and possible additional assessments – ERM.
- Review and evaluation of the U.S. Army Corps of Engineers ("ACOE") decision to decline to perform additional work and adequacy of the technical basis for that position – ERM.
- Summary Report on Preceding Tasks – ERM.
- Identification of all Potentially Responsible Parties ("PRPs"), and assessment of the basis for their liability and of the strength of their defenses – Allen Matkins.
- Initial review of possible insurance claims.
- Assist City in identifying potential sources of funding from the Department of Defense, federal and state legislatures, with the help of key elected officials – Allen Matkins.
- Assess potential for City to invoke the Polanco Act to take over the process in lieu of DTSC – Allen Matkins.

Caveats:

It is the strong recommendation of Allen Matkins and ERM that the City consider completing these tasks before attempting to formulate a coherent and realistic strategy for achieving its goals.

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Potential scenarios range from the City's acting as a prime facilitator in joint problem-solving to simply being one of the many PRPs trying to minimize its financial exposure.

With the advent of a new administration in Sacramento, there is likely to be a changing of the guard at Cal/EPA and DTSC. Perhaps DTSC can be persuaded to defer precipitous action until new policy-makers are fully informed.

III. SCOPE OF SERVICES

The overall Scope of Services depends heavily upon the City's decision regarding the role it wishes to play in dealing with the Benicia Arsenal. Under one scenario, the City might decide to take a leadership role that would call upon counsel and consultants to perform advisory and consulting functions on behalf of the City in coordinating all parties' efforts. Under another scenario, counsel might serve more strictly in a legal defense capacity, and consultants might have to prepare and implement specific removal and/or remediation projects. There are multiple mixed scenarios within this spectrum of alternatives. For the reasons provided under Section III., Key Preliminary Tasks, Allen Matkins and ERM believe it would not be in the City's best interests to adopt a scope of work and cost estimates for the project until completion of the Preliminary Tasks and after the City settles upon an overall strategy that meets its realistic goals and resources.

Accordingly, Allen Matkins and ERM both believe that the highest and best use of their combined experience and expertise is, in the first instance, assisting the City to identify strategic options together with their associated pros and cons and an estimate of likely costs associated with each option. Once the City has selected its preferred strategy, it will then be appropriate to develop a specific scope of work together with tasks, timelines, and appropriate budget commitments. It is estimated that this process can be completed within 4 to 6 weeks from retention.

IV. COMMUNICATIONS TECHNOLOGY

Both firms use Word programs and Excel spreadsheets and related graphs and tables. In addition, both firms employ Workshare so that clients are able to participate in the creation and editing of documents. Lastly, Allen Matkins and ERM have the capability to provide an Extranet website whereby clients are able to access documents related to their matters that are stored in the firm's secure case database. These secure technologies would enable the City to have direct access to electronic documents and relevant research, as well as provide its comments for the project duration.

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V. PROJECT TEAM

A list of key personnel for this project are presented below, and resumes for the Allen Matkins and ERM personnel are provided in Attachments A (Allen Matkins) and B (ERM). Members of the Allen Matkins/ERM team have active practices on other projects but are committed to make themselves routinely available to the City on short notice for whatever task is required and to meet all agreed upon or mandated deadlines with whatever advance review the City may require.

Allen Matkins	ERM
<ul style="list-style-type: none">◦ Bob Wyatt, Partner, Principal PM◦ David Cooke, Partner◦ Sandi Nichols, Partner◦ Sonia Ransom, Partner	<ul style="list-style-type: none">◦ Mark Ransom, PE, Principal PM◦ Peter Russell, PhD, PE (Liaison to City with specialized expertise with the Arsenal Project)◦ Greg Murphy, PG◦ Jim Warner, PG◦ Ken Jenkins, PhD (risk assessment)◦ John Consoletti, PE (UXO expertise)

Focused highlights of the experience and qualifications of our Principal Project Managers and our designated liaison for the City are provided below.

- Bob Wyatt will serve as principal project manager on the legal front for Allen Matkins. Bob has been practicing environmental law for thirty-five years. He was Deputy Regional Counsel and Acting Regional Counsel for USEPA Region 9 in San Francisco between 1980 and 1984 and helped establish the Superfund and RCRA programs at their inception. In that capacity he worked directly with DTSC and Regional Boards around the state in addressing contaminated properties. He has been named among Best Lawyers in America for the last 10 years and as a Northern California Superlawyer for the same period. His full resume is included in Appendix A.
- Mark Ransom will serve as the principal project manager on the technical consulting issues for ERM. Mark has 32 years of experience in environmental management and has worked with a variety of public and private sector clients, including the City of Fresno, Catellus Development Corporation (Alameda FISC), and Union Pacific Railroad Company/Thomas Enterprises (see case studies in Attachment D). He currently directs ERM's nationwide Environmental Liability Transfer Program, employing insurance and business-based solutions for complex Brownfields transactions valued at up to \$52 million. Specifically relevant is his experience as Principal-in-

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Charge for the CERCLA-directed investigation and cleanup program at the 1,600-acre active air terminal, a former defense site, in Fresno. Among his several accomplishments on this project, is negotiation of an agreement with DTSC and RWQCB under the DTSC federal facilities program as well as a Cooperative Agreement among the four PRPs involved in the project. He has directed all phases of the fast-track property redevelopment work, and worked with a diverse PRP group, comprising the City of Fresno, US Army Corps of Engineers, Air National Guard, and Boeing. In addition, he served for several years as the Principal-in-Charge for the Sacramento Railyards project, which is described in Attachment D.

- o Peter Russell provides in-depth knowledge of the Benicia Arsenal project. He previously served as project director for the investigation and remediation at the Benicia Arsenal, which resulted in California's first former ordnance site to be approved for unrestricted residential reuse. He addressed ordnance and chemical contamination of soil, groundwater, soil gas, and surface water, with extensive regulatory liaison and remedial costs modeling. Peter oversaw and directed the remediation contractor, and performed considerable public relations interface.

Once the process described in Sections III and IV has been completed and a legal and technical strategy has been selected by the city, the Allen Matkins/ERM team will develop a specific project team that clearly establishes personnel and their roles, and identifies the project manager and day-to-day contact person for the Benicia Arsenal project.

VI. ORGANIZATIONAL QUALIFICATIONS

The Allen Matkins/ERM team has particularly relevant experience with similar projects to the City's Benicia Arsenal project, as summarized below. More detailed project descriptions are provided in Appendices D (Allen Matkins) and C (ERM).

ERM's experience most relevant to the City's project is our 20-year project performed for the City of Fresno for the Old Hammer Field turnkey site investigation, remediation, construction management, and system operation and maintenance project. The City of Fresno, National Guard Bureau, US Army Corps of Engineers, and Boeing (formerly Rockwell International) retained ERM to conduct investigations and perform cleanup activities for the Old Hammer Field Air Base, which was used by the Army Air Corps during World War II. The USEPA Region 9, DTSC, and Central Valley Regional Water Quality Control Board (RWQCB) required preliminary assessments before redevelopment approval. During the entire 20-year and ongoing performance on the project as lead consultant, ERM has provided the following services and results:

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- For 20 years ERM has directed project strategy and interface with DTSC and the RWQCB. ERM has leveraged its working relationship with the agencies to the advantage of the City. As a result, the City has been through the entire RI/FS/RAP/Community Outreach/Remediation Implementation in the most streamlined cost-effective manner possible. ERM has carried the project successfully and efficiently through significant turnover at the agencies for years.
- ERM led negotiations with DTSC, RWQCB, and the PRPs in the development of a favorable Enforceable Agreement for the performance of the work. ERM negotiated schedules that allowed flexibility for funding from the federal government. Oversight costs from the agencies were capped at an extremely low-burn rate.
- ERM performed all work consistent with the National Contingency Plan (NCP) requirements. This proved extremely valuable in the settlement between the PRPs in which the City's share for past and future costs was capped at 10 percent. This was significant for the City in that they were only the landowner, not the party that contributed to the soil and groundwater contamination.
- In 1991, ERM started the development of the list of PRPs. Through the work, the federal government and private parties were identified and held responsible for 90 percent of past and future costs. This outcome was critical for the City in that they had no funds to perform the work.
- ERM successfully carved out two parcels of land for development within the boundaries of the site for fast-track redevelopment. This allowed the City to lease and sell land that would have otherwise remained idle and producing zero revenue. ERM turned both parcels into cash producers to help the City fund their portion of the cleanup.
- ERM negotiated a lease with a private landowner under favorable terms for the location of a groundwater treatment system off of the City property boundaries. ERM streamlined the process and saved the City considerable funds in purchasing property for the system. ERM was also able to complete this in a very short period of time, allowing compliance with all of the regulatory schedule requirements.
- ERM has developed a close relationship with the City Attorney, which has allowed him the ability to successfully advise the City Council in key decisions regarding the management of the project. This has been critical to the City's success in maintaining a low percentage of the payment for the work performed at the site.

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- ERM has assisted the City Attorney in the preparation of key materials for presentations to City Council in closed and open sessions. This has been key in maintaining the 10 percent cost share for the City.
- ERM has led community outreach activities for the project. This has allowed the project to move forward smoothly over 20 years, and there has been no interruption to the schedule or adverse cost impacts for the City in the outreach process.

VII. PROJECT SCHEDULE

Both Allen Matkins and ERM are prepared to start work immediately on the activities described in Sections III and IV upon selection. As noted, the precise budget and project duration would be established jointly with the City once a strategy and component tasks have been defined.

VIII. BILLING

Allen Matkins proposes to bill the City for time and materials, provided, however, that the City will receive a 15% discount off of current standard hourly rates for listed attorneys in accordance with the Attachment E table. Likewise, ERM's fee proposal extends a 15-percent discount to the City as presented in Attachment F.

Should Allen Matkins and ERM be selected by the City, the following arrangements for retention should be considered.

- Option 1 would be for the City to enter into separate retention agreements with counsel and consultant.
- Option 2 would be for the City to enter into separate retention agreements subject to exceptions for those instances where it would be preferable for Allen Matkins to retain ERM for the benefit of the City in order to maintain certain communications privileged and confidential.
- Option 3 would be for Allen Matkins to retain ERM for all purposes for the City's benefit.

IX. REFERENCES

Allen Matkins and ERM have presented client reference contacts together with brief project descriptions in Appendices G (Allen Matkins) and H (ERM). These client contacts have first-hand experience with Allen Matkins and ERM, and many of our proposed project team. We are proud of our work and long-standing relationships with these clients, and we encourage you to contact them.

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X. **CONCLUSION**

We appreciate the opportunity to be considered to assist the City in this important matter, and look forward to meeting with you and answering any questions you may have.

Very truly yours,

Handwritten signature of Robert D. Wyatt in cursive script, including the initials "RDW" at the end.

Robert D. Wyatt
Partner, Allen Matkins

Handwritten signature of Mark E. Ransom in cursive script.

Mark E. Ransom
Partner, ERM

RDW:dwk
Attachments

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Charge for the CERCLA-directed investigation and cleanup program at the 1,600-acre active air terminal, a former defense site, in Fresno. Among his several accomplishments on this project, is negotiation of an agreement with DTSC and RWQCB under the DTSC federal facilities program as well as a Cooperative Agreement among the four PRPs involved in the project. He has directed all phases of the fast-track property redevelopment work, and worked with a diverse PRP group, comprising the City of Fresno, US Army Corps of Engineers, Air National Guard, and Boeing. In addition, he served for several years as the Principal-in-Charge for the Sacramento Railyards project, which is described in Attachment D.

- Peter Russell provides in-depth knowledge of the Benicia Arsenal project. He previously served as project director for the investigation and remediation at the Benicia Arsenal, which resulted in California's first former ordnance site to be approved for unrestricted residential reuse. He addressed ordnance and chemical contamination of soil, groundwater, soil gas, and surface water, with extensive regulatory liaison and remedial costs modeling. Peter oversaw and directed the remediation contractor, and performed considerable public relations interface.

Once the process described in Sections III and IV has been completed and a legal and technical strategy has been selected by the city, the Allen Matkins/ERM team will develop a specific project team that clearly establishes personnel and their roles, and identifies the project manager and day-to-day contact person for the Benicia Arsenal project.

VI. ORGANIZATIONAL QUALIFICATIONS

The Allen Matkins/ERM team has particularly relevant experience with similar projects to the City's Benicia Arsenal project, as summarized below. More detailed project descriptions are provided in Appendices D (Allen Matkins) and C (ERM).

ERM's experience most relevant to the City's project is our 20-year project performed for the City of Fresno for the Old Hammer Field turnkey site investigation, remediation, construction management, and system operation and maintenance project. The City of Fresno, National Guard Bureau, US Army Corps of Engineers, and Boeing (formerly Rockwell International) retained ERM to conduct investigations and perform cleanup activities for the Old Hammer Field Air Base, which was used by the Army Air Corps during World War II. The USEPA Region 9, DTSC, and Central Valley Regional Water Quality Control Board (RWQCB) required preliminary assessments before redevelopment approval. During the entire 20-year and ongoing performance on the project as lead consultant, ERM has provided the following services and results:

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- For 20 years ERM has directed project strategy and interface with DTSC and the RWQCB. ERM has leveraged its working relationship with the agencies to the advantage of the City. As a result, the City has been through the entire RI/FS/RAP/Community Outreach/Remediation Implementation in the most streamlined cost-effective manner possible. ERM has carried the project successfully and efficiently through significant turnover at the agencies for years.
- ERM led negotiations with DTSC, RWQCB, and the PRPs in the development of a favorable Enforceable Agreement for the performance of the work. ERM negotiated schedules that allowed flexibility for funding from the federal government. Oversight costs from the agencies were capped at an extremely low-burn rate.
- ERM performed all work consistent with the National Contingency Plan (NCP) requirements. This proved extremely valuable in the settlement between the PRPs in which the City's share for past and future costs was capped at 10 percent. This was significant for the City in that they were only the landowner, not the party that contributed to the soil and groundwater contamination.
- In 1991, ERM started the development of the list of PRPs. Through the work, the federal government and private parties were identified and held responsible for 90 percent of past and future costs. This outcome was critical for the City in that they had no funds to perform the work.
- ERM successfully carved out two parcels of land for development within the boundaries of the site for fast-track redevelopment. This allowed the City to lease and sell land that would have otherwise remained idle and producing zero revenue. ERM turned both parcels into cash producers to help the City fund their portion of the cleanup.
- ERM negotiated a lease with a private landowner under favorable terms for the location of a groundwater treatment system off of the City property boundaries. ERM streamlined the process and saved the City considerable funds in purchasing property for the system. ERM was also able to complete this in a very short period of time, allowing compliance with all of the regulatory schedule requirements.
- ERM has developed a close relationship with the City Attorney, which has allowed him the ability to successfully advise the City Council in key decisions regarding the management of the project. This has been critical to the City's success in maintaining a low percentage of the payment for the work performed at the site.

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- ERM has assisted the City Attorney in the preparation of key materials for presentations to City Council in closed and open sessions. This has been key in maintaining the 10 percent cost share for the City.
- ERM has led community outreach activities for the project. This has allowed the project to move forward smoothly over 20 years, and there has been no interruption to the schedule or adverse cost impacts for the City in the outreach process.

VII. PROJECT SCHEDULE

Both Allen Matkins and ERM are prepared to start work immediately on the activities described in Sections III and IV upon selection. As noted, the precise budget and project duration would be established jointly with the City once a strategy and component tasks have been defined.

VIII. BILLING

Allen Matkins proposes to bill the City for time and materials, provided, however, that the City will receive a 15% discount off of current standard hourly rates for listed attorneys in accordance with the Attachment E table. Likewise, ERM's fee proposal extends a 15-percent discount to the City as presented in Attachment F.

Should Allen Matkins and ERM be selected by the City, the following arrangements for retention should be considered.

- Option 1 would be for the City to enter into separate retention agreements with counsel and consultant.
- Option 2 would be for the City to enter into separate retention agreements subject to exceptions for those instances where it would be preferable for Allen Matkins to retain ERM for the benefit of the City in order to maintain certain communications privileged and confidential.
- Option 3 would be for Allen Matkins to retain ERM for all purposes for the City's benefit.

IX. REFERENCES

Allen Matkins and ERM have presented client reference contacts together with brief project descriptions in Appendices G (Allen Matkins) and H (ERM). These client contacts have first-hand experience with Allen Matkins and ERM, and many of our proposed project team. We are proud of our work and long-standing relationships with these clients, and we encourage you to contact them.

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Heather McLaughlin, City Attorney

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X. **CONCLUSION**

We appreciate the opportunity to be considered to assist the City in this important matter, and look forward to meeting with you and answering any questions you may have.

Very truly yours,

Handwritten signature of Robert D. Wyatt in cursive, dated 10/28.

Robert D. Wyatt
Partner, Allen Matkins

Handwritten signature of Mark E. Ransom in cursive.

Mark E. Ransom
Partner, ERM

RDW:dwk
Attachments

Attachment A
Allen Matkins Professional
Profiles

Allen Matkins

Robert Wyatt: Partner

Practice Areas:

Land Use, Environmental & Natural Resources

Description of Practice:

Bob Wyatt is a partner in our San Francisco office whose practice has focused on environmental law for over thirty years. The scope of his practice includes environmental compliance counseling under all federal and state environmental statutes; permit acquisition; environmental due diligence and negotiations in mergers and acquisitions, and real property transactions; Brownfields regulatory clearances; federal and state Superfund and hazardous waste cases; and counseling and litigation under California's Proposition 65. Bob's long-term clients include Fortune 500 companies in the industrial, real estate, financial institution, agricultural, mining, pharmaceutical, chemical, electronics, and construction materials sectors, as well as public agencies. He has overseen environmental review in the acquisition of a portfolio of over 2,700 properties, the largest such transaction in California's history. He has been recognized by his peers in the *Daily Journal* as one of the top three environmental lawyers in California, has been listed in *The Best Lawyers in America* for the past 10 years, and named to the list of Northern California *Super Lawyers* for the past 10 years.

In the period of 1979 to 1984, Bob served as Deputy Regional Counsel and Acting Regional Counsel for the United States Environmental Protection Agency, Region 9, with jurisdiction over California, Nevada, Arizona, Hawaii, Guam, American Samoa, and the Commonwealth of the Northern Marianas. During his tenure, he was responsible for implementing legal provisions of the federal Superfund and hazardous waste programs as well as enforcement actions under the federal Clean Water Act. Bob was also tasked with coordinating the federal environmental statutes and programs with state and local agencies. From 1984 to 1985, he held the position of Special Counsel for Regulatory Affairs and Director of Government Relations for Castle & Cooke.

Bob has lectured widely on the field of environmental law, including presenting before the California Business Law Institute; Soils and Foundation Engineers Association of California; Executive Enterprise Institute, Course on Environmental Regulations; University of San Francisco School of Law; Practising Law Institute; University of California, School of Business; and Stanford University Graduate School of Business.

Bob is admitted to practice in all California state courts, the United States District Courts for the Northern, Central and Eastern Districts of



San Francisco
(415) 837-1515
(415) 837-1516 (fax)

rwyatt@allenmatkins.com

California, and the United States Courts of Appeals for the Ninth Circuit. He is a member of the American Bar Association, Natural Resources, Energy and Environmental Law Section; the California State Bar Association; the Bar Association of San Francisco.

Educational History:

Mr. Wyatt received his law degree in 1975 from Boalt Hall, the University of California at Berkeley, and also holds a Ph.D. and M.A. in English and American Literature from the University of Oregon (1969). He was awarded his B.A. from San Francisco State University in 1964, and received his secondary education at The Lawrenceville School.

Allen Matkins

Anton Hasenkampf: Associate

Practice Areas:
Litigation

Description of Practice:

Anton Hasenkampf is an associate in the firm's San Francisco office, where he focuses on general business litigation. He regularly advises clients on issues related to claims for breach of contract, breach of lease and environmental liability pursuant to Business & Professions Code Section 17200. Anton represents a wide variety of businesses and individuals.

Anton is admitted to the State Bar of California.

Educational History:

Anton received his B.A. in Philosophy from Dartmouth College, Hanover, NH in 2006. In 2009, he received his J.D. from the University of California, Hastings College of the Law, graduating first in his class. While in law school, Anton was a member of Hastings Law Journal in 2007 and earned numerous Witkin Awards for Academic Excellence. Anton externed for the Honorable Carlos Bea of the United States Court of Appeals for the Ninth Circuit.



San Francisco
(415) 837-1515
(415) 837-1516 (fax)

ahasenkampf@allenmatkins.com

Allen Matkins

Kamran Javandel: Associate

Practice Areas:

Land Use, Environmental & Natural Resources
Litigation

Description of Practice:

Kamran Javandel is an associate in the Environmental and Natural Resources and Litigation departments of our San Francisco office. His practice focuses on representing and advising clients in environmental and business litigation issues.

Prior to joining Allen Matkins, Kamran was a Senior Staff Scientist at Cambria Environmental Technology, Inc. (now Conestoga-Rovers & Associates) from 2004 to 2007 where he managed the assessment and remediation of underground storage tank release sites. He consulted with major oil company clients to establish goals and develop action plans; directed subcontractors in investigations to assess subsurface soil and groundwater conditions; interfaced with professional engineers and geologists on remedial design solutions; collaborated with government agencies to ensure regulatory compliance; reviewed chemical analytical data; and authored reports.

Educational History:

Kamran received his J.D. from the University of California, Hastings College of the Law, *cum laude*, in 2010. While at Hastings, he was an Assistant Managing Editor of the *Hastings Law Journal*, recipient of the Witkin Award in Legal Writing and Research, earned Honorable Mention for Best Oral Argument in Moot Court, and was a Teaching Assistant for Legal Writing and Research.

In 2004, Kamran earned both a B.S. in Environmental Toxicology and a B.A. in Political Science from the University of California, Davis.



San Francisco
(415) 837-1515
(415) 837-1516 (fax)

kjavandel@allenmatkins.com

Allen Matkins

Sandi L. Nichols: Partner

Practice Areas:

Land Use, Environmental & Natural Resources
Litigation

Description of Practice:

Sandi Nichols practices in the areas of environmental, natural resources and land use counseling and litigation, primarily handling litigation under the federal Clean Water Act, the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and the California Environmental Quality Act (CEQA). She has handled all phases of litigation from discovery through mediation, trial and appeal in state and federal court cases relating to contaminated soil, sediments, groundwater and surface waters, resulting from petroleum, chemical use and disposal, battery reclamation activities and industrial port-related activities. She has also handled indoor air quality litigation and environmental insurance coverage matters. Sandi also assists in the preparation of negative declarations and environmental impact reports, and represents clients in litigation under CEQA. She has litigated eminent domain actions and title and boundary disputes. Sandi has counseled lenders and fiduciaries on environmental matters, including the development and implementation of environmental policies, and management of environmentally-impaired trust and estate assets and real property security.

Prior to joining Allen Matkins in 2007, Sandi was the Managing Partner of the California Offices of Stoel Rives LLP (2001-2006). She began her legal career with Washburn, Briscoe & McCarthy in 1981 and was its Managing Shareholder from 1996 until the merger with Stoel Rives in 2001.

Honors and Awards:

Best Lawyers in America (2009-2011); *San Francisco Business Times* Best Lawyers in the Bay Area (2009); *Super Lawyers* Northern California in Environmental Litigation (2004-2010); Martindale-Hubbell A-V Rating; Stanford University Mediation Certificate (1994); and *Who's Who* in American Law; *Who's Who* of Emerging Leaders of America.

Professional Activities/Memberships:

Member, State Bar of California, Sections on Litigation, Environment and Real Property; member, American Bar Association, Section on Natural Resources, Energy and Environment; member, Bar Association of San Francisco, Environment and Water Section; member, Queen's Bench; member, Association of Environmental



San Francisco
(415) 837-1515
(415) 837-1516 (fax)

snichols@allenmatkins.com

Professionals; member, Groundwater Resources Association.

Community Activities:

Attorney-coach, Menlo School, National Mock Trial Competition; mentor, Hastings College of the Law Mentor Program; member/chair, Crocker School Site Council, Crocker Middle School, Hillsborough, CA (1999-2001); trustee, The Carey School, San Mateo, CA (1995-98); AYSO soccer coach, Burlingame, CA (1990-97); president, Carey School Parents Association (1994-95).

Representative Matters and Cases:

- Represent private and public entities in defense of citizen-suit litigation brought for alleged discharges, effluent limitations violations, reporting, and monitoring violations under the federal Clean Water Act. Published decisions include *San Francisco BayKeeper v. Cargill Salt*, 481 F.3d 700 (9th Cir. 2007); *San Francisco BayKeeper v. Tosco Corporation*, 309 F.3d 1153 (9th Cir. 2002), cert. dismissed, 539 U.S. 924 (2004); *San Francisco BayKeeper v. Tosco Corp.*, 2001 U.S. Dist. LEXIS 1164 (N.D. Cal. 2001); *Communities for a Better Env't v. Tosco Refining Company, et al.*, 2001 U.S. Dist. LEXIS 1161 (N.D. Cal. 2001); *San Francisco BayKeeper v. Cargill Salt*, 263 F.3d 963 (9th Cir. 2001); *San Francisco BayKeeper v. Vallejo Sanitation and Flood Control District*, 36 F. Supp. 2d 1214 (E.D. Cal. 1999).
- Represent large oil company in defending cost recovery actions in Northern California relating to petroleum, hydrocarbon and other soil and groundwater contamination relating to former service station operations. Participant in many mediations of such disputes.
- Represent ports, oil companies, commercial landlords, property managers and large landowners in negotiations, litigation and remediation activities relating to the contamination of real property and marine sediments by hazardous substances, including metals, PCBs, chlorinated solvents and petroleum. Work closely with environmental consultants in the various phases of investigation, development of feasibility studies, work plans, remedial actions and reports. Interface with local and state regulatory agencies in investigation, clean-up and development of real property.
- Represent commercial landlords and tenants in indoor air quality matters stemming from heating, ventilation and air conditioning systems (HVACs), mold, off-gassing of new and remodeled building interiors and related problems. Work closely with certified industrial hygienists to investigate and respond to situations.
- Represent and counsel major financial institutions regarding the administration of trusts and estates that include environmentally-impaired real property, including the investigation, leasing, sale and remediation of such property.
- Represent corporate and individual insureds in obtaining insurance coverage for defense and indemnity of

environmental claims and suits.

Land use and real estate matters and litigation:

- Represent residential, commercial, and industrial developers in the development and defense of environmental impact reports (EIRs) and negative declarations prepared under CEQA. Handle administrative writ trials and appeals, including *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus, et al.* (1994) 27 Cal.App.4th 713.
- Represent landowners in eminent domain proceedings, including negotiations to obtain or defend "highest and best use" value for permanent and temporary taking of real property in California. Work closely with professional appraisers.
- Filed amicus brief in support of condemnee regarding calculation of interest rates in eminent domain actions resulting in a favorable opinion from the California Supreme Court in *Redevelopment Agency of Burbank v. Gilmore* (1985) 38 Cal.3d 790.
- Represent commercial and residential landowners, purchasers, and sellers in litigation relating to claims for breach of contract, fraud, negligence and related claims concerning the condition, use and boundaries of real property.
- Represented title insurance company in actions related to title to real property and the handling of escrows and foreclosures, including *Hatch v. Collins, et al.* (1990) 225 Cal.App.3d 1104.

Educational History:

Sandi received her B.A. from the University of California, Los Angeles in 1978. She received her J.D. from U.C. Hastings College of the Law in 1981. While at U.C. Hastings, she served as the Associate Research Editor for COMMENT Law Journal (1980-81) and as a Teaching Assistant for Criminal Law (1979-80). Sandi was also a recipient of the U.C. Newhouse, U.C. Towne, and 1066 Foundation Scholarships.

Allen Matkins

Eileen M. Nottoli: Of Counsel

Practice Areas:

Land Use, Environmental & Natural Resources
Litigation

Description of Practice:

Eileen M. Nottoli is Of Counsel in the firm's San Francisco office and practices in the area of environmental law with a focus on advising clients on compliance and transactions as well as representing clients in administrative enforcement and civil litigation. Ms. Nottoli has extensive expertise in state and federal regulatory programs governing exposures to toxins including Proposition 65, and managing hazardous materials (including emergency release reporting), hazardous wastes (including mining wastes and recycled materials), toxic air emissions, mold, wastewater, storm water, asbestos, lead, PCBs, wastewater recycling, and worker exposure. She has managed numerous environmental investigations and remediations for site contamination and mold and indoor air quality of buildings. She has managed corporate and real estate environmental due diligence in purchases, mergers, and acquisitions for developers, sellers, buyers and lenders. In addition, Ms. Nottoli has prepared environmental compliance handbooks and compliance programs for clients. She has also managed human health risk assessments and developed compliance strategies. Representative clients include heavy industry, high tech industry, food producers, ice cream manufacturers, mines, consumer product manufacturers, commercial office building owners and managers, sellers and purchasers of real property, developers, lenders, retailers, and landfill owners.

Prior to joining Allen Matkins, Ms. Nottoli was with the law firms of Beveridge & Diamond, LLP and Brobeck, Phleger & Harrison. From 1976-88, she was a research chemist with Chevron Chemical and Chevron Research Companies where she managed the commercialization, fuel and lubricating oil additives, developed a commercial steam and gas turbine oil and formulated diesel fuel additives.

Ms. Nottoli is a member of the California State Bar, Groundwater Resources Association, American Chemical Society, and California Section of the American Chemical Society, and has been elected the 2009 Chair of the California Section of the American Chemical Society. Ms. Nottoli has been a guest lecturer on environmental compliance, Proposition 65, mold remediation, and recycling of wastewater. She is also a member of East Bay Heritage Quilters.

Publications:

"Caught by Surprise: What do you Mean My Package is Illegal?"



San Francisco
(415) 837-1515
(415) 837-1516 (fax)

enottoli@allenmatkins.com

Packaging Design Magazine, March 2009.

"Who's Got the Mop? An Increase In Foreclosures May Call Into Question The Responsibility For Remediating Contamination", Scotsman Guide, Commercial Edition, June 2009.

Educational History:

Ms. Nottoli received her J.D., with honors, from the University of San Francisco in 1988, her Ph.D. in Chemistry from Northwestern University in 1976, and her B. Chemistry, with honors, from the University of Minnesota in 1971.

Allen Matkins

Sonia J. Ransom: Partner

Practice Areas:

Governmental Advocacy
Land Use, Environmental & Natural Resources
Real Estate

Description of Practice:

Sonia Ransom, a land use partner in our San Francisco office, is highly regarded for her extensive experience in land use and redevelopment. She has co-chaired the firm's renowned land use, environmental, and natural resources group, and served as Allen Matkins' Marketing Partner, as well as on the firm's Compensation Committee. Sonia was named one of *Real Estate Southern California's* "Most Influential Women in Commercial Real Estate" in 2008, 2007, 2006, 2005, 2004, and 2003. In November 2008, Sonia was inducted by Real Estate Southern California into its Women of Influence Hall of Fame (one of the first three women in California to be honored and the sole attorney). She is a Fellow, American College of Real Estate Lawyers. She has been honored by Commercial Real Estate Women - Los Angeles (CREW-LA) as a woman in real estate who has transformed the real estate landscape of Los Angeles. Sonia's client list includes Aeroterm, Bank of Montreal, Chadmar Group, Concert Realty Partners, Empire Commercial Real Estate, Essex Property Trust, Extra Space Storage, Extended Stay America, Google, Hillwood, IKEA Properties, Industrial Realty Group, Kearny Real Estate, LaSalle Bank, Sares-Regis Group, Symantec, and Trammell Crow Residential.

Sonia's work in land use matters includes: developing entitlement strategies and obtaining entitlements for commercial, industrial, and residential projects in numerous Southern and Northern California jurisdictions, including general plan amendments, zone changes, conditional use permits, variances, subdivisions, planned development permits, and changes in jurisdiction; leading and coordinating development teams, including architects, engineers, environmental, financial, public relations, and community relations consultants; advising clients on and developing strategy for compliance with the California Environmental Quality Act; advising clients on strategic and compliance issues related to the Subdivision Map Act; and drafting and negotiating development agreements. Sonia handles a wide variety of redevelopment and public finance matters for her clients, including drafting and negotiating disposition and development agreements, owner participation agreements, and exclusive negotiation agreements between developers (or other property owners) and redevelopment agencies; developing strategies for obtaining public financing for a variety of public/private partnerships; and military base redevelopment. Sonia also advises



San Francisco
(415) 837-1515
(415) 837-1516 (fax)

sransom@allenmatkins.com

purchasers, developers, investors, and lenders regarding existing entitlements on real property, identifying potential land use issues, and developing a strategy for obtaining entitlements if existing entitlements are insufficient.

Sonia is currently serving as land use counsel for Industrial Realty Group on the redevelopment of the former Boeing/NASA site in Downey into a 3-4 million square foot mixed-use project, which includes commercial, entertainment, office, and residential components. She is working on multiple campus expansion projects for a publicly-traded internet source provider in the Silicon Valley. Sonia is currently assisting the Snowcreek Investment Company in the entitlement and development of the Snowcreek Resort in the Town of Mammoth Lakes and is assisting the Chadmar Group and the MacFarlane family in the development of a master planned community of 1,400 homes in Clovis, California.

Recently, Sonia assisted Sares Regis Group in the entitlement of the Westgate Pasadena residential project, one of the largest (if not the largest) development projects in Pasadena's history. The Westgate project comprises 820 homes, of which, 110 are affordable to low- and moderate-income families. She has worked with SAMS LLC, a venture of Kearny Real Estate; Morgan Stanley; Catellus, the developer chosen by the U.S. Air Force to modernize the Los Angeles Air Force Base; and The Chadmar Group in the entitlement and development of 1,050 single family homes on former Fort Ord.

Sonia is known for her expeditious efforts. For example, the complex entitlements for SAMS LLC, which included detachment of a 40-acre site from El Segundo and its annexation into Hawthorne, took approximately one year, and the entitlement of a 330,000 square foot IKEA store in Covina took less than four months.

She served as President of CREW-LA in 2002 and 2001 and has served on the organization's Board of Directors since 1996. She is also a member of the California State Bar Association, the Los Angeles County Bar Association, and Women Lawyers of Los Angeles. A sought-after speaker, Sonia co-instructed the University of Southern California Law School's "Land Use Controls" course, and has spoken at the Pacific Coast Builders Conference, as well as Apartments 2005 and 2007. She has also written a number of articles on real estate and land use issues, including "9 Tips on Managing the Entitlement Process," published in the *California Real Estate Journal*.

Educational History:

Ransom received a J.D. from Loyola Law School (1992) and a B.A. from the University of California at Los Angeles (1988).

Attachment B
ERM Professional Profiles

Mark E. Ransom, PE

Partner



Mr. Mark Ransom has 32 years of experience in environmental management and has worked with a variety of public and private sector clients, including the National Guard Bureau, Catellus Development Corporation, and Union Pacific Railroad Company. He currently directs ERM's nationwide Environmental Liability Transfer Program, employing insurance and business-based solutions for complex Brownfields transactions valued at up to \$52 million.

Mr. Ransom has directed major CERCLA and RCRA programs at over 25 Superfund sites in California, Nevada, and Texas. These projects have involved negotiation of consent agreements with regulatory agencies and fast track investigation and remediation of redevelopment parcels. Mr. Ransom has worked closely with DTSC, USEPA, and other regulatory agencies to facilitate implementation of innovative remedial solutions and realistic cleanup levels resulting in timely site closures.

Professional Affiliations & Registrations

- Registered Civil Engineer, California (#039857)
- California Manufacturer's Association, Environmental Quality Steering Committee
- Railroad Environmental Association

Fields of Competence

- Brownfield redevelopment site management
- Liability transfer with insurance backing
- Regulatory agency negotiations
- CERCLA/RCRA program management for Superfund sites
- Risk transfer solutions
- Property transfer assessments
- Remedial Action/Strategic Plan development
- Litigation support/expert testimony
- Community relations/interaction

Education

- B.S., Environmental Engineering, Humboldt State University, 1978

Key Industry Sectors

- Aerospace
- Government
- Legal
- Transportation
- Utilities

Publications

- *Methodology for Locating Abandoned Hazardous Waste Sites*. 1980.
- *Cost Analysis for Applying the EPA Hazardous Ranking System*. 1982.
- *Site Assessment and On-site Treatment of a Pesticide Spill in the Vadose Zone*. 1985.

Key Projects

Sacramento Rail Yard Redevelopment, California

Directed strategy to remediate 240-acre Superfund site undergoing large-scale Brownfield redevelopment. Negotiated innovative remedial approaches and cleanup standards for reuse scenarios with DTSC and RWQCB, saving \$65 million.

Recent purchase of property by developer required in-depth negotiation of full liability transfer for site investigation and remediation with insurance backing for \$52.1 million over 30 years. Currently directing remediation and construction to prepare property for this multi-billion-dollar redevelopment project that will significantly modify Downtown Sacramento. Insurance-backed environmental work includes soil and groundwater remediation, landfill design and construction, operation and maintenance, and regulatory agency negotiations and permitting.

Old Hammer Field, Fresno, California

Principal-in-Charge for Preliminary Assessment/Site Investigation/RI/FS/RAP/RD program at 1,600-acre active air terminal, a former defense site in Fresno, California. Negotiated agreement with DTSC and RWQCB under DTSC federal facilities program. Implemented all phases of fast-track property redevelopment work, and worked with diverse PRP group.

Taylor Yard, California

Negotiated fast track enforceable agreement with DTSC that allowed early transfer and redevelopment of approximately 160-acres. Project was completed within demanding 13-month schedule to meet redevelopment time line. Conducted focused remediation on additional 18 acres for transfer to State of California.

National Guard Bureau Environmental Services Contract

Principal-in-Charge for 10-year, \$100-million environmental engineering indefinite delivery/indefinite quantity, national contract for National Guard Bureau. Projects include lump sum/fixed price remediation to provide early release of sites for potential redevelopment. Range of services has included RI/FS, remedial design, record of decision, soil and groundwater remediation, remedial cost estimation, risk assessment, construction, environmental impact statements, environmental baseline studies, and storm water studies.

Curtis Park Rail Yard Redevelopment, Sacramento, California

Facilitated a transaction that enabled a developer to secure insurance coverage and purchase a 65-acre former rail yard in the greater Sacramento area. Negotiated with State to refine the technical remedy for soil and groundwater, conducted extensive community relations interactions, and implemented the remedy. Contract signed with developer included insurance backing for \$9.2 million.

Confidential Chemical Manufacturer, Portland

Proposed site redevelopment of 70-acre former chemical factory. Provided cost estimation services to evaluate investigation and remediation program. Remedial actions were coordinated to accommodate possible alternative redevelopment plans. Site remediation is currently underway.

BMI, Henderson, Nevada

Provided Principal-level oversight for environmental conditions investigation at Superfund site for PRP Group in Henderson, NV. Project consisted of multiple PRPs. ERM facilitated "cash-out" walkaway strategy for the PRPs backed by finite risk insurance product. Cash-out solution allowed site redevelopment with mixed use, including residential.

Gencorp/Aerojet NPL Carve-out, Sacramento

Assisted client throughout negotiations to carve out approximately 3,000 acres of land from NPL Superfund site. Worked closely with key decision-makers at USEPA Region 9, DTSC, and RWQCB. Program was designed to facilitate redevelopment for residential/mixed use.

Fox Avenue Site, Seattle

In 2003, negotiated contract for cleanup of contaminated property in south Seattle, which involved obtaining the proceeds of the seller's environmental liability insurance settlement. Insurance proceeds were transferred to AIG for purchase of a finite risk insurance policy to cover environmental liabilities for the client. A contract was signed to complete remedial action at the site for \$5.2 million to No Further Action standard.

Catellus East Shore Park, San Francisco Bay

Supported negotiations associated with sale of 1,300 acres of shoreline and submerged land adjacent to and within San Francisco Bay, for use as State Park. Developed costs associated with remediation. Negotiated completion of site assessment and remediation approaches with buyer (East Bay Regional Park District and State Parks & Recreation) and San Francisco Bay RWQCB.

Other Highlights

- Managed RI/FS/RAP programs at state Superfund sites in Roseville, Sacramento, Los Angeles, and San Francisco, California.
- Participated in and led several PRP technical and steering committees, including those for Sparks Rail Yard, Crystal Chemical National Priority List (NPL) site, French Ltd. NPL site, and Liquid Gold NPL site.
- Expert witness for petroleum hydrocarbon contamination case in support of major real estate transaction in California's Central Valley.
- Served as key witness for major U.S. railroad in support of litigation against insurance carriers for recovery of remediation costs. Provided numerous depositions and assisted in case preparation for trial.
- Developed RCRA training materials and implemented training program for refinery in San Francisco Bay Area.

Russell Resources, Inc.

environmental management

Peter Russell, PhD, PE, REA

Dr. Russell is a leading authority on environmental contamination—soil gas, soil, groundwater, and surface water. Drawing upon extensive experience with investigation and remediation of large, complex sites, Dr. Russell is able to communicate technical information simply and clearly, to help wider audiences understand the issues. This skill is very useful for effective management of many projects, especially when it is important to explain health risk and environmental contamination to the general public.

Dr. Russell's environmental consulting experience spans more than 35 years. Past projects range from management of investigations and cleanups at hazardous wastes sites to water and wastewater treatment. Dr. Russell's expertise includes management and oversight of environmental remediation projects, community relations, regulatory liaison, risk modeling of cost-to-clean estimates, pollution insurance claims management, and strategic planning for permitting and enforcement. In contrast to most environmental professionals, Dr. Russell also has training and experience in biology, business, and property/casualty insurance, which provide useful insight for some projects.

Dr. Russell works effectively with all major environmental regulatory agencies—DTSC, Water Board, and U.S. EPA—to bring hazardous waste sites to closure, using both voluntary cleanup agreements (VCAs) and administrative orders.

EDUCATION

- PhD, engineering, University of California, Berkeley (1980)
- MS, environmental engineering (1973), BS, biology, (1971) Rensselaer Polytechnic Institute
- MBA, joint EMBA program of Haas School of Business (UC Berkeley) and Columbia University (40% completed)
- CPCU segments completed: risk, commercial liability, contract law, and finance (3)

REGISTRATIONS

- Registered Civil Engineer, California C33501
- Registered Environmental Assessor, California REA 00007

PROFESSIONAL HISTORY

- Russell Resources, Inc., Founder and President, 1984—present
- Northgate Environmental Management, Inc., Founder and Principal, 2000—2004
- Fireman's Fund Insurance Co., Director of Environmental Engineering, 1981—1984
- Association of Bay Area Governments (ABAG), Senior Environmental Engineer, 1979—1981

REPRESENTATIVE EXPERIENCE

Major Sites

- Naval Air Station, Alameda (NAS Alameda) Environmental project lead for City of Alameda, providing environmental and finance support re transfer and redevelopment of the 1500-acre former base. This ongoing project involves extensive liaison with regulatory agencies (EPA, DTSC, Water Board, and State Lands Commission), the Navy, the developer, and the community. City of Alameda's representative at community advisory group. Principal contaminants: solvents, metals, PAHs, fuels, radionuclides, pesticides, and PCBs, involving soil, soil gas, sediment, and groundwater. Many areas involve cleanup of volatile solvents and fuels to be protective against residential vapor intrusion. (1996 to present)
- Naval Fleet and Industrial Supply Center Oakland, Alameda Annex (FISCA) Environmental project lead for City of Alameda, similar to that for the adjoining NAS Alameda. Unlike NAS Alameda, which is an NPL site, FISCA is being cleaned pursuant to a VCA with DTSC. Principal issues are PAHs in soil and vapor intrusion of benzene/naphthalene from soil gas and groundwater. Residential reuse is planned. Represents City with community advisory group. (1996 to present)
- Residential Community, Solano County Project director for investigation and cleanup of landfill in residential area. Included detailed historical review; sampling of soil, soil gas, groundwater, and surface water; evaluation of sampling results; and strategic remediation. Vapor intrusion and contact with metals in soil were primary issues. This project entailed oversight of clean-up contractor and many meetings over several years with community groups and individuals in affected area. (Extensive regulatory liaison)

- Benicia Arsenal (California) Project director for investigation and remediation, which resulted in California's first former ordnance site to be approved for unrestricted residential reuse. Addressed ordnance and chemical contamination of soil, groundwater, soil gas, and surface water, with extensive regulatory liaison and remedial costs modeling. Oversaw and directed remediation contractor. Considerable public relations interface. The site is now a thriving residential community.
- Fort Ord, Monterey County Technical (ordnance) and finance support to the Fort Ord Reuse Authority for early transfer of a 5,000-acre portion of the former base. Technical lead in negotiations with regulatory agencies, remediation contractor, and the Army. Monte Carlo modeling of environmental remediation cost uncertainty. Principal contaminant: ordnance. (2005 to 2007)
- Marine Corps Air Station, Tustin Environmental assistance to the City of Tustin concerning cleanup and redevelopment of the former base. Liaison with the developer and the Navy. Ongoing evaluation of adequacy of the Navy's remediation for the intended reuse. Principal contaminant: solvents in groundwater. Vapor intrusion and drinking water quality are major concerns. (2004 to 2009)
- Ford Aerospace, Newport Beach Project director for cleanup (soil, groundwater, and surface water) of former industrial facility for residential reuse. Addressed solvents in soil and groundwater, with extensive regulatory liaison and clean-up cost modeling.
- Southern Pacific Rail Yard (Sacramento), Union Pacific Rail Yard (Sacramento), and Mission Bay (San Francisco) Environmental lead for cities of San Francisco and Sacramento for cleanup and redevelopment of former industrial facilities. Strategic evaluation of environmental status and estimation of potential environmental remediation costs. Major contaminants were fuels, solvents, metals, and PCBs. Monte Carlo modeling of remedial costs for Mission Bay and Southern Pacific Rail Yards. (Extensive regulatory liaison)
- Multnomah County, Oregon Developed a risk assessment model (Monte Carlo simulation) for the evaluation of the risk of drinking water supply impacts from alternative redevelopment scenarios in the groundwater recharge zone for Portland, Oregon.
- Ford Aerospace, Palo Alto Project director for site-wide contaminant investigation and remediation (solvents) at active facility. Evaluation of extent of solvents in soil and groundwater, feasibility study of remedial measures, permitting and installation of air stripper to treat

contaminated groundwater—including surface water discharge monitoring and air emission permit variance. At same facility, conducted feasibility study for management of plating wastewaters, with emphasis on waste minimization. (Extensive regulatory liaison)

- Residential Development at Former Plant Nursery, San Leandro Project director for investigation of soil and groundwater related to historic pesticide applications, underground storage tanks, and septic tanks.
- Project director. Environmental assessments (soil, groundwater, and surface water) at many commercial and industrial properties. These assessments were done in support of the owners' or buyers' decisions about whether to buy, sell, lease, or develop the properties.

Expert Witness / Litigation Support

- Extensive expert witness testimony on the extent of impacts to soil, groundwater, surface water, and soil gas by a former landfill in vicinity of a residential development. Understandable explanations of technical issues to the jury over four days helped client win case.
- Environmental support to a homeowners group concerning relocation of hazardous waste to a highway project adjacent to their property.
- Environmental evaluation of proposed industrial projects, including refineries and steel mills, in the context of CEQA review.
- Expert witness testimony regarding potential impacts to client's property from solvents in soil and groundwater, encroaching due to releases at neighboring properties.
- Litigation support in: 1) technical interpretation of RCRA regulations regarding the recycling of hazardous wastes; 2) monitoring of major industrial facility groundwater investigation and clean up; 3) technical evaluation of Environmental Impact Reports, Toxic Pits Cleanup Act exemption requests, and NPDES discharge permit applications.
- Statistical analyses and data reduction for rainfall and surface water flow and salinity data for San Francisco Bay-Delta hearings.
- Numerous technical evaluations of pollution liability claims for insurers, involving landfills, manufacturing facilities, Superfund sites, leaking underground tanks, and others.
- Evaluation of analytical data regarding feed supplements suspected of causing increased mortality to poultry.

- Litigation support related to perchlorate plume in groundwater at Rialto, California.

Other Professional Services

- Technical assistance in obtaining closure approval for leaking underground tank sites.
- Evaluated environmental regulatory issues for a community planning to reuse asphalt/cement grindings on roads in sensitive areas.
- Technical support for commercial/industrial property owner regarding cleanup of soil and groundwater contamination by tenant.
- Developed training programs for local agency inspectors for compliance with underground storage tank and hazardous waste generator regulations.
- Developed software for tracking wastewater treatment plant monitoring data, with statistical analysis, and producing monthly NPDES reports for several California cities.
- Analyzed wastewater treatment sludge management alternatives for the City of Sunnyvale, California, including evaluation of the hazardous waste status of the sludge.
- Author of *Consumer Guide to Chemicals in Drinking Water*, published by the Golden Empire Health Planning Center.
- Data management in support of cleanup activities at catastrophe sites: One Market Plaza in San Francisco (high rise fire); First Interstate Bank Tower in Los Angeles (high rise fire). Information managed: residues sampling data, industrial hygiene monitoring data for cleanup crews, verification sampling for reoccupancy clearance, and others.

PUBLICATIONS and PRESENTATIONS

Available upon request

Gregory Murphy, P.G.



Gregory Murphy is a Program Director with ERM based in Walnut Creek, California, and has 20 years of professional experience as a geologist and hydrogeologist. A registered professional geologist in California and Arizona, Mr. Murphy has been involved with hazardous waste site investigations, soil and ground water remediation, mine waste investigation and remediation, cost recovery/cost allocation evaluation, litigation support/expert witness work, and risk-based approaches applied to site closure.

Mr. Murphy's expertise includes managing and providing technical oversight of large-scale, complex Remedial Investigation/Feasibility Study/Remedial Action Plan programs at several federal and state Superfund sites; water supply and drinking water treatment projects; developing soil cleanup strategies based on ground water protection considerations; evaluating soil and ground water remedies for property slated for redevelopment; and providing litigation support, expert witness, and cost recovery/allocation analysis for cases driven by environmental liability. Mr. Murphy serves as a strong advocate for clients with local, state, and federal regulators.

Professional Affiliations & Registrations

- Professional Geologist, California and Arizona
- Groundwater Resources Association of California
- National Ground Water Association

Fields of Competence

- Remediation goals development and negotiation
- Geologic, hydrogeologic, and geophysical investigations
- Remedial Investigation/Feasibility Studies
- Litigation support, expert witness
- Ground water and fate and transport modeling
- Water supply and drinking water permitting
- Remedial action programs
- Remedial treatment system design and installation
- Risk-based corrective action
- Cost recovery and cost allocation analysis
- Regulatory agency negotiations

Education

- M.S., Geology, University of California, Berkeley, 1986
- B.A., Geology, Middlebury College, 1982
- 40-Hour OSHA HAZWOPER
- 8-Hour Refresher, Current

Key Industry Sectors

- Chemical
- Legal
- Manufacturing
- Mining & Extractive
- Property Development
- Transportation
- Waste Management

(See publications listed at end of profile)

Key Projects

Certain Settling Respondents, Baldwin Park Operable Unit, San Gabriel Valley Federal Superfund Site, CA. Technical Representative

Represent certain members of settling cooperating respondents (CR) for Baldwin Operable Unit (BPOU) within USEPA's San Gabriel Valley Superfund sites. BPOU site consists of ground water plume more than 7 miles long and up to 1,500 feet deep. The site lies within an adjudicated ground water basin with associated issues concerning water rights, allocation, and supply. Primary contaminants in ground water are chlorinated volatile organic compounds (VOCs), perchlorate, N-nitrosodimethylamine (NDMA), and 1,4-dioxane. Selected remedy, currently nearing completion of the \$100M construction stage, calls for large ground water pump-and-treat systems capable of extracting and treating approximately 23,500 gallons per minute. Extracted water is treated to drinking standards and is delivered to the public. Provide multidisciplinary strategic consulting to CRs for all remedy implementation issues, including treatment process evaluation and selection, design, contracting, construction, cost-benefit analysis concerning chemical fate and transport issues, modeling, performance monitoring, and well design and construction. Ensure that remedy is implemented in cost-effective, timely manner, and meets remedial objectives stated in USEPA's Record of Decision, Explanation of Significant Differences, and Administrative Order. Future work will focus on optimizing remedial systems, demonstrating extraction performance, and reducing life-cycle costs.

Glendale Respondents Group, Glendale Operable Unit, San Fernando Valley Federal Superfund Site, CA. Technical Representative

Represent the Glendale Respondents Group in evaluating hexavalent chromium (Cr+6) treatment alternatives to treat extracted ground water to drinking water standards. Cr+6 was detected in a water treatment plant designed to treat VOCs and 1,2,3-trichloropropane and will require treatment. Cr+6 treatment technologies were evaluated in a feasibility study and two technologies, weak base ion exchange and reduction, coagulation and filtration, were short-listed. Since no drinking water systems are currently permitted in California, ERM evaluated technical feasibility and permitability for treatment technologies. Detailed capital and O&M costs were also developed. ERM also prepared an estimate of Cr+6 trends in drinking water

wells to estimate future Cr+6 concentrations to support the design. In addition, ERM also reviews and provides comments on work products and Cr+6 pilot testing work conducted on behalf of the City of Glendale. Currently negotiating a Statement of Work with USEPA for a Focused Feasibility Study to evaluate recent changes in COCs and their impact to the Interim Remedy.

FMC Corporation, Newark, CA.

Project Manager

Soil and ground water is impacted with VOCs and pesticides. Site is currently in area being considered for redevelopment. Integrating future land use based on risk, developing strategy to support brownfield development with RWQCB, assessing risk and potential mitigation measures associated with various land uses, assessing existing remedy and evaluating the feasibility and cost of other alternatives. Working to demonstrate to regulators that under existing land use, existing remedy is sufficient based on risk, threat to ground water, modeling, and lack of COC mobility in the subsurface.

Former Cotati Rod and Gun Club Site, Cotati, CA.

Represented the property owner in investigating and remediating soil impaired by gun club operations by a former tenant at the site. Soil was contaminated by lead, soluble lead, and polynuclear aromatic hydrocarbons (PAHs). Developed and negotiated cleanup goals based on human health and risk. In addition, assessed soluble lead impacts and developed soluble lead cleanup goals to address North Coast RWQCB concerns about lead mobility and threat to ground water. ERM directed all remediation work consisting of excavation, offsite disposal, and site restoration. Working closely with the regulators, ERM was able to receive formal site closure from the DTSC, only six months after remediation efforts were initiated. ERM also supported the property owners in cost recovery efforts, serving as experts in litigation with insurers concerning environmental coverage.

Confidential Litigation Case, CA.

Technical Expert

Served as technical expert on litigation case concerning ground water impairment in California. Developed opinions concerning chemical source, fate and transport, responsibility, and allocation that served as basis for mediation and cost recovery. Summarized findings in expert report, attended and provided technical support to mediation among responsible parties and insurers, and prepared reports to rebut findings of opposing

experts. Also provided ongoing technical support to client and legal team throughout litigation process including cost analysis, preparation of interrogatories, coordination with other experts, and assistance to legal team with deposition preparation.

**FMC Corporation, State Superfund Site, Fresno, CA.
Project Manager**

Managed all aspects of investigation and remediation at California Superfund site, where pesticides, chromium, 1,2,3-TCP, and TCE impacted soil and ground water. Site consisted of soil, on-site ground water, and off-site ground water operable units. Directed work that included well installation, aquifer testing, ground water modeling, ground water monitoring and reporting, database management, treatment system operation, conveyance pipeline and treatment system design and construction. Evaluated chromium treatment options including ion exchange benchscale testing. Served as client advocate in negotiations with regulators, provided technical case for assigning unrelated contamination to neighboring facility, provided litigation support and deposed as percipient and expert witness, and managed all ongoing technical and strategic activities.

Mid-Peninsula Regional Open Space District, New Almaden Mining District, CA.

Project Manager

Served as manager for project involving provision of technical and strategic support to Natural Resource Damage Assessment (NRDA) claim, assessment of Total Maximum Daily Load (TMDL) for mercury, and performance of environmental site assessments. Coordinated multidisciplinary team to assess and defend NRDA claim. Team consisted of wetlands, fisheries, sediment transport, mercury biochemistry, surface water, mining restoration, and other experts to assess NRDA claim brought by federal and state trustees regarding contamination associated with past mercury mining activities in New Almaden Mining District. In related matter, was responsible for representing Open Space District in mercury TMDL process that was being developed by RWQCB for San Francisco Bay and apportioned mercury loads and required load reductions among watersheds in southern portion of Bay. Also directed Phase I and Phase II evaluations as properties were identified for acquisition.

Union Pacific Railroad, State Superfund Site, Sacramento, CA.

Project Geologist

Developed and negotiated soil remediation goals for five operable units at this 240-acre state Superfund site. Soils were impacted to varying degrees by volatile organic compounds, semi-volatile organic compounds, petroleum hydrocarbons, lead and other metals, making the development of site-wide remedial goals particularly challenging. Goals were based on the evaluating the threat to ground water and human and ecological health. A successful outcome resulted in significantly reducing soil remediation volumes; for example, a petroleum hydrocarbon remedial goal of 10,000 milligrams per kilogram was negotiated, saving hundreds of thousands of dollars in TPH remediation costs alone.

Pfizer Inc., Southern California.

Project Manager

Conducted site investigations, evaluated remediation options, and directed remediation of mining wastes at several abandoned mining facilities Death Valley and the Mojave Desert in southern California. Work involved extensive regulatory interaction toward unrestricted site closure as these facilities. Mining wastes included tailings piles, naturally occurring asbestiform materials, and wastes impacted with petroleum hydrocarbons.

Litigation Support, San Francisco Bay Area, CA.

Project Manager

Provided litigation support for cost recovery/cost allocation at two San Francisco Bay Area federal superfund sites involving comprehensive data review, analysis, and exhibit preparation. Projects required presenting and defending data review and analysis procedures to opposing counsel.

Confidential Litigation Case, SF Area, CA.

Technical Expert

Served as expert to assess timing, sources, and extent of gasoline and diesel contamination in soil at an active sand and gravel quarry.

Waste Management Inc. (Former Davis Street) Landfill, San Francisco Bay Area, CA.

Project Manager

Evaluated hydrological conditions in closed Oyster Bay landfill to assess various remediation alternatives for leachate capture. Trench and extraction well alternatives were assessed using hydrogeological data, empirical analysis of existing leachate collection systems, and

ground water modeling. Trench/well configuration was selected based on captive performance and costs, and was being designed for construction in 2005.

Geothermal Inc. Landfill, Middletown, CA.

Project Manager

Evaluated water supply needs of project for Pacific Gas and Electric, Unocal Corporation, and other responsible parties. Secure water supply was required to support phytoremediation in this rural area. Assessed regional hydrogeology, local ground water supply conditions, and stratigraphy. Directed drilling program to locate, drill, and install six water supply wells, capable of delivering 100 gpm, required to support tree growth.

McCormick-Selph, Inc. Hollister/Gilroy, CA.

Project Manager

Managed oversight of investigation and remediation activities related to perchlorate-contaminated ground water at explosives manufacturing and testing facility. Work was being done by past owners of facility who retained environmental liability. Reviewed reports, workplans, investigation results, and other work products prepared for former owner to ensure that they were technically sound and protective of current owner.

Catellus Development Corporation, Monterey, CA.

Project Manager

Managed ground water investigation and remediation of high-profile site adjacent to Monterey Bay National Marine Sanctuary in Monterey, California. Site was impacted with dissolved and free phase petroleum hydrocarbons that periodically discharged to Marine Sanctuary. Following site investigation, remedial alternatives screening, and pilot testing, high vacuum extraction was selected as preferred remedy. Working with Central Coast RWQCB, obtained site closure within 9 months of high-vacuum extraction system startup, resulting in release of \$1-million environmental escrow account.

Ball Corporation, Hayward, CA.

Project Manager

Managed environmental issues related to sale and redevelopment of former manufacturing facility. Work consisted of soil investigation, excavation, and removal inside large warehouse building. Risk-based corrective action (RBCA) analysis was performed to evaluate indoor air chemical exposure under future use scenarios for residual contaminants that could not be safely

excavated. Worked with regulators and stakeholders to facilitate sale and re-use of industrial property.

U.S. Navy, Brooklyn and Staten Island, NY.

Task Order Manager

Managed U.S. Navy contract and conducted site investigations at two facilities. Directed all task order activities, which included drilling, soil sampling, geophysical investigations, soil gas studies, laboratory analysis, and reporting. Served as client liaison, produced cost-impact statements for additional work items, and provided overall technical and administrative management for task order.

Moore Business Forms, City of Industry, CA.

Project Geologist

Provided comprehensive environmental baseline evaluation of property for former tenants of manufacturing facility in San Gabriel Superfund area. Results demonstrated to regulators that client should not be included as potentially responsible party for PCE ground water contamination.

Numerous Major Oil Companies, CA.

Project Manager

Directed and performed all aspects of work related to underground storage tank investigation and removal, soil boring and monitoring well installation, and soil and ground water sampling.

Specialty Minerals Inc., Apple Valley, CA.

Project Geologist

Compiled and provided hydrogeological support to life of mine permitting process for expansion of existing mining operation.

United States Geological Survey, Western US.

Geologist

Performed economic potential investigation and reconnaissance field geology in proposed wilderness study areas throughout western United States and compiled summary of Nevada wilderness study areas for Congressional review.

United States Geological Survey, Stillwater Platinum Mine, Montana.

Geologist

Delineated stratigraphic relationships at the Stillwater platinum mine, an ultramafic complex in Montana that is the only platinum mine operating in the western hemisphere. Performed extensive field-based studies

and analytical work to define in more detail the stratigraphy of the platinum-bearing horizon and other potential ore-bearing zones.

United States Geological Survey, American Canyon Gold Mine, Cargo Muchacho Mts, CA.

Geologist

Performed field and laboratory-based investigations to understand geochemistry and timing of disseminated gold mineralization in the Cargo Muchacho Mountains in southeastern California.

Lawrence Livermore National Laboratory, Livermore, CA.

Geochemist

Conducted dissolution experiments for host rock characterization and modeling support on proposed high-level radioactive waste repository, Yucca Mountain, Nevada.

Publications

- Murphy, G.P., R. Tosdal, J. Wooden, J. Kent, R. Vough, and E. Hayes, 1990. "Chemical and isotopic character of Jurassic granitoids, Cargo Muchacho Mountains, SE California." *Geol. Soc. Am. Abst. Pro.*, V. 22, No. 5.
- Murphy, G.P., 1988. "The dissolution of natural and synthetic cristobalite under conditions of varying pH and temperature." Lawrence Livermore National Laboratory, Livermore, CA.
- Murphy, G.P., 1986. "The chronology, pyroclastic stratigraphy, and petrology of the Valle de Santiago Maar Field, central Mexico." In: *Volume Honoring Dr. Brewster Baldwin*, Middlebury College Press, p. 257-284.
- Murphy, G.P., 1982. "An evaluation of the biotite-oxide geothermometer and its application to Precambrian amphibolite and granulite gneisses." *Green Mountain Geologist*, V. 9, No. 1.

Kenneth D. Jenkins, PhD

Partner



Dr. Jenkins has more than 35 years of experience in the field of environmental toxicology. He has evaluated natural resource damages (NRD) and ecological risk assessment throughout the country. Dr. Jenkins has given testimony before Congress, and briefed house and congressional staff on technical issues relating to Natural Resource Damages. He has been a member of the Science Advisory Board of the U.S. Environmental Protection Agency (USEPA). He has served on the National Research Council Panel on the Fate and Effects of Drilling Fluids and the task force to develop revised water-quality standards for the State of Colorado, which he chaired. Dr. Jenkins has served as a peer reviewer of sediment criteria and wildlife-based water quality criteria. He is an active member of the Society of Environmental Toxicology and Chemistry (SETAC), and has chaired numerous sessions and symposia on ecological risk assessments (ERAs) and natural resource damage assessment (NRDAs) at national SETAC meetings. He has authored more than 100 scientific papers, book chapters, and technical reports.

As a principal toxicologist, Dr. Jenkins has been responsible for the design and implementation of numerous cooperative and litigation driven natural resource damage assessments, ecological risk assessments, and water quality and sediment quality evaluations. He has worked extensively in large river systems in the West Coast, South West, Northeast, Midwest, Rocky Mountains, and British Columbia.

Dr. Jenkins has expertise in contaminant fate and transport, contaminant bioavailability, and contaminant metabolism and mechanisms of toxicity. He has experience with a wide range of chemicals including metals, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), dioxins, pesticides including DDTs, and volatile organic compounds

(VOCs). His experience includes the evaluation of toxicity caused by contaminated sediments, sewage outfalls, urban runoff, drilling discharges, acid mine drainage, mine tailings, groundwater discharges, and the physical and chemical impacts of dredging activities.

Dr. Jenkins served as a Professor of Biology at California State University at Long Beach (CSULB) from 1970 to 1997 and is now a Professor Emeritus. During his tenure at CSULB, he ran an extensive research program in environmental toxicology, founded and directed a Research Institute, and taught graduate-level courses in environmental toxicology.

Professional Affiliations & Registrations

- Society of Environmental Toxicology and Chemistry
- American Chemical Society
- American Society for Testing and Materials
- Editorial Board for Chemical Speciation and Bioavailability, an international scientific journal
- Technical Advisory Committee for Assessment of Urban and Industrial Storm Water Runoff Toxicity and the Evaluation/Development of Treatment for Runoff Toxicity Abatement, Storm and Combined Sewer Programs, USEPA
- Subcommittee on Bioavailability, Environmental Analytical Commission of the International Union of Pure and Applied Chemistry (IUPAC) Division V
- Delphi Panel Evaluating Methods for Quantifying the Toxicological Effects of Sediment Contaminant Bioaccumulation in Benthic Organisms for EPA Regions I and II
- Member, Project Advisory Committee, Common Ion Toxicity in Membrane Concentrates, American Water Works Association Research Foundation
- Member, Editorial Board, Strategic Environmental Management, an international journal

Fields of Competence

- Toxicology
- Natural resource damage assessment
- Ecological risk assessment
- Expert witness
- Sediment quality evaluation
- Water quality evaluation
- Contaminant fate and transport
- Contaminant bioavailability
- Contaminant metabolism and mechanisms of toxicity
- Habitat equivalency analysis (HEA)
- Resource equivalency analysis (REA)

Education

- PhD, Biology, University of California, Los Angeles
- BA, Biology, California State University, Northridge

Languages

- English, native speaker

Key Industry Sectors

- Oil & Gas
- Government
- Mining & Extractives
- Pulp & Paper
- High Technology & Telecommunications
- Manufacturing

Key Projects

Natural Resource Damages (NRD)

Cooperative Settlement - Great Lakes, Confidential client

Serves as principal scientist for an ongoing cooperative assessment of natural resource damages associated with over 100 years of industrial and commercial development on river system in the Great Lakes.

Cooperative NRD Settlement - Idaho, Noranda Minerals

Served as principal scientist and designated expert at the Blackbird Mine Superfund Site. An NRD action was initiated by the National Oceanic & Atmospheric Administration (NOAA) for alleged damages to aquatic resources in the creeks that drained the mine site. COCs included cadmium, copper, cobalt, lead, and zinc. Natural resources allegedly impacted included surface waters, sediments, and biological resources, including the anadromous Chinook salmon, steelhead trout,

resident trout species, and aquatic invertebrates.

Provided strategic support for the response to the NRD action. Designed and implemented field and laboratory studies designed to determine the sources of metals in creeks draining the mine. In settlement negotiations with the trustees, provided strategic and technical support that included the development of a restoration plan for introducing salmon back into Panther Creek.

Cooperative NRD Settlement - Great Lakes, Georgia Pacific

Served as principal scientist for a cooperative settlement of NRD claims arising from the presence of PCBs on the Fox River. This work included the evaluation of both an injury determination and injury quantification for ecological resources on the Lower Fox River. Potential restoration projects were identified as compensation for alleged injuries. Projects were scaled using HEA and REA. These analyses provided a basis for settlement negotiation for NRD liabilities with state and federal trustees.

Cooperative NRD Settlement - Great Lakes, Confidential Client

Principal scientist on program evaluating potential for natural resource damages associated with metal, crude oil, and refined petroleum hydrocarbon products associated with historical refinery operations at a site in the Midwest. Of principal concern was risk associated with contaminated sediments adjacent to the site. Receptors of concern include benthos, fish, and piscivorous birds. Provided the technical basis for settlement of NRD liabilities.

Cooperative NRD, Multiple Sites in Arizona and New Mexico, Confidential Client

Provided strategic and technical support for the development and implementation of cooperative NRDs at several large mining sites in the Southwest. Issues included potential injuries to migratory birds, threatened and endangered species and aquatic and terrestrial habitat. Potential compensatory projects were identified. Service losses and gains scaled using both HEA and REA methods.

Cooperative NRD, Multiple Sites in the Southeast, Confidential Client

Providing strategic and technical support for the cooperative settlement of NRD liabilities at multiple estuarine sites in the South East. Metals are the primary chemicals of concern. Focused site-specific studies were

conducted to constrain estimates of services losses. Potential compensatory projects were identified and scaled using HEA methods.

Cooperative NRD, California, Romic Environmental Technologies Corporation

Senior technical lead for a cooperative NRD resulting from a chemical release in to wetlands adjacent to South San Francisco Bay. Potential resources of concern included wetland habitat, endangered avian and mammalian resources and recreational use of the wetland. Studies were designed to establish baseline conditions and evaluate potential for injury. Resulting data demonstrated that potential injuries were very limited and provide a basis for a focused cooperative settlement.

Cooperative NRD - Pacific Northwest, Confidential Client

Serves as principal scientist for an ongoing cooperative assessment of natural resource damages associated with over 75 years of industrial and commercial development on river system in the Pacific Northwest.

NRD and Ecological Risk Assessment, Confidential Client

Principal scientist evaluating potential natural resource damages and ecological risk assessments for a large mine site in the Western US.

NRD and Ecological Risk Assessment, Confidential Client

Principal scientist for ongoing evaluations of potential natural resource damages and ecological risk associated with releases to a river in the Northern Rocky Mountains.

Litigation Support NRD Action - California, CBS Corporation

As principal scientist, Dr. Jenkins worked closely with attorneys to provide strategic and technical support for the injury-determination phase of the Montrose Chemical NRD action. CBS was named as a PRP for PCB-related damages on the Palos Verdes Shelf in Southern California. Provided a critical review and evaluation of expert reports alleging injuries to sediment, surface water, benthic invertebrates, fish, and avian species due to PCB contamination and bioaccumulation in preparation for the deposition phase of the NRD action. Worked extensively with attorneys during the depositions of opposing experts. Settlement was reached prior to the trial.

NRD Litigation Support - Montana, ARCO

Served as senior scientist and testifying expert in the Clark Fork River natural resource damage action brought under CERCLA. This action alleged that metals released due to historical mining activities in the upper Clark Fork River had resulted in injuries to surface water and sediments and to aquatic terrestrial species. Chemicals of potential concern were metals, including arsenic, copper, cadmium, and zinc. Directed the review of opposing experts' reports and publications and developed expert reports addressing injuries to aquatic mammals. Directly involved in ongoing strategy development and directed litigation support for the deposition and cross-examination of opposing experts. Provided expert testimony on the aquatic and terrestrial phases of the trial.

NRD Litigation Support - Multiple Sites, Koch Pipeline

Served as a principal scientist and testifying expert for an NRD brought under the Clean Water Act. The NRD was based on a series of pipeline spills that occurred over a 10-year period of time. Chemicals of concern included crude oil and refined petroleum hydrocarbon products. A series of 15 sites were chosen to be representative of some 300 spill sites distributed over a 5-state area. The selected sites encompassed a variety of habitats including coastal estuaries, estuarine and freshwater marshes, freshwater ponds and creeks, and various upland habitats. Receptors included a wide range of aquatic species and mammalian and avian species. Evaluation of natural resource damages was complicated by the variety of petroleum products and differing degrees of weathering.

NRD Litigation Support - Idaho, Hecla

Serves as a testifying expert representing one of the PRPs in the Phase 2 NRD litigation associated with the Coeur d'Alene Superfund site. Prepared expert reports evaluating the Ecological Risk Assessment, and allegations of injury brought by the Trustees. The primary focus is on alleged damages to aquatic and avian resources in the Coeur d'Alene basin.

Ecological Risk Assessments (ERA)

ERA - Northeast US, Confidential Client

Principal scientist for the ecological associated with PCBs in the river sediments and floodplain soils of a river in the Northeastern United States. Receptors included

benthic invertebrates, fish, amphibians, small mammals, piscivorous mammals, and insectivorous and piscivorous birds. Studies focused on evaluating fecundity and local populations exposed to ranges of PCB concentrations. Also has overseen shadow studies of work conducted by the USEPA. Taken together, the studies conducted by the RP and the USEPA on this river system constitute one of the most extensive ecological risk assessments ever undertaken.

ERA, Northeastern US, Confidential Client

Principal scientist for the ecological associated with PCBs in over 40 miles of floodplain soil of a large river in the Northeastern United States. Receptors included amphibians, and insectivorous and carnivorous birds and mammals. Studies employ landscape scale methods for establishing habitat for receptor species and quantitative modeling to allow risk to be evaluated at this landscape scale.

ERA, Lower Hudson River, NY, Atlantic Richfield

Principal scientist for the ecological risk assessment associated with metals in sediments of the lower Hudson River. Receptors included birds, mammals, fish and benthic invertebrates. Site-specific studies demonstrated that acid volatile sulfides and organic carbon in sediments were present at sufficient concentrations to limit the bioavailability and toxicity of metals to aquatic organisms.

ERA, Kalamazoo River Superfund Site, Georgia Pacific

Principal scientist for ecological risk assessments and natural resource damages for the Kalamazoo River Superfund Site in South Western Michigan. This site includes over 80 miles of river and floodplain habitat with historic PCB contamination. Extensive site specific studies were conducted to evaluate site specific risk. These data are being used to support a series of risk assessments that will move down the river over the next 10 years.

ERA, San Diego, CA, Navistar

Served as principal scientist in a baseline ecological risk assessment of a large industrial site located adjacent to San Diego Bay. COCs included metals, TPH, PAHs, VOCs, and PCBs. The ecological risk assessment focused on San Diego Bay. Primary pathways include storm water discharges and groundwater intrusion to the bay. Receptors of concern include benthos, fish, and piscivorous birds.

ERA, California, Unocal

Provided senior review and strategic consulting for the RP on an extensive ecological risk assessment conducted on the Guadalupe Oil Field, which is located in sensitive dune and swale habitat on the central California coast.

ERA, California, Romic Environmental Technologies Corp.

Principal scientist responsible for conducting the ERA of upland, wetland, and slough habitats adjacent to Romic facilities in San Francisco Bay. Compounds of concern included VOCs and heavy metals. Oversaw strategy development, and the design and implementation of all phases of the field and laboratory programs. Conducted in-situ bioassays, and population and community structure studies to evaluate the risk of sediment and surface-water contamination to aquatic species. Investigated bioaccumulation in native biota to evaluate exposure of birds and mammals via the food chain.

ERA, San Francisco Bay Area, CA, Rhone-Poulenc

As principal scientist, conducted the baseline ecological risk assessments (ERAs) of tidal and non-tidal wetlands adjacent to the Bay Road Site, bordering the South San Francisco Bay. Constituents of concern (COCs) included several metals and metalloids. Contamination in the wetlands was of particular concern due to the presence of two endangered species. Designed and oversaw the collection of an extensive suite of site-specific data that provided a basis for a rigorous evaluation of risk to aquatic, avian, and mammalian species. Conducted parallel studies on two remote reference wetlands properties to properly define ambient conditions in a heavily industrial area of San Francisco Bay. Data were also used as a basis in evaluating natural resource damage (NRD).

ERA, South San Francisco, CA, Fuller O'Brien

As principal scientist at the O'Brien Site (a former paint facility), conducted the initial characterization and ecological risk work at Oyster Point in San Francisco Bay. Evaluated ecological impacts of metals, VOCs, and SVOCs in soil, sediments, surface water, and groundwater at this 100-year-old paint manufacturing site. Receptors included vegetation, aquatic organisms, small mammals, and birds from the mudflats, wetlands, and upland areas. Lead was the primary COC. Conducted lead isotope ratio studies to assist in differentiating historical sources of lead contamination in sediments from the sites adjacent to the O'Brien Facility.

Work was carried out as part of a remedial facilities investigation.

Ecological Risk Assessment, Midwestern US

Principal scientist on an ecological risk assessment involving metals, PCBs, TPH, and PAHs associated with historical releases from an industrial site in the Midwest. Of principal concern was risk associated with contaminated sediments adjacent to the site. Receptors evaluated included benthic invertebrates, fish, and piscivorous birds.

Water Quality

Refinery Effluent Evaluation, Northern California, Western States Petroleum Association

Principal scientist in a study designed to develop methods for evaluating the potential for constituents present in refinery effluents at very low concentrations to bioaccumulations in aquatic food chains. This was a requirement for NPDES permit renewal for all six of the refineries located on the San Francisco Bay. COCs included PAHs, chlorinated hydrocarbons, and metals from petroleum refinery effluent. Conducted a pilot study at the Unocal Refinery and confirmatory studies at five remaining refineries. The methods and results were approved by the Regional Water Quality Control Board (RWQCB).

Evaluation of Technical Basis for Chronic Silver Standard, Colorado, Silver Coalition

Retained to evaluate the technical basis for the existing chronic silver standard for the State of Colorado. (Previously chaired the committee that had developed the existing standard.) Reviewed all previous and newly gathered data, prepared an expert report, and testified before the Colorado Water Quality Commission. The existing chronic standard for silver was subsequently eliminated pending further review.

Aluminum TMDL, New Mexico, Confidential Client

Provided technical support and strategic consulting regarding the proposed TMDL for aluminum for the Red River.

PCB TMDL, California, Confidential Client

Provided technical support and strategic consulting for private client on emerging TMDL issues including: 1) a proposed copper TMDL in eastern California; 2) a proposed aluminum criteria for a watershed in the south west; and 3) a draft PCB TMDL in Northern California.

Selenium in Refinery Effluent, San Francisco Bay Area, CA, Unocal and Shell Oil

Provided litigation support in four legal actions brought against Unocal and Shell Oil under the Clean Water Act. Cases addressed different aspects of the alleged effects of selenium in refinery effluents on aquatic and avian receptors. Working closely with attorneys, provided strategic consulting and technical litigation support for the deposition phase of the action. Developed expert reports and testified at the deposition. Two of the cases were dismissed and the remaining two were settled outside of court in the client's favor.

Copper Treatment of Drinking Water Reservoirs, California, Los Angeles Department of Water and Power (LADWP)

As principal scientist for the Los Angeles Department of Water and Power (LADWP), provided technical support and expert testimony to the LADWP in an action alleging injury to fish under the Clean Water Act. The contaminant of concern was copper sulfate that had been applied as an algacide at a drinking-water reservoir upstream from a trout and bass fish farm. Reviewed data, including groundwater models, concluding that there was no pathway for copper toxicity to reach the fish farm. Designed and conducted additional studies to evaluate the partitioning and speciation of copper in sediments. Studies showed that sediments of the reservoir had substantial capacity to sequester copper; provided expert testimony in a jury trial on this subject. The jury found in favor of the client. In addition, served as the principal scientist for a study designed to evaluate the effects of copper sulfate treatment on fish and other aquatic species in the North Haiwee Reservoir. Designed and oversaw studies that evaluated the bioavailability and toxicity of residual copper in sediments and surface waters of the reservoir. Evaluated total copper and free cupric ion concentrations in pore water and surface water, acid volatile sulfide analysis, sediment pore water bioassays, and copper bioaccumulation in aquatic species.

Testimony and Briefings:

- Testified before a Senate Subcommittee on “Superfund Waste Control and Risk Assessment,” on the scientific basis for establishing natural resource damage as part of the oversight hearing regarding the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), in Washington, D.C., on May 11, 1995.
- Delivered scientific briefing of House and Senate Staff entitled, “The Superfund Environmental Protection Standard: What Are We Trying to Protect?” at the Rayburn House Office Building in Washington, D.C., on April 12, 1996.
- Delivered scientific briefing of House and Senate Staff entitled, “Technical Revisions Related to the Superfund Environmental Protection Standard” at the Rayburn Office Building in Washington, D.C., on June 12, 1997.
- Testified before the Colorado Water Quality Control Commission on “The Proposed Chronic Standard for Selenium” in Denver, Colorado on November 6, 1995.

Publications & Papers

- Reiser, D.W., E.S. Greenberg, T.E. Helsler, M. Branton, and K.D. Jenkins. 2004. In situ reproduction, abundance, and growth of young-of-year and adult largemouth bass in a population exposed to polychlorinated biphenyls. *Environmental Toxicology and Chemistry* 23(7): 1762-1773.
- Sanders, B., P.L. Goering, and K.D. Jenkins. 1996. The role of general and metal-specific cellular responses in protection and repair of metal-induced damage. In *The Toxicology of Metals*, ed. L. Chang; Lewis Publishers.
- Mason, A.Z., and K.D. Jenkins. 1995. Metal toxicity and detoxification in aquatic organisms. In *Interactions between Trace Metals and Aquatic Organisms*, eds. A. Tessier and D. Turner. John Wiley and Sons, Ltd.
- Jenkins, K.D., R.C. Lee, and J. Hobson. 1995. Ecological risk assessment of a tidal wetland: a case study. In *Fundamentals of Aquatic Toxicology*, Vol. 2., ed., G.M. Rand. Washington: Taylor & Francis.
- Kent, D.J., K.D. Jenkins, and J.F. Hobson. 1994. Ecological assessment of wetlands. In *Applied Wetland Science and Technology*. Michigan: Lewis Publishers.
- Jenkins, K.D., and B.M. Sanders. 1992. Monitoring with biomarkers: a multi-tiered framework for evaluating the ecological impacts of contaminants. In *Ecological Indicators*, ed. McKenzie. Elsevier Sciences Publishers.
- Mason, A.Z., and K.D. Jenkins. 1991. Effects of cadmium bioavailability on the cytoplasmic distribution of cadmium in *Neanthes arenaceodentata*. *Bulletin of Marine Sciences* 48(2): 524-529.
- Jenkins, K.D., S.R. Howe, and A. Gilliam. 1991. Evaluation of the AET as a basis for setting sediment quality criteria. API Publication, No. 4521.
- Mason, A.Z., and K.D. Jenkins. 1990. Effects of feeding on the accumulation and subcellular distributions of zinc and cadmium in the Polychaete *Neanthes arenaceodentata*. *Chemical Speciation and Bioavailability* 2(1): 33-47.
- Jenkins, K.D., S. Howe, B.M. Sanders, and C. Norwood. 1989. Sediment Deposition, Biological Accumulation and Subcellular Distribution of Barium Following the Drilling of an Exploratory Well. In *Drilling Wastes*, eds. F.R. Engelhardt, J.P. Ray, and A.H. Gillam. England: Elsevier Applied Science Publishers.
- Jenkins, K.D., and A.Z. Mason. 1988. Relationship between subcellular distributions of cadmium and perturbations in reproduction in the polychaete *Neanthes arenaceodentata*. *Aquatic Toxicology* 12: 229.
- Jenkins, K.D., and B.M. Sanders. 1986. Relationships between free cadmium ion activity in sea water, cadmium accumulation and subcellular distributions and growth in polychaetes. *Environ. Health Persp.* 65: 205.
- Jenkins, K.D., and B.M. Sanders. 1986. Assessing the biological effects of anthropogenic contaminants in situ. In: *Urban Runoff Quality*, eds. B. Urbonas and L. Roesner. New York: American Society of Civil Engineers.
- Jenkins, K.D., and D.A. Brown. 1985. Determining the biological significance of contaminant bioaccumulation. In *Concepts in Marine Pollution Measurements*, ed. H.H. White. Maryland Sea Grant College.
- Jenkins, K.D., B.M. Sanders, and W.G. Sunda. 1984. Metal regulations and toxicity in aquatic organisms. In *Mechanisms of Drug Action*, eds. T. Singer, T. Mansour, and R. Ondarza. New York: Academic Press.

- Costlow, J.D., R. Ayers, D. Boesch, T. Gilbert, J. Gonders, D. Hood, K.D. Jenkins, J. Neff, J. Ray, H. Scott, J. Spiller, K. Tenore, and D. White. 1983. *Drilling Discharges in the Marine Environment*. Washington, D.C.: National Academy Press.
- Brown, D.A., R.W. Gossett, G.P. Hershelman, H. Schafer, K.D. Jenkins, and E.M. Perkins. 1983. Bioaccumulation and detoxification of contaminants in marine organisms from the California bight. In *Waste Disposal in the Oceans: Minimizing Impact, Maximizing Benefits*. Washington, D.C.: Westview Press
- Perkins, E.M., D.A. Brown, and K.D. Jenkins. 1982. Contaminants in white croakers (*Genyonemus lineatus*) from the southern California bight: III histopathology. In *Physiological Mechanisms of Marine Pollutant Toxicity*, eds. W.B. Verberg, A. Calabrese, F.P. Thurberg, and F.J. Vernberg. New York: Academic Press.
- Jenkins, K.D., D.A. Brown, P.S. Oshida, and E.M. Perkins. 1982. Cytosolic metal distribution as an indicator of toxicity in sea urchins from the southern California bight. *Marine Pollution Bulletin* 13(2): 413.
- Jenkins, K.D., D.A. Brown, G.P. Hershelman, and W.C. Meyer. 1982. Contaminants in white croakers (*Genyonemus lineatus*) from the southern California bight: I trace metal detoxification. In *Physiological Mechanisms of Marine Pollutant Toxicity*, eds. W.B. Verberg, A. Calabrese, F.P. Thurberg, and F.J. Vernberg. New York: Academic Press.
- Brown, D.A., R.W. Gossett, and K.D. Jenkins. 1982. Contaminants in white croakers (*Genyonemus lineatus*) from the southern California bight: II xenobiotic hydrocarbon detoxification. In *Physiological Mechanisms of Marine Pollutant Toxicity*, eds. W.B. Verberg, A. Calabrese, F.P. Thurberg, and F.J. Verberg. New York: Academic Press.

James B. Warner, P.G.

Partner



Mr. James Warner has 24 years of professional experience related to hazardous waste site investigation and remediation, legal services, environmental due diligence, water supply assessment and development, compliance, and strategic consulting. This experience includes projects in North America, South America, Asia, and Europe.

Mr. Warner has managed diverse hazardous waste site investigation and remediation projects under CERCLA, RCRA, State, and local regulatory programs. Sites include transportation facilities, industrial operations, refineries, chemical plants, mining operations, and military facilities. He specializes in state-of-the-art environmental investigation techniques, fate and transport evaluations, modeling, and data visualization focused on efficient and meaningful characterization to support effective risk-based closure, remedial strategy development, and regulatory negotiations. He has developed, implemented, operated, and optimized a wide range of remediation programs, including in situ and ex situ methods for different contaminants in diverse settings ranging from shallow fill material to deep fractured bedrock.

Mr. Warner has provided legal support for litigation and mediation involving industrial facilities and mining operations. He has developed legal strategies, written expert reports and submittals, given depositions, participated in cost recovery actions, and been involved with multiparty mediated settlements. He has a proven record of effective advocacy on behalf of parties he has represented. He has worked on several high profile sites involving PRP groups.

Mr. Warner has directed environmental due diligence evaluations for property and company acquisitions, water supply development projects, and compliance assurance programs for a wide range of clients, leading to successful

business decisions, liability management, and resource management.

Professional Affiliations & Registration

- Professional Geologist, California (#5314)
- National Ground Water Association
- California Ground Water Resources Association

Fields of Competence

- Remedial Investigation/Feasibility Study programs
- Strategic remedial planning
- Geologic and hydrogeologic site investigations
- Remediation system design, installation, and operation
- Ground water flow and solute transport modeling
- Natural attenuation evaluations
- Computer applications for hydrogeologic investigations
- Water supply evaluation and development
- Risk assessment
- Regulatory compliance/negotiations
- Property redevelopment and transfer
- Litigation support
- Due diligence

Education

- B.S., Geology, Ohio University, 1983
- M.S., Geology, Ohio University, 1985

Selected Publications

- Bjorklund, B, Warner, J., Chemburkar, A., Lake, K, and Moe, J. *Use of CPT/MIP to Optimize Remediation Design of a Zero Valent Iron Permeable Reactive Barrier* (Poster). The Sixth International Battelle Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA. May 2008.

(Publications continued on page 5)

Key Projects

Represented major airline in lawsuits related to subsurface contamination at airports (SEA, PDX, SFO, OAK, LAX). Other parties included Ports, airlines, and oil companies. Performed cost allocation evaluations and negotiations to settle disputes and assist client in successful resolution of liabilities with numerous parties.

Provided litigation support to mining company for suit related to ground water and surface water impacts by arsenic and other inorganic contaminants at mine in Sierra Nevada Mother Lode District. Evaluated site conditions, mine history, reclamation requirements, and lawsuit to assist client in equitable settlement. Participated in mediated settlement.

Expert for aggregate/gold mining operation for lawsuit (California Water Code, Clean Water Act, and Proposition 65) by citizens group concerned about metals, TDS, and sediment impacts to Yuba River in Northern California. Developed effective defense strategy. Directed technical evaluations and fieldwork to address potential contaminant sources, ground water-surface water impacts, mining operational history, and water use in area. Produced expert documents and rebuttals. Successfully addressed concerns and the lawsuit was dropped.

Expert for lawsuit between two major Silicon Valley chip manufacturers concerning responsibility for extensively commingled chlorinated VOC plumes. Directed fieldwork and evaluations to develop technically defensible past and future allocations based on observational data, ground water flow and solute transport modeling, remediation costing, and operational histories. Generated expert reports and rebuttals. Reached favorable settlement on behalf of client.

Assisted airline in lawsuit concerning jet fuel plume at San Francisco International Airport involving other airlines and an oil company. Developed strategy, directed investigations, performed evaluations (history, sources, fate and transport, fuel forensics, remedial costing), and generated expert documents to define allocation position. Reached favorable mediated settlement that led to remediation as chosen consultant for cooperative PRP group. Remediation involves multiphase hydrocarbon recovery to restore ground water, prevent worker exposure, and protect San Francisco Bay.

Provided litigation support to Southern California aerospace manufacturer for lawsuit involving insurer. Developed strategy and generated expert documents related to chlorinated VOC plumes. Conducted extensive

investigations and modeling as part of team (including fate and transport researcher from UC Berkeley and other consultants) to support cost recovery from insurer. Case was successfully resolved with client receiving significant monetary settlement.

Represented Santa Barbara County as expert for citizen's lawsuit by homeowners near County landfill with chlorinated VOC plume in overburden and fractured bedrock. Homeowner's suit was based on water supply impacts, gas migration, and home value complaints. Project involved ground water, outdoor air, and indoor air investigation, as well as risk assessment. Developed strategy and generated expert reports and rebuttals. Case was settled by County purchasing selected properties.

Provided litigation support for chemical manufacturer in California's Central Valley involving commingled chlorinated VOC, pesticide, and metals plumes with adjacent manufacturer. Supported strategy development based on previous RI/FS experience at site. Served as fact witness for depositions.

Developed financial reserve estimates for multiple remediation sites across the US for major airline in compliance with Sarbanes-Oxley protocols.

Managed environmental due diligence and remedial evaluations for Chevron in Southeast Asia and Latin America. Projects included Phase I ESAs for several shore-based logistics facilities that support off-shore oil platforms, as well as onshore exploration and production assets.

Managed third party review of a large scale remediation project for Chevron in the Middle East. Participated in expert team to evaluate investigation, risk assessment, and remedial planning and recommend future work.

Represented a utility on a South Pacific island responding to USEPA RFI and response actions for discharges of oil to the ocean. Conducted investigation to identify PRPs and respond to RFI. Managed SPCC and NPDES compliance projects for power generation facilities.

Directed ongoing investigation, risk assessment, and remediation project for a site in Hollister, California involving significant on-site and off-site TCE and perchlorate plumes. Project includes extensive investigation, remedial planning, source area remediation, groundwater containment system implementation, and replacement of water supplies for third party wells that have been impacted.

Investigated chlorinated VOCs in ground water at Palo Alto, California Superfund Site. Investigated ground water flow, conducted aquifer testing, and evaluated extraction well performance to assess contaminant migration and remediation effectiveness. Identified other responsible party and negotiated cost-sharing agreement. Negotiated remedial strategy with RWQCB and DTSC and implemented excavation/pump and treat remedy.

Performed investigations of 70 underground storage tank and fuel pipeline sites at U.S. Naval Air Stations in Northern California under RWQCB oversight, including Mare Island, Alameda, Crows Landing, and Skaggs Island. Investigated PCBs in soil and their potential to migrate to SF Bay.

Managed investigation, risk assessment, and remediation project for chlorinated VOC plume in fractured bedrock at maintenance center at San Francisco International Airport on behalf of airline under RWQCB oversight. Project involved extensive drilling, borehole geophysics, seismic reflection survey, aquifer testing, well survey, monitoring, modeling, risk assessment, in situ remediation microcosm testing, and DNAPL recovery. Primary concerns are potential impacts to water supply wells, vapor intrusion, and ecological receptors in San Francisco Bay. Negotiated MNA closure with RWQCB.

Directed investigation, risk assessment, and feasibility study for a chlorinated VOC plume under RWQCB oversight in Pleasant Hill, California for PRP group. Concerns include drinking water, indoor air, and ecological receptors. Project involves exterior investigation and modeling, complex potentially responsible party (PRP) negotiations, and high-profile public involvement. Negotiated final remedy involving SVE, chemical oxidation, and in situ permeable reactive barrier with zero valent iron.

Managed extensive investigation, risk assessment, and remediation of free phase and dissolved phase jet fuel in several active boarding areas at San Francisco International Airport for PRP group (oil company and airlines) under RWQCB oversight. Investigations involved drilling, geophysical surveys, extensive ground water flow evaluations and aquifer testing, monitored natural attenuation assessments, and LNAPL and dissolved jet fuel monitoring. Remediation involved long-term pilot testing of free product recovery by skimming and high-vacuum extraction (HVE). Final remediation by mobile and fixed system HVE is underway.

Managed investigation and remediation of chlorinated solvents and Stoddard solvent (LNAPL and dissolved) in shallow aquifer at maintenance facility at San Francisco International Airport for airline under RWQCB oversight. Remediation includes LNAPL recovery by HVE and in situ dissolved cleanup by enhanced aerobic degradation and chemical oxidation.

Managed human health and ecological risk assessment for fill material containing lead along a Steelhead habitat stream and adjacent residential area for Sonoma County Water Agency. Developed closure plan and negotiated innovative capping remedy with the RWQCB, which incorporates bike path design as protective barrier to exposure and mobilization.

Performed large scale hydrogeologic/surface water evaluation for 90 MGD radial collector wellfield adjacent to river with endangered species on behalf of Sonoma County Water Agency. Conducted long term aquifer tests to evaluate production well capacities and optimize water use in light of site conditions, projected future demand, and other system constraints.

Managed Phase I/II ESAs related to water supply and storm water system upgrades in Sonoma and Marin Counties, on behalf of Sonoma County Water Agency.

Served as Principal-in-Charge for 5-year, on-call contract for BART light-commuter rail system, consisting of six task orders related to construction of transportation facilities in areas containing impacted soil and ground water. Oversaw initial site assessment related to property acquisition, Phase II site investigations to determine material management and worker health and safety options, and procurement support.

Evaluated basin-wide effects of long-term pumping from multiple municipal supply wells on the San Francisco Peninsula to assess sustainable water supply, potential for sea water intrusion, and potential for regional ground water plumes to impact supply wells.

Evaluated sustainability of ground water supplies in a large basin in Central Asia in support of the approval for a bottled water plant. Project was successful in receiving clearance and was constructed.

Managed investigation and risk assessment for shallow fuel hydrocarbon impacts at maintenance facility at San Francisco International Airport for airline under RWQCB oversight. Negotiated No Further Action for site.

Publications (continued)

- Chemburkar, A, Dyer, R., Lind, D, Warner, J, Brown, D, Tisoncik, D. *Sequential Enhanced Bioremediation and Chemical Oxidation of Solvents and Hydrocarbons* (Poster). The Sixth International Battelle Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA. May 2008.
- Warner, J., Chemburkar, A., Brown, R., Skladany, G. *Use of Chemical Reductants to Stimulate Abiotic Reductive Pathways* (Poster). The Fifth International Battelle Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA. May 2006.
- Warner, J., Truskowski, M., Fieber, L., Ernstmann, G., Tisoncik, D., Henrich, B. *Strategic Investigation and Remediation of Chlorinated Solvents in a Fractured Bedrock Aquifer*. The Fourth International Battelle Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA. May 2004.
- Chemburkar, A, Warner, J., Tisoncik, D., Brown, D., and Skladany, G. *In Situ Enhanced Bioremediation and Chemical Oxidation of Solvents and Hydrocarbons*. The Fourth International Battelle Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA. May 2004.
- Warner, J., Truskowski, M., Fieber, L., Ernstmann, G., Tisoncik, D., Wells, T., Stanhope, J., Henrich, B. *Geologic Controls on Groundwater Flow and Contaminant Transport in Fractured Bedrock*. American Geophysical Union Annual International Meeting San Francisco, CA. December 2003.
- Warner, J., Truskowski, M., Tisoncik, D. *Optimizing a Hydrogeologic Investigation of a Fractured Bedrock Aquifer with a Seismic Reflection Survey*. American Geophysical Union Annual International Meeting, San Francisco, CA. December 2003.
- Warner, J., Truskowski, M., Tisoncik, D. *Seismic Reflection Survey for Fractured Bedrock Targets*. Association of Engineering Geophysicists Conference, Vail, Colorado. September 2003
- Warner, J., Chemburkar, A., Lucio, J., Lind, D., Sperinde, G., and Levy, J. *Optimizing Natural Attenuation and Active Remediation to Manage a Chlorinated VOC Plume at a Central California Rail Yard* (Poster), 2002 Railroad Environmental Conference, University of Illinois.
- Warner, J. Liu, H. Sterrett, R., Chemburkar, A., Patil, J., Levy, J. Barnes, L. *Biodegradation of a Large Chlorinated Solvent Plume* (Poster). The Fifth International Symposium on In Situ and On-Site Bioremediation, Battelle, San Diego, California. April 1999.
- Barnes, L.J.W., Daniel, S.R., and Warner, J.B. *Enhanced Biodegradation of a Mixture of Chlorinated Volatile Organic Compounds by an Indigenous Microbial Community from a Superfund Site*. 12th Annual Conference On Hazardous Waste Research, Kansas City, Missouri (Poster). 1997.
- Mahoney, J., Liu H., Warner J., and Sterrett R. *In Situ Measurement of the Rate of Vinyl Chloride Degradation in a Gravel Aquifer*. U.S. Air Force Conference on Intrinsic Remediation of Chlorinated Solvents, Hill Air Force Base (Abstract). 1996.
- Warner J. *Integration of Outcrop Fracture Mapping, Drilling, and Geophysical Logging to Evaluate Ground Water Flow and Gasoline Migration in Fractured Granite, Yosemite National Park, California*. Presented at the American Geophysical Union, San Francisco, California. December 1994.
- Warner J. *Applications of Borehole Geophysics to the Site Characterization of a High Level Radioactive Waste Repository Site in Bedded Salt of the Permian San Andreas Formation, Palo Duro Basin, Deaf Smith County, Texas*. Presented at the Geological Society of America Northeastern Section Meeting. March 1988.
- Warner J. *Late Carboniferous Dextral Transpression in Southern New Brunswick: A Summary Report*. Presented at the Geological Society of America Northeastern Section Meeting. March 1988.
- Warner J. *Variscan Tectonostratigraphy of the Mispic Group, Southern New Brunswick: Structural Geometry and Deformational History*. Geological Survey of Canada Paper 86-1A. 1986.
- Warner J. *An Allochthonous Alleghenian Terrane in the Vicinity of Saint John, New Brunswick, Canada*. Presented at the Geological Society of America Northeastern Section Meeting. March 1985.

John Consoletti, PE



Mr. Consoletti has 17 years of experience in the field of remediation management with domestic and international experience in civil and environmental engineering related projects for private and government clients including site assessments; remedial investigation, design, and action; storm water control design and spill prevention; and environmental compliance and permitting. For many projects, he has served as project manager, supervised field sampling and cleanup crews, and served as health and safety officer.

Mr. Consoletti has in-depth experience in working on USEPA Superfund sites in California, Texas, Massachusetts, and Louisiana. He is well versed in USEPA quality assurance and control procedures, as well as CERCLA and RCRA regulations.

Prior to joining ERM, Mr. Consoletti managed the Remediation Program for Raytheon Company. The position entailed managing the budgeting, contracting, and regulatory interactions of a \$20-million-per-year remediation program. Mr. Consoletti also served as the chairman of the technical committees for two Superfund Projects in California.

Professional Affiliations & Registrations

- Professional Engineer (Environmental) – South Carolina

Fields of Competence

- Strategic remedial planning
- USEPA and state Superfund sites
- USEPA quality assurance and control procedures
- RCRA and CERCLA compliance
- Civil and environmental engineering
- Remedial Investigation/Feasibility Studies (RI/FS)
- Engineering Evaluation/Cost Analysis (EE/CA)
- Remedial technology analyses/reviews (to analyze remedial technology efficiency or improvement opportunities)
- Remedial Action Plans, Removal Action Workplans
- Unexploded ordnance investigation and removal
- Remedial design, installation, operation, and maintenance
- Construction management
- Health and safety management
- Multimedia sampling and analysis programs
- Storm water control design and spill prevention
- Environmental compliance and permitting

Education

- BS, Civil Engineering, Virginia Polytechnic Institute and State University, 1993

Languages

- English, native speaker

Key Industry Sectors

- Aerospace
- Petrochemical

Key Projects

Unexploded Ordnance (UXO)/Munitions

Scripps Ranch Middle School Preliminary Endangerment Assessment (PEA) Workplan/ Remedial Action Workplan (RAW), San Diego Unified School District, San Diego, CA, 2003. Project Manager
Project Manager and primary author for PEA/RAW documents for proposed school location site on former military firing range. Project activities included geophysical survey, UXO investigation and removal, building demolition, and soil sampling.

Munitions Survey HUTA Investigation at Massachusetts Military Reservation (MMR), Army National Guard, Cape Cod, MA, 2000-2001. Project Manager

Project manager for the HUTA investigation for the Munitions Survey of the impact area of MMR in Cape Cod. Served as on-site manager coordinating construction activities, UXO clearance operations, and the environmental sampling phases of the National Guard Bureau (NGB) project. In addition, he served as the primary point of contact for the USEPA, the Massachusetts Department of Environmental Protection, and the NGB regarding the project. The HUTA investigation involved the detection, characterization, sampling, and removal of UXO and UXO-related materials from a 4-acre study area in the central Impact Area of the artillery range at MMR. The project scope included 10,000-square-foot test pit excavations to depths up to 15 feet below the ground surface within the central impact area of the Camp Edwards Firing Range.

Insurance Cost Recovery

Private-Sector Insurance Cost Recovery Program, Confidential Clients, Worldwide, 1998-2001. Project Manager

Involved in insurance cost recovery program, providing support to private-sector companies in evaluating environmental liabilities and conducting risk management analysis in preparation of environmental damages claims under insurance cost recovery (ICR) programs. He has evaluated environmental liabilities for various portfolios of industrial sites including industries such as chemical manufacturing, petroleum and petrochemical, railroad, pulp and paper, and others. These efforts included project management, conducting site inspections and interviews, analyzing historical site operations, preparing detailed site characterizations,

conducting regulatory analyses and determining cleanup standards, calculating volumes of affected media, developing site remedial approaches, preparing technical guidance for the selection of remediation technologies, and preparing engineering-level cost estimates for site remediation.

This program involved conducting in-depth due diligence analysis of a client's entire portfolio of currently and previously owned industrial facilities, as well as third-party sites, to develop a comprehensive and defensible estimate of the client's past and future environmental liabilities in support of environmental damage claims against the client's insurers. Gained an understanding of applicable environmental laws and regulations in most of the United States, as well as in Canada, Mexico, the United Kingdom, Spain, and Germany.

Superfund Site Management

McColl Superfund Site, Fullerton CA, 2007 -2010. Project Manager

Project Manager for multi-party remediation system operation, maintenance, monitoring, and optimization. Also managed the technical and field staff while serving as the corporate health and safety officer.

MDI Superfund Project RI/FS Investigation, Houston, TX, USEPA, 2003. RI Field Manager

Field Manager for Remedial Investigation at the Many Diversified Interests (MDI) Superfund Site. Sampling activities included over 1,000 soil samples, 40 temporary wells, 20 permanent wells, and 20 sludge and waste samples. Other activities included pumping tests, slug tests, pit sludge, and pond sediment sampling.

CERCLA Field Project, USEPA, 1999. Supervisor

For USEPA Region 4, supervised RI/FS field activities at Hammond, LA, Superfund site. Coordinated sampling teams conducting soil and groundwater sampling using Geoprobe technology, as well as drill rigs and manual sampling at more than 250 sampling locations. Prepared the site sampling plan, quality assurance plan, and health and safety plan for the field efforts. Served as the site health and safety officer for the field operations. Assisted in the analysis of the data results and development of the RI report.

Program and Project Management

Corporate Remediation Program for Raytheon Company, Long Beach, CA, 2004-2007. Program Manager

Managed remediation program comprising \$20 million per year, including budgeting, contracting, oversight, and planning for 10 to 15 active sites and tracking of over 200 sites in various stages of the remediation process. Managed the development of a database that allowed senior management to easily find current and historical information on active and inactive sites.

Installation Restoration Program, Vandenberg Air Force Base, CA, US Air Force, 2001-2002. Senior Engineer/Deputy Program Manager

Senior Engineer and Deputy Program Manager for several contracts with responsibilities including writing RI/FS for several abandoned missile launch complexes, an active launch complex, wetland areas, and a former fire training area. Responsible for planning and implementation of site investigations. Included management and oversight of preparation and review of RI/FS reports; EE/CA preparation and contaminated sediment excavation; drilling and sampling of direct-push borings, air rotary borings, soil borings, and monitoring wells; aquifer tests; and collection of surface water and sediment samples.

SK Corporation RI/FS, SK Corporation Refinery Complex, Ulsan, South Korea, 2002-2003. Senior Engineer/Project Manager

Senior Engineer and Project Manager for fast track RI/FS investigation and report. Responsibilities included preparation of cost proposal, work plan, and travel arrangements for a five-person team for an 8-week soil and groundwater field investigation at SK Refinery Complex including installation of 50 wells and over 500 soil borings. Managed and authored the RI/FS with a total turnaround time of less than 6x months and a budget of \$700,000.

International Chemical Company, Environmental Site Assessment, 1999-2000. Project Manager

Served as project manager and field team leader for environmental investigations at chemical manufacturing facilities in the United Kingdom and France. These efforts included conducting site inspections and interviews, analyzing historical site operations, preparing site sampling plans, coordinating subcontract labor, coordinated sampling teams that conducting soil and groundwater sampling using drill rigs and direct push

technology at more than 20 sampling locations at each site. Prepared the health and safety plan and served as the site health and safety officer for the field operations. Also assisted in the analysis of the data results and development of the RI Report.

SWMU Investigation, Naval Base Point Loma, US Navy, San Diego, CA, 2003. Field Manager

Field Manager for soil and groundwater investigation for RCRA closure of 12 solid waste management units (SWMUs) at the SubBase and SPAWAR facilities at the Naval Base Point Loma.

Installation Restoration Program, Ventura County Naval Base, US Navy, Point Mugu, CA, 2002. Senior Engineer and Task Manager

Senior Engineer and Task Manager for Site 24 FS and characterization of former underground storage tank site. Responsible for planning and implementation of supplemental site characterization. Efforts included management and oversight of the following activities: preparation and review of FS reports; drilling and sampling of direct-push borings and monitoring well installation; and collection of groundwater samples.

Private Sector Environmental Compliance, Investigation, and Remediation, Multiple Clients, 1995-1999

Significant experience in supporting private-sector clients in site investigations, cleanup activities, and compliance efforts. Conducted numerous site inspections, sampling projects, and compliance reviews and inspections, including developing storm water and spill prevention plans and implementing designs; conducting more than 50 Phase I and Phase II site assessments; performing surface and subsurface soil, groundwater, surface water, hazardous and solid waste, and soil vapor sampling; designing storm water and industrial wastewater drainage and treatment systems; planning and completing hazardous waste remediation projects that included groundwater monitoring and excavation and treatment of contaminated soils; completing storm water discharge, solid waste disposal, and various air permits; and completing Title V air permits and conditional waivers for five states.

Attachment C
Allen Matkins Relevant
Experience

ATTACHMENT C

Allen Matkins Representative Matters

Major Manufacturer - Rialto/Colton Groundwater Basin (San Bernardino County, CA) – Representation of the client and related entities in connection with alleged perchlorate and TCE contamination of the Rialto/Colton Groundwater Basin, which is located approximately 60 miles east of Los Angeles. This multi-party action, which involves allegations of damages to the groundwater in excess of \$100 million by the Cities of Rialto and Colton, has been pending for six years in state and federal courts and before the Santa Ana Regional Water Quality Control Board and the State Water Resources Control Board.

Major Oil Company - Portland Harbor Superfund (Portland, OR) – Representation of the client Corporation in the multi-party Portland Harbor Superfund Site under CERCLA. The Portland Harbor Superfund Site involves the alleged contamination of Willamette River sediments for its entire 15 mile course through Portland, Oregon. Preliminary assessments of the sediments in the river has caused some potentially responsible parties to estimate that the remedial investigation of the river itself will cost between \$60 and \$80 million with the cleanup potentially costing multiples of this number. It is currently in the remedial investigation phase. The client is one of more than 100 potentially responsible parties.

Oil & Gas Company (Santa Maria County, CA) – Representation of client. in administrative civil liability complaint for \$8.5 million arising out of beneficial reuse of crude oil impacted soils from operating oil field as road mix under Central Coast RWQCB waiver program for waste discharge requirements.

California American Water Company (Sacramento County, CA) – Representation of California American Water Company in federal court litigation against the United States Air Force, arising out of contamination of a drinking water supply well with pollutants released at the former Mather Air Force Base. Our work for California American Water Company in Sacramento also included the negotiation of a comprehensive water supply replacement agreement with the primary responsible party at a nearby Superfund site in eastern Sacramento County.

Campbell Soup Company - San Gabriel Valley Superfund Site/Puente Valley Operable Unit (Los Angeles County, CA) – Represented Campbell Soup, alleged to be responsible for liabilities of Vlastic Foods, Inc., in negotiations with U.S. Department of Justice and U.S. EPA of terms of consent decree, and with potentially responsible parties (PRPs) regarding cleanup responsibilities, cost contributions, and resolution of claims for contamination and treatment costs by affected water purveyors.

Black & Decker – Stringfellow Superfund Site (Riverside County, CA) – Represented Black & Decker, Inc., a third party defendant and alleged generator of hazardous wastes in long-running litigation in federal district court regarding the Stringfellow Acid Pits Superfund site.

California-American Water Company – Mather Air Force Base Superfund Site (Sacramento County, CA) – Represented Cal-Am in action in federal district court against the U.S. Department of

Defense in action arising out of contamination of drinking water supply wells by chlorinated solvents released to groundwater at the former Mather Base.

California-American Water Company – Aerojet-General Superfund Site (Sacramento County, CA) – Represented Cal-Am in obtaining comprehensive resolution of water replacement claims arising out of past and threatened future contamination of drinking water supply wells by chlorinated solvents and perchlorate released to groundwater at the Aerojet-General site.

San Diego Unified Port District (San Diego County, CA) – Representation of Port District, as the trustee of the tidelands in San Diego Bay, in administrative enforcement action brought by the San Diego RWQCB against numerous alleged Dischargers (including shipbuilders, the City of San Diego, San Diego Gas and Electric Company, and the United States Navy) to address metals, PCBs, tributyltin, among other contaminants of concern.

Former Solvent Service Partners – Solvent Service Site (Santa Clara County, CA) – Representation of former owner/operators of contaminated solvent recycling facility in regional water board-supervised cleanup and in related litigation in federal court with other responsible parties and indemnitors.

999 Arques Corporation – Sunnyvale Stewart Drive OU (Santa Clara County, CA) – Representation of corporation set up by Tyco, Ametek and New England Mutual Life to address chlorinated solvent contamination at former industrial site in Sunnyvale, and litigation in federal district court with other responsible parties regarding cleanup costs.

Myers Industries, Inc./Buckhorn, Inc. – Almaden Quicksilver County Park (Santa Clara County, CA) – Representation of alleged successor to last operator of largest mercury mine in North America in Department of Toxic Substances Control-led cleanup and related litigation, in resolution of U.S. Department of Interior and California Department of Fish and Game action for natural resource damages under CERCLA.

Freshwater Tissue Company LLC (Humboldt County, CA) – Representation of owner/operator of kraft pulp mill in connection with regional water board-led investigation and remediation of contaminated soil and groundwater adjacent to Humboldt Bay.

Port of Stockton (San Joaquin County, CA) – Advice to and representation of the Port in connection with site investigations and negotiations with industrial tenant that has generated PCB, metals and other contamination of soil and groundwater at the site.

California-American Water Company – Ameripride Site (Sacramento County, CA) – Represented Cal-Am in negotiations with regional water board regarding cleanup and disposition of water supply wells contaminated or threatened by releases of perchloroethylene from large industrial dry cleaning plant, and in CERCLA litigation in federal district court against the owner of the plant.

Attachment D
ERM Relevant Experience

ERM's Public Sector Experience

Redevelopment Agencies, Cities, and Other Public Agencies



ERM has worked with or for cities and their associated agencies, including redevelopment and planning, throughout California since 1990.

ERM has extensive experience with the public sector as clients and as interested or oversight parties in redevelopment projects.

Experience with California Cities

ERM has provided various environmental services to cities within California, most notably the following:

City of Fresno

The City of Fresno has been our client on a large-scale, multi-party contaminated site cleanup project at Old Hammer Field since 1991. During execution of project activities associated with the investigation, cleanup, and eventual redevelopment of this 1,600-acre site, ERM has worked closely with the City Manager's Office, City Attorney's Office, Public Works, Water Division, and Department of Airports on a variety of tasks.

From a redevelopment perspective, we worked with the City Manager's Office and the Department of Airports to create a new Department of Forestry Air Attack Fighting Base at the Fresno Air Terminal. In addition, we worked with the City Manager's Office and the Redevelopment Office to clean up a portion of the Old Hammer Field/ Fresno Air Terminal on a fast-track basis to allow development of a GAP Stores distribution center in Fresno.

All of these activities with the City have entailed extensive interaction with the DTSC, Central Valley RWQCB, and the Fresno County and State health departments.



City of Berkeley

ERM has been providing “as-needed” planning and environmental support to the City of Berkeley’s Planning & Development Department under a Master Services Agreement since 2005. ERM staff serves as an extension of Berkeley’s land use planning staff. Planning services include:

- Reviewing use permit and development applications to assess their potential environmental and social impacts and to develop use permit recommendations and mitigation measures;
- Conducting completeness reviews consistent with the Permit Streamlining Act;
- Preparing public notices;
- Preparing staff summary reports and conditions of approval; and
- Making presentations to City boards and commissions.

Environmental services include project scoping and the preparation of environmental documents, such as Initial Studies, Mitigation Monitoring Plans, and Negative Declarations, to comply with CEQA. ERM begins work immediately when projects arise, and keeps close track of review, public notices, and other deliverable deadlines.

City of San Ramon

ERM is a preferred consultant for the City of San Ramon’s Planning Department, providing planning and CEQA-related services on an as-needed basis. Most projects are related to new development projects or redevelopment.

City of Eureka

The City of Eureka retained ERM to respond to demands of the North Coast Regional Water Quality Control Board (RWQCB) to prepare a Remedial Action Plan (RAP) to address contamination adjacent to Humboldt Bay. The former foundry site where the contamination had been found was part of a larger property planned for waterfront commercial redevelopment. The identified contaminants of concern included metals and petroleum hydrocarbons in soil and groundwater.

Although the RWQCB initially rejected the City’s preferred alternative, ERM was able to negotiate an

approach that both satisfied the RWQCB and met the initial goals of the project. The accepted approach included the preferred alternative, Alternative 2: access control and groundwater monitoring, and Alternative 4: debris removal/soil excavation and groundwater monitoring. Alternative 2 was to be implemented immediately. Implementation of Alternative 4 was deferred until final remedial action is determined for the larger redevelopment property. This negotiated approach protected human health, included definitive assessment of potential groundwater contamination, and integrated soils cleanup into redevelopment of the larger property.

City of Vista

The City of Vista has maintained a long-term lease of a Little League field on property owned by its neighbor, the City of Oceanside. The field is located on the top of a former landfill that was operated by the County of San Diego, and jointly used by both municipalities for many years prior.

Recently, in the process of completing a SWAT for the San Diego Bay RWQCB, data revealed an elevated concentration of lead in sediment obtained from the adjacent creek. In an effort to keep the ballfield in use, ERM was retained by the City of Vista to assess the potential risks on the basis of data obtained at the surface of the playing fields. Despite this effort, the City of Oceanside decided to exercise its right to close the fields and initiate a preliminary endangerment assessment (PEA) of the site. Potentially responsible parties, including the City of Vista, initially objected to the rationality and comprehensiveness of the PEA, but continued to participate in ongoing meetings with the City of Oceanside. ERM assisted Vista with a technical assessment of the services being provided on Oceanside's behalf, and monitored the implications of the study.

Municipal Redevelopment Agencies Experience

ERM has worked for or with redevelopment agencies in California, most notably the Sacramento Housing and Redevelopment Agency (SHRA) and the Alameda Reuse and Redevelopment Authority.

City of Sacramento, including Sacramento Housing and Redevelopment Agency

ERM has served as the lead environmental consultant for activities at the Sacramento Rail Yard State Superfund site, located just north of downtown Sacramento. These activities have included the characterization, evaluation, engineering design, and cleanup of soil and groundwater. This has also included support of Brownfields redevelopment through risk-based cleanup standards consistent with land use options, integration of cleanup with redevelopment, and negotiations with the City of Sacramento and CalEPA/DTSC for long-term coordination and oversight agreements for the property. This 240-acre site is one of the largest Brownfield redevelopment sites in North America.

ERM has worked for all the owners of the site since 1990: Southern Pacific Transportation Company, Union Pacific Railroad, and now Thomas Enterprises. During our history at this site, we have directly interfaced with the Governor's Office and state regulators (including the lead agency, DTSC and the Central Valley RWQCB); and several City of Sacramento departments and agencies (City Council and communities, Mayor's Office, City attorneys, Development Services Department, Planning Department, City Preservation Office, and the City of Sacramento Housing and Redevelopment Agency (regarding land use planning and traffic control during cleanup activities). Other projects we have performed directly for SHRA include:

- Soil sampling for a proposed housing development;
- Soil contamination investigation on Front Street;
- Underground tank removal services at the downtown waterfront; and
- Soil investigation for a historical site near the Sacramento River.

City of Alameda and Alameda Reuse and Redevelopment Authority

ERM worked collaboratively with the City of Alameda Development Services Department and the Alameda Reuse and Redevelopment Authority on various projects

related to the transfer and redevelopment of the Fleet and Industrial Supply Center Oakland, Alameda Annex and Facilities (FISCA) and Alameda Point (former Naval Air Station Alameda). ERM's activities have included site investigation to evaluate contaminants in soil, soil gas, and groundwater associated with residential and commercial redevelopment of portions of the FISCA, and assistance in revising and updating a City ordinance addressing potential organic contaminants associated with excavation permits on portions of the FISCA and Alameda Point.

Most recently, ERM has provided assistance to the City and its Master Developer in providing analysis of potential impacts associated with aerially deposited lead and preparation of specifications for improvements to a major thoroughfare through a portion of the FISCA.

Other Public Agencies

ERM has been providing diverse environmental services to many regional, state, and federal agencies, as shown in Table 3-1 below. Most of our work with these agencies has been long-term through consecutive contracts won repeatedly through the procurement process. Much of our project work has been in support of expansion activities and modifications or upgrading of existing facilities.



Table 3-1 Other Public Agency Experience

Public Agency	Client Contact	Description of Work
<p>Bay Area Rapid Transit District (BART) 2002 - ongoing</p>	<p>Gary Jensen Environmental Health and Safety (510) 464-7659 gjensen@bart.gov</p>	<p>Awarded two consecutive 5-year “on-call” contracts for environmental/hazardous materials engineering services related to BART expansion and modification projects, including Proposed Oakland Airport Connector, Warm Springs Extension, East Contra Costa Extension (eBART), and Fruitvale Station. Completed 14 task orders under first contract. Services include Phase I ESAs, Phase II soil and groundwater investigations, feasibility studies, health and safety evaluations, regulatory interface and negotiation, Soil Management Plans, hazardous materials surveys/abatement, and environmental planning.</p>
<p>Peninsula Corridor Joint Powers Board (Caltrain) 2002 – 2007 Work ongoing as part of design firm teams under General Engineering Consultant contracts</p>	<p>Hubert Chan Project Engineer (650)622-7786 chanh@samtrans.com</p>	<p>Awarded 2-year “on-call” contract and 3 optional years for environmental/hazardous materials engineering services for JPB capital projects. Completed 22 task orders under contract, which was subsequently merged into new General Engineering Consultant design contracts, under which ERM continues to work as part of design firm teams (e.g., HNTB, Parsons). Supported JPB from property acquisition and planning through construction process by providing various departments with understanding of nature, extent, and potential mitigation of contamination.</p>
<p>Caltrans Statewide and Northern California 1994 – 2008</p>	<p>Doug Coleman (530) 741-4539 douglas_coleman@dot.ca.gov</p>	<p>ERM has been prime consultant on 5 consecutive “on-call” hazardous waste engineering design contracts, from 1994 to 2008. We have completed over 27 task orders to support highway construction and demolition projects, existing maintenance facilities, and environmentally distressed properties.</p> <p>ERM has also recently won a new 3-year contract with Caltrans Districts 1, 2, and 3 to provide environmental remediation monitoring services.</p>

Public Agency	Client Contact	Description of Work
<p>Judicial Council of California, Administrative Office of the Court</p> <p>Statewide</p> <p>2005 – Ongoing</p>		<p>ERM was selected by AOC under two consecutive “on-call” contracts to provide technical support associated with transfer of Superior Court buildings from the counties to the State. ERM has completed work under more than 30 delivery order authorizations under these contracts, associated with more than 50 Court facilities. Projects have involved existing or new California Court facilities, and have been located in 18 counties throughout the state, representing approximately 30 percent of the counties in California.</p> <p>Services have primarily consisted of performing Phase I ESAs (scope varying from full AAI-compliant for Title and Responsibility transfers to limited scope for Leasehold transactions); Phase II field investigations with soil, soil gas, and/or groundwater sampling components; hazardous materials surveys/abatement, and environmental planning and CEQA compliance and documentation. The purpose of the Phase II investigations was either (1) to evaluate potential impacts from on- or off-site Recognized Environmental Conditions identified during the Phase I process; or (2) to establish baseline conditions for vacant sites being considered for development as new Court facilities.</p>
<p>Sonoma County Water Agency</p> <p>Sonoma County</p> <p>2005 – Ongoing</p>	<p>Don Seymour, PE Chief Engineer (707) 526-5370 dseymour@scwa.ca.gov</p>	<p>ERM is providing environmental support to several capital construction projects under a Master Service Agreement. Work has consisted mainly of several Phase I ESAs, industrial hygiene services, and site investigation and remediation of a lead-impacted site along Santa Rosa Creek.</p>
<p>National Guard Bureau Air National Guard Army National Guard</p> <p>Nationwide</p> <p>1995 – Ongoing (2011)</p>	<p>Russell Dyer (301) 836-8149 russell.dyer@ang.af.mil</p>	<p>Under two successive ID/IQ contracts, totaling \$60.2 million to date, ERM has been providing support to NGB on a task-order basis for their Environmental Restoration, Environmental Quality/Compliance, and Environmental Planning Program requirements nationwide. ERM has executed more than 297 task orders at 81 Bases in 30 states and Puerto Rico to date.</p>
<p>US Army Corps of Engineers (USACE)</p> <p>Sacramento District</p> <p>2007 – Ongoing</p>	<p>Jeff Case Program Manager Terranear PMC, LLC (610) 862-5064 JCase@TerranearPMC.com</p>	<p>As a subcontractor to Terranear PMC, LLC, ERM has been supporting this contract to USACE’s Sacramento District to provide environmental investigation and remediation services on an as-needed basis.</p>

City of Fresno; Boeing/North America, Inc.; NGB; USACE Fresno, California

PA/SI/RI/FS/RAP/RD/Construction Program at Old Hammer Field

Situation

The City of Fresno, National Guard Bureau, USACE, and Boeing/North America, Inc., (formerly Rockwell International) retained ERM to conduct investigations and perform cleanup activities for the Old Hammer Field Air Base, which was used by the Army Air Corps during World War II. The site consists of approximately 1,600 acres of land that, when fully operational, contained over 400 buildings, several runways, and accommodated activities of 5,800 air corps personnel.

In 1945, the base was deactivated and the property was transferred to the City of Fresno. The City currently uses the majority of the property to operate the Fresno Air Terminal (present day Fresno-Yosemite International Airport); however, some sections of the site are leased to light industrial manufacturers.

In 1990, the City wished to develop and lease a portion of Old Hammer Field. However, preliminary site investigations detected tetrachloroethylene (PCE) and trichloroethylene (TCE) in drinking water wells downgradient of the site. Subsequently, USEPA Region 9, Department of Toxic Substances Control (DTSC), and Central Valley Regional Water Quality Control Board (RWQCB) required preliminary assessments before redevelopment approval.

ERM's Approach

Potentially Responsible Parties (PRPs)

An important aspect of this project involves working with PRPs to prepare strategies for their negotiation positions. Based on our understanding of the technical issues as well as each PRP's individual needs, we have assisted the PRPs in negotiating favorable terms and schedules for investigation and site remediation. The PRPs have been faced with several challenges in working together because

of their different business backgrounds (i.e., DOD, municipality, and private industry), funding mechanisms, and requirements. To unify the PRPs and allow them to focus on the issues, ERM prepared and implemented a Strategic Site Management Plan to articulate their objectives and overall strategy for the site. We have assisted the PRPs in identifying objectives, developing action plans, assigning responsibilities, and tracking progress to ensure they meet their overall objectives for the site.

Preliminary Assessments/Site Inspections (PA/SI)

ERM conducted a PA of Old Hammer Field to determine if former or existing site activities may have resulted in the release of chemicals to the environment. The PA divided the site into 14 distinct areas and consisted of existing data/records review, aerial photograph review, interviews of former and current site workers, and site surveillance. The preliminary assessment identified specific data gaps and recommended further action (i.e., site inspections) for several Old Hammer Field sites.

Based on the PA results, ERM conducted two site inspections. The first site inspection was conducted to assess the potential impact of solvents to soil and ground



water in Area 1 of Old Hammer Field. The site inspection consisted of a 180-point soil vapor survey, 50 soil borings with the collection of 70 soil samples, and 23 ground water samples via HydroPunch.

The site inspection identified a portion of a significant TCE plume in ground water adjacent to an airport hangar. It also provided data to support No Further Action recommendations at many of the sites first identified in the preliminary assessment.

ERM conducted a second site inspection to investigate sewer lines, two wastewater effluent drying beds, and a storm water detention pond. This effort consisted of a sewer camera survey, 14 soil borings, and 20 surface samples. The site inspection produced data that resulted in DTSC acceptance of a No Further Action recommendation for each site.

Shell RI/FS Workplan

Since Old Hammer Field has several study areas with mixed remediation priorities and differing end use objectives, ERM prepared a Shell RI/FS Workplan to address site history, data management, and quality control components of the entire site. All investigation activities were then executed under brief Sampling and Analysis Plans. In addition to the workplan components, the Shell Workplan included a site background, waste minimization plan, Standard Operating Procedures, Quality Assurance Plan, Site-Wide Health and Safety Plan, and Data Quality Objectives.

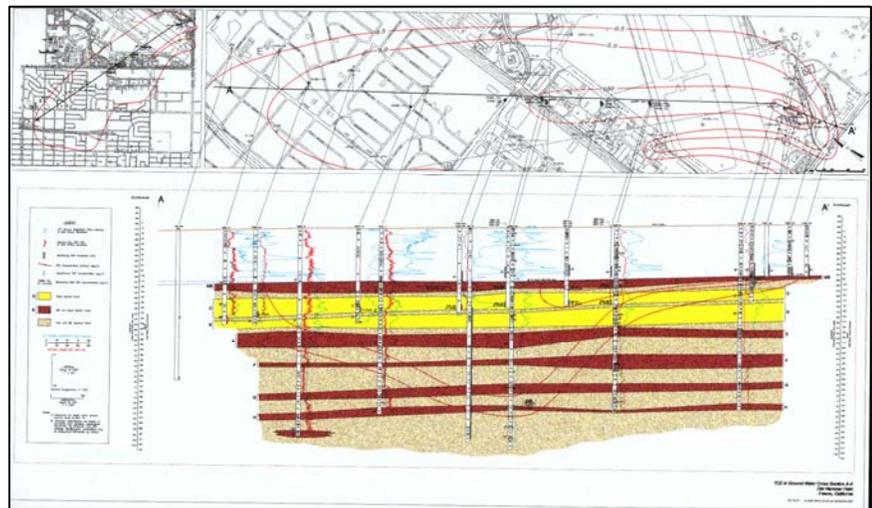
Decision Documents

ERM identified 96 potential waste sites that may require further action. To address regulatory concerns regarding these sites, ERM prepared a report that reviewed the histories for each site and developed recommendations for either Further Action or No Further Action. These Decision Documents individually addressed each site and resulted in DTSC acceptance of recommendations of No Further Action for 79 sites, or 82 percent of the total 96 sites, and Further Action for only 17 sites.

Remedial Investigation (RI), Water Supply Survey
ERM performed a remedial investigation to address volatile organic compounds (VOCs) in site soil and ground water. Nineteen deep mud-rotary borings (to a maximum depth of 375 feet), 27 shallow hollow-stem auger borings, and 15 ground water monitoring wells were installed. This RI defined the vertical and lateral extents of the VOC plume.

To ensure both the data mobile and fixed-base laboratory were of acceptable quality to meet project Data Quality Objectives, ERM chemists performed an evaluation for quality. In addition to reviewing quality control results, we performed an audit of the mobile laboratory. Data were qualified using standard CLP qualifiers as necessary. We also prepared and included an assessment of data quality and usability with each project report.

The investigation included an extensive survey of the plume area for municipal, domestic, and industrial water supply wells. Numerous active wells were discovered and sampled for VOCs. Several wells have been determined to be impacted with TCE, and many others are at risk of becoming impacted.



TCE in Ground Water Cross Section

RBCA Screening Risk Assessment

To determine if remedial action was necessary before the redevelopment of a specific portion of Area 1, ERM conducted a RBCA screening risk assessment according to USEPA Preliminary Endangerment Assessment guidelines. We examined existing site data, identified site chemicals of potential concern (COPCs), determined potential chemical concentrations in a given medium to which humans might be exposed, and compared these chemical concentrations to screening levels. ERM identified ground water as the only area of potential concern and recommended allowing development of the proposed site to proceed without remedial action. We also recommended that individuals should continue to use other sources of drinking water.

Public Participation Plan

ERM has designed a Public Participation Plan to complement remediation activities at the site. Fact sheets, public notices, public response summaries, and a public information repository have provided up-to-date information for public review. ERM has also developed and maintained an extensive mailing list of concerned individuals and organizations.

Feasibility Study

ERM has prepared a FS to evaluate the potential remedial options to address VOCs in soil and ground water, primarily TCE and PCE. Based on the results for the RI and Health Risk Assessment at the site, ERM developed cleanup goals and remedial action objectives for the site. The FS evaluated four remedial alternatives to the remedial action objectives. The alternative development process was intended to be focused and practical; only the most appropriate and promising technology types and process options were included. The detailed analysis of the alternatives involved refinement of the technological components, an evaluation of each alternative against the nine evaluation criteria set forth in the *National Contingency Plan*, and a comparative analysis of all alternatives.

Included in the FS was the development of a ground water flow model and a contaminant transport model.

The model was used to support the potential remedial alternatives for ground water at the site.

The FS recommends a combination of treatment technologies including: implementation of the water supply contingency plan, water-use restrictions or notifications, water supply well operation to control plume migration (specifically Wells 70 and 32B), soil vapor extraction within the source area, in situ potassium permanganate within the source area, and long-term ground water monitoring. The DTSC and RWQCB have approved the FS.

Remedial Action Plan

ERM prepared a RAP for agency and public review and approval. Due primarily to the effectiveness of the Public Participation Plan and active regulatory involvement during the FS phase, the RAP was approved relatively quickly. Currently, ERM is preparing the design documents for the full-scale remedy. The PRP group is currently negotiating the terms of a potential contract with ERM for a turnkey design/contract program.

Design and Remedy Implementation

Finally, ERM prepared remedial designs and implementation plans for all components of the approved remedy, which included chemical oxidation and SVE for source areas, wellhead treatment for mid-plume (Well 70), including recirculation of treated water into City water supply, and ground water extraction and treatment with reinjection of treated ground water at the downgradient edges of plume. The designs were approved, and ERM initiated implementation in August 2005.

The full-scale chemical oxidation program consists of eight injections of 33,000 gallons of 2% permanganate solution via nine injection wells to treat TCE and associated VOCs in the shallow aquifer. Chemical injections was initiated in November 2005 and completed by January 2008.

The full-scale SVE program consists of 750-scfm blower package with activated carbon vapor abatement connected to 10 SVE wells cycled under three groups.

System operation began in December 2005 and will likely shutdown in early 2009.

At the downgradient edges of the plume, construction of the extraction and treatment system will be completed by 12 December 2008. System startup will be initiated by 31 December 2008.

Results

Based on our PA, ERM produced a tenant list of PRPs among whom investigation and remediation costs should be fairly allocated.

ERM helped the site avoid being listed on the federal National Priorities List and minimized payment of oversight costs. ERM also conducted the Area 1 investigation on an expedited basis so the Forest Service could receive funding for redevelopment, and negotiated Force Majeure to delay a State-enforceable schedule if government funding becomes available.

ERM is involved with ongoing agency negotiations with DTSC and RWQCB, including negotiating work scopes. For example:

- ERM Project / Program Leadership: For 20 years, ERM has directed project strategy and interface with DTSC and the RWQCB. ERM has leveraged its working relationship with the agencies to the advantage of the City of Fresno. As result, the City has been through the entire RI/FS/RAP/ Community Outreach/ Remediation Implementation in the most streamlined cost-effective manner possible. ERM has carried the project successfully and efficiently through significant turnover at the agencies for years.
- ERM led negotiations with DTSC, the RWQCB, and the PRPs in the development of a favorable Enforceable Agreement for the performance of the work. Negotiated schedules allowed flexibility for funding from the federal government. Oversight costs from the agencies were capped at a extremely low burn rate.
- ERM provided key testimony in a litigation filed against the PRPs by a local water purveyor. The

case was ruled in favor of the PRPs/City, and there was no payment for any alleged damages in the lawsuit.

- ERM performed all work consistent with the National Contingency Plan (NCP) requirements. This proved extremely valuable in the settlement between the PRPs in which the City's share for past and future costs was capped at 10 percent. This was significant for the City in that they were only the landowner, not the party that contributed to the soil and groundwater contamination.
- In 1991, ERM started the development of the list of PRPs. Through the work, the federal government and private parties were identified and held responsible for 90 percent of past and future costs. This outcome was critical for the City in that they had no funds to perform the work.
- ERM performed an EE/CA for an impacted key well in the City of Fresno water system. Through work with the agencies, well head treatment was provided, and the City was able to produce 2000 gpm from this well for the water supply. This saved the City several millions of dollars in the development of a new water well supply field for their distribution system.
- ERM successfully carved out two parcels of land for development within the boundaries of the site for fast-track redevelopment. This allowed the City to lease and sell land that would have otherwise remained idle and producing zero revenue. ERM turned both parcels into cash producers to help the City fund their portion of the cleanup.
- ERM negotiated a lease with a private landowner under favorable terms for the location of a groundwater treatment system off the City property boundaries. ERM streamlined the process and saved the City considerable funds in purchasing property for the system. ERM was also able to complete this in a very short period of time, allowing compliance with all of the regulatory schedule requirements.
- ERM has developed a close relationship with the City Attorney, which has allowed him the ability to successfully advise the City Council in key decisions

regarding the management of the project. This has been critical to the City's success in maintaining a low percentage of the payment for the work performed at the site.

- ERM has led a Community Outreach Activities for the project. This has allowed the project to move forward smoothly over 20 years, and there has been no interruption to the schedule or adverse cost impacts for the City in the outreach process.
- We negotiated with DTSC to use a combination of HydroPunch and fewer confirmation wells (in place of 20 monitoring well locations) to monitor the deep VOC plume, saving \$250,000.
- ERM assisted the PRPs in negotiating their Cooperative Agreement with DTSC (modeled after the Federal Facilities Agreement).
- ERM negotiated DTSC's concurrence with No Further Action recommendations for 82 percent of the total potential waste sites at Old Hammer Field.
- ERM negotiated with DTSC and RWQCB for a streamlined risk assessment approach to expedite the remaining RI/FS tasks and a site-specific trigger level that is more than an order of magnitude above the level originally proposed by DTSC, is acceptable to both agencies, satisfies CERCLA requirements, and also meets the needs of the PRP committee.

- The DTSC and RWQCB have approved all CERCLA documents prepared to date.
- Through continual optimization of the SVE system operation, ERM anticipates completion of the soil remedial action within 4 years, approximately 20% quicker than originally estimated.
- The in situ chemical oxidation remedial action is also progressing faster than expected. ERM is currently optimizing the injection scheme to reduce the overall injection and performance monitoring requirements and costs.



Catellus Development Corporation

Alameda, California

Alameda Fleet and Industrial Supply Center, Alameda Annex and Facilities/Alameda Point East Housing Complex

Situation

ERM was retained to provide technical support associated with the transfer and redevelopment of the former San Francisco Bay Area Naval Installation. Under the Base Realignment and Closure Act (BRAC), the property was being transferred to the City of Alameda, CA, which had negotiated a development agreement with Catellus Development Corporation (Catellus).

The planned development includes a mixed commercial/high-tech office park with 1.3 million square feet of office space and a 500-unit, single-family residential development that incorporates part of the adjacent Alameda Point (former Naval Air Station [NAS] Alameda).

Activities associated with base closure and transfer in which ERM participated included reviewing Navy monitoring, remediation, and closure documentation; performing additional soil and ground water remedial investigation in support of supplemental risk analysis addressing the residential reuse for a portion of the East Housing Complex; remediation cost analysis in anticipation of potential early transfer by the Navy; soil vapor and ground water investigation in support of marquis commercial tenant redevelopment; and preparing closure documentation associated with and subsequent to base transfer to the City of Alameda. ERM subsequently planned and implemented several remedial actions to address legacy environmental issues, including a \$4.2 million remediation to address pesticide-impacted soil in the proposed residential area.



ERM/3421/02.08

ERM's Approach

ERM's approach focused on the following development issues:

1. Facilitating and expediting Navy remedial activities in areas not subject to residential risk concerns;
2. Negotiating the performance of additional remedial investigation by the Navy in support of risk assessment for the area designated for residential reuse;
3. Negotiating schedules and cleanup standards with regulatory agencies (Department of Toxic Substances Control and Regional Water Quality Control Board);
4. Assisting the Navy in negotiating closure or *No Further Action* status for specific areas of concern at the base, including the site-wide storm water drainage system;
5. Performing limited, as-needed remedial investigation activities to evaluate the extent of selected constituents of concern, including metals, pesticides, polynuclear aromatic hydrocarbons to expedite completion of Navy investigation and/or remedial activities;
6. Preparing a Risk Analysis evaluating site conditions associated with planned residential and commercial reuse of the facility;
7. Evaluating remedial and long-term monitoring costs associated with BRAC early transfer and a potential cooperative agreement between Catellus/City of Alameda and the Navy;
8. Providing technical support to other stakeholders in site redevelopment (e.g., affordable housing collaboratives and environmental justice groups) to keep them updated on all pertinent environmental issues;

9. Interfacing with local utilities and negotiating additional remedial investigations to ensure that infrastructure design remained on pace with planned residential development;
10. Maintaining pressure on regulatory agencies and the Navy to address outstanding RCRA permit issues; and
11. Preparing significant closure-related documentation.

ERM assisted Catellus in negotiating expedited cleanup in portions of those areas to be developed first, so that the Navy's closure schedule would not impact Catellus' schedule for the proposed development. This included evaluating surface cleanups in former residential and scrap yard areas and considering an appropriate disposition for the antiquated site-wide storm water drainage system.

ERM participated in monthly meetings of the Restoration Advisory Board (RAB) for the installation to keep this citizen-based board advised of regulatory and development issues associated with the closure. ERM made periodic presentations to the RAB and assisted them in obtaining federal funding for independent review of controversial documentation regarding historical remedial investigations. Additionally, ERM participated in closure planning as a representative of the BRAC Closure Team (BCT), consisting of development, municipal, Navy, and regulatory stakeholders. In this forum, ERM was able to assist in negotiating agreements regarding technical issues with the Navy and lead regulatory agencies in developing schedules for closure activities.

For the proposed residential area, ERM developed a scope of work addressing additional sampling in areas identified in Navy documentation as potential areas of concern. ERM then prepared a risk analysis, which concluded that risks associated with the proposed residential reuse were within the ranges defined as acceptable by the USEPA and Cal-EPA. The objective of this work was to develop a database from which risks to human health under the proposed residential reuse scenario of portions of the FISC and Alameda Point East Housing Complex could be evaluated.

To address existing contamination that might impact proposed development activities, ERM directed the development of several key documents, including a:

- Removal Action Workplan (RAW) addressing historical contamination pre-dating Navy activities (Marsh Crust) on behalf of Cal-EPA (DTSC);
- Site Management Plan governing all environmental aspects of site development;
- Workplan and completion report for DTSC documenting a \$4.2-million pesticide removal action in the proposed residential area; and
- Technical Memorandum to mitigate risks to human health and the environment during infrastructure development within a plume of benzene-impacted ground water, and the coordination of this construction with Navy remedial activity.

In anticipation that the Navy might seek early transfer of the property to the City of Alameda/Catellus, ERM performed a detailed analysis of remedial and long-term costs. This analysis included evaluation of known and potential unknown contamination issues and evaluation of potential insurance vehicles for cost cap and pollution/legal liability coverage.

ERM's history with the regulatory community associated with the closure of this installation and NAS Alameda afforded the opportunity for ERM to participate in monthly meetings of the BRAC Closure Team. In this forum, ERM was able to assist in negotiating agreements regarding technical issues with the Navy and lead regulatory agencies in developing schedules for closure activities.

Results

ERM's additional remedial investigation and supplemental risk analysis found that conditions in the proposed residential areas posed no adverse risk to human health, facilitating more timely Navy and City approval of the proposed transfer. Although early transfer under a cooperative agreement was not successfully negotiated with the Navy, cost analysis performed by

ERM was instrumental in developing a remedial strategy with the least impact on proposed development activities.

The Site Management Plan provided for timely implementation of development activities without exacerbating existing contamination or impeding ongoing Navy remedial activities. The Marsh Crust RAW resulted in a City ordinance limiting exposure to contaminated sediments during excavation activities. ERM negotiated regulatory concurrence of the demolition and pesticide removal documentation. As a result, the agency did not issue a cleanup and abatement order, facilitating fast-track preparation of the site for residential redevelopment.

The Technical Memorandum allowed the unusual decision by USEPA, DTSC, RWQCB, and the Navy to allow development to proceed at an active CERCLA site without impeding the Navy's RI/FS process. Without this regulatory agency approval, development would have been delayed by several years until completion of all remedial activities and receipt of site closure.

Thomas Enterprises Sacramento, California

The Railyards Redevelopment (formerly Sacramento Rail Yard)

Situation

The Railyards is one of the largest redevelopment/ Brownfields projects on a contaminated property in North America. ERM began providing consulting services on the property in 1990, when the active yard was owned and operated by the Southern Pacific Transportation Company (SPTCo). In 1997, Union Pacific Railroad Company (UPRR) purchased SPTCo and assumed the responsibilities for all activities at the property.

Chemicals of concern in site soils and/or ground water include lead and other heavy metals, asbestos, VOCs, SVOCs, residue from the operation of a former Manufactured Gas Plant, and petroleum hydrocarbons.

ERM's Approach

Due to the size and complexity of the property, ERM divided the 240-acre property into multiple soil and ground water study areas. Each area had its own negotiated enforceable schedule that designated separate Remedial Investigation Reports, Risk Assessments, Feasibility Studies, Remedial Designs (including preparing specifications, CADD drawings, cost estimates and sketches), and Remedial Action Plans.

ERM established numerical models specific to site conditions, including those that simulate and predict ground water flow patterns and the transport of contaminants through four water-bearing zones. ERM used Visual Site Manager (VSM™), a Geographic Information System data management system, to generate contour maps, cross sections, and data reports, as well as interface with three-dimensional modeling to efficiently conduct soil and chemical

volumetric calculations, and ground water flow analyses.

ERM performed study-area-specific human health risk assessments, including evaluation of baseline risks associated with organic and inorganic constituents, and post-remediation risks due to soil exposure associated with residual benzene in ground water. ERM evaluated the risk posed by lead and VOCs to current and future on- and off-site receptors under various proposed land uses.



Since 1993, ERM designed and implemented multitude of remedial programs including:

- Soil/cement/bentonite cutoff wall to isolate and remediate potential DNAPL (installed in 1993);
- Floating hydrocarbon recovery system and vacuum extraction system (installed in 1993);
- Soil vapor extraction system and ground water extraction/ air stripping system with a single

catalytic oxidizer for destruction of vapor-phase halogenated VOCs (installed in 1994); and

- Ground water extraction system to establish hydraulic control of a plume (installed in 1995).

In 2000, ERM commenced large-scale soil remediation activities, managing the tasks on behalf of UPRR and overseeing the excavation/remediation contractor. From 2000 through 2004, approximately 500,000 cubic yards (CY) of soil was excavated and profiled. ERM designated soils for direct disposal, chemical stabilization, land-farming, or on-site reuse. From 2000 through 2006, more than 95,000 CY of soils were chemically stabilized to reduce soluble metals concentrations, which made available more disposal options and significantly increased cost savings associated with disposal. In 2007 and 2008, ERM excavated over 270,000 CY, treated over 45,000 CY, and placed over 180,000 CY in the on-site soil repository.

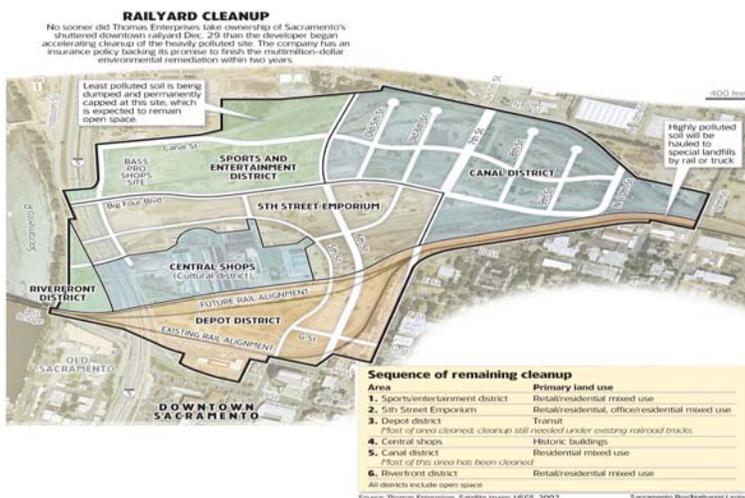
Results

The following are examples of effective negotiations and instrumental value engineering provided by ERM:

- ERM successfully negotiated risk-based soil cleanup levels with the Department of Toxic Substances Control (DTSC) and Central Valley Regional Water Quality Control Board (RWQCB).

ERM conducted and negotiated with DTSC a detailed feasibility analysis on cutoff wall technologies and implementation strategies for DNAPL plume source control interim remedial action with limited pumping, which resulted substantial life-cycle cost saving over DTSC's initial request for an entire plume capture requiring a 2,000-gpm system.

- ERM is currently conducting O&M on a ground water and soil vapor extraction and treatment system. The ground water is extracted at 165 gpm from 15 extraction wells and is treated using a tray air stripper. The air stripper off-gas and extracted soil vapors are treated using a catalytic oxidation unit and a caustic scrubber. Utilizing over 15-plus years of O&M experience, ERM has developed a specific program for air stripper scale (iron and carbonate) management while the maximizing system operation.
- ERM prepared a remedial design package for soil remediation that balanced regulatory compliance with environmental risk management and cash flow limitations.
- ERM redesigned the program for the regular groundwater monitoring of more than 225 wells at the site. We negotiated substantial reductions in monitoring requirements over the 17-year period of environmental management at the site under the SPTCo/UPRR contract.
- ERM renegotiated a regulatory directive to install a focused ground water remediation system instead of a large-scale, pump-and-treat program, effecting an 80 percent reduction in the 30-year cost of implementing the required action.



Attachment E
Allen Matkins Schedule of Rates

ATTACHMENT E

Allen Matkins Billing Table

Allen Matkins Hourly Billing Rates reflecting a 15% discount from Standard Rates:

Robert Wyatt	Partner	\$585
Sonia Ransom	Partner	\$505
David Cooke	Partner	\$495
Sandi Nichols	Partner	\$495
Eileen Nottoli	Of Counsel	\$405
Anton Hasenkampf	Associate	\$212
Kamran Javandel	Associate	\$200

Attachment F
ERM Schedule of Rates

Schedule of Charges

For City of Benicia, California



Labor Category	Hourly Rate
Principal Engineer, Geologist, & Scientist	\$165 – \$220
Program Director	\$155 – \$190
Senior Engineer, Geologist, & Scientist III	\$145 – \$160
Senior Engineer, Geologist, & Scientist II	\$130 – \$145
Senior Engineer, Geologist, & Scientist I	\$120 – \$135
Project Engineer, Geologist & Scientist III	\$110
Project Engineer, Geologist & Scientist II	\$105
Project Engineer, Geologist & Scientist I	\$100
Staff Engineer, Geologist & Scientist III	\$90
Staff Engineer, Geologist & Scientist II	\$85
Staff Engineer, Geologist & Scientist I	\$75
Senior Technician	\$65
Technician	\$60
Project Coordinator	\$60
Technical Directors/Technical Specialists will be charged as required for the project.	\$185 – \$230

Standard Rates

Includes 15% discount from standard 2010 rates. Associated Project Costs (APC) 9.8% of total labor costs per invoice consist of those costs incurred in the performance of a specific client project for project-related telecommunications

- including wireless
- facsimile, computer, and network usage
- project accounting services
- audio-visual equipment
- first class postage, up to three overnight delivery packages per month (excluding boxes and courier services)
- routine in-house reproduction of reports and other documents (up to 500 pages per copy job).

Not included in APC are itemizable time of administrative assistants, CAD and graphics professionals, and word processors; and shipping and reproduction costs in excess of the above-stated limits.

*Effective January 1, 2010

Subject to escalation of 3% - 5% annually

Attachment G
Allen Matkins Client References

ATTACHMENT G

Allen Matkins References

**Mary Jane Olhasso
Economic Development Administrator
County of San Bernardino
909-387-9801**

**Harlan Agnew
Deputy County Counsel
Pina County Arizona
520-740-5571**

**David Cropper, Partner
TMG Partners
415-772-5900**

**Duane Bennett
Port Attorney
Port of San Diego
619-686-6221**

**Jeff Garber
General Counsel
Imperial Irrigation District
760-339-9574**

**Richard Bruckner
Director of Regional Planning
County of Los Angeles
213-974-6401**

**Linda Biagioni
Vice President of Environmental Affairs
Stanley Black & Decker
410-716-3208**

Attachment H
ERM Client References

ATTACHMENT H

ERM References

James Sanchez
City Attorney
City of Fresno
559-621-7500
Re: Old Hammer Field project

Norm Dupont
Attorney
Richards Watson & Gershon
310-666-0722
Re: BPOU and Glendale OU Superfund Sites

David Young
Assistant General Solicitor & National Environmental Counsel
Union Pacific Railroad
(713) 220-3201