



Engineering Services For Landfill and Disposal Site Remediation

PROJECT NO. IWM05018

Presented To:

California Integrated Waste Management Board
c/o California Environmental Protection Agency's
Environmental Services Center
1001 I Street, First Floor
Sacramento, California 95814

Presented By:

BRYAN A. STIRRAT & ASSOCIATES
1360 Valley Vista Drive
Diamond Bar, California 91765
909-860-7777



Completion Checklist for
Engineering Services for Landfill and Disposal Site Remediation
Request for Qualifications - IWM05018

Please use this checklist to assist in your preparation of the SOQ package to ensure that the following items are included in your submittal:

- _____ Signed cover letter printed on company letterhead
- _____ One (1) unbound reproducible original SOQ package marked "Original"
- _____ One (1) electronic copy of the SOQ package on CD-R viewable thru Adobe Acrobat Reader
- _____ All documents submitted double-sided on paper with a minimum of 30% post-consumer recycled content fiber, as attested to in the cover letter
- _____ Evidence of a valid California Class A General Engineering Contractors License with a Hazardous Substance Removal (HAZ) Certification
- _____ Evidence of at least one registered Professional Civil Engineer (PE) who is currently licensed through the California Board for Professional Engineers and Land Surveyors
- _____ Evidence of at least one Registered Geologist (RG) who is currently licensed through the California Board for Geologists and Geophysicists
- _____ Current copy of Contractor's California Business License
- _____ Notarized Statement from Financial Institution
- _____ Audited or Reviewed Financial Statement
- _____ Resumes of Key Personnel
- _____ Organizational Chart
- _____ Attachment A, Small Business/DVBE Participation Requirements Certification
- _____ Attachment B, Government Code Section 87100 Form
- _____ Attachment C, PCC Section 10162 Questionnaire, PCC Section 10285.1 Statement, and Non-Collusion Statement

NOTE - If any of the above items are missing from the submitted proposal package, your package will be considered incomplete and may be disqualified from the process.

The following forms are only required upon submittal as applicable pursuant to the provisions outlined in Section III, Minimum Qualifications, Subsections D and E:

- _____ Attachment D, Small Business/Disabled Veteran Business Enterprise (DVBE) Participation Summary
- _____ Attachment E, Demonstration of Good Faith Efforts



BRYAN A. STIRRAT & ASSOCIATES
CIVIL AND ENVIRONMENTAL ENGINEERS

January 10, 2006

Ms. Tiffany Donohue
California Integrated Waste Management Board
c/o California Environmental Protection Agency's
Environmental Services Center
1001 I Street, First Floor
Sacramento, California 95814

**RE: STATEMENT OF QUALIFICATIONS – ENGINEERING SERVICES FOR LANDFILL
AND DISPOSAL SITE REMEDIATION – SOLICITATION NUMBER IWM-05018**

Bryan A. Stirrat & Associates in conjunction with Geo-Logic Associates, and our supporting sub consultants, Ultrasystems, Alpha Analytical Laboratories, Chambers Group, United Pumping Service, MML Environmental, and Environmental Health Decisions are pleased to present the following Statement of Qualifications for Engineering Services support to the California Integrated Waste Management Board's (CIWMB) Solid Waste Disposal and Codisposal Site Cleanup Program.

The BAS Team has had the opportunity to provide engineering services and construction management support to the Solid Waste Disposal Site Cleanup Program for the past eight years. We are proud of the part we have played in the overall success of the Program, and renew our commitment to respond to, and meet the challenges associated with this important program in the future. To maintain project continuity and avoid any interruption of service, the BAS Team is dedicating the same group of disposal site remediation specialists that has been supporting the CIWMD for the past eight years, to the 25-month term of this new contract.

The BAS Team has more than 21 years of experience in engineering and construction services in the environmental remediation and solid waste industry, with special emphasis on landfill and disposal site closure. In addition, the Team has been selected by such agencies as the California Department of Transportation to provide statewide environmental investigation and remediation support services contracts. The Team understands the many complexities and concerns related to the types of projects that will be undertaken during the course of this contract. The BAS Team will continue to provide the expertise required to assist the CIWMB throughout the evaluation, design and implementation process.

January 10, 2006

IWMB Contracts Unit

RE: Engineering Services for Landfill and Disposal Site Remediation (IWM - 05018)

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In accordance with the requirements of Section II C, of the RFQ, we are pleased to provide the following information:

1. Name and Address of Proposer Submitting Qualifications:

Bryan A. Stirrat & Associates
1360 Valley Vista Drive
Diamond Bar, California 91765
Telephone: (909) 860-7777

2. Name and telephone number of individual(s) to contact for additional information

Mr. Richard L. Huffmire
(949) 728-3080
rhuffmire@bas.com

Mr. Michael Cullinane
(909) 860-7777
mcullinane@bas.com

3. Name, title, address, and telephone number of individual(s) with authority to negotiate and execute a binding contract on behalf of the firm:

Bryan A. Stirrat, President
(909) 860-7777
bstirrat@bas.com

Ira R. Snyder, Senior Vice President
(909) 860-7777
isnyder@bas.com

Address:

1360 Valley Vista Drive
Diamond Bar, CA 91765

4. Term of Offer:

The BAS Team certifies that the following document constitutes a firm and irrevocable offer for 90 days.

5. Certification of use of recycled paper in this Statement of Qualifications:

The BAS Team certifies that paper utilized in this Statement of Qualifications contains a minimum of 30% post-consumer recycled content fiber.

BRYAN A. STIRRAT & ASSOCIATES

January 10, 2006

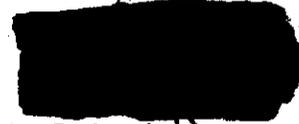
IWMB Contracts Unit

RE: Engineering Services for Landfill and Disposal Site Remediation (IWM - 05018)

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The CIWMB is one of the BAS Team's oldest and most valued clients. We give our commitment that the CIWMB will receive all the combined resources and attention needed to effectively respond to future project needs. We are excited with the prospect of continuing our association with CIWMB and the Solid Waste Disposal and Codisposal Site Cleanup Program. The BAS Team appreciates the opportunity to submit this statement of our qualifications. Following your review of this submittal, we would welcome the opportunity of providing responses to any additional questions the IWMB may have regarding our Team.

Sincerely,

A large black rectangular redaction box covering the signature of Ira R. Snyder.

Ira R. Snyder
Senior Vice President

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(REQUEST FOR QUALIFICATIONS NUMBER IWM05018)

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Statement of Qualifications

ENGINEERING SERVICES FOR LANDFILL AND DISPOSAL SITE REMEDIATION
(REQUEST FOR QUALIFICATIONS NUMBER IWM05018)

APPENDICES

- Appendix A: Letters of Recommendation
- Appendix B: Evidence of Valid California Class A-HAZ General Engineering License
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- Appendix D: Evidence of California Business License
- Appendix E: Notarized Statement from Financial Institution
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- Appendix G: Small Business/DVBE Participation Documentation
- Appendix H: Government Code Section 87100 Form
- Appendix I: PCC Section 10162 Questionnaire, PCC Section 10285.1 Statement and Non-Collusion Statement
- Appendix J: Sample Construction Management Approach
- Appendix K: Resumes of Project Team Members
- Appendix L: Statement of Qualifications of Subconsultants



1. Introduction

1.1 GENERAL

Bryan A. Stirrat & Associates, Inc. (BAS) is pleased to submit the following Statement of Qualifications to support the California Integrated Waste Management Board (CIWMB) for the investigation, evaluation, and performance of landfill design and construction management in support of the Solid Waste Disposal and Codisposal Site Cleanup Program.

As you are aware, BAS has been the engineering services contractor for the CIWMB's Solid Waste Disposal and Codisposal Site Cleanup Program since June 1997. Over the past eight and a half years, BAS has supported the CIWMB for multiple, simultaneous work orders, including concurrent construction projects. To date, more than 136 work orders have been executed for projects at 56 sites in 25 counties spread throughout California.



Site Investigation - National City Burn Dump, San Diego County, California.

The Solid Waste Disposal and Codisposal Site Cleanup Program is an outstanding example of how a public agency can achieve significant results in restoring the environment of California. The program has excelled in cost-effectively closing sites which have, for years, been a nuisance and a threat to public health and safety. This contract is important to BAS. To ensure the smooth continuation of the program, we will dedicate the same project team currently utilized under its existing contract to all future work orders. In addition, we are committed to providing the CIWMB with the same level of priority on all future work items as we have since 1997.

1.2 THE BAS TEAM

In light of the unique logistical and technical considerations surrounding this program, BAS has organized a project team (the BAS Team) to provide the most technically defensible and environmentally sound approach to the project. As will be presented herein, the BAS Team includes a highly qualified group of environmental consultants with specific experience in the characterization and remediation of landfill facilities and disposal sites. Table 1.1 presents the roles of the individual members of the BAS Team.



Table 1.1: BAS Team Members and Project Responsibilities

Firm	Responsibilities
Bryan A. Stirrat & Associates	Program Management Grading and Embankment Design Drainage and Erosion Control Hazardous Materials Sampling Construction Management Surveying Regulatory Compliance
Geo-Logic Associates	Soils and Geotechnical Services Hazardous Materials Services Construction Quality Assurance
MML Environmental	Health & Safety
Environmental Health Decisions	Toxicology
Chambers Group	Biological Services
Ultra Systems	Permitting/Regulatory Compliance Community Education
United Pumping Service	Emergency Response/Haz. Materials
Alpha Analytical Laboratories	Laboratory Services
Environmental Data Research	Title/RP Search

Brief introductions to the individual firms in the BAS Team are provided in the following paragraphs.



Bryan A. Stirrat & Associates, Inc. (BAS): BAS is a diversified consulting engineering firm formed specifically to provide municipal solid waste and hazardous waste management services to public and private sector clients. Since its inception in 1984, the firm has completed projects at more than 200 landfill facilities in California and the western United States. This has included the preparation and/or implementation of plans to close more than 80 landfill facilities and disposal sites. Sites have ranged from large regional metropolitan landfills, to abandoned and illegal dump sites and burn dumps. BAS was listed in *Engineering News Record* magazine's annual ranking of the Top 15 Solid Waste Firms in the U.S. for the last four years (*Top 500 Design Firms Source Book - July 2005*).

In 2004, BAS formed a construction contracting group (BAS Construction & Remediation) to provide complete construction services for landfill development and hazardous waste site remediation projects. BAS also added a transportation engineering subsidiary in 2004 (KFM Engineering).

PROJECT ROLE:
Prime Contractor
Program Management
Engineering & Design
Hazardous Waste Services
Construction Management
Regulatory Compliance



Geo-Logic Associates (Geo-Logic): Geo-Logic is a privately held, multi-disciplinary, consulting geologic, geotechnical and environmental firm established in 1991 specifically to address the geologic and geotechnical needs of the waste disposal community. To date, Geo-Logic has provided geotechnical engineering support for the preparation of closure plans for more than 90 California solid and hazardous waste landfill facilities. Geo-Logic personnel have been involved with the investigation, evaluation and processing of prescriptive barrier materials for almost 20 years, with an emphasis on liners and covers for solid waste facilities. In the last 15 years, Geo-Logic closure research has focused on non-prescriptive final cover systems in arid environments. In fact, this extensive experience with the design, approval and implementation of alternatives to prescriptive standards for closure of California municipal and hazardous waste landfills has positioned Geo-Logic at the forefront of alternative final cover research and design in the state of California.

PROJECT ROLE:

Soils and Geotechnical Service
Hazardous Materials Services
Construction Quality Assurance



MML Environmental MML is a health and safety consulting firm owned by Mr. Mark Levin, a certified industrial hygienist with 20 years of health and safety and environmental compliance experience. Mr. Levin will work with the Health and Safety Task Manager of the CIWMB's construction contractor, where appropriate, to ensure that site-specific health and safety concerns are adequately addressed. MML provides comprehensive industrial hygiene and regulatory compliance services, including health and safety training, exposure assessment and air monitoring for toxic air contaminants, regulatory compliance inspections, and review of health and safety plans. MML has provided health and safety support to BAS on site investigation and remediation projects throughout California.

PROJECT ROLE:

Health and Safety



Environmental Health Decisions (EHD): EHD is a health risk assessment and toxicology consulting firm which is currently supporting BAS on site investigation and remediation projects throughout California. EHD President, Jill E. Ryer-Powder, Ph.D., is a Diplomat of the American Board of Toxicology, and has over 17 years of experience in risk assessment, Proposition 65 evaluation, litigation support, and occupational toxicology to human health hazard and evaluation projects. EHD has worked extensively with USEPA Region IX, Cal/EPA Department of Toxic Substances Control, and the Regional Water Quality Control Board. Her recent experience includes acting as Senior Scientist in the preparation of health risk assessments of lands involved in the development of the Alameda Transportation Corridor.

PROJECT ROLE:

Toxicology



Chambers Group Inc.

Chambers Group, Inc.: Chambers Group is a certified Disabled Veteran Business Enterprise (DVBE) and Small Business Enterprise (SBE). The firm was established in 1978 to provide

interdisciplinary environmental consulting services to private business, industry, and government agencies. The firm features a staff of dedicated professionals with expertise in environmental studies and permitting; mitigation monitoring, biological re-sources, cultural resources, as well as Geographic Information System (GIS) and computer modeling. Chambers can provide clients with wildlife biologists, botanists, marine biologists, wetland and restoration specialists, environmental analysts, cultural resources professionals, environmental planners, GIS analysts as well as archaeological and paleontological field personnel.

PROJECT ROLE:
Biological Surveys



UltraSystems
environmental management planning

UltraSystems Environmental Consultants: Since the early 1990s, UltraSystems has been serving public and private clients with a broad range of environmental and entitlement support services

to facilitate compliance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA). The firm also works closely with various regulatory agencies to ensure both procedural and technical compliance with CEQA/NEPA. UltraSystems has prepared regulatory permitting documents for several high-profile landfill development projects in California, and has been responsible for the implementation of public information programs for several large solid waste projects. UltraSystems is certified as a Small Business Enterprise with the California Department of General Services.

PROJECT ROLE:
Regulatory Compliance
Community Education



United Pumping Services (United): United is a privately-owned firm founded in 1970, which has served as BAS' primary emergency response contractor on the CIWMB solid waste engineering services contract since 1997. The firm has successfully completed more than 900 remediation and/or emergency

response projects for clients in petroleum, chemical, aerospace, heavy manufacturing, and the public sector. United maintains all necessary permits and licenses including E.P.A., U.S. Department of Transportation, and California Contractors State License Board, and carries \$10,000,000 in liability insurance. Being the 63rd licensed transporter in the State of California, United is the oldest licensed emergency response/hazardous waste transporter in California. In an industry that now reaches in excess of 3,500 licensees, United is among the pioneers in hazardous transportation.

PROJECT ROLE:
Emergency Response



Alpha Analytical Laboratories: Alpha Analytical is a California certified environmental laboratory which was founded in 1982. The firm is providing laboratory services on BAS' current engineering support

contract with the CIWMB. Alpha Analytical is a California certified Small Business Enterprise, and has successfully conducted environmental analyses, both short term and

PROJECT ROLE:
Laboratory Services



ongoing, for numerous clients in the public and private sector. Clients include the California Regional Water Quality Control Board, California Department of Transportation, Sonoma County Landfills, Georgia Pacific, U.S. Air Force, and the U.S. Army Corps of Engineers.



Environmental Data Research (EDR): EDR is the nation's leading provider of environmental information. EDR is a one-stop shop, offering current and historical environmental risk management information, and state-of-the-art online services including interactive mapping. The firm has supported the BAS Team on numerous environmental investigations of former disposal sites, commercial and industrial facilities throughout California. EDR has 22 regional offices located throughout the United States, and is wholly owned by Daily Mail and General Trust, plc (DMGT). Other DMGI companies include Sanborn, Risk Management Solutions, Dolphin Software Inc., and Landmark.

PROJECT ROLE:
Title / RP Search

1.3 SUMMARY OF BAS TEAM STRENGTHS

The following Statement of Qualifications is organized in accordance with the requirements detailed in the CIWMB's Request for Qualifications (RFQ) dated November 18, 2005. The key strengths of the BAS Team described in the following document include the following:

Qualifications: The BAS Team's managers, engineers, construction managers, and safety personnel specialize in environmental remediation and landfill projects. The solid waste industry comprises over eighty percent of our business. Each Team member brings years of direct, hands-on experience in the environmental and solid waste fields. Our in-house expertise extends to all phases of work anticipated within the Solid Waste Disposal and Codisposal Site Cleanup Program. Our experience and excellent association with Local Enforcement Agencies and regulatory agencies throughout the state provides for effective communications and expeditious resolution of associated issues.



Remediation of Archie Crippen Illegal Disposal Site, Fresno County, California.

Background: As noted above, the BAS Team specializes in environmental remediation and landfill projects. In recent years, the BAS Team has successfully completed more than 350 projects which have involved all aspects of the environmental and solid waste industry. Projects include; development of landfill closure and post closure documents, geotechnical investigations, design of liner and cover systems, design of leachate and landfill gas management systems, development of specifications and bid packages, construction management and QA/QC services, environmental assessments and remediation; groundwater, soil, and air sampling and monitoring, and post closure monitoring and maintenance.



The BAS Team subconsultants bring a comparable level of experience and expertise in their related fields. Section 3.0 of this document provides a summary of many of the long-term clients that have been maintained by the BAS Team. Long term and repeat clients result from the successful completion of projects.

Ability to Respond: BAS Team members have offices distributed throughout California which will provide for all administrative and technical support required under this Contract. Of particular significance, BAS established a Northern California Office in the City of Roseville in 2005, providing it with qualified staff within approximately 30 minutes of the CIWMB's offices.

Over the past eight years, the BAS Team has successfully responded to CIWMB work orders for sites in remote, rural areas as well as in urban settings throughout the state. The Team's primary area of business is the management of municipal solid waste. As a result, the staff of BAS/Geo-Logic consists of multiple layers of professionals who specialize in landfill improvement design and construction. This integrated Team has a long history of simultaneously completing complex, large-scale solid waste management projects.

Continuity: The BAS Team will utilize key staff from its current contract on all future work orders. The BAS Team Program Manager and all key team members have worked closely with CIWMB staff. There will be no "learning curve" on future work activities, allowing the program to efficiently move forward.

Commitment: Since BAS is a medium-sized firm, clients have direct access to senior-level staff throughout the duration of a project. The CIWMB is an important and long-standing BAS client. Our primary customers are municipal and county waste management organizations in California. We do not pursue large Federal environmental response contracts, so we can quickly respond to the needs of our California clients. As a result, the CIWMB will always have quick access to senior staff professionals with more than 15 years experience in landfill and disposal site closure projects.

Reputation: The best measure of the BAS Team's quality and timeliness in the performance of a project is reflected in the amount of long term and repeat clients that have been maintained by the BAS Team over the years. Additionally, we direct CIWMB's attention to selected letters of recommendation and commendation located in Appendix A, referencing Team members which have been included in this proposal. Each letter represents a client's satisfaction with the quality of the work performed by members of this Team.

The BAS Team has submitted and had approved numerous solid waste facility permits. Additionally, the BAS Team has assisted clients in maintaining regulatory compliance by revising and/or updating hundreds of permits. As such, the BAS Team permitting group must be up-to-date with all current regulations, and maintain a positive working relationship with the various agencies. The BAS Team has established relationships with water boards, LEAs, and governmental agencies through out the state.



Quality: The BAS Team develops construction specifications for the majority of projects that we design. Two basic standards exist for public works related projects, the Standard Specifications for Public Works Construction (Greenbook), and the State Department of Transportation Standard Specifications. Dependent upon where a project is located, or a particular client’s preference, the BAS Team incorporates one or the other into every project. As a result, all BAS Team construction managers are familiar with each standard.



National City Burn Dump, San Diego County, California.

In addition to project specifications, the BAS Team develops QA/QC plans for geotechnical, geosynthetic, and environmental testing as required for individual projects. QA/QC managers maintain current data on modifications to ASTM standards, industry trends and standards, and manufacturer’s recommendations. As changes occur in the industry, specifications and QA/QC plans are updated and QA/QC staff are trained in any new procedure or testing requirements.

Through our interaction with regulatory agencies, contractors, manufacturer’s representatives, and the BAS Team’s dedication to providing a quality product, Team members are kept abreast of regulatory changes and improvements within the solid waste industry. The BAS Team will incorporate cost effective and proven technological advances into their design to ensure that our client’s projects are completed in compliance with all acceptable standards.

1.4 REQUIRED CERTIFICATIONS

The CIWMB’s RFQ for this project identifies certifications and items which are required submittals as part of this solicitation. The location of these documents is provided below:

- Evidence of valid California Class A-HAZ General Engineering License.....Appendix B
- Evidence of at least one California Registered Professional Civil Engineer..... Appendix C
- Evidence of at least one California Registered Geologist..... Appendix C
- Current copy of business licenseAppendix D
- Notarized Statement from Financial Institution Appendix E
- Audited/Reviewed Financial Statement Appendix F
- Organization Chart Section 4.0
- Small Business/DVBE Participation Requirement Certification.....Appendix G
- Government Code Section 87100 FormAppendix H
- PCC Section 10162 Questionnaire, PCC Section 10285.1 Statement and Non-Collusion Statement..... Appendix I
- Small Business/Disabled Business Enterprise Participation SummaryAppendix G



2. Project Understanding & Approach

2.1 INTRODUCTION

Since June 1997, the BAS Team has provided engineering support, construction management, and related services to CIWMB, under Engineering Services Contract IWM-C8042, Solid Waste Disposal and Codisposal Site Cleanup Program.

During the course of the contract, more than 136 work orders have been issued. The scope of work for these work orders has included:



*Glass Beach Burn Dump remediation,
Mendocino County, California.*

- Site characterizations and preparation of Site Investigation Reports.
- Engineered design for site remediations.
- Development of Scopes of Work and construction specifications for remediation projects.
- Sampling, analysis, and reporting of soil, groundwater, and landfill gas constituents.
- Construction management including documentation, cost control, scheduling, and preparation of Construction Completion Reports.
- Geotechnical investigations.
- Title and deed searches and preparation of deed restrictions documents.
- Emergency response for the handling of unknown and/or potentially hazardous materials.
- Coordination of hazardous materials disposal.
- Radiological sampling and support.
- Survey work including aerial and surface topographic, boundary, and record surveys.
- Consultation with CIWMB, local LEAs, and various regulatory agencies.
- Evaluation of underground landfill fires.
- Coordination of biological studies.
- Production of public information literature and brochures.

A summary of the work tasks provided by site is included in Table 2.1



TABLE 2.1 - BAS TEAM DISPOSAL SITE CLOSURE EXPERIENCE
CIWMB Solid Waste Disposal and Codisposal Site Cleanup Program

Site	Location	BAS Responsibilities				
		Site Investigation	CM/CQA	Sampling/ Analysis	Survey	Title Report
Amador City Burn Site	Amador County	■	■			
Aggregate Recycling Systems	Los Angeles County		■		■	
Antioch Disposal Site	Contra Costa County	■	■			
Archie Crippen IDS/Mark-Nielson	Fresno County	■	■	■	■	
Billingsly Disposal Site	Los Angeles County	■	■	■		
BKK Landfill	Los Angeles County				■	
Black Butte Disposal Site	Los Angeles County			■		
Brawley Landfill	Imperia County	■				
Bryte Landfill	Yolo County			■		
Cajon Landfill	San Bernardino County			■		
Calabrese Property	Monterey County					
Cannery Street Site	Orange County	■			■	
Cappel Road Disposal Site	Humboldt County		■	■		
Carpinteria State Beach Site	Santa Barbara	■	■	■	■	
Davenport Burn Dump	Santa Cruz County	■	■			
Dunnigan Burn Dump	Yolo County		■			
Enterprise Landfill	Shasta County		■			
Filbin Aggregates Site	San Luis Obispo County				■	■
Floin-Perkins Chip/Grind	Sacramento				■	
Folsom State Prison Burn Dump	Sacramento County		■	■		
Ford City Burn Dump	Kern County			■		
Glass Beach Burn Dumps	Mendocino County	■				
Gordon English Disposal Site	San Bernardino County	■		■		
Greenfield Disposal Site	Monterey County		■			
Hilltop Drive Disposal Site	Shasta County	■	■			
Holy Spirit School	San Diego County			■		
Laguna Honda Disposal Site	San Francisco County	■		■	■	
Lindsay Burn Dump	Tulare County		■	■		
Marks Ranch Disposal Site	Monterey County					
Morro Bay Burn Site	San Luis Obispo County		■			
National City Burn Dump	San Diego County	■	■	■	■	
Neenach IDS	Los Angeles	■		■	■	
Newport Terrace Site	Orange County			■		
Nicholson Avenue Disposal Site	Los Angeles County			■		
Noah Webster School	San Diego County	■		■		
Ox Ranch Site Closure	San Bernardino County			■		
Palo Corona Ranch Burn Dump	Monterey County	■		■		
Panoche Burn Site	Fresno County	■				
Pinnacles Waste Accumulation Area	San Benito	■		■		
Pryshepa Disposal Site	Siskiyou				■	
Ralcco Disposal Site	San Luis Obispo County					■
River Ranch Disposal Site	Riverside County, CA		■	■		
Rio Linda Disposal Site	Sacramento County		■			
San Joaquin Disposal Station	Orange County	■				
Shafter Burn Dump #1	Kern County	■		■		
Skyline Ridge Disposal Site	San Mateo County		■			
Sonoma Burn Dump	Sonoma County	■	■	■	■	
Stoneybrook Disposal Site	Kern County	■				
Table Bluff Reservation	Humboldt County			■		
Tang Disposal Site	Santa Barbara County		■			
Warings Dump	Sacramento County	■				
Warner Springs Ranch Burn Site	San Diego County	■		■		
Wilder Ranch Burn Dump	Santa Cruz County	■	■			
Yuba Sutter Disposal Site	Yuba County	■		■		
38th Street Burn Dump	San Diego County			■		
155th Street Disposal Site	Los Angeles County		■			



Before and after views of the Billingsley Illegal Disposal Site, located in the Antelope Valley in northern Los Angeles County near the community of El Mirage

The BAS Team has had the opportunity to provide every one of the specific types of tasks anticipated in the Scope of Work during the course of its contract. The BAS Team has demonstrated the ability to provide staffing for multiple simultaneous work orders, including several concurrent construction projects. The BAS Team has provided rapid response to CIWMB emergency requests (Cajon fire), and demonstrated the ability to provide staff on short notice to assist CIWMB (Dunnigan erosion control).

The BAS Team understands that CIWMB staff are active participants in the development, design, and implementation of projects. Many of the projects for which the BAS Team provided construction management support were coordinated and designed solely by CIWMB engineers. The BAS Team recognizes its role in providing engineering services to support CIWMB, as requested.

To provide for effective communication between the BAS Team construction managers and CIWMB engineers, on the majority of the projects, BAS provided construction managers with laptop computers. As a result, daily construction reports, cost summaries, and other project related correspondence can be transmitted, via e-mail, to the respective CIWMB project managers on a daily basis. The BAS Team will continue this procedure for the upcoming contract and software will be compatible with CIWMB system requirements.

Throughout the course of its contract, the BAS Team constantly self-evaluates the work product and efficiency of the assignments received from CIWMB. The purpose of the evaluations are to ensure that when course corrections are needed, that they are made quickly and efficiently, and when things have worked well, evaluate how they can be made to work even better. **The BAS Team is committed to taking what they have accomplished during the current contract, and expanding and improving upon it in the next contract.**



2.2 OFFICE LOCATIONS

BAS and Geo-Logic were affiliate companies between 1991 and 2004, and the firms continue to support each other on landfill projects throughout California. This relationship provides for direct communication and cooperation between all members of the BAS Team. Support offices are also shared and maintained in San Diego, Ontario, San



Sonoma Burn Dump – Sonoma County, California. The site was located adjacent to a former cemetery and ephemeral creek, and featured steep loose slopes which complicated investigations.

Bernardino, California; and in Phoenix Arizona. In addition, BAS opened an office in Roseville, California in 2005. The multiple locations also provide additional geographical support for both design and construction management services, as they are required.

With so many of CIWMB's projects located in remote or isolated areas, however, the location of the teams offices is less important than the team's ability to respond in a timely manner to the requests of the various CIWMB managers. Our experience over the past eight years has shown that it is more beneficial to a project to provide the most experience and trained personnel

for the job, as opposed to just providing someone from a "local office." Likewise, with the current status of technology; documents, drawings, photos, or other project-related correspondence are transmitted instantaneously via e-mail. All BAS team offices are fully equipped and will be current with CIWMB software systems.

2.3 PROJECT MANAGEMENT

While CIWMB and BAS will each have individual project or task managers responsible for implementation of the various aspects of each project, CIWMB will appoint a Contract Manager and BAS will provide a Program Manager for overall management of the contract. The Program Manager will coordinate with the Contract Manager regarding all contractual questions or issues, provide billing summaries and status reports, and maintain all contract-related correspondence. The Program Manager will supervise the performance of Task Managers within the project team and assure that the project receives appropriate resources and achieves technical quality objectives. In addition, the BAS Team will provide Mr. John Hower as Assistant Program Manager on the Project Team, to provide additional field, logistical, and administrative support to the BAS Program Manager.



The BAS Team Program Manager will also work closely with individual CIWMB project managers to clearly establish the objectives of each task to be performed, and will develop cost estimates and schedules for the completion of these tasks. He will maintain primary contact with CIWMB and will coordinate and administrate all aspects of the program.

To facilitate efficient implementation of individual projects, CIWMB project managers will also have direct access to BAS task managers to work out detailed specifics of the various projects. Since work contemplated can involve a variety of technical areas, and since BAS believes it is important to maintain continuity of task management, we have structured our project organization around highly experienced, capable and multi-disciplined task managers. These managers are seasoned professionals with a long track record in environmental and landfill related projects, and construction management and construction quality assurance. The Task Managers will have direct responsibility for the supervision of their staff assigned to the projects.

Schedule Control: Under this contract, two separate and distinct scheduling issues are typically encountered. The first relates to the scheduling of the engineering support services during the investigation, characterization, and design stages of a project. The second relates to monitoring the contractor's schedule during the implementation and construction phase.



Remediation of Folsom State Prison Burn Dump.

The BAS Team understands that monitoring and control of a project schedule is a critical factor in project success. Schedule delays can prove to be costly and detrimental to all involved in a project. One of the hallmarks of BAS' project success is strict attention to schedule.

When a project is proposed, the Program Manager and CIWMB's Contract Manager or Project Managers will review the anticipated scope of work, and when required, agree on milestone dates for deliverables. These dates, or time frames, will be incorporated into individual work orders. Having conducted environmental remediation and landfill related projects for clients throughout California, Arizona, New Mexico, and Montana, BAS is extremely cognizant of the numerous factors that can cause schedule delays. By addressing these factors in the project scope and work planning phases, costly time delays can be minimized.

The BAS Program Manager will coordinate and monitor the activities of Task Managers, staff and others involved in the project. Project responsibilities for all parties concerned will be identified. Nebulous scope will be discussed and responsibilities determined to eliminate any confusion. Fall-back positions and alternative strategies to maintain the project schedule, in view of potential set backs, will also be discussed and anticipated prior to such set-backs occurring.



Our experience has shown that most projects are short term with limited scope items. As a result, schedule development and maintenance of the schedule can be simplified. However, if a project is multifaceted, a more comprehensive schedule control system may be required to ensure that project milestones are met and budgets are not over-run. BAS utilizes proven computer-based scheduling procedures that not only monitor and control schedules, but also provide the maximum amount of information to the BAS project manager and client staff. BAS has a long track record in managing projects through such computer-based programs as Primavera and Microsoft Project.

Typically, when BAS Team construction managers are assigned to a project, the duration of the project has been established with the remediation contractor. The Construction Manager's schedule is therefore concurrent with the operations of the contractor, and any over-runs impact not only the project schedule, but also the schedule and budget for engineering support and construction management. Therefore, BAS construction managers work closely with the contractor and the CIWMB project manager to identify potential problem areas that may affect the schedule of a project. If for instance, based on field observations during initial operations, the limits of remediation appear to extend beyond that which could originally be anticipated, the CIWMB will be immediately advised, revised quantity estimates prepared, and project schedules modified accordingly. By quickly and accurately defining changed or unknown conditions, timely delays can be minimized or eliminated. By conferring with the contractor on a daily basis, and with daily documentation of manpower and equipment usage, schedule slippage is immediately identified and corrective measures can be implemented.

Cost Controls: During its current contract with CIWMB, the BAS Team has met or been below the anticipated budget on each of the issued work orders. Only when the scope of work was expanded by CIWMB were modifications made or new work orders issued.

The BAS Team is committed to controlling costs through regular and timely discussions of work efforts and projects through weekly reporting of costs. To accomplish this, team members use automated project management and project tracking tools to monitor project completion budgets. Before the start of each project, a detailed scope of work is established where tasks and subtasks are identified, methods are evaluated, and a "per-task" budget is estimated. Project team members determine the method that minimizes project cost, while ensuring a high-quality product. It is the team's policy to discuss with the client all elements of a project's budget and work plan before the project begins. In this way, budget "surprises," unforeseen costs, and attendant delays are avoided.

Time spent on projects is recorded manually on a time sheet for each work day and integrated into a tracking system. From the computerized system, each project manager can, at any time, obtain a detailed Project Progress Report that shows the amount of time spent per- person, as well as the budget-per-task, year-to-date, and project-to-date.



2.4 PROJECT APPROACH

The primary focus of the Solid Waste Disposal and Codisposal Site Cleanup Program is to identify sites where there is a need to protect public health and safety, or the environment, and where the responsible party (RP) is unable or unwilling to pay for remedial action. Once a site has been selected for possible Solid Waste Cleanup Program consideration, the CIWMB may elect to manage work performed at the site, provide grants to the local enforcement agency, provide matching grants to the local government, or make loans available to local governments.



To assist CIWMB in meeting the objectives of the Solid Waste Disposal and Codisposal Site Cleanup Program, the BAS Team brings extensive experience in site assessment, investigations, sampling, and analysis. Our in-house expertise for environmental remediation and landfill-related projects extends from permit and regulatory compliance, to geotechnical issues, innovative engineering design solutions, and landfill gas and leachate management systems. For implementation of CIWMB managed projects, the BAS Team has a core of construction managers and QA/QC technicians who have worked together on numerous environmental remediation and landfill projects. Their experience includes mass excavation and compacted fill, refuse removal, grading, drainage and erosion control, pond closures, burn ash separation and removal, clean closure, landfill cap installation, geosynthetic installations such as GCL and HDPE, geotextiles, and landfill gas and leachate collection systems.

The BAS Team understands that CIWMB staff will typically take a leading role in the selection of each site, and in the development of proposed projects. Together with our selected subconsultants, the BAS Team is amply qualified, and prepared to dedicate its resources to work with, and assist, CIWMB in the successful implementation of the Solid Waste Cleanup Program.

As projects are identified and approved by the Board, the CIWMB may issue Work Orders (WO) to its Engineering Services Consultant to further evaluate proposed sites and/or conduct and develop Site Investigation Reports (SIR) and Scopes of Work (SOW).

The BAS Team Program Manager will meet with the CIWMB Contract Manager or designated staff member responsible for the project to discuss the proposed scope of work, projected schedule, and estimated costs required to complete the detailed work. In compliance with the CIWMB 's policy, the BAS Team will not begin work on a project until the WO has been approved. Upon concurrence of all WO details, CIWMB will issue the WO, and the BAS Team will begin the designated tasks.



The BAS Team has divided potential scope of work items into six general categories, (1) Grading and Embankment Design, (2) Drainage and Erosion Control Design, (3) Soils and Geotechnical Studies, (4) Hazardous Materials Sampling and Testing, (5) Construction Management, and (6) Construction Quality Assurance. Each of these general categories is managed by a qualified Task Manager. The BAS Team proposes that individual staff members, under each of the four Task Managers as related in the organization

chart (Section 4.1) will form a core group to be assigned to assist CIWMB in implementing the Solid Waste Cleanup Program. Additional staff from the organization chart will be added to the core group as the volume or complexity of the projects increase.

The BAS Team Program Manager, who will have already evaluated the scope of work during the WO consultation phase, will assign a Project or Task Manager to the project who has been selected for that individual's expertise in the specific areas of concern related to a site. Assignments will be made after review with Task Managers and CIWMB. The Program Manager will also assess the proposed work for assignments to be made to our SMB/DVBE sub consultants.

As will be demonstrated in the Consultant's Qualifications Section, individual BAS Team members are proficient in a wide variety of disciplines. As such, many projects may be assigned to one individual who will follow through on all phases of the project. When and if necessary, that individual will draw upon the expertise of other BAS Team members. This approach will result in efficiently organized projects, facilitate communications, and provide for a reduction in overall costs.

As dictated by the scope of work, initial tasks will vary widely, but may include such typical assignments as; file searches and reviews to accumulate known data to develop a site history profile, contacts and discussions with designated LEA's, aerial and/or ground photographs, property record searches, and site reconnaissance.

In many cases, the scope of work may include the collection and analysis of samples to evaluate the potential of contamination at the site. Prior to any site investigation, the BAS Team will evaluate health and safety related issues, develop an entry and operating procedures plan, and if required, incorporate any necessary modifications to the BAS Team's standard QA/QC sampling plans.

At the completion of the outlined scope of work, a SIR will be prepared by the designated BAS Team project manager, and will be submitted to CIWMB for their review. As directed by CIWMB, a SOW for project implementation may also be developed, concurrently, or following completion of the SIR. The SOW elements may include conceptual or final engineering designs and specifications for review with CIWMB contractors. The level of detail included in the SOW, as well as the extent of preparatory work will be dependent



upon the specifics of individual sites. Such particulars as additional sampling plans to be employed during construction, alternative remediation plans, potential for salvage of recyclables, site security issues, erosion and drainage control, and potential material sources or approved disposal sites will be evaluated, when required, and viable options presented to the CIWMB.

If a project is to be a CIWMB-managed project, the BAS Team will, when requested, assist in negotiations with the CIWMB's contractors to develop a final and cost effective plan for implementing the project. If the designated BAS Team construction manager was not the SIR/SOW manager, he will also participate in contractor discussions, and will provide a review of the contractor's work plan. As required, the construction manager will also provide a constructibility review of the plans and specifications.

Prior to a project entering the construction phase, the BAS Team will coordinate or verify that all pre-construction activities have been completed. This may include such items as: survey requirements and construction layout, required permits obtained, coordination with testing laboratories, site specific QA/QC documentation, and a pre-construction conference with the CIWMB contractor to review final project requirements and potential areas of concern.

Monitoring of construction activities will be performed by a BAS Team construction manager specifically selected to meet the project requirements. While BAS Team construction managers have a wide variety of experience in environmental remediation and landfill projects, many have specialized expertise with such elements as; geosynthetic installations, leachate or landfill gas collection systems, geotechnical testing and evaluations, and contaminated soil removal or remediation.



Dust control measures.

In consultation with the CIWMB, the BAS Team Program Manager will assign a construction manager, matching the specific nature and needs of a project with the manager's experience and expertise. The BAS Team Program Manager will provide support and oversight for all construction activities.

The BAS Team construction manager will monitor and document site activities. A daily work log will be prepared and reviewed against the contractor's log. Each will be signed and forwarded to the CIWMB. The Construction Manager will monitor the manpower, equipment, and material utilization on a daily basis to provide real-time evaluation of project expenditures. The BAS Team has developed a standard Construction Management Approach (Appendix J) which we typically follow on each project. The Construction Management Approach outlines procedures, policies, and recommendations for such



Hilltop Disposal Site, Redding, California

items as: project start-up, pre-construction meetings, project documentation, progress meetings, schedule cost control, project close-out, and preparation of construction completion reports.

Prior to construction, the BAS Team construction manager and Program Manager will evaluate project-staffing requirements. During the course of the project, the addition of personnel for geotechnical testing or geosynthetic QA/QC will be commensurate with the level of activity being performed by the contractor. The CIWMB will be kept apprised of the increase or decrease in project demands. All monitoring, sampling, testing, or other QA/QC requirements will be performed in accordance with the plans, specifications, required permits, and applicable standard specifications or manufacturer's recommendations.

Based on our experience, however, field conditions often require modifications or adjustments to accomplish the remediation design intent. The BAS Team has demonstrated its ability over the previous eight years to recognize conditions that require additional attention or modification, and adapt the project plans and specifications to accomplish economical and timely solutions to changed or unknown conditions. The CIWMB Project Manager is always kept apprised of situations requiring such modifications.

At the conclusion of all work, a final construction completion report and as-built drawings will be prepared and submitted for CIWMB's review. All logs, data, photographs, and other related project information will be transmitted to the CIWMB.

Throughout all phases of each and every project, an established line of communication is essential. Program details and administrative issues must follow agreed upon and established channels between the BAS Program Manager and the CIWMB manager. However, it is anticipated that a flow of information and coordination, as related to the details of specific projects, will be maintained between CIWMB staff and the BAS Team Task Manager or staff assigned to the project

Of particular concern to the BAS Team are those issues that relate to Health and Safety. The CIWMB will note in our Standard Construction Management Approach (Appendix J) that Health and Safety issues are at the beginning of the agenda for all pre-construction and weekly progress meetings.

The BAS Team will utilize the services of MML Environmental, as our corporate Health and Safety consultant as well as a resource for site specific Injury and Illness Prevention Programs (IIPP), emergency response, and hazardous waste handling issues.

In preparation for work at any site, the BAS Team will evaluate known and potential safety hazards. From that evaluation, entry and operational procedures will be developed. All personnel who will be involved in site reconnaissance or review will be advised and trained



Before and after views of the Lindsay Burn Dump remediation project, located in Tulare County, California.

regarding potential hazards. All personnel will be equipped with proper personal protection equipment (PPE) and equipment required to complete the initial work. Site characterizations, if included during this phase, will be conducted in accordance with applicable federal, state, and local regulations.

If a decision is made to proceed with a new proposed project, a site specific IIPP will be developed based on the data collected from the site's reconnaissance, and will be signed by our certified industrial hygienist. Project managers and construction managers who will be assigned to work at the site will be 40-hour certified in accordance with 29 CFR 1910.120. In instances where the BAS Team is assigned to manage construction projects which were researched and designed by CIWMB staff, the BAS Team will adhere to the conditions of the IIPP previously developed for the site by CIWMB or the remediation contractor, as well as our corporate IIPP.

Our corporate Health and Safety consultant will also be available to provide oversight and technical assistance in emergency response situations. United Pumping Service (UPS), our emergency response team, is the primary regional State of California, Department of Transportation Emergency Spill Contractor for Los Angeles County and was rated number one in response time and overall low cost. UPS has offices in three locations in California with command centers located in the City of Industry. Their extensive coverage of California provides for rapid deployment well within the 24-hour response time requirement of this RFQ. At each UPS facility, trucks are equipped with a full range of safety and decontamination equipment, PPE, and monitoring and sampling devices. Specialized equipment such as vacuum trucks, backhoes, loaders, and other such equipment as may be required in emergency response situations will be available within 24 hours of notification.

The BAS Team also has in house expertise working with hazardous materials, both during site investigations and on construction projects. As conditions dictate, our corporate Health and Safety consultant and our emergency response consultant will be utilized for the handling, packaging, transporting and disposal of hazardous materials. The BAS Team has established protocols for the collection and analysis of suspected contaminated materials, and has developed site specific work plans for contaminated soil separation and/or removal.



As outlined above and as demonstrated in the following Consultant's Qualification Statement section of this SOQ, the BAS Team, together with their supporting services sub contractors, will provide CIWMB with the resources necessary to continue and expand upon the success of the existing Solid Waste Cleanup Program. The BAS team will work with the CIWMB to efficiently develop and implement proposed projects and to achieve the stated goal of the Solid Waste Cleanup Program, to protect public health and safety, and the environment.



3. Statement of Qualifications

3.1 CIWMB CONSULTANT QUALIFICATIONS QUESTIONNAIRE

The following section summarizes BAS Team qualifications and experience to provide the CIWMB with continued engineering and construction support services for the Solid Waste Disposal and Codisposal Site Cleanup Program. This section includes two main subsections:

- CIWMB Consultant Qualification Questionnaire
- Additional Experience in Key Task Areas

As will be described, the BAS Team has a track record of successfully completing projects in the 15 areas of potential work identified in Section V-A-II of the CIWMB's Request for Qualifications for this project. The central strengths of the BAS Team's qualifications include the following:

- Extensive background in the remediation of illegal and abandoned disposal sites and burn dumps.
- Experience managing regional environmental response contracts for large California public agencies. This has included mobilization of staff and resources to support concurrent projects over a wide geographic area of California.
- Engineering and construction management experience for large earthwork projects involving the evaluation and design of embankments and excavation plans.
- Participation in community outreach programs for high-profile disposal site remediation programs.
- Successful track-record in the remediation of disposal sites in environmentally sensitive areas. This includes clean-up of sites in coastal tidelands, sites located directly adjacent residential neighborhoods, investigation of high-level radioactive sources, and remediation of automobile tire fire sites.

The BAS Team's track record of successfully completing projects has resulted in a continued and long-term association with many of our clients. Among those long term clients are the County of Orange, County of San Bernardino, County of Santa Barbara, City of Phoenix, City of Santa Cruz, City of San Diego, and the County of Imperial. The BAS Team is extremely proud of the relationship we have with our clients and value their confidence and recommendations. The CIWMB is encouraged to contact the references listed under Question D of the Qualifications questionnaire provided on the following pages.



Davenport Burn Dump remediation, Santa Cruz County, California.

SECTION VI

STATEMENT OF QUALIFICATIONS

A. GENERAL INFORMATION

1. Identification of company submitting this Statement of Qualifications:

Name of firm: Bryan A. Stirrat & Associates

Address: 1360 Valley Vista Drive

City: Diamond Bar State: CA Zip: 91765

Telephone No: 909-860-7777 Fax No.: 909-396-9777

2. Person authorized to execute an agreement for the company:

Name: Ira R. Snyder

Title: Senior Vice President

3. Type of company (must be one of the following, check applicable):

Corporation Partnership Individual Joint Venture

Are you a Certified Small Business? No

If "YES" attach approval letter from Office of Small Business Certification and Resources,
And list your Small Business ID No. Not Applicable

4. Taxpayer federal employer identification number: [REDACTED]

5. Year organized: Formed 10/15/84. Incorporated 7/25/85.

6. Under what other or former names has your company operated:

Name of former company:	Dates of operation:
<u>NOT APPLICABLE</u>	<u>NOT APPLICABLE</u>
_____	_____
_____	_____

11. If a partnership, complete the following:

Date of organization: _____

Type of partnership: General Limited

List names and addresses of all partners:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

12. If a joint venture, list names and addresses of all partners in the joint venture (attach additional sheets if necessary):

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

7. Identify total number of current permanent employees: _____

Construction: _____

Administration: _____

Engineering: _____

Highest manpower level in past five years: _____

Lowest manpower level in past five years: _____

8. Identify parent company, if applicable:

Name of firm: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone No: _____ Fax No.: _____

State in which incorporated: _____

9. Agent for Service of Process in California:

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone No: _____ Fax No.: _____

10. If a corporation, complete the following:

Date of incorporation: _____

State(s) in which incorporated: _____

B. LICENSING/HEALTH & SAFETY INFORMATION

1. Current Class A, General Engineering Contractor's license with a Hazardous Substance Removal Certification (HAZ) issued within the State of California is required. Complete the following:

Licensee(s): Bryan A. Stirrat & Associates

License Number(s): 572017 (Classification: A HAZ)

Expiration Date(s): 6/30/07

2. Do you have a written company Illness and Injury Prevention Program? Yes No
If yes, is it signed by a certified Industrial Hygienist? Yes No
Do you employ a full-time certified Industrial Hygienist? Yes No

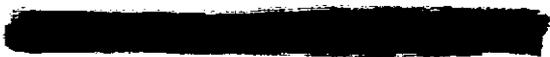
3. What is your OSHA lost-time injury/illness incidence rate for the last 3 years? _____



4. What is your OSHA recordable injury/illness incidence for the last 3 years? _____



5. What is your Workers Compensation Insurance Experience Modification Rate (EMR) for the past 3 years? _____



C. FINANCIAL INFORMATION

1. Submit a notarized written statement from your financial institution(s) on letterhead stating the following information:

A. Name of company;

B. Date account(s) were opened;

C. Line of credit? Yes No

D. Does the company keep a well-balanced financial position at the bank?

Yes No

2. Submit an audited or reviewed financial statement, including the Proposer's latest balance sheet and income and expense statement dated within the last 12 months showing the following items (annual reports will not be accepted and will be considered unresponsive):

A. Current assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses).

B. Net fixed assets.

C. Other assets.

D. Current liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes).

E. Other liabilities (e.g., capital, capital stock, authorized and outstanding share par values, earned surplus and related earnings).

F. Name of firm preparing financial statement and date thereof.

G. Is this financial statement for the proposing organization. If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

3. Has your company or any of its principals petitioned for bankruptcy within the last 7 years?

Yes No

If yes, enter the date(s): _____

D. PROJECT EXPERIENCE

Include appropriate experience for both the submitting entity and any proposed subcontractors in this part of the Statement of Qualifications. Reproduce this page for each project listed and add a supplemental numbering system at the bottom of the page (e.g., six projects listed, first page would be SOQ-6, Sheet 1 of 6).

To be considered in the evaluation, projects must meet the following requirements:

1. Involves types of work listed in Section V, Scope of Work, of the RFQ.
2. Be successfully completed within the last 5 years.
3. Be of a minimum contract amount of \$100,000 for the submitting entity or \$25,000 for subcontractors.

Include the name and current telephone number of a client representative who is familiar with the project and can attest to the participation, quality of work, and timeliness of the submitting Contractor or subcontractor in performing the work.

Name of entity claiming experience: _____

Project name/location: _____

Name of client (owner or prime Contractor): _____

Client contact and current telephone number: _____

Contract amount (listed entity only): _____

Percent of work performed with your entity's resources: _____

Type of work (mark all that apply):

- | | |
|---------------------------------------------------------------|----------------------------------------------------------------|
| <input type="checkbox"/> Remediation plans/specifications | <input type="checkbox"/> Waste characterization |
| <input type="checkbox"/> Property title/deed/history research | <input type="checkbox"/> Hazardous waste operations |
| <input type="checkbox"/> Site surveys | <input type="checkbox"/> CQA testing/monitoring |
| <input type="checkbox"/> Site grading design | <input type="checkbox"/> Construction management |
| <input type="checkbox"/> Drainage system design | <input type="checkbox"/> Community education/outreach programs |
| <input type="checkbox"/> Erosion control system design | <input type="checkbox"/> Geotechnical investigations |
| <input type="checkbox"/> Excavation/embankment design | <input type="checkbox"/> Other: _____ |

Brief description of the project and your entity's participation: _____

Were liquidated damages applied to the project? Yes No

If yes, explain: _____

E. LITIGATION/CLAIMS INFORMATION

1. List any projects in which your entity or any of its principals is currently involved in litigation. Identify lawsuits by name, number, parties, and your claim or participation. (Attach additional copies of this page if required)

Project name: _____

Project location: _____

Lawsuit name: _____

Lawsuit number: _____ Date of lawsuit: _____

County/state where filed: _____

Parties involved: _____

Lawsuit claim: _____

2. List any projects within the last five years in which your entity or any of its principals has been involved in litigation. Identify lawsuits by name, number, parties, and your claim or participation. (Attach additional copies of this page if required)

Project name: _____

Project location: _____

Lawsuit name: _____

Lawsuit number: _____ Date of lawsuit: _____

County/state where filed: _____

Parties involved: _____

Lawsuit claim: _____

3. Has your company ever been terminated or unilaterally elected to terminate from a project before completion? If so, complete the following adding additional pages as necessary:

Project name: _____

Project location: _____

Client: _____

Address: _____

Contact name/current telephone no.: _____

Date of termination: _____

Reason for termination: _____

Project name: _____

Project location: _____

Client: _____

Address: _____

Contact name/current telephone no.: _____

Date of termination: _____

Reason for termination: _____

F. PERSONNEL & ORGANIZATIONAL INFORMATION

Attach an organization chart indicating the Program Manager and other staff designations as required by the RFQ. Other personnel may be included in the organization chart. A resume is required for each person shown on the organization chart. Only personnel listed on the organizational chart may attend interviews and negotiation meetings. Each resume shall include, at a minimum, the following:

1. Current position in the firm.
2. Experience for at least the last 5 years.
3. Major projects and accomplishments.
4. Education and special training.
5. Professional Registrations, include certificate number(s).
6. Professional affiliations.

G. ACKNOWLEDGMENT/AUTHORIZATION FORM

The undersigned acknowledges that submittal of this Statement of Qualifications constitutes an irrevocable offer for a 90-day period for the Board to award the Contract.

The undersigned acknowledges that he has read all of the requirements set forth in the Request for Qualifications, including the Standard Agreement, and that, if awarded the Contract, shall comply with said provisions.

The undersigned hereby authorizes and requests any person, firm, agency, or corporation to furnish any information requested by the Board in verification of the recitals comprising this Statement of Qualifications and also hereby authorizes the Board to contact such persons, firms, etc., in order to obtain information regarding the undersigned.

I certify under penalty of perjury that the foregoing is true and correct. This certification is made under the laws of the State of California.

Ira R. Snyder

Print Name of Authorized Representative



Signature of Authorized Representative

Senior Vice President

Title of Authorized Representative

909-860-7777

Telephone Number

Bryan A. Stirrat & Associates

Name of Organization

Diamond Bar, California

Location Where Signed

1/10/06

Date Signed

Acknowledgment of Addenda:

Addendum No.

#1 - 12/6/05

Signature





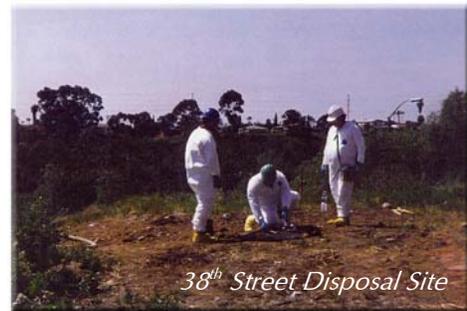
3.2 ADDITIONAL QUALIFICATIONS INFORMATION

Landfill Closure Design: The BAS Team has been in the forefront of the development of state-of-the-art landfill and disposal site closure technologies in the southwestern United States since 1984 (Table 3.1). Experience includes the location and characterization of final cover materials; design of drainage facilities; preparation of construction plans, specifications, and cost estimates; evaluation, justification and negotiation for use of alternative closure cover systems; preparation of Stormwater Pollution Prevention Plans; preparation and implementation of Construction Quality Assurance (CQA) plans; and value engineering. To date, the Team has designed cover systems for approximately 80 landfills.

Burn Dump Closure: The BAS Team has provided engineering and construction support for the remediation of more than 36 California burn dump sites. As part of its engineering services contract with the CIWMB Solid Waste Site Clean-up Program, the BAS Team has assisted in the investigation and remediation of the such sites as the Amador, Dunnigan, Morro Bay, Wilder Ranch, Cappel Road, Folsom Prison, Lindsay, Davenport, Enterprise, Hilltop Drive, Sonoma, Panoche, Pinnacles National Monument, and Skyline Ridge burn dumps. Responsibilities have included waste characterization, remediation design, waste manifesting, drainage and final cover design, and construction management and CQA during site remediation.



Investigation of Radioactive Sources: The BAS Team is familiar with radiation monitoring and dosimetry. During the course of the firm's work with CIWMB at the 38th Street Burn Dump and the City of Sonoma Burn Dump, the BAS Team performed field surveys to identify and segregate radioactive materials. We are also currently working with several other clients in evaluating sources of radioactivity in municipal solid waste landfills. As part of our work on the SWCP, the Team assisted CIWMB staff in developing radiation dosimetry plans, radiation response and contingency plans, and field methodologies for evaluating background radiation, performing routine surveys, and cataloguing and disposing radioactive items. Team personnel can provide as-needed radiation dosimetry and survey training to CIWMB staff and contractor personnel.



Research of Site Ownership/Usage: The BAS Team has 21 years of experience conducting investigations of hazardous materials sites. This has included reviews of site ownership, chain-of-title studies, responsible party searches, investigations of past and current activities, review and analysis of available regulatory information, reconnaissance surveys, prioritization of potential hazards, development of investigation plans, analysis of data, and liability assessments. Significant experience includes the following:



FIGURE 3.1 - LANDFILL CLOSURE EXPERIENCE

Site		Closure Plans	Geotech. Studies	Cover Design	Plans & Specs.	CM/COA	Site		Closure Plans	Geotech. Studies	Cover Design	Plans & Specs.	CM/COA
Site	Location						Site	Location					
Altamont Landfill	Alameda County, CA	■		■	■		Lindsay Burn Dump	Shasta County, CA		■	■		■
Amador Burn Dump	Amador County, CA			■	■		Lopez Canyon Landfill	Lakeview Terrace, CA	■	■	■	■	
Antioch Disposal Site	Contra Costa Co., CA			■	■		Lucerne Landfill	San Bernardino Co., CA		■		■	
Apple Valley Landfill	San Bernardino Co., CA	■	■	■	■		Lynch Disposal Site	Contra Costa County, CA		■			■
Baker Landfill	San Bernardino Co., CA	■	■	■	■	■	Mead Valley Landfill	Riverside County, CA		■			■
Bakersfield Landfill	Bakersfield, CA	■	■	■	■		McCourtney Rd Landfill	Nevada County, CA	■	■	■		
Ballard Canyon Landfill	Santa Barbara Co., CA			■	■		Mid Valley Landfill	San Bernardino Co., CA	■	■	■	■	■
Berry St. Mall Landfill	Roseville, CA	■	■	■	■	■	Milliken Landfill	San Bernardino Co., CA	■	■	■	■	■
Big Bear Landfill	San Bernardino Co., CA	■	■	■			Mountain View Landfill	Mountain View, CA	■	■	■	■	■
BKK Landfill	West Covina, CA	■	■	■	■	■	Morongo Valley Landfill	San Bernardino Co., CA	■	■	■		■
Bonsall Landfill	San Diego County, CA	■	■	■			Needles Landfill	San Bernardino Co., CA		■			■
Brawley Landfill	Imperial County, CA			■	■	■	Newberry Landfill	San Bernardino Co., CA		■			■
Calva Road Dump Site	Bylas, AZ	■		■			Newby Island Landfill	San Jose, CA	■	■		■	
Calexico Landfill	Imperial County, CA			■	■		Niland Landfill	Imperial County, CA	■	■	■		
Cappel Rd. Disposal Site	Humboldt County, CA			■	■	■	N Chollas Burn Dump	San Diego, CA		■	■	■	■
Coachella Landfill	Riverside County, CA			■	■	■	Ocotillo Landfill	Imperial County, CA	■	■	■		
Coastal Landfill	Ventura County, CA	■	■				Olinda Alpha Landfill	Brea, CA	■	■	■		
Colton Landfill	San Bernardino Co., CA			■	■	■	Palo Verde Landfill	Imperial County, CA	■	■	■		
Coyote Canyon Landfill	Orange County, CA	■	■	■	■	■	Panoche Burn Site	Fresno County, CA		■	■	■	
Crazy Horse Landfill	Salinas, CA	■	■	■	■	■	Phelan Landfill	San Bernardino Co., CA	■	■	■	■	■
Dunnigan Burn Dump	Yolo County, CA			■	■	■	Picacho Landfill	Imperial County, CA	■	■	■		
Edom Hill Landfill	Riverside County, CA			■	■	■	Pitchess Landfill	Saugus, CA	■	■	■		
Elsinore Landfill	Riverside County, CA	■	■	■	■	■	Poway Landfill	San Diego, CA	■	■	■		
Encinitas Landfill	San Diego County, CA	■	■	■			Prima Deshecha Landfill	Orange County, CA	■	■	■	■	
Enterprise Landfill	Shasta County, CA			■	■	■	Rose Hills Landfill Site	Whittier, CA		■	■	■	■
Folson Prison Burn Dump	Sacramento County, CA			■	■	■	Royal Boulevard Site	Torrance, CA		■	■	■	■
Forster Canyon Landfill	San Juan Capistrano, CA	■	■	■			San Marcos Landfill	San Diego County, CA		■			
Forward Landfill	Manteca, CA	■		■			Santa Cruz Landfill	Santa Cruz, CA	■	■	■	■	■
FRB Landfill	Orange County, CA	■	■	■	■	■	Salton City Landfill	Imperial County, CA	■	■	■		
Gillespie Landfill	San Diego County, CA	■	■	■			Santa Maria Airport	Santa Maria, CA		■	■		
Glendale Landfill	Glendale, AZ			■			Santiago Can. Landfill	Orange County, CA	■	■	■	■	■
Greenfield Dump Site	Monterey County, CA			■		■	Six Mile Dump Site	Peridot, AZ	■	■	■		
Hesperia Landfill	San Bernardino Co., CA	■	■	■			Sonoma Burn Dump	Sonoma County, CA		■			■
Highgrove Landfill	Riverside County, CA			■		■	South Coast Landfill	Mendocino County, CA	■	■	■		
Hilltop Disposal Site	Shasta County, CA			■	■	■	Spadra Landfill	Pomona, CA		■			■
Holbrook Landfill	Holbrook, AZ	■	■	■			Tequesquite Landfill	Riverside, CA		■	■		■
Holtville Landfill	Imperial County, CA	■	■	■			Trona-Argus Landfill	San Bernardino Co., CA	■	■	■	■	■
Hot Spa Landfill	Imperial County, CA	■	■	■			Tufa Stone Dump Site	Seven Mile, AZ	■		■		
Huntington Landfill	Huntington Beach, CA	■	■		■	■	29 Palms Landfill	San Bernardino Co., CA	■	■	■	■	■
Imperial Landfill	Imperial County, CA	■	■	■			Upland Landfill	Upland, CA		■	■		
Iron Mountain Landfill	San Bernardino Co., CA	■	■	■	■		Valle Vista Landfill	Hemet, CA		■			■
Jamacha Landfill	San Diego County, CA	■	■	■			Valley Center Landfill	San Diego County, CA	■	■	■		
Jamestown Landfill	Tuolumne County, CA	■	■	■	■		Victorville Landfill	San Bernardino Co., CA	■	■	■		
Kern Valley Landfill	Kern County, CA	■	■	■	■	■	Viejas Landfill	San Diego County, CA	■	■	■		
Laytonville Landfill	Mendocino County, CA			■	■	■	West Miramar Landfill	San Diego, CA	■	■	■	■	
Lenwood-Hinkley Landfill	San Bernardino Co., CA	■	■	■			Yermo Landfill	San Bernardino Co., CA	■	■	■	■	



- Assessment of more than 350 parcels in support of the widening of Interstate 5 in Southern Los Angeles County.
- Research of ownership/uses for more than 200 parcels during the development of the Staples Center in downtown Los Angeles.
- Review of more than 450 acres of downtown San Bernardino as part of a municipal water project.
- Assessment of a 16-mile segment of AT&SF Railroad right-of-way through four cities in San Bernardino County. The project involved research on ownership/uses at more than 260 parcels.
- Assessment of 1,640 acres (55 assessor's parcels) adjacent the Yuma Marine Corps Air Station.

Survey Services: BAS Team survey personnel have more than 17 years of experience conducting projects in the dynamic environment of landfill facilities. BAS survey crews have been responsible for a variety of tasks including:

- Setting aerial control for mapping
- Staking grades for foundation, clay, and vegetation layers
- Verifying borrow site cross-section work and quantities
- Verifying layer thickness, foundation, clay, and vegetation
- Establishing horizontal and vertical control system for subcontractor use during construction
- Realigning for horizontal and vertical changes due to settlement
- Establishing horizontal and vertical settlement monuments
- Establishing sections for trash expansion areas
- Staking grades for drainage systems, v-ditches, and concrete channels
- Collection of digital survey data and down-loading to site as-built maps
- Laying out landfill gas extraction systems
- Establishing gas grid system for emission testing

During the past eight years of its contract with the Solid Waste Site Cleanup Program, the BAS Team has conducted surveys of the 38th Street, Black Butte, Lynch/Antioch, Nicholson Avenue, Folsom Prison, and Sonoma Development Center sites. In addition, the BAS Team has provided extensive site survey services for projects at the majority of the 56 sites where BAS has supported the CIWMB over the past eight years.

Permitting and Regulatory Compliance: Over the past 21 years, the BAS Team has prepared a variety of landfill permitting documents, and provided liaison/negotiations with the agencies responsible for regulating landfill facilities. The Team has been responsible for preparing one or more of the following permitting documents:



- Closure/Post-Closure Maintenance Plans
- Joint Technical Document / Report of Facility Information
- Periodic Site Review
- California Environmental Quality Act (CEQA) Documentation
- Report of Disposal Site Information
- Land Use Permit Application
- Report of Composting Site Information
- Findings of Conformance w/ General Plan and CIWMB
- Report of Waste Discharge
- CEQA Mitigation Monitoring Plans
- Stormwater M&RP
- AQMD Refuse Removal Permit
- AQMD Permits to Construct and/or Operate



BAS was one of the first consulting firms to have one of their Joint Technical Document (JTDs) utilized to revise a Solid Waste Facilities Permit (SWFP) for a Class III landfill. To date, BAS has prepared JTDs for six major California landfills. BAS developed and implemented the first EPA-approved RCRA closure for a Class I landfill in the western United States (BKK Landfill), and one of the first Closure Plans approved by the California Integrated Waste Management Board under Title 14 Regulations (Coyote Canyon Landfill). In total, the Team has prepared closure plans for more than 55 landfill sites.



Block party organized by BAS and the California Integrated Waste Management Board to celebrate the completion of the Aggregate Recycling Systems clean-up project.

Public Meetings/Community Outreach: Since the BAS Team represents public waste management districts during major landfill development and closure projects, it is regularly called upon to make presentations to city/county government entities, regulators, and citizen groups which have a direct impact on the approval of projects. Landfill development projects are often controversial and politically charged. The BAS Team has found that a well-executed community outreach program that identifies key project stakeholders, and involves the local community in the project decision process is invaluable in moving work toward successful resolution.

In a recent project, the BAS Team provided site investigation and remediation support to the CIWMB during the clean-up of a debris pile in the City of Huntington Park. Legal issues had delayed the clean-up of the site (which contained crushed concrete, construction debris, roll-off bins, and used truck tires) for many years. Once the waste pile was successfully remediated, the BAS Team worked with the CIWMB to organize a block party to celebrate the successful solution of a problem that had long been an issue of contention in the local community. Local residents, officials from the City of Huntington Park, and representatives from the California Integrated Waste Management Board and the BAS/KFM Team attended the event.



Emergency Response: BAS Team member United Pumping Service, Inc. has served California in the field of hazardous and non-hazardous waste removal and remediation since 1970. The firm maintains a fleet of trucks, roll-off containers and support equipment to handle emergency response situations or day-to-day removal requests. Being the primary Regional State of California Department of Transportation Emergency Spill Response Contractor in District 7, United Pumping has performed the majority of emergency spill cleanups. United Pumping provides quality service in the areas of transportation, disposal, site remediation, demolition, plant closures, decontamination, tank cleaning and removal, and various other environmental needs.

In addition, the BAS Team has been providing emergency response services to the Los Angeles County Metropolitan Transportation Authority since 1994. The project has involved response to hazardous materials spills, clean-up of contaminated material stockpiles, and development of site remediation plans.

Landfill Gas Management: Since 1984, the BAS Team has designed landfill gas extraction and treatment systems at more than 60 landfill facilities. Of particular note, the vast majority of landfill gas systems design projects completed by the Team have been for public waste management agencies in California. The BAS Team has the resources and qualifications to provide clients with "one-stop shopping" for all landfill gas migration control related services. This includes performance evaluation of existing gas systems, initial design and permitting of new systems, comprehensive construction management support for system installation, and complete operations, maintenance, monitoring and repair of operating systems.



BAS-designed Skunk Creek Landfill flare station, winner of the 2000 SWANA Landfill Gas Control Excellence Silver Award

BAS Team LFG control systems are designed to be cost-effective and easy to operate and maintain, while meeting regulatory requirements. An important aspect of this process is the analysis of practical gas control technologies for a given site. The advantages and disadvantages of available technologies, including the advantages and disadvantages of alternative approaches are presented to the client prior to the development of the conceptual design.

In recognition of its technical achievements in landfill gas management, the Solid Waste Association of North America awarded BAS the 2000 SWANA Landfill Gas Control Excellence Silver Award, for its design of a landfill gas extraction and treatment system at the Skunk Creek Landfill in Phoenix, Arizona. In addition, the Los Angeles Chapter of the National Electrical Contractors Association presented BAS with its 1990 Award for Excellence for the firm's design of a flare station at the Lopez Canyon Landfill. The BAS Team has also developed specialized source testing methodologies for flare optimization, a proprietary LFG well adjustment manual, highly efficient and expedient underground landfill fire mitigation protocols, and an automated data management system for tracking landfill gas migration control system performance.



Geologic/Hydrogeologic Studies: BAS Team member Geologic Associates has performed more than 100 geologic and hydrogeologic investigations at landfill facilities. This has included geologic mapping, subsurface exploration using a variety of excavation, drilling and geophysical techniques, trench and borehole logging, in-situ and bulk material sampling, laboratory testing, materials evaluations, seismic hazard analyses, engineering analyses and evaluation, and development of cost-effective recommendations for project completion.

Landfill End-Use Planning: BAS Team landscape architects and designers have provided comprehensive landfill closure/post-closure landscape end-use design for more than 40 separate landfill facilities. Project responsibilities have included development of site end-uses such as passive and active recreational facilities and open-space, as well as specialized facilities such as golf courses and equestrian parks. Issues addressed by the Team in the design of recreational facilities at landfill facilities include site settlement, configuration of final grades, slope stability, soil quality, vegetative layer depth, revegetation strategies, irrigation, and maintenance requirements.



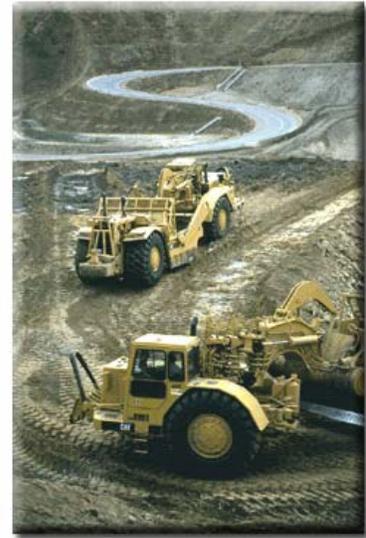
In recent years, the BAS Team has provided end-use planning and permitting for the Prima Deshecha, Olinda Alpha, Mid-Valley, City of Glendale, City of Chandler, Santiago Canyon, McCourtney Road, and Coyote Canyon landfills. In 1991, BAS prepared the Landscape Master Plan for Lopez Canyon Landfill. BAS prepared the CIWMB's Guide to Vegetative Covers for California Landfills. This document is used by the CIWMB in the review of closure plans, guides operators in the selection of approved vegetative cover plant materials, and assists CIWMB and operators in design considerations for typical California landfills.

Construction Management: The BAS Team has more than 21 years of experience providing construction management at Class I and Class III landfill facilities. The BAS Team has managed the construction of virtually every major component of a landfill facility, including earthwork, liner systems, cover systems, drainage systems, leachate collection and treatment systems, landfill gas extraction and treatment systems, condensate management systems, irrigation systems, roadway and bridge construction, refuse excavation and relocation, and landslide mitigation. The BAS Team has extensive experience working in



concert with the construction manager to provide timely and cost effective resolution of potential construction disputes. The Team is currently providing construction management services at several sites where soil management is a significant issue (Prima Deshecha, Waterman landfills.)

Construction Quality Assurance: The BAS Team has been involved with the investigation, evaluation, processing, and placement of low-permeability soils and geosynthetic materials throughout its history, with an emphasis on composite liners and covers for solid waste management facilities. This involvement has included the preparation of soil and geosynthetic materials CQA Plans and related project specifications as well as full implementation of soil and geosynthetic material CQA programs.





4. Project Organization and Personnel

4.1 PROJECT ORGANIZATION CHART

Figure 4-1 presents the proposed BAS Project Team for this project. This organization chart is structured to delineate staffing in the categories defined in Section V of the CIWMB's Statement of Qualifications Questionnaire for this project. These categories include the following:

- Program Management
- Grading and Embankment Design
- Drainage and Erosion Control Design
- Geotechnical Investigations
- Hazardous Materials Sampling and Testing
- Construction Management
- Construction Quality Assurance

In addition, Figure 4.1 also identifies the personnel who will be responsible for performing the 13 specific tasks listed in Section V-A of the Request for Qualifications for this project. Anticipated staffing for these 15 task items is listed below:

Task	Personnel
1. Site Surveys	Plunkett, LOCAL SURVEY COMPANIES
2. Title/Deed/PRP Searches	Acosta, ENVIRONMENTAL DATA RESEARCH
3. Grading Design	Cullinane, Genzel, Yacyshyn, Johnson
4. Excavation and Embankment Evaluation and Design	Cullinane, Genzel, Yacyshyn, Warner, Constant
5. Drainage Design	Moore, Cullinane, Yacyshyn, Wilson
6. Erosion Control / Vegetation Design	Cullinane, Yacyshyn Duncan
7. Geotechnical Investigations	McMillan, Franzzone, Murphy, Vincent, Lopez
8. Field Characterizations of Waste	Hower, Acosta, Grigorova, Powder, Battelle, Reason, Hansen
9. Hazardous Materials Disposal / Emergency Response	UNITED PUMPING
10. Preparation of Site Remediation Plans and Specifications	Acosta, Cullinane, Genzel, Yacyshyn
11. Permitting	Arbogast, ULTRASYSTEMS
12. Construction Quality Assurance	Baird, Campbell, Runyan, Sapp, Mariscal
13. Construction Management	Somogyi, Nuckols, Zuppardo, Ibarra, Spier, Andrade
14. Community Outreach	ULTRASYSTEMS
15. Assistance for Presentations, Meetings	Huffmire, Hower, Stirrat, Lass, Yacyshyn



4.2 PROJECT TEAM MANAGEMENT

To maintain continuity of management with the BAS Team's current contract with the CIWMB's Solid Waste Disposal and CoDisposal Site Cleanup Program, Mr. Richard Huffmire will again serve as Program Manager of the BAS Team. Mr. Huffmire has more than 30 years of construction management/inspection experience for large public works improvements and landfill projects. He is a licensed general contractor and has managed the construction of landfill facilities, pump stations, wastewater treatment plants, industrial parks, and residential developments. The last 15 years of Mr. Huffmire's career have been dedicated to managing the construction of landfill expansions and closures.

The BAS Team will utilize Mr. John Hower as Assistant Program Manager of its project team. Over his tenure with the Program, Mr. Hower gained extensive experience in the clean-up of and closure of illegal and abandoned disposal sites, particularly, sites featuring contamination by radioactive materials. Mr. Hower worked closely with the CIWMB during the investigation of many of these sites and will again have a prominent position in our Project Team. In addition, Mr. Hower will provide logistical and administrative assistance to Mr. Huffmire, ensuring that project objectives are met.

Project Staffing: Mr. Huffmire and Mr. Hower will be supported by a team of senior disposal site investigation and remediation specialists in the key project areas identified in Section 4.1. The BAS Team has designated two key Task Managers and qualified support staff for each task area to ensure that qualified personnel are always available to meet program needs. The BAS Team anticipates that a core group of staff members will be developed from those included in the organization chart. The core group will have primary responsibility for implementation of CIWMB projects. As the volume or complexity of the work increases, additional experienced personnel will be added to the group, commensurate with the level of activity. Maintaining a select group of staff specifically for CIWMB projects will increase efficiency, reduce start-up time, minimize redundancy, and enhance communications between the BAS Team and the CIWMB.

BAS Team staff members are proficient in a wide variety of disciplines. When and if site conditions warrant, an individual staff member may be assigned to follow a project through each of the various phases. As necessary, the staff member will draw upon specific expertise of other members of the BAS Team and will receive direction from the Program Manager.

Maintenance of the lines of communication is essential to each and every project. Program details and administrative issues must follow agreed upon and established communication channels between the BAS Team Program Manager and the CIWMB Project Manager. However, it is anticipated that a flow of information and coordination, as related to the details of specific projects, will be maintained between CIWMB staff and the BAS Team staff assigned to the project. The BAS Team members understand and will strictly adhere to procedures and policies agreed upon by the BAS Team and the CIWMB at the onset of the contract and subsequent agreements for individual projects.



**California Integrated
Waste Management Board**
Solid Disposal and Codisposal Site Cleanup Program

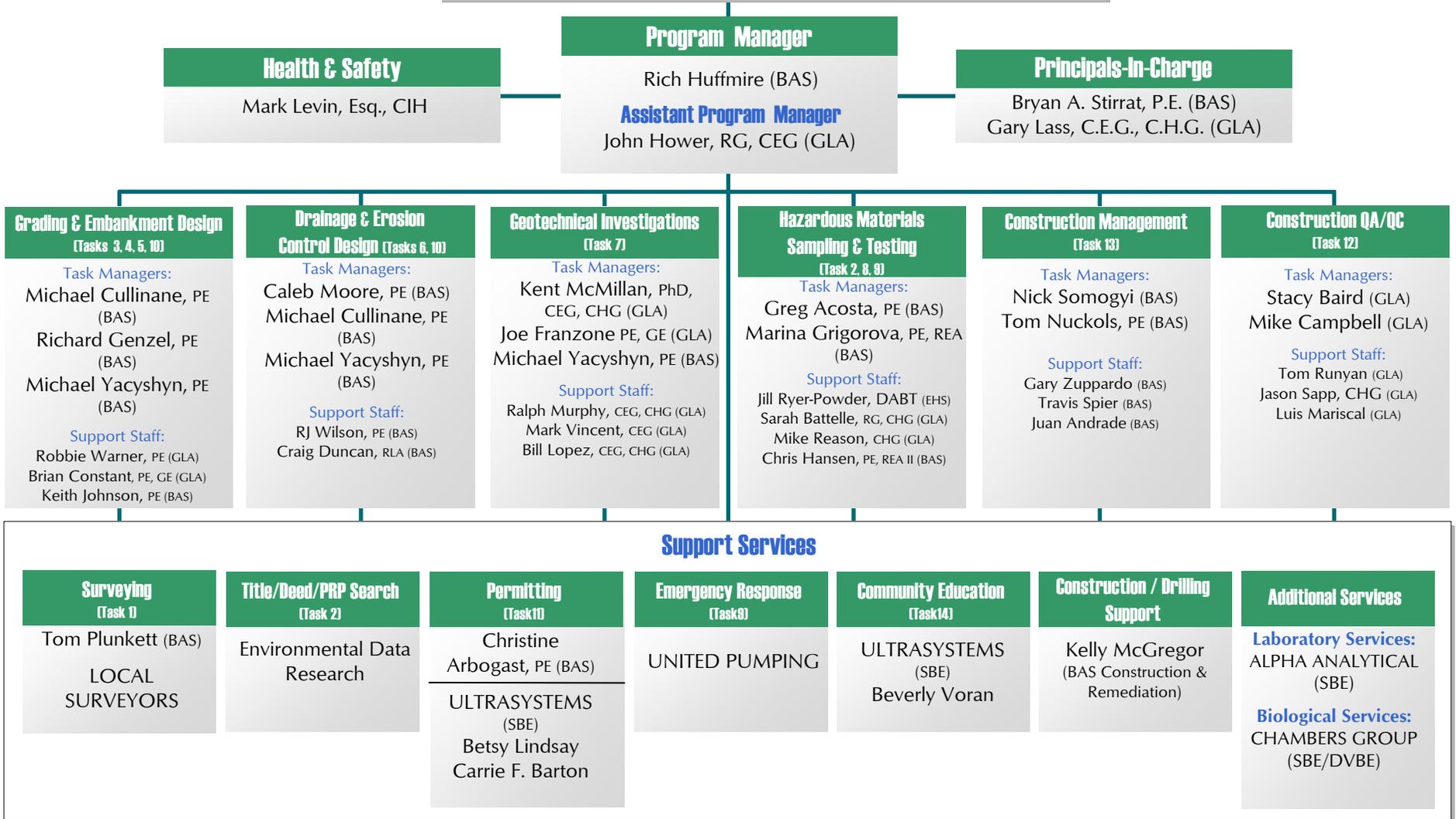


Figure 4.1

Project Organization Chart



The BAS Team, as outlined in the following sections, provides the CIWMB with the expertise and experience to implement projects, the management skills to oversee the projects, and the depth of talent to fulfill staffing requirements as dictated by the volume of projects.

Health and Safety: The BAS Team includes Mr. Mark Levin, C.I.H., who will provide supporting health and safety services and on-site personnel exposure monitoring, as may be required during a specific project. Recognizing that past CIWMB Solid Waste Cleanup Program projects have included contractor-supplied health and safety programs, including worker exposure monitoring, the BAS Team will be prepared to adopt the CIWMB's Construction Contractor health and safety protocols during future projects, if they can be demonstrated to be cost-effective and beneficial to the project and the CIWMB. Contractor-supplied health and safety plans and protocols will be reviewed by the BAS Team health and safety subcontractor, Mark Levin for concurrence with our Injury and Illness Prevention Program and to ensure that site-specific health and safety concerns are adequately addressed.

4.3 QUALIFICATIONS OF PROJECT TEAM

The following paragraphs briefly summarize the credentials, education, and experience of the key individuals in our proposed project team. Full resumes for all the individuals identified in the organization chart presented in Section 4.1 are presented in Appendix K.

4.3.1 Project Management

Richard Huffmire

Title:	Vice President, Construction, BAS
Project Role:	Program Manager
Registrations:	California State Contractor's License

Mr. Huffmire is Vice President of Construction for BAS and has more than 30 years experience in construction management and inspection services for the expansion and closure of landfill facilities, and for public works improvement projects. He is a licensed contractor and is responsible for coordination of construction management staff, geotechnical testing, and on-site project review of construction issues. His responsibilities have included the coordination of construction schedules, ensuring compliance with contract documents, coordination between contractors and engineers, and maintenance of all project-related documentation such as daily progress reports, change orders, and pay applications. In addition, Mr. Huffmire has provided litigation support in defending landfill owners against claims made by construction contractors. Mr. Huffmire has been Program Director of BAS' engineering services contract with the Solid Waste Disposal and Codisposal Site Cleanup Program since 1997. He has also been Construction Manager for projects at the Prima Deshecha, Frank R. Bowerman, 27th Avenue, and Crazy Horse landfills.

John Hower, R.G., C.E.G.

Title:	Senior Geologist, GeoLogic
Project Role:	Assistant Program Manager
Education:	B.S., Geology (<i>California State University, Long Beach</i>)
Registrations	Registered Geologist (<i>California</i>), Certified Engineering Geologist (<i>California</i>)

Mr. Hower has more than 15 years of experience in geology, engineering geology, geologic modeling, landfill design, and construction quality assurance. Over the past eight years, Mr. Hower



has been integrally involved in the California Integrated Waste Management Board's Solid Waste Cleanup Program, completing hazardous waste characterization and remediation work at dozens of illegal or abandoned disposal sites throughout California. In addition, Mr. Hower has been involved with the geotechnical evaluation, design, and groundwater monitoring and reporting programs at numerous solid waste landfills in southern California. Mr. Hower also has unique expertise developing three-dimensional geologic modeling including one in support of an RI/FS for a state-listed site in southern California. He was also Field Geologist for the Westley Tire Fire Site remediation, and has performed geologic and hydrogeologic investigations at the Santa Cruz, Frank R. Bowerman, South Miramar, Prima Deshecha, Savage Canyon, and Calabasas landfills.

Bryan A. Stirrat, P.E.

Title	President, BAS
Project Role:	Principal-in-Charge
Education:	M.S., Environmental Engineering (<i>University of Southern California</i>) M.S., Petroleum Engineering (<i>University of Southern California</i>) B.S., Civil Engineering (<i>University of Missouri-Rolla</i>)
Registration:	Registered Civil Engineer (<i>California, Arizona, New Mexico</i>) Registered Corrosion Engineer (<i>California</i>) Licensed Class A General Engineering Contractor, Certified Hazardous Substance Removal and Remedial Action Contractor (<i>California</i>)

Bryan Stirrat brings more than 30 years of experience in solid waste engineering and management to the project team. His landfill consulting experience includes siting, design, permitting and construction management for landfill expansions and new landfill facilities; construction of landfill leachate management and landfill gas control systems; and preparing and implementing closure plans. He has been Chief Consulting Engineer for the planning, design, and management of landfill development and closure projects at more than 200 landfill sites in California, Arizona, Oregon, and Hawaii. Mr. Stirrat was a member of the Governor's Task Force on Solid Waste, and a member of the CIWMB Advisory Committee for Landfill Closures. He has consulted directly with the CIWMB and numerous municipal agencies on the development of state-of-the art landfill design and closure techniques.

Gary Lass, C.E.G., C.H.G.

Title:	President, Geo-Logic Associates
Project Role:	Principal-in-Charge
Education:	MS, Geology/Geochemistry (<i>California State University, Los Angeles</i>) BS, Geology (<i>California State University, Los Angeles</i>)
Registration:	Registered Geologist (<i>California, Arizona</i>) Certified Engineering Geologist (<i>California</i>) Certified Hydrogeologist (<i>California</i>)

Mr. Lass, President of Geo-Logic, has 20 years of geotechnical and hydrogeologic experience, and has served as Project Manager and/or Principal-in-Charge on more than 200 landfill development projects. He has been involved in alternative final cover design and construction since 1986 when he participated in the closure of the BKK hazardous waste site. He is the only private consultant on the California Alternative Final Cover Technical Committee, which is evaluating the feasibility of implementing non-prescriptive final closures and post-closure end uses at Southern California landfill facilities. He is a specialist in Title 27 compliance and is responsible for development of in-house statistical computer programs to respond to the most recent regulatory requirements. Mr. Lass has acted as an expert witness for the CIWMB regarding a landfill closure dispute



Mark Levin, Esq., C.I.H.

Title:	President, MML Environmental
Project Role:	Health and Safety
Education:	Juris Doctor, admitted to State Bar of California (<i>Loyola Law School</i>) MS, Public Health (<i>University of Michigan</i>) BS, Public Health (<i>University of Michigan</i>)
Registration:	Certified Industrial Hygienist (<i>California</i>)

Mr. Levin has 20 years of industrial hygiene and environmental compliance experience. He has been responsible for advising clients on the recognition, evaluation, and control of OSHA and environmental hazards including hazardous materials, chemical hazards, toxic air contaminants, microbial hazards, and general industry safety standards. He has served as an expert witness on environmental and toxic tort matters in state and federal court. In add-on, Mr. Levin has reviewed and prepared health and safety documents for OSHA/environmental regulatory compliance. He has conducted air monitoring and exposure assessments for hazardous materials including but not limited to asbestos, heavy metals, microbial contaminants and bio-aerosols, toxic gases, petroleum hazards and chlorinated solvents.

4.3.2 Engineering Services

Michael A. Cullinane, P.E.

Title:	Vice President of Engineering, BAS
Project Role:	Grading & Embankment Design, Drainage Design
Education:	B.S., Civil Engineering (<i>California State Polytechnic University, Pomona</i>)
Registration:	Registered Civil Engineer (<i>California, Arizona, Montana</i>)

Mr. Cullinane has more than 20 years of experience managing the permitting, design, and construction of municipal solid waste landfill liner expansions, closures, and improvement projects. His experience has included design and engineering construction support for Subtitle D liner system construction, master planning, permitting, performance of various engineering analyses to support design and construction of surface water drainage systems, and development of base and final grading plans and construction documents. Mr. Cullinane has made presentations to members of the Solid Waste Management Association of North America (SWANA) on issues raised by Subtitle D liner design regulations. He has been Project Manager/Project Engineer for final cover designs at the Santiago Canyon, Ballard Canyon, Big Oak Flat, Kern Valley, Milliken and Coyote Canyon landfills.

Richard Genzel, P.E.

Title:	Principal Engineer, BAS
Project Role:	Grading & Embankment Design, Drainage Design
Education:	B.S. Civil Engineering (<i>California State Polytechnic University, Pomona</i>)
Registration:	Registered Civil Engineer (California)

Mr. Genzel is a Registered Civil Engineer with over 26 years of civil engineering experience in municipal solid waste disposal facility design, public works, and civil engineering project infrastructure design. Mr. Genzel acts as project manager for landfill closure plan development, landfill closure construction drawing preparation; design of grading, drainage liner systems and access roads; and operational fill sequencing for solid waste disposal sites. He also provides operations planning, and serves as project engineer for special projects, and has a long history of supporting the public agencies on large landfill development and closure projects. Mr. Genzel has been Project Manager or Engineering Task Manager for the development of closure designs for the Mid-Valley, Milliken, Lenwood Hinkley, Needles, Morongo Valley, 29 Palms, Trona, Upland, Santiago Canyon, Coyote Canyon, and Frank R. Bowerman landfills.



Michael Yacyshyn, P.E.

Title: Director, Northern California Operations, BAS
Project Role: Grading & Embankment Design, Drainage Design, Geotechnical Services
Education: MS, Geotechnical Engineering (*University of California, Berkeley*)
BS, Civil Engineering (*University of Massachusetts, Amherst*)
Registration: Registered Civil Engineer (California)

Mr. Yacyshyn has gained broad experience in waste management issues over the last 13 years and has been a consulting engineer in the western US for over 25 years. Issues that he has addressed include: disposal site permitting, design, construction, closure, and remediation. He has managed several multi-disciplinary projects. Prior to joining BAS, he was Program Manager for the engineering support services contract for the CIWMB Solid Waste Disposal and Codisposal Site Cleanup Program (1994-1997). Mr. Yacyshyn has first hand knowledge of regulatory and technical issues associated with landfill siting, permitting, design, construction, and closure; and he is experienced in dealing with all aspects of landfill design, including slope stability, settlement, gas control, and surface and groundwater control issues. He was the Program Manager for a multi-year contract at the Western Regional Sanitary Landfill in Placer County. Services provided included periodic inspections of landfill operations, development of fill sequencing plans, operation efficiency studies, periodic environmental monitoring and reporting, liner system design, and CQA services.

4.3.3 Geotechnical Investigations

Kent McMillan, Ph.D., C.E.G., C.H.G.

Title: Principal, Technical Services, Geo-Logic
Project Role: Geotechnical Investigations
Education: Ph.D., Applied Earth Sciences (*Stanford University*)
B.S., Geology (*California State University, Los Angeles*)
Registration: Certified Engineering Geologist (*California*)
Certified Hydrogeologist (*California*)

Dr. McMillan has more than 25 years experience in engineering geology, hydrogeology, geochemistry, and applied geophysics. His professional experience includes both practice, and academic experience. He has managed projects for government, public utilities, and corporations, and has participated in a diverse range of projects involving site characterization, seismic and fault investigation, analysis of slope and landslide stability, groundwater resource and hydrogeology investigation, forensic investigation and expert witness testimony. These projects pertain to solid waste containment, power generation facilities, dams, transportation facilities, and other infrastructure. Dr. McMillan has directed all phases of projects including field investigation, laboratory testing and analysis, development of design alternatives, and client and regulatory agency liaison. His project experience includes slope stability analyses at the Prima Deshecha, Frank R. Bowerman, Santiago Canyon and Gregory Canyon landfills; plus geotechnical investigations in support of projects at the Bena and BKK landfills, and a proposed landfill site in San Diego County.

Joe Franzone, P.E., G.E.

Title: Supervising Geotechnical Engineer, Geo-Logic
Project Role: Geotechnical Engineering
Education: MS, Geotechnical Engineering (*University of Nevada*)
BS, Geotechnical Engineering (*Purdue University*)
Registration: Registered Civil Engineer (*California*); Registered Geotechnical Engineer (*California*)

Mr. Franzone's 20 years of geotechnical engineering experience includes project management and onsite field engineering in conjunction with subsurface exploration, foundation, slope stability and



analysis and quality control of earthwork construction and grading operations. Mr. Franzone has a comprehensive background in geotechnical investigations involving slope stability and slope failures, structural distress, major hillside residential projects and foundation/earthwork design for landfills, industrial/commercial developments, and high-rise buildings. Mr. Franzone has extensive experience in failure analysis and remedial work using shoring/underpinning techniques and rock and soil instrumentation methods. His project experience includes geotechnical investigations at the Prima Deshecha, Arizona Street, Sonoma Central, and South Coast landfills.

4.3.4 Hazardous Waste Services

Greg Acosta, P.E.

Title:	Director, Environmental Services, BAS
Project Role:	Hazardous Materials Sampling & Testing
Education:	M.S., Environmental Engineering (<i>University of California, Los Angeles</i>) B.S., Civil Engineering (<i>California State Polytechnic University, Pomona</i>)
Registration:	Registered Civil Engineer (<i>California</i>)

Mr. Acosta is a registered Civil Engineer with 16 years experience in the preparation of Remedial investigation reports, feasibility studies, remedial action plans and environmental site assessments for landfill facilities and industrial facilities. Through his experience, Mr. Acosta has developed an excellent working rapport with the DTSC and other regulatory agencies. He has performed engineering feasibility studies and has been Project Manager for numerous site investigations involving drilling and sample collection, development of remedial alternatives and costs based upon the site characterizations, preparation of site specific health and safety plans, and preparation of reports. He supported the CIWMB during investigations of the Ford City Burn Dump, Cajon Landfill Fire Site, and Nicholson Avenue Disposal Site. He was also Project Manager for the preparation of a Remedial Investigation / Feasibility Study for the Gardena Valley 1&2 Landfill, and remedial investigations at the Mid-Valley, Milliken, and EPC landfills.

Marina Grigorova, R.E.A.

Title:	Project Manager, BAS
Project Role:	Hazardous Materials Sampling & Testing
Education:	M.S., Environmental Engineering (<i>Johns Hopkins University</i>) B.S., Chemical Engineering (<i>Moscow Institute of Fine Technology</i>)
Registrations:	Registered Civil Engineer (<i>California</i>) Registered Environmental Assessor I (<i>California</i>)

Ms. Grigorova has seven years experience in environmental engineering and environmental research. She has provided site sampling and engineering support to the CIWMB during the investigation of the Nicholson Avenue Illegal Disposal Site, the Lindsay Burn Dump, and the Gordon English Disposal Site. She is currently Project Manager for the investigation of the Old Snake Landfill in Fresno, California, and for the investigation and remediation of a former lumber mill site in Madera County. She has supervised the drilling of exploratory borings, construction of groundwater monitoring and vapor extraction wells, and vapor extraction testing. Ms. Grigorova has been responsible for the analysis of state-of-the-art technologies for the remediation of wastewater and industrial wastes, and has extensive knowledge of federal environmental legislation (RCRA, CERCLA, CWA). Prior to joining BAS, Ms. Grigorova was a Research and Development Engineer with the Los Alamos National Laboratory in Los Alamos, New Mexico.



4.3.5 Construction Management

Nick Somogyi

Title:	Environmental Specialist
Project Role:	Construction Management
Education:	B.S., Environmental Engineering (<i>Polytechnic University, Farmingdale, New York</i>)

Mr. Somogyi is an experienced environmental engineer with seven years experience performing construction oversight, design services, and regulatory permitting activities. He has performed environmental oversight during the remediation of disposal sites, construction of light rail systems, and has designed water and wastewater treatment plants, stormwater management systems, and water distribution networks. He provided construction management support to the CIWMB during the remediation of the Half Moon Bay and Billingsley illegal disposal sites, and was construction manager for the Phase 1A groundwater protection project at the Tajiguas Landfill. Mr. Somogyi has been responsible for preparing permitting documents, and has performed inspection services during large earthwork projects.

Tom Nuckols, P.E.

Title:	Senior Project Manager, BAS
Project Role:	Construction Management
Education:	M.S., Environmental Engineering (University of Southern California) B.S., Civil Engineering (Southern California)
Registration:	Registered Civil Engineer (California); Licensed Drilling Contractor (California) Licensed Building Contractor

Mr. Nuckols has more than 30 years of landfill and disposal site remediation and environmental engineering experience. He was BAS Site Manager at a major U.S. EPA Superfund Site (Oil Landfill) between 1992 and 1996, where he managed the construction of improvements to site gas control and liquids management systems. Mr. Nuckols has coordinated field personnel, managed project schedules, and maintained project-related documentation such as daily progress reports, change orders, and pay applications for a variety of landfill construction projects. His construction experience encompasses the installation of state-of-the-art leachate treatment plants; leachate and condensate management systems; groundwater and gas monitoring wells; drainage improvements, pumping and irrigation systems; and support facilities such as roads, scalehouses and buildings. Mr. Nuckols provided construction management support to the CIWMB during the remediation of the Lindsay Burn Dump, the Greenfields Burn Dump, and the Brawley dump site. He was also Construction Manager for the closure of the Ballard Landfill and the partial closure of the Santa Cruz Landfill.

4.3.6 Construction Quality Assurance

Stacy Baird

Title:	Vice President of Construction, Geo-Logics
Project Role:	Construction Quality Assurance
Education:	BS, Geology (<i>California State University, Fullerton</i>)

Mr. Baird more than 12 years experience participating in a wide variety of geotechnical and construction quality assurance projects throughout California, including landfill liner and cover construction, field explorations, geologic hazard evaluations, geotechnical analyses and design, report preparation, and field construction review and observations. Mr. Baird has extensive experience supervising CQA staff, mapping geologic structures, logging and sampling borings and



trenches, and monitoring well installation and testing. His duties have also included the identification of low-permeability borrow materials, construction review of cover and liner placement, and preparation of construction certification reports. Mr. Baird has been CQA Manager for landfill cover construction projects at the Milliken, Coachella, Phelan, Tequesquite, Ballard Canyon, and Big Oak Flat landfills.

Mike Campbell

Title:	Lead CQA Monitor, Geo-Logics
Project Role:	CQA Services
Education:	BS, Geology (California State Polytechnic University, San Luis Obispo)

Mr. Campbell is a Senior Field Technician with over 15 years of experience performing a variety of geotechnical tasks including construction quality assurance monitoring and testing of soils and geosynthetics for composite liner systems, final cover systems, and slope remediation systems. Mr. Campbell has provided field services for closures of Class I hazardous waste sites and expansion and closures of Class III waste disposal facilities, observation and testing of fills related to grading operations, subsurface investigations for structural distresses of residential and commercial facilities, some of which were the result of earthquake damage. Mr. Campbell has been Lead CQA Monitor for final cover construction projects at the Coachella, Baker, Tequesquite, Needles, and Colton landfills.

4.3.7 Support Services

Betsy Lindsay

Title:	President, UltraSystems
Project Role:	Permitting
Education:	Master of Urban & Regional Planning (<i>California State Polytechnic University, Pomona</i>) B.A., Geography (<i>California State University, Long Beach</i>)

Ms. Lindsay possesses 21 years experience in the fields of environmental planning and permitting, redevelopment, fiscal impact analysis, economic development, and facility planning. Her primary responsibilities include business and project management, contract administration, resource allocation, and quality control. She also manages all corporate endeavors involving the permitting and processing of solid waste facilities (e.g., Class III landfills, transfer stations, and material recovery facilities). Specific responsibilities include overall project management, preparation and processing of CEQA/NEPA documents, and associated entitlement obligations for large-scale public/private infrastructure projects.

Carrie F. Barton

Title:	Senior Planner, UltraSystems
Project Role:	Permitting
Education:	MS, Marine Geology and Geochemistry (<i>Massachusetts Institute of Technology</i>) BA, Earth Sciences (<i>University of California, Berkeley</i>)

Ms Barton has more than 4 years of experience in environmental analysis and private and public land development, and 5 years of experience in applied science, including laboratory analyses and fieldwork. Ms. Barton has authored or co-authored a full range of CEQA and NEPA environmental documents, including major public transportation projects in urban areas and new private residential or mixed-use developments. She has a particular expertise in the evaluation of potential environmental impacts and interpretation of technical reports in the areas of geology and seismic hazards, water resources, and fiscal impact analysis.



Beverly Voran

Title: Community Outreach Specialist, UltraSystems
Project Role: Community Outreach
Education: MA, Urban Planning (Pending) (*University of California, Los Angeles*)
MA, Psychology (*University of Kansas*)
BA, Microbiology (*University of Kansas*)

Ms. Voran specializes in building partnerships and facilitating dialogue between communities and public/private projects that impact those communities. Early involvement by public affairs specialists will establish goodwill at the beginning of the project, and can dramatically reduce costly delays, negative publicity, claims and lawsuits. Ms. Voran has extensive experience working with a variety of stakeholders including homeowners/residents, businesses, environmental groups, government agencies, elected officials and community organizations. She has a vital understanding of role politics play and has successfully managed many high profile, controversial projects.

4.4 QUALIFICATIONS OF PROPOSED SUBCONSULTANTS

Appendix L provides Statements of Qualifications for key BAS Team subconsultants identified in Figure 4.1.



5. Additional Information

5.1 LICENSES

Contractors License: BAS is licensed to do business in California, and holds a General Engineering Contractor's License with a Hazardous Substances Removal and Remedial Action Certification from the California Contractors State Licensing Board. A copy of BAS' contracting license is presented in Appendix B.

Registered Professional Engineers: The CIWMB's RFQ for this project requires that proposers document that their project team includes at least one registered Professional Civil Engineer who is licensed through the California Board for Professional Engineers and Land Surveyors. The BAS Team includes the following individuals with current California civil engineering licenses:

- Bryan A. Stirrat
- Michael Cullinane
- Richard Genzel
- Caleb Moore
- RJ Wilson
- Robbie Warner
- Keith Johnson
- Brian Constant
- Greg Acosta
- Marina Grigorova
- Chris Hansen
- Tom Nuckols
- Christine Arbogast

Registered Geologists: The CIWMB's RFQ for this project also requires that proposers document their project teams include at least one Registered Geologist who is currently licensed through the California Board for Geologists and Geophysicists. The BAS Team includes the following individuals who are California Registered Geologists.

Team Member	Registered Geologist	Certified Engineering Geologist	Certified Hydrogeologist
Gary Lass	■	■	■
John Hower	■	■	
Kent McMillan	■	■	■
Ralph Murphy	■	■	■
Mark Vincent	■	■	
Bill Lopez	■	■	■
Sarah Battelle	■		■
Michael Reason	■		■
Jason Sapp	■		■



In addition to the above individuals, the BAS Team also includes the following licensed professionals:

Brian Constant	Registered Geotechnical Engineer
Joseph Franzone.....	Registered Geotechnical Engineer
Craig Duncan.....	Licensed Landscape Architect
Kelly McGregor	Licensed Drilling Contractor
Tom Nuckols.....	Licensed Drilling Contractor
Mark Levin.....	Certified Industrial Hygienist
Jill Ryer-Powder	Diplomat in the American Board of Toxicologists

As indicated above, several members of our proposed project team hold multiple registrations. Additional information about team member licenses is presented in Appendix C.

5.2 SMALL BUSINESS ENTERPRISE (SBE) PARTICIPATION

BAS is committed to meeting the CIWMB’s Small Business Enterprise Participation goal for this project. BAS understands that the Small Business participation goal for this project is 25% of total work order costs. Participating Small Firms must be certified by the Department of General Services, Office of Small and Minority Business (OSMB). The BAS Team contains the following certified Small Business Enterprises:

- Alpha Analytical Laboratories
- Ultrasystems Environmental Incorporated
- Chambers Group, Inc.

Documentation of the SBE status of each of these firms is presented in Appendix G.

5.3 DISABLED VETERAN BUSINESS ENTERPRISE (DVBE) PARTICIPATION

BAS understands that California State law requires that three percent of work performed on State contracts must be conducted by firms which are certified with the OSMB. The BAS Team will utilize the Chambers Group, Inc. as its Disabled Veteran Enterprise subconsultant on this project. The Chambers Group is a certified DVBE with the OSMB. A copy of Attachment H - Certification of Disabled Business Enterprise Requirements is presented in Appendix G of this document.



LETTERS OF RECOMMENDATION





**COUNTY OF LOS ANGELES
DEPARTMENT OF HEALTH SERVICES
Public Health**

THOMAS L. GARTHWAITE, M.D.
Director of Health Services and Chief Medical Officer

JONATHAN E. FIELDING, M.D., M.P.H.
Director of Public Health and Health Officer

Environmental Health
ARTURO AGUIRRE, R.E.H.S., M.A.
Director of Environmental Health

Bureau of Environmental Protection
Solid Waste Management Program/L.A. County LEA
5050 Commerce Drive Baldwin Park, California 91706-1423
TEL (626) 430-5540 • FAX (626) 813-3022
www.lapublichealth.org/eh

February 2, 2005

Greg Acosta
Bryan A. Stirrat & Associates
1360 Valley Vista Drive
Diamond Bar, California 91765

Dear Mr. Acosta:

**CLEAN UP OF THE BILLINGSLEY ILLEGAL DISPOSAL SITE/19-AA-5756
LAKE LOS ANGELES**

The above mentioned illegal disposal site was cleaned over two weeks in early December of 2004 and in mid-January of this year. This site had been a long term threat to public health and environment and it was a great achievement in getting this site removed.

During cleanup operations, Nick Somogyi of your company was onsite to conduct sampling and monitoring of the waste. During his activities on the job site, Nick performed his duties professionally and efficiently. Nick was an asset to the crew at the site. With his help during this job, delays and interruptions were avoided.

If Los Angeles County is involved with B.A.S. on another job I would not hesitate to request Nick work on the project.

If you have any questions, do not hesitate to call me at (626) 430-5540.

Sincerely,


Chris Mastro
Environmental Health Specialist
Solid Waste Management Program



BOARD OF SUPERVISORS

Gloria Molina
First District

Yvonne Brathwaite Burke
Second District

Zev Yaroslavsky
Third District

Don Knabe
Fourth District

Michael D. Antonovich
Fifth District

FEB 7 2005

Redding Redevelopment Agency

December 13, 2002

Bryan A. Stirrat
Bryan A. Stirrat & Associates
Civil and Environmental Engineers
1360 Valley Vista Drive
Diamond Bar, CA 91765

Dear Mr. Stirrat:

Earlier this year, the Sacramento River Trail Extension to Hilltop Drive was named as a 2002 Excellence in Transportation winning project by the California Department of Transportation (Caltrans). The project was recognized in the Pedestrian and Bicycle Facilities category which had a total of nine entries.

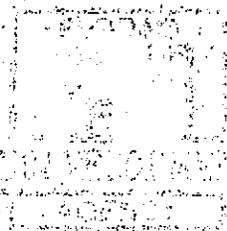
It is with tremendous pleasure that I am forwarding the enclosed award plaque and accompanying certificate to you recognizing Bryan A. Stirrat's (BAS) contribution to the project design. We believe this recognition is especially meaningful because of the significant design challenges BAS faced incorporating the trail design into the Hilltop Drive Burn Dump remediation project.

The presentation of this award also provides an excellent opportunity to once again express appreciation to BAS for its extraordinary effort in working with City of Redding and Redding Redevelopment Agency staff on the numerous design revisions both before and during project construction. It was a pleasure working with BAS on this project. Congratulations on a job well done.

Sincerely,



Kurt Starman
Executive Director





**COUNTY OF ORANGE
HEALTH CARE AGENCY**

**REGULATORY HEALTH SERVICES
ENVIRONMENTAL HEALTH**



**JULIETTE A. POULSON, RN, MN
DIRECTOR**

**MIKE SPURGEON
DEPUTY AGENCY DIRECTOR
REGULATORY HEALTH SERVICES**

**STEVEN K. WONG, REHS, MPH
DIRECTOR
ENVIRONMENTAL HEALTH**

**MAILING ADDRESS:
2009 EAST EDINGER AVENUE
SANTA ANA, CA 92705-4720**

**TELEPHONE: (714) 667-3600
FAX: (714) 972-0749**

E-MAIL: environhealth@hca.co.orange.ca.us

March 7, 2002

To Whom It May Concern:

We have had the opportunity to work with Bryan A. Stirrat Associates over the last ten years on a number of methane migration control projects. This has included resolution of methane migration issues at the Newport Terrace condominium complex in Newport Beach and Bettencourt Park in the City of Cerritos.

Throughout these and other projects BAS has exhibited an outstanding level of professionalism, technical expertise, and versatility in addressing complex environmental issues that pose hazards to public health and safety. BAS has been able to consistently bring sites exhibiting significant methane migration problems into full compliance with current regulatory standards. Their responsiveness and willingness to go the extra mile to understand and address our concerns as a regulatory agency has been extremely helpful in resolving areas of environmental concern and in bringing projects to a successful conclusion.

We continue to look forward to working with BAS in the future, and would recommend them for any project involving problematic landfill and methane gas migration issues.

Respectfully yours,


Patricia Henshaw, REHS
Supervising Hazardous Waste Specialist
Solid Waste Local Enforcement Agency
Environmental Health

DEPARTMENT OF PUBLIC WORKS

FLOOD CONTROL • GIMS • REGIONAL PARKS • SOLID WASTE • SURVEYOR • TRANSPORTATION



COUNTY OF SAN BERNARDINO
ECONOMIC DEVELOPMENT
AND PUBLIC SERVICES GROUP

SOLID WASTE MANAGEMENT DIVISION

222 West Hospitality Lane, Second Floor • San Bernardino, CA 92415-0017
(909) 386-8722 • Fax (909) 386-8786

KEN A. MILLER
Director of Public Works

GERRY NEWCOMBE
Solid Waste Division Manager

June 14, 2001

Mr. Ghassan Andraos
Bryan A. Stirrat & Associates
1360 Valley Vista Drive
Diamond Bar, California 91765

RE: LETTER OF RECOMMENDATION - BRYAN A. STIRRAT & ASSOCIATES

Dear Ghassan:

The County of San Bernardino Solid Waste Management Division (SWMD) is pleased to provide this letter of recommendation to Bryan A. Stirrat & Associates (BAS), in recognition of BAS' support in the development of the landfill gas control systems at the SWMD's Valley landfill sites.

In 1998, BAS provided extensive permitting, design, and construction support during upgrades to the landfill gas extraction and treatment systems at the Colton, Mid-Valley, Milliken, and San Timoteo Sanitary Landfills. This involved permitting, design, and installation of additional flares, blowers, piping, and condensate injection systems at four separate landfill sites. The project was conducted under an accelerated schedule to meet the requirements mandated by the alternative energy tax credit program.

The SWMD is extremely satisfied with the technical expertise, quality of work, and versatility exhibited by BAS during this complex project. BAS' responsiveness, professionalism, enthusiasm, and willingness to go the extra mile to meet our needs contributed greatly to the timely and successful completion of this project.

We look forward to continuing our working relationship with you, and we would recommend your firm for any future landfill gas or solid waste related projects.

Sincerely,

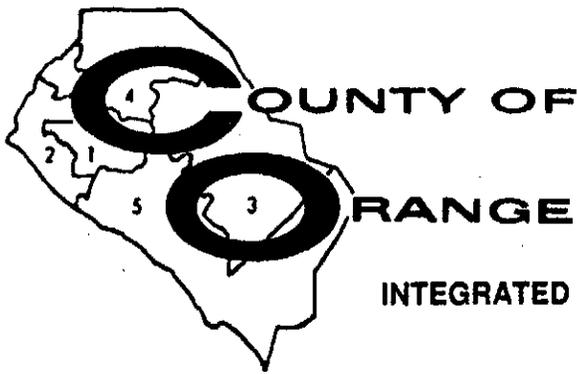
A large black rectangular redaction box covering the signature of Arthur L. Rivera.

Arthur L. Rivera, P.E.
Chief of Engineering

ALR: js

WILLIAM H. RANDOLPH
County Administrative Officer
JOHN GOSS
Assistant County Administrator
Economic Development and

Board of Supervisors
BILL POSTMUS First District DENNIS HANSBERGER Third District
JON D. MIKELS Second District FRED AGUIAR Fourth District
JERRY EAVES Fifth District



VICKI L. WILSON
Director

INTEGRATED WASTE MANAGEMENT DEPARTMENT

320 N. Flower Street, Suite 400
Santa Ana, California 92703
(714) 834-4000
FAX (714) 834-4001

August 21, 1998

Bryan A. Stirrat, Principal
Bryan A. Stirrat & Associates
1360 Valley Vista Drive
Diamond Bar, CA 91765

**SUBJECT: PRIMA DESHECHA LANDFILL - PHASE A MASS EXCAVATION PROJECT
SUPERIOR PERFORMANCE OF BAS CONSTRUCTION MANAGER**

Dear Bryan:

I would like to take this opportunity to commend BAS on the excellent Construction Management services provided by BAS's Rich Huffmire during the past year, during the execution of the Phase A Mass Excavation project at Prima Landfill.

Rich has proved himself to be an excellent Construction Manager, with extensive experience in all aspects of project development and execution. His management of the mass excavation project enabled the project to be completed on schedule and within the budget, in spite of a very difficult winter season. Considerable savings in time and money can be attributed in large part to his management knowledge and efforts.

In addition, Rich's relaxed method of operation and sense of fairness resulted in excellent relations with the construction contractor and County staff, and defused any potential conflicts with contractor R. E. Monks. We feel sure that these qualities will be applied to the on-going contract with C. W. Poss, Inc., and lead this project to the same satisfactory completion. It is a pleasure to work with Rich.

Sincerely,


Dick Harabedian
Prima Site Manager

cc: Rich Huffmire
Ray Douglass



AUG 25 1998



EVIDENCE OF GENERAL ENGINEERING LICENSE



State of California

Contractors State License Board

Pursuant to Chapter 9 of Division 3 of the Business and Professions Code and the Rules and Regulations of the Contractors State License Board, the Registrar of Contractors does hereby issue this license to:

BRYAN A STIRRAT & ASSOCIATES

to engage in the business or act in the capacity of a contractor in the following classification(s):

A - General Engineering Contractor

Witness my hand and seal this day,

August 10, 1989

**Issued June 28, 1989
CERTIFIED COPY**

Signature of Licensee

Signature of License Qualifier

This license is the property of the Registrar of Contractors, is not transferable, and shall be returned to the Registrar upon demand when suspended, revoked, or invalidated for any reason. It becomes void if not renewed.

Registrar of Contractors

572017

License Number





State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE



License Number **572017** Entry **CORP**
Business Name **BRYAN A STIRRAT & ASSOCIATES**

Classification(s) **A HAZ**

Expiration Date **06/30/2007**



STATE OF CALIFORNIA
STATE AND CONSUMER SERVICES AGENCY

CONTRACTORS STATE LICENSE BOARD



Building Quality

HAZARDOUS SUBSTANCES REMOVAL AND REMEDIAL ACTIONS CERTIFICATION

Pursuant to the provisions of Section 7058.7 of the Business and Professions Code, the Registrar of Contractors does hereby certify that the following qualifying person has successfully completed the hazardous substances removal and remedial actions examination.

Qualifier: BRYAN A STIRRAT

License No.: 572017

Business Name: BRYAN A STIRRAT & ASSOCIATES INC



WITNESS my hand and official seal this
13TH day of DECEMBER 1995

Registrar of Contractors

13L-36 (12/91)

This certification is the property of the Registrar of Contractors. It is not transferable, and shall be returned to the Registrar upon demand when suspended, revoked, or invalidated for any reason.

A 6792

STATE OF CALIFORNIA

Contractors State License Board

Pursuant to Chapter 9 of Division 3 of the Business and Professions Code and the Rules and Regulations of the Contractors State License Board, the Registrar of Contractors does hereby issue this license to:

BAS CONSTRUCTION, LP A CALIFORNIA LIMITED PARTNERSHIP



to engage in the business of a contractor in the following classification(s):

A - GENERAL ENGINEERING CONTRACTOR (WELDRING/WATER)

Witness my hand and seal this day,
April 20, 2005

Issued January 20, 2005

SIGNATURE OF LICENSEE

SIGNATURE OF LICENSE QUALIFIER

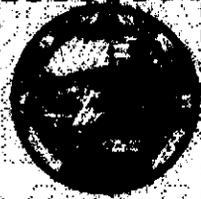

Stephen P. Sands
Registrar of Contractors

853309

License Number

This license is the property of the Registrar of Contractors, is not transferable, and shall be returned to the Registrar upon demand when suspended, revoked, or invalidated for any reason. It becomes void if not renewed.

Board for Geologists and Geophysicists
2525 Capitol Oaks Drive, Suite 308A
Sacramento, CA 95833
916-263-2113



CERTIFIED ENGINEERING GEOLOGIST

LICENSE NO. EG 2142

EXPIRATION 08/31/07

JOHN MICHAEL HOWER
23977 NECTAR WAY
RANONA CA 92065

Signature

DATE 07/31/07

RECEIPT NO.

17400084



APPENDIX C

PROFESSIONAL ENGINEER AND REGISTERED GEOLOGIST LICENSES





CALIFORNIA
Board for Professional
Engineers & Land Surveyors
2535 Capitol Oaks Drive - Suite 300
Sacramento, CA 95833-2944
(916) 263-2222



CIVIL ENGINEER

LICENSE NO.
C 22631

EXPIRATION
12/31/2007

BRYAN ALEXANDER STIRRAT

Remove your new pocket license from the receipt portion and carry it with you at all times.

Board for Geologists and Geophysicists
2535 Capitol Oaks Drive, Suite 300A
Sacramento, CA 95833
916 263-2113

06/24/05
06/24/05

JUL 5 2005

IMPORTANT

CUT ON
DOTTED LINE

State of California
Department of
Consumer
Affairs
Board for Geologists and Geophysicists
2535 Capitol Oaks Drive, Suite 300A
Sacramento, CA 95833
916 263-2113



CUT ON
DOTTED LINE

LICENSE NO. 3653
PROFESSIONAL GEOLOGIST
GARY LEE LASS
1360 VALLEY VISTA
DIAMOND BAR CA 91765

EXPIRATION
06/30/07

1. Please include your license no. on any correspondence to this office.
2. Notify the Board of any name or address change in writing.
3. Report any loss immediately in writing to the Board.
4. Please sign and carry the pocket license with you.
GARY LEE LASS

Signature
PGGEO 02/28/05

RECEIPT NO.
16400013

LICENSE NO. 3653
EXPIRATION DATE 06/30/07
RECEIPT NO. 16400013

This is your RECEIPT. Please save for your records.

Remove your new pocket license from the receipt portion and carry it with you at all times.

Board for Geologists and Geophysicists
2535 Capitol Oaks Drive, Suite 300A
Sacramento, CA 95833
916 263-2113

06/24/05
06/24/05

JUL 5 2005

IMPORTANT

CUT ON
DOTTED LINE

Board for Geologists and Geophysicists
2535 Capitol Oaks Drive, Suite 300A
Sacramento, CA 95833
916 263-2113



CUT ON
DOTTED LINE

CERTIFIED ENGINEERING GEOLOGIST
LICENSE NO. EG 1093
GARY LEE LASS
1360 VALLEY VISTA
DIAMOND BAR CA 91765

EXPIRATION 06/30/07

1. Please include your license no. on any correspondence to this office.
2. Notify the Board of any name or address change in writing.
3. Report any loss immediately in writing to the Board.
4. Please sign and carry the pocket license with you.
GARY LEE LASS

Signature
PGGEG 12/31/00

RECEIPT NO.
16400015

LICENSE NO. EG 1093
EXPIRATION DATE 06/30/07
RECEIPT NO. 16400015

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Remove your new pocket license from the receipt portion and carry it with you at all times.

Board for Geologists and Geophysicists
2535 Capitol Oaks Drive, Suite 300A
Sacramento, CA 95833
916 263-2113

06/24/05
06/24/05

JUL 5 2005

IMPORTANT

CUT ON
DOTTED LINE

Board for Geologists and Geophysicists
2535 Capitol Oaks Drive, Suite 300A
Sacramento, CA 95833
916 263-2113



CUT ON
DOTTED LINE

CERTIFIED HYDROGEOLOGIST
LICENSE NO. HG 18
GARY L. LASS
1360 VALLEY VISTA
DIAMOND BAR CA 91765

EXPIRATION 06/30/07

1. Please include your license no. on any correspondence to this office.
2. Notify the Board of any name or address change in writing.
3. Report any loss immediately in writing to the Board.
4. Please sign and carry the pocket license with you.
GARY L. LASS

Signature
PGGHG 12/31/00

RECEIPT NO.
16400014

LICENSE NO. HG 18
EXPIRATION DATE 06/30/07
RECEIPT NO. 16400014

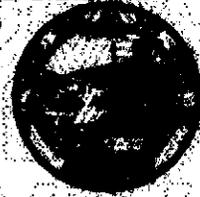
This is your RECEIPT. Please save for your records.

Board for Geologists and Geophysicists

2525 Capitol Oaks Drive, Suite 308A

Sacramento, CA 95833

916-263-2113



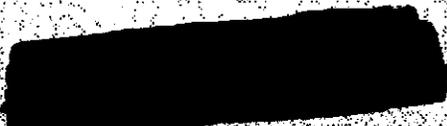
CERTIFIED ENGINEERING GEOLOGIST

LICENSE NO. BG 2142

EXPIRATION 08/31/07

JOHN MICHAEL HOWER
23977 NECTAR WAY
RANONA CA 92065

Signature



RECEIPT NO.

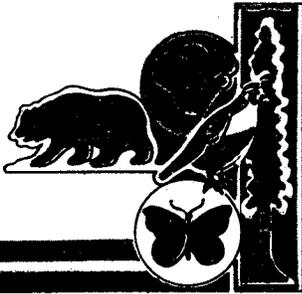
1740004



APPENDIX D

EVIDENCE OF
CALIFORNIA BUSINESS LICENSE





State
of
California

OFFICE OF THE SECRETARY OF STATE

I, *MARCH FONG EU*, Secretary of State of the State of California, hereby certify:

That the annexed transcript has been compared with the record on file in this office, of which it purports to be a copy, and that same is full, true and correct.

IN WITNESS WHEREOF, I execute
this certificate and affix the Great
Seal of the State of California this

JUL 29 1985



March Fong Eu

Secretary of State

1346576

ENDORSED
FILED

In the office of the Secretary of State
of the State of California

JUL 29 1985

MARCH FONG EU, Secretary of State
Carmelle M. Guy
Deputy

ARTICLES OF INCORPORATION

OF

BRYAN A. STIRRAT & ASSOCIATES, INC.

ONE; The name of this corporation is BRYAN A. STIRRAT & ASSOCIATES, INC..

TWO: The purpose of this corporation is to engage in any lawful act or activity for which a corporation may be organized under the General Corporation Law of California other than the banking business, the trust company business, or the practice of a profession permitted to be incorporated by the California Corporations Code.

THREE: The name and address in this state of the corporation's initial agent for service of process is Thomas E. Bandy, 20709 Colima Road, Suite 101, Walnut, California 91789.

FOUR: The total number of shares which the corporation is authorized to issue is 100,000.

Dated: July 25, 1985

[REDACTED]

THOMAS E. BANDY, Incorporator

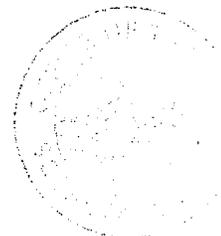
I declare that I am the person who executed the above Articles of Incorporation, and such is my act and deed.

[REDACTED]

THOMAS E. BANDY

State of California

SECRETARY OF STATE



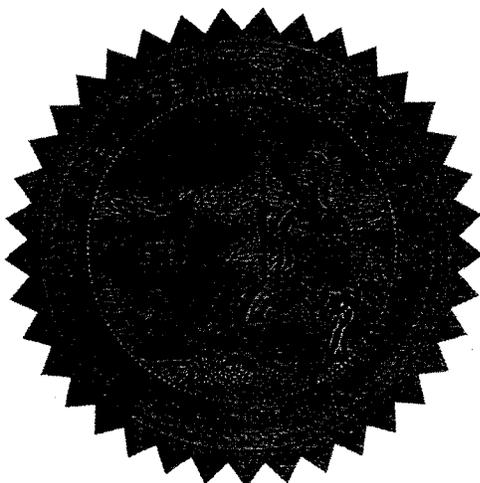
E
2 pages

I, *BILL JONES*, Secretary of State of the State of California, hereby certify:

That the attached transcript has been compared with the record on file in this office, of which it purports to be a copy, and that it is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this

FEB 25 1998



Bill Jones

Secretary of State

**AMENDED AND RESTATED
ARTICLES OF INCORPORATION**ENDORSED - FILED
IN THE OFFICE OF THE
SECRETARY OF STATE
OF THE STATE OF CALIFORNIA

FEB 23 1998

The undersigned certify that:

BILL JONES, SECRETARY OF STATE

1. They are the president and secretary, respectively, of BRYAN A. STIRRAT & ASSOCIATES, INC., a California corporation.
2. The Articles of Incorporation of this corporation are amended and restated to read in their entirety as follows:

"I

The name of this corporation is BRYAN A. STIRRAT & ASSOCIATES.

II

The purpose of this corporation is to engage in any lawful act or activity for which a corporation may be organized under the California General Corporation Law other than the banking business, the trust company business or the practice of a profession permitted to be incorporated by the California Corporations Code.

III

This corporation is authorized to issue only one class of shares of stock and such class shall be designated as "Common Stock." The total number of shares of Common Stock which this corporation is authorized to issue is One Hundred Thousand (100,000).

IV

The liability of the directors of this corporation for monetary damages shall be eliminated to the fullest extent permissible under California law.

V

This corporation is authorized to provide indemnification of agents, as that term is defined in Section 317 of the California Corporations Code, in excess of that expressly permitted by said Section 317, for breach of duty to the corporation and its shareholders, under any bylaw, agreement, vote of shareholders or disinterested directors or otherwise, to the fullest extent such indemnification may be authorized hereby pursuant to

paragraph (11) of subdivision (a) of Section 204 of the California Corporations Code."

3. The foregoing Amendment and Restatement of Articles of Incorporation has been duly approved by the Board of Directors.

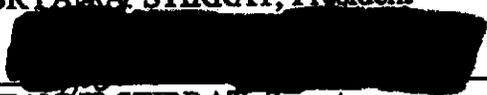
4. The foregoing Amendment and Restatement of Articles of Incorporation has been duly approved by the required vote of shareholders in accordance with Section 902, California Corporations Code. The total number of outstanding shares of the corporation is 1,000. The number of shares voting in favor of the amendment equaled or exceeded the vote required. The percentage vote required was more than 50%.

We further declare under penalty of perjury under the laws of the State of California that the matters set forth in this Certificate are true and correct of our own knowledge.

DATE: Dec, 24, 1997



BRYANA STIRRAT, President



JEANNE STIRRAT, Secretary





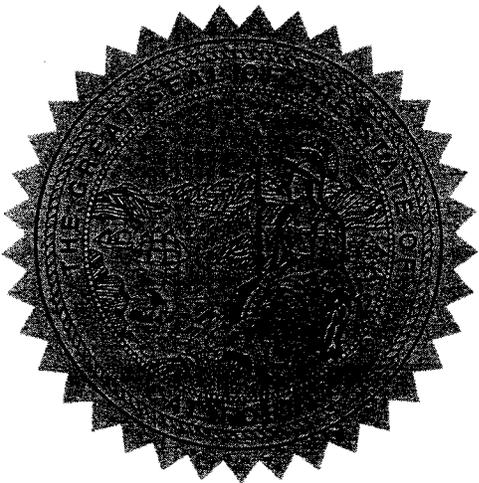
[Handwritten initials]

SECRETARY OF STATE

I, *BILL JONES*, Secretary of State of the State of California, hereby certify:

That the attached transcript of 1 page(s) has been compared with the record on file in this office, of which it purports to be a copy, and that it is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this day of



Bill Jones

Secretary of State

A0522607

ENDORSED - FILED
IN THE OFFICE OF THE
SECRETARY OF STATE
OF THE STATE OF CALIFORNIA

MAR 24 1999

BILL JONES, SECRETARY OF STATE

**CERTIFICATE OF AMENDMENT OF
AMENDED AND RESTATED
ARTICLES OF INCORPORATION**

The undersigned certify that:

1. They are the president and secretary, respectively, of BRYAN A. STIRRAT & ASSOCIATES, a California corporation.

2. The Amended and Restated Articles of Incorporation of this corporation are amended by amending Article III to read in its entirety as follows:

"III

This corporation is authorized to issue only one class of shares of stock and such class shall be designated as "Common Stock." The total number of shares of Common Stock which this corporation is authorized to issue is One Hundred Thousand (100,000). Upon amendment of this article, each outstanding share is split into eight (8) shares."

3. The foregoing amendment has been duly approved by the Board of Directors.

4. The foregoing amendment was one which may be adopted with approval of the Board of Directors alone, because the foregoing amendment is solely to effectuate a stock split and Section 902(c) of the California Corporations Code only requires approval of the Board of Directors in such circumstances.

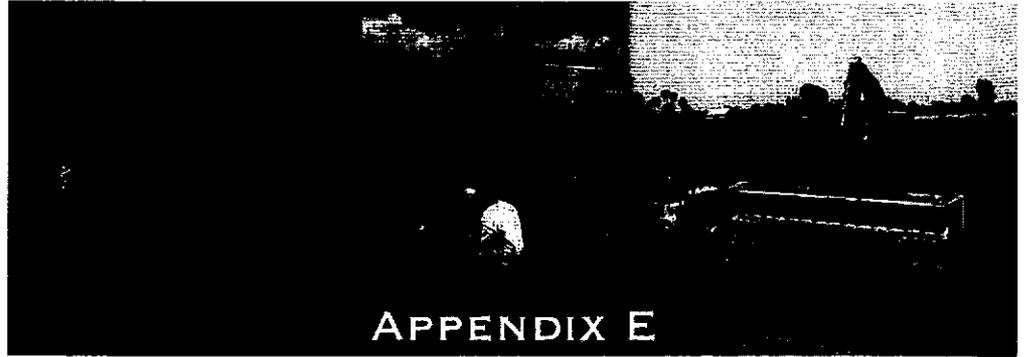
We further declare under penalty of perjury under the laws of the State of California that the matters set forth in this Certificate are true and correct of our own knowledge.

DATE: January 21, 1999

[REDACTED]
BRYAN A. STIRRAT, President

[REDACTED]
JEANNE STIRRAT, Secretary



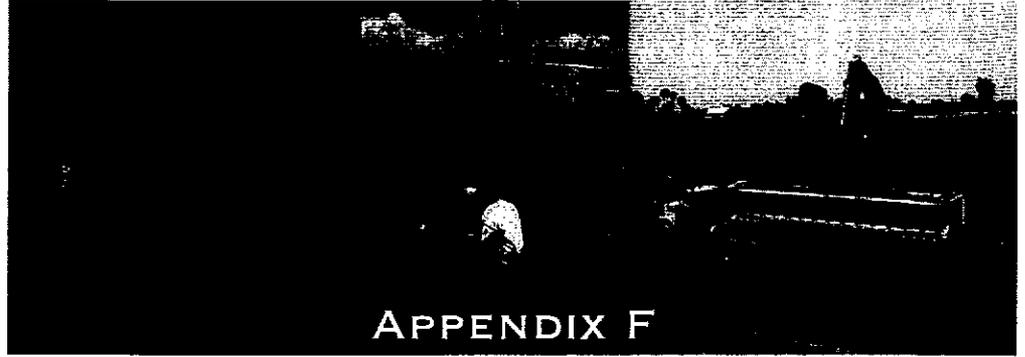


APPENDIX E

NOTARIZED STATEMENT FROM
FINANCIAL INSTITUTION

*This section
has been
removed -*





APPENDIX F

FINANCIAL STATEMENTS

The financial information contained in this Appendix is confidential. BAS respectfully requests that this information be kept confidential and not be made available for public inspection.

*This section has
been removed.*





APPENDIX G

SBE / DVBE PARTICIPATION
DOCUMENTATION



**CERTIFICATION OF
SMALL BUSINESS/DISABLED VETERAN BUSINESS ENTERPRISE (DVBE)
REQUIREMENTS**

The undersigned acknowledges that he has read all of the requirements set forth in the Request for Qualifications and, if awarded this Agreement, he will comply with the State's Small Business/DVBE requirements or make good faith efforts to meet these goals.

I certify under penalty of perjury that the foregoing is true and correct. This certification is made under the laws of the State of California.

Bryan A. Stirrat & Associates

Name of Organization

Diamond Bar, California

Location where signed



Signature of Authorized Representative

Ira R. Snyder, Sr. Vice President

Printed Name and Title

1/10/06

Date

SMALL BUSINESS/DISABLED VETERAN BUSINESS ENTERPRISE (DVBE) PARTICIPATION SUMMARY							
MARK ONE FOR EACH FIRM USED			NAME OF FIRM	NATURE OF WORK	TOTAL AMOUNT OF WORK (Mark one for each firm used)		IS CERTIFICATION FORM ATTACHED?
PRIME BIDDER	SUBCONTRACTOR	SUPPLIER			SMALL	DVBE	
					\$	\$	
					\$	\$	
					\$	\$	
					\$	\$	
					\$	\$	
					\$	\$	
					\$	\$	
					\$	\$	

The appropriate certification letter issued by the Office of Small Business Certification and Resources must be attached for each small and DVBE business used.

Please Note: This form is only required at the time of SOQ submittal if the prime contractor has identified sub-contractors to be used during the course of the agreement or if the prime contractor is certified as a small or disabled veteran business enterprise.



PROCUREMENT DIVISION

Office of Small Business and DVBE Certification

707 Third Street, 1st Floor, Room 400 * PO Box 989052

West Sacramento, California 95798-9052 * (800) 559-5529

SB APP 20050413

April 13, 2005

REF# 0012845
ULTRASYSTEMS ENVIRONMENTAL INCORPORATED
100 PACIFICA STE 250
IRVINE CA 92618-7443

RECEIVED
APR 16 2005
ULTRASYSTEMS
ENVIRONMENTAL

Dear Business Person:

Congratulations on your certified small business status with the State of California. Your certification entitles you to benefits under the state's Small Business Participation Program within state contracting, including a five percent bidding preference and special provisions under the Prompt Payment Act.

Certification period

Your certification period for each business type is:

Industry

SERVICE

From

04/06/2005

To

04/30/2007



Annual Submission Requirement

To maintain your certified status, you must annually submit to the Office of Small Business and DVBE Certification (OSDC), proof of annual receipts and proof of employees for your firm and each of your affiliates (if any).

Proof of Annual Receipts

Submit to OSDC, a copy of your firm's and any affiliate firm's ENTIRE federal tax return each year following your certification. Include ALL accompanying schedules, forms, statements, and any other support documents filed with that specific tax return.

If you request a tax filing extension with the Internal Revenue Service, submit to our office a copy of the extension form. When your tax returns are filed, submit a copy of the entire federal tax return to our office.

Proof of Employees

If you have employees whose taxable wages are reported to the California Employment Development Department (EDD) on a quarterly basis, you must annually submit to our office along with your proof of annual receipts, proof of employees for your firm and any affiliates.

We will accept a copy of the EDD's "Quarterly Wage and Withholding Report" (Form DE6) or other format accepted by the EDD. Your employee documents must cover the same four quarters as the tax return you submit for your proof of annual receipts.

If you have out-of-state employees, submit the employee documentation comparable to EDD's "Quarterly Wage and Withholding Report" for the same four-quarter period.

Maintain Your Online Certified Firm Profile



PROCUREMENT DIVISION

Office of Small Business and DVBE Certification

707 Third Street, 1st Floor, Room 400 • PO Box 989052

West Sacramento, California 95798-9052 • (800) 559-5529

SB SAPP 20050714

July 14, 2005

Supersedes SUPERSEDE APPROVAL Letter Dated 02/05/2003

REF# 0001025
ALPHA ANALYTICAL LABORATORIES INC
PO BOX 1508
UKIAH CA 95482

Dear Business Person:

Congratulations on your certified small business status with the State of California. Your certification entitles you to benefits under the state's Small Business Participation Program within state contracting, including a five percent bidding preference and special provisions under the Prompt Payment Act.

Certification period

Your certification period for each business type is:

<u>Industry</u>	<u>From</u>	<u>To</u>
SERVICE	09/12/2002	03/31/2006

Annual Submission Requirement

To maintain your certified status, you must annually submit to the Office of Small Business and DVBE Certification (OSDC), proof of annual receipts and proof of employees for your firm and each of your affiliates (if any).

Proof of Annual Receipts

Submit to OSDC, a copy of your firm's and any affiliate firm's ENTIRE federal tax return each year following your certification. Include ALL accompanying schedules, forms, statements, and any other support documents filed with that specific tax return.

If you request a tax filing extension with the Internal Revenue Service, submit to our office a copy of the extension form. When your tax returns are filed, submit a copy of the entire federal tax return to our office.

Proof of Employees

If you have employees whose taxable wages are reported to the California Employment Development Department (EDD) on a quarterly basis, you must annually submit to our office along with your proof of annual receipts, proof of employees for your firm and any affiliates.

We will accept a copy of the EDD's "Quarterly Wage and Withholding Report" (Form DE6) or other format accepted by the EDD. Your employee documents must cover the same four quarters as the tax return you submit for your proof of annual receipts.

If you have out-of-state employees, submit the employee documentation comparable to EDD's "Quarterly Wage and Withholding Report" for the same four-quarter period.

Maintain Your Online Certified Firm Profile



PROCUREMENT DIVISION

Office of Small Business and DVBE Certification

707 Third Street, 1st Floor, Room 400 * PO Box 989052

West Sacramento, California 95798-9052 * (800) 559-5529

DVBE APP 20051011

October 11, 2005

REF# 0016538
CHAMBERS GROUP INC
17671 COWAN AVE STE 100
IRVINE CA 92614

Dear Business Person:

Congratulations on your certified disabled veteran business enterprise (DVBE) status with the State of California. Your certification entitles you to benefits under the state's DVBE Participation Program within state contracting, including the three percent DVBE participation goal for overall state contract dollars.

Certification period

Your certification period for each business type is:

Industry

SERVICE



Annual Submission Requirement

All DVBEs must submit to the Office of Small Business and DVBE Certification (OSDC) each postcertification tax year, a complete copy of your business' federal income tax return, including extensions, within 90 days of the tax return's filing due date. If your business is a partnership, each partner must also submit a complete copy of his or her individual tax return. Additionally, if you are a DVBE that is not a sole proprietorship and your firm rents equipment to the state, you must also include in your submittal a complete copy of the personal federal income tax returns for each of your disabled veteran owners, including extensions, and within 90 days of the individual's tax return filing due date. Failure to comply will result in the suspension of your DVBE status and possible decertification, and it shall prohibit your business from participating in any state contract until all requirements are met.

Maintained Your Online Certified Firm Profile

A secure access feature on our website enables you to maintain certain company profile information, including customizable keywords to best describe your business specialties with. Details about the Certified Firm Profile and your secure logon information are available on the final page of this letter. Please keep your logon information page in a secure place and DO NOT share it with anyone or include it with any of your bid documents or submittals.

Reporting Business Changes

You must notify OSDC of all business changes or your certification status will be subject to revocation. The enclosed "Certification Information Change" form identifies specific items that may be reported using the change form and it identifies other changes that require a new certification application submittal.

Proof of Eligibility

Maintain this original certification letter for future business needs. To demonstrate your firm's DVBE eligibility,

include a copy of this letter in your state contract bid submittals.

Prior to contract award, agencies will assure the vendor is in compliance with Public Contract Code, Section 10410 et seq. addressing conflict of interest for state officers, state employees or former state employees.

Certification Renewal

A renewal application will be mailed to you prior to the expiration of your DVBE certification. If you do not receive an application, please call us so that you may timely renew your certification.

If you have any questions, please contact me at 800.559.5529 (Procurement Division receptionist) or 916.375.4940 (OSDC receptionist), by e-mail louise.kurashige@dgs.ca.gov, or by fax 916.375.4950. The Procurement Division oversees many programs to further state contracting participation. For more information regarding these programs, visit our website at www.pd.dgs.ca.gov/smbus, or visit the Procurement Division's website at www.dgs.ca.gov/pd.

Sincerely,



Louise Kurashige
Certification Officer
Office of Small Business and DVBE Certification

**Standard Industrial Classification (SIC) Code(s)
Certification Approval Attachment**

You selected the following Standard Industrial Classification (SIC) codes and/or contractor's license classifications to describe your firm's business:

***Construction firms are classified by their California contractor's license classification(s).**

<u>Industry</u>	<u>4-Digit SIC Code*</u>	<u>SIC Code Description</u>
SERVICE	8711	Engineering services
	8748	Business consulting services, n.e.c.
	8999	Services, n.e.c.



APPENDIX H

GOVERNMENT CODE
SECTION 87100 FORM



COMPLIANCE WITH GOVERNMENT CODE, SECTION 87100

Government Code, Section 87100 provides: No public official at any level of state or local government will make, participate in making or in any way attempt to use his official position to influence a governmental decision in which he knows or has reason to know he or she has a financial interest. Contractors that provide recommendations and advice that may influence decision-making are required to comply with the disclosure requirements of the conflict of interest laws promulgated under the Political Reform Act.

The prospective contractors and subcontractors, if any, shall disclose any present or prior (within the last two years) financial, business, or other relationship with the CIWMB. These disclosures will be made under penalty of perjury.

In addition to the disclosures required above, list current clients subject to any discretionary action by the CIWMB, or who may have a financial interest in the policies and programs of the CIWMB, and describe any current or planned work activities the contractor is performing for such clients. These disclosures will be made under penalty of perjury. The Proposer and its subcontractors (if any) will be required to file statements of economic interests with the CIWMB upon award of the Contract. The CIWMB will keep copies of the statements of economic interest and forward the originals to the Fair Political Practices Commission.

CURRENT CLIENTS MEETING ABOVE CRITERIA

<u>Client Name</u>	<u>Contract</u>	<u>Address</u>	<u>Phone</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

A determination by the CIWMB that a conflict of interest exists as a result of the disclosed relationships will be grounds for disqualifying a Proposer.

Compliance with Government Code, Section 87100

In compliance with Government Code, Section 87100, requiring disclosure of any present or prior (within the last two years) financial, business, or other relationship with the Board, BAS notes that it currently has two contracts with the CIWMB:

- Contract Number IWM-C2001 – Solid Waste Cleanup Engineering Services Contract
- Contract Number IWM 03031 – Oversight of Civil Engineering Applications Using Waste Tires / Incentive Contract

IWMB Attachment B also requires disclosure of any current clients which may be subject to discretionary action of the Board, or who may have a financial interest in the policies and programs of the Board. The BAS Team provides consulting services almost exclusively to the solid waste industry. As such, many of our clients would be subject to Board actions, regulations, programs, and decisions.

The attached Figure 1 has been included to reflect the BAS Team's current landfill projects and clients.

Figure 1: BAS Team Landfill Clients and Projects

Client	Contract	Client Address	Phone
AK Steel	Royal Blvd. Reclamation Site	10945 Reed Hartman Hwy, Suite 120, Cincinnati, OH 45242	513-425-5000
Allied Waste Industries	LFG Design Services	1145 W. Charter Way, Stockton, CA 95206	209-466-5192
Allied Waste Industries	Newby Island Landfill Cell Design	1146 W. Charter Way, Stockton, CA 95206	209-466-5193
Allied Waste Industries	San Diego Landfill Groundwater Monitoring	8514 Mast Boulevard, Santee, CA 92071	619-449-4053
Allied Waste Industries	Otay Landfill	8514 Mast Boulevard, Santee, CA 92071	619-449-4053
City of Anaheim	Westgate Center	201 S Anaheim Blvd., Suite 1003, Anaheim, CA 92805	714-765-4300
City of Bakersfield	Bakersfield Landfill	1501 Truxtun Ave, Bakersfield CA 93301	661-326-3114
City of Cerritos	Curti Dump	18125 Bloomfield Ave., Cerritos, CA 90703	562-916-1226
City of San Diego	LF Groundwater Monitoring	9601 Ridgehaven Court, Suite 310, San Diego, CA 92123	858-432-5035
City of San Diego	West Miramar Landfill	9601 Ridgehaven Court, Suite 310, San Diego, CA 92123	858-432-5035
City of Fresno	Old Snake Road Landfill	1331 Fulton Mall, Fresno, CA 93721	559-443-8490
City of San Bernardino	Waterman Landfill	300 North D Street, San Bernardino, CA 92418	909.384.5549
City of Santa Cruz	Santa Cruz Landfill	City Hall, 809 Center Street, Room 201, Santa Cruz, CA 95060	831-420-5427
County of Imperial	On Call Solid Waste Services	155 South 11th Street, El Centro, CA 92243	760-399-4462
County of Los Angeles	Peter Pitchess Landfill	293000 The Old Road, Saugus CA 90012	213-974-4528
County of Mendocino	On Call Solid Waste Services	501 Low Gap Road, Room 1010, Ukiah, CA 95482	707-463-4441
County of Orange	Centra Region LFG O&M	320 N Flower, Suite 400, Santa Ana, CA 92703	714-834-4000
County of Orange	Prima Deshecha Landfill	320 N Flower, Suite 400, Santa Ana, CA 92703	714-834-4000
County of Orange	Coyote Can. Landfill Groundwater Treat. O&M	321 N Flower, Suite 400, Santa Ana, CA 92703	714-834-4001
County of San Bernardino	Barstow Landfill	222 West Hospitality Lane, 2nd Floor, San Bernardino, CA 92408	909-386-8722
County of San Bernardino	LFG O&M Services	222 West Hospitality Lane, 2nd Floor, San Bernardino, CA 92408	909-386-8722
County of San Bernardino	Mid-Valley Landfill	222 West Hospitality Lane, 2nd Floor, San Bernardino, CA 92408	909-386-8722
County of San Bernardino	Milliken Landfill	222 West Hospitality Lane, 2nd Floor, San Bernardino, CA 92408	909-386-8722
County of San Bernardino	Victorville Landfill	222 West Hospitality Lane, 2nd Floor, San Bernardino, CA 92408	909-386-8722
County of Santa Barbara	On Call Regulatory Compliance Services	109 E. Victoria Street, Santa Barbara, CA 93101	805-882-3621
County of Santa Maria	Santa Maria Landfill	2065 E. Main St., Santa Maria CA 93454	805-925-0951
County of San Luis Obispo	Los Osos Landfill	1087 Santa Rosa Street, San Luis Obispo, CA 93408	805-781-5274
County of Tuolumne	On Call Solid Waste Services	2 South Green Street, Sonora, CA 95370	209-754-6043
Gregory Canyon LP	Gregory Canyon Landfill	212 N Cedros Avenue, Solano Beach, CA 92075	858-792-7661
Los Angeles Co. Sanitation Dist.	Mesquite Landfill	1955 Workman Mill Road, Whittier, CA 90607	562-908-4288
Republic Industries	Chiquita Canyon Landfill	4001 Vasco Road, Livermore CA 94550	925-447-0491
Waste Connections	Avenal Landfill	35 Iron Point Circle, Suite 200, Folsom, CA 95630	916-608-8200
Waste Management	Lancaster Landfill	600 E. Avenue F, Lancaster CA 93535	818-252-3147



PCC SECTION 10162 QUESTIONNAIRE

PCC SECTION 102851 STATEMENT

NON-COLLUSION STATEMENT



PUBLIC CONTRACT CODE SECTION 10162 - QUESTIONNAIRE

In accordance with Public Contract Code Section 10162, the Proposer shall complete, under penalty of perjury, the following questionnaire:

Has the Proposer, any officer of the Proposer, or any employee of the Proposer who has a proprietary interest in the Proposer, ever been disqualified, removed, or otherwise prevented from bidding on, or completing a federal, state or local government project because of a violation of law or safety regulation? If the answer is yes, attach an explanation.

Yes

No

PUBLIC CONTRACT CODE SECTION 10285.1 STATEMENT

In accordance with Public Contract Code Section 10285.1, Proposer shall complete, under penalty of perjury, the following statement:

Has the proposer been convicted within the preceding three years of any offenses referred to in Public Contract Code Section 10285.1, including any charge of fraud, bribery, collusion, conspiracy, or any other act in violation of any state or federal antitrust law in connection with the bidding upon, award of or performance of, any public works contract, as defined in Public Contract Code Section 1101, with any public entity as defined in Public Contract Code Section 1100, including the Regents of the University of California or the Trustees of the California State University? The term "proposer" is understood to include any partner, member officer, director, responsible officer, or responsible managing employee thereof, as referred to in Section 10285.1.

Yes

No

NONCOLLUSION AFFIDAVIT
 (Title 23 United States Code Section 112 and
 Public Contract Code Section 7106)

In accordance with Title 23, United States Code, Section 112, and Public Contract Code 7106 if federally funded, or Public Contract Code 7106 if state funded, the proposer declares that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the proposer has not directly or indirectly induced or solicited any other proposer to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any proposer or anyone else to put in a sham bid, or that anyone shall refrain from bidding; has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the proposer or any other proposer, or to fix any overhead, profit, or cost element of the bid price, or of that of any other proposer, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the proposer has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Note: The above Noncollusion Affidavit is part of the Proposal. Signing this Proposal on the signature portion thereof shall also constitute signature of the Noncollusion Affidavit. Proposers are cautioned that making a false certification may subject the certifier to criminal prosecution.

SIGNATURE:

 Signature of Authorized Representative

Ira R. Snyder, Senior Vice President

 Printed Name and Title



APPENDIX J

SAMPLE CONSTRUCTION MANAGEMENT
APPROACH





Appendix J: Standard BAS CM/CQA Approach

The following standard BAS CM/CQA approach would be modified to conform to the size and complexity of a particular project. All elements may not apply to all projects.

The success of any construction project is typically measured in three areas:

1. Was the project completed in compliance with the drawings and specifications?
2. Was it completed on time?
3. Was it completed within budget?

Attaining a favorable response to each of these questions requires extensive planning, coordination, and communication long before a construction project ever begins. To that end, the BAS Construction Managers (CM) shall implement a CM /QA/QC approach to establish the framework by which successful administration and implementation of a project will result, and positive answers to the above questions will be obtained.

The standard BAS CM/CQA approach is outlined in the following sections:

1. Schedule and staffing requirements
2. Management, organization, and communication
3. Constructibility review of proposed projects
4. Specifications, cost estimates, and construction document preparation
5. Project start-up
6. Monitoring of work in progress/compliance verification
7. Project documentation
8. Schedule and cost controls
9. Project close-out

SCHEDULE AND STAFFING REQUIREMENTS

Implementation of the BAS CM /QA/QC approach to a project, as well as the establishment of staffing requirements will be very dependent upon the projected construction schedule and activities at the site.

BAS will provide staffing appropriate for the number of specific projects underway at a given time and commensurate with the level of activity for the contractor(s).

MANAGEMENT, ORGANIZATION, AND COMMUNICATION

The BAS CM staff will be actively involved during the development of the SIR/SOW's. This provides them with a thorough understanding of the project requirements and the design intent, without a lost-time learning curve. As a result, response time is minimized, or in



some cases, eliminated when addressing contractor questions or requests for information (RFI's). When questions do arise, the BAS CM staff have direct access to design staff for a timely and accurate response.

The BAS CM will have overall responsibility for administration of the work outlined in the SIR/SOW. The CM will maintain communications with the designated IWMB project manager and keep IWMB informed as to the status of all aspects of the work. At the beginning of the project, the CM and the IWMB project manager will discuss and agree upon the distribution procedure of contract documentation, lines of authority, and other administrative issues. The BAS CM will not deviate from those procedures unless directed otherwise.

The CM will maintain direct communication with other BAS task managers responsible for planning, permitting, or design aspects of the work. Any work product produced by or through other project task managers that relates to or impacts work to be performed under a specific SIR/SOW will be directed to the CM.

It is recommended that all construction related communication and correspondence from contractors performing work under a SIR/SOW be directed to the CM, who will log the information and then distribute it to the appropriate parties.

The BAS CM will evaluate project schedules and the type of work being performed by the contractor. Based on that evaluation, sufficient BAS CM personnel will be assigned to monitor the contractor's operations. (e.g. additional staff may be required if HDPE or GCL installation were included as a portion of a project, or geotechnical testing were required).

The BAS CM will coordinate with other firms, agencies, and contractors as is required under the intent of the RFQ, and as requested by IWMB.

CONSTRUCTIBILITY REVIEW

The BAS CM will evaluate the plans and project specific specifications during the development stage of the project. In addition to assisting the design engineer with site specific issues or construction related concerns, this provides the CM team with an in-depth knowledge of the plans and the design intent well before construction activities begin.

The in-house constructibility review provides the benefit of two groups (the design group and the CM group) combining their knowledge of a site and a project approach to produce a set of Contract Documents that will result in an efficiently run and constructed project.

SPECIFICATIONS, COST ESTIMATION, AND CONSTRUCTION DOCUMENT PREPARATION

BAS CM and design staff are intimately familiar with IWMB standards, regulatory requirements, and State Standard Specifications. This knowledge translates into the efficient and timely development of SIR/SOW's, plans, and construction documents.



BAS cost estimators have extensive experience with the development of bid schedules and engineers estimates for environmental and landfill related projects.

PROJECT START-UP

Prior to work beginning on a project the CM will developed the format for all project files and acquired all pertinent project documents. Format of reports and decimation will be reviewed with IWMB's project manager. At a minimum project files will include:

- All contract documents, i.e., SIR/SOW's, General Conditions, Special Conditions, Technical Specifications, and QA/QC Requirements.
- Relative permits and requirements from local governments or regulatory agencies.
- Appropriate reference specifications, standards, and standard plans.
- Notice to Proceed and contract time accounting procedure and documentation.
- Equipment and material submittal log. (The SIR/SOW project specifications will be reviewed for submittal requirements and due dates will be established).
- Correspondence log.
- Progress payment format in compliance with IWMB.
- Project personnel and emergency phone numbers.
- Contract change order documentation and approval procedures.
- Daily construction report format. (BAS currently uses Expedition or preprinted daily report forms supplemented by GLA daily geotechnical reports or QA/QC reports).
- Required safety documentation and equipment.
- Project photographic log.
- Record drawing format.
- Progress meeting format.
- Pre-construction meeting format.

Prior to beginning work on a project, a pre-construction conference will be scheduled. The CM will prepare an agenda and review it with the IWMB project manager. At a minimum, the agenda will include the following:

- Introduction of project participants
- Project Health and Safety Issues
- Lines of communication
- Emergency notification procedures
- Submittal format
- Requests for Information
- Change Order/Extra Work (procedures and approvals)
- Progress Payments (schedule and procedures)
- Completion date, time extension procedures, and time accounting
- QA/QC, (review of project requirements)
- Project Schedule, milestones
- Special permit requirements
- Review of site specific concerns (plans and specifications)
- Survey requirements



The CM will conduct and document the pre-construction conference. Following the conference, the CM will prepare minutes of the meeting and will distribute draft copies to each attendee. Upon receipt and reconciliation of any comments, the CM will finalize the meeting minutes for distribution to the attendees.

MONITORING OF WORK IN PROGRESS/COMPLIANCE VERIFICATION

The first item on our list of ways by which a construction project is measured is “Was the project completed in compliance with the drawings and specifications?” It is well known and often stated that it doesn’t matter how well a project may have been designed, if it is not constructed properly.

The BAS CM staff consist of a core of skilled construction inspectors and QA/QC monitors who have worked together on numerous environmental, remediation, and landfill projects,

The inspection and QA/QC monitoring staff will be under the direction of the CM with additional technical support from the BAS Team engineering and design staff. The CM will evaluate the needs of specific projects based on the level of activities represented on the contractors schedule and as dictated by field conditions.

The BAS CM staff have been cross-trained in a variety of disciplines which provides for efficient monitoring when multiple activities are being undertaken by the contractor. As the contractors activities increase, or the critical nature of the work intensifies, the QA/QC staff will be adjusted accordingly to provide for an appropriate level of monitoring.

Understanding the importance and serious economic impacts of deficiencies or failures in an environmental or landfill construction project, the BAS CM will utilize their most qualified individuals for each specialized task..

The BAS CM and project inspectors and QA/QC monitors will provide detailed reports of all contractor activities. Of particular note will be any deviations from the project specifications or QA plan. All variances will be documented and will be maintained on a “cumulative punch” list until repair and/or remediation has been completed.

PROJECT DOCUMENTATION

Construction documentation provides not only a project history, but is quite often the basis for resolving many outstanding issues. Clarification or adjustment of payment limits, extra work and changed or unforeseen conditions, and ultimately, an evaluation of the completeness of the project, will all be dependent upon accurate construction documentation.

The BAS CM understands the importance of detailed documentation on all aspects of a construction project. On past projects, records that were developed and prepared by the BAS CM Team have been used to successfully resolve conflicts and mitigate potential



contractor claims. The BAS CM Team takes pride in observing high standards in the preparation of all construction documentation.

Outlined below is a brief description of typical documentation that would be maintained during a project:

Daily Construction Reports: A typical daily report is prepared on Primavera Expedition. Reports are to be finalized by the following day. The report will include the date, weather, a summary of the equipment working (and non-operating equipment), manpower, material deliveries, visitors to the site, and a narrative.

The narrative portion of the report will include sufficient information to convey to IWMB the scope of work that occurred on that day, and the locations in which the work occurred. Particular attention will be paid to changed or unforeseen conditions, deficiencies noted, and when corrective action is required. If earthwork operations or geosynthetic installations are underway, an additional daily report will be prepared by the geotechnical QA/QC monitor. The QA/QC report will outline and document all tests taken that day and will note any deficiencies.

All reports will be reviewed by the CM prior to distribution to appropriate parties.

QA/QC Summary: On a daily basis, QA/QC test results will be tabulated. Testing frequency will be monitored for potential negative trends and any required corrective action.

Cumulative Corrective Action File: A list will be maintained of all deficiencies and items requiring repair, removal, or remediation. As items are corrected they will be removed from the list. The contractor will be kept advised of the items requiring additional work. At the conclusion of the project, those items which have not been completed will be added to the punch list.

Work Force and Material Daily Reports: When "time and material" work has been authorized, or disputed work is taking place, the CM will keep a detailed summary of the manpower, equipment, and material being used in the operation. The report will be agreed upon by the CM and the Contractor, on a daily basis, and signed by each party. The signatures are verification of the labor, equipment, and material used in the operation, however, they do not constitute the approval, or authorization for extra work.

Contract Time Accounting: On a daily basis, the CM will make a determination as to whether or not the day is to be charged as a "contract day". At the end of each week, a Contract Time Summary shall be prepared and distributed to the Contractor and the IWMB, indicating recommended time extensions for inclement weather, change orders, or unforeseen conditions. The summary will reflect the adjusted contract completion date, and the remaining contract time. The summary will be reviewed at each weekly progress meeting.



Contract Change Orders: All change orders or contract modifications must be approved prior to beginning the work. Contract change orders will be based on either an extension of contract unit prices, an approved contractor estimate, or on a time and materials basis. Anticipated changes may be submitted on a Proposed Change Order form, or letter format. All change orders will be finalized on a separate Change Order document, approved by IWMB.

Progress Payments: Monthly progress payment applications will be prepared based on a schedule agreed upon by IWMB and the Contractor. Applications may be prepared on the standard BAS form (Excel), Expedition, or a form of the IWMB's preference. The CM will schedule a meeting with the Contractor to review the Contractor's estimated quantities, prior to preparing the payment application. Standard progress payment packages will include, Contractors Invoice, Application for Payment (contract summary and signature page), and Contractor's Detailed Monthly Application for Payment (summary of individual bid items status).

Submittals: Prior to work beginning on the project, the CM will determine the minimum submittal requirements for material and equipment as outlined in the Project Specifications. Anticipated due dates will be established, and each submittal will be reviewed for completeness. Submittals will then be distributed as indicated in the Specifications. Most submittals will require the approval of the Design Engineer.

Request for Information (RFI) and Design Clarification Log: The same format as outlined for tracking submittals will be implemented to track RFIs and Design Clarifications. All responses to RFIs and finalization of Design Clarifications will be reviewed and approved by the Design Engineer and, if applicable, the CQA Officer.

Weekly Progress Meeting Minutes: In addition to the above noted documentation, a weekly progress meeting will be conducted in which many of the above issues will be reviewed and documented.

At a minimum the following issues will be covered:

- Health and Safety issues.
- Amendments or corrections to previous weeks minutes.
- Contract time summary to date.
- Progress and schedule review (two week look ahead).
- Submittal review.
- Request for Information review.
- Review any out-of-scope or extra work occurring during the previous week. Any changed or unforeseen conditions that have come to the contractors attention since the previous week. (If required, separate resolution meetings will be scheduled to discuss and resolve specific issues).
- QA/QC review and discussion of issues.
- Task specific issues.
- Progress payment (if applicable).



The BAS CM will document all discussions at the progress meetings and will prepare meeting minutes for distribution to all attendees prior to the next scheduled meeting.

Photo Documentation: The BAS CM will document existing site conditions, prior to construction, with both 35 mm photographs and video taping. Through-out the construction process, the BAS CM will take additional photographs to document progress, note unusual or unforeseen conditions, and record events of interest. The photographs will be taken with a camera that will superimpose the date/time on the photograph. Two sets of the photographs will be made. During the project, progress reports will be submitted to IWMB that incorporate photographs from one of the sets. At the conclusion of a project, both sets of the photographs and the negatives will be submitted to IWMB

SCHEDULE AND COST CONTROL

The BAS CM, in conjunction with the design team will develop a preliminary schedule for all phases of a proposed construction project. Each contractor will be required to submit their proposed schedule during the pre-construction conference. The proposed schedule will be reviewed against the Engineers schedule for compliance with project milestones.

At each weekly progress meeting, contractors will be required to submit schedule updates and two week look ahead schedules. These schedule updates will be reviewed for compliance with the Master Schedule, and if necessary, appropriate changes will be made to the Master Schedule.

The BAS CM will confer with and advise the IWMB project manager regarding the status of any significant schedule issues.

Contractor construction estimates will have been evaluated and comparative spread sheets developed prior to beginning a project. The BAS CM will have developed tracking procedures for each major component of a project. As required, graphs may be developed to reflect various relationships such as time versus expenditure, quantity versus time, or quantity versus expenditure. The BAS CM Team has found such plots to be useful in graphically representing the status of a project.

All contract quantities for progress payments and final payment will be verified by the CM. Any change orders or modifications that require an adjustment of the total sum of the project will be documented and tracked. When extra work is authorized, all operations will be monitored and documented to verify compliance with the intent of the change order or work directive.

CONSTRUCTION CLOSE OUT

Project close-out procedures will begin well before the conclusion of a contract. The BAS CM will maintain a cumulative listing of project deficiencies and corrective action items.



Pre-final inspections will be implemented to develop project punch lists. QA/QC monitors will verify, and document, that all required modifications or repairs have been completed.

As part of the close-out procedure, the CM will review and verify final pay quantities for compliance with the bid schedule and any approved contract additions or deletions. Contract time summaries will be evaluated and the CM will endeavor to resolve any remaining contract time extension issues. Contract Change Orders and extra work items will be reviewed for completeness. If unresolved issues remain, the CM will schedule negotiation meetings with the contractor, and make every attempt to mitigate the item(s). All submittals will have been received by this time and the CM will verify receipt of any Operation and Maintenance Manuals, Manufacturers warranties, record drawings, or other required literature or documentation.

At the completion of the project close-out procedure, the CM will prepare a report detailing final conclusions that have been reached in regards to the above noted items. In addition, the CM will submit to the IWMB project manager all project photographic logs, and final as-built plans, and QA/QC reports. The final report will also include any recommendations that may be warranted, and the project certification.

CONCLUSION

As noted at the beginning of this CQA approach, the success of a construction project is typically measured in three ways:

1. Was the project completed in compliance with the drawings and specifications?
2. Was it completed on time?
3. Was it completed within the budget?

By implementing a detailed and comprehensive plan for CM and QA/QC as outlined above, the BAS CM has confidence that proposed projects under AB 2136 will be completed to the satisfaction of the IWMB and affirmative answers will be tendered for each question listed above.



RESUMES OF KEY TEAM MEMBERS

PRESENTED IN ALPHABETICAL ORDER



GREG ACOSTA, P.E.

Director of Environmental Services Division
Bryan A. Stirrat & Associates

Mr. Acosta is a registered Civil Engineer with more than 17 years experience in conducting Remedial Investigations, Feasibility Studies and Environmental Site Assessments, preparation of Remedial Action Plans and design and implementation of contaminated site remediations. Mr. Acosta has had extensive experience in the implementation and supervision of both site characterizations and cleanup activities.

SITE INVESTIGATION/REMEDIATION EXPERIENCE:

- ❑ **Nicholson Avenue Site Investigation.** Project Engineer conducting the investigation of an illegal disposal site located in the City of Long Beach. Work included the coordination of site surveys, waste sampling, asbestos sampling and report preparation for ultimate disposal of the waste.
- ❑ **Ford City Burn Dump Site.** Project Engineer performing an investigation to delineate the lateral extent of contamination of a former burn dump site in Ford City California. Work included development and implementation of a sampling plan and preparation of a report of findings for submittal to the California Integrated Waste Management Board.
- ❑ **Cajon Pass Landfill Fire Site.** Project Engineer directing the emergency investigation of emissions from a subsurface fire at an illegal landfill located in the Cajon Pass, north of San Bernardino California. Work included coordination with the California Integrated Waste Management Board and local fire officials; development of a sampling plan; collection of point source samples from within the landfill and at the landfill surface; analyses of samples for VOCs, metals, carbon monoxide, PAHs, dioxins, furans, and PCBs; and preparation of a report of findings for submittal to the Board.
- ❑ **Milliken Landfill Groundwater Pump and Treat System.** Project design engineer during construction of the groundwater pump and treat system at the Milliken Landfill. Work included review of submittals, field design of system elements, preparation of an O&M manual, system start-up and shakedown, coordination of system operation and sampling, and coordination with the project construction manager and client.
- ❑ **Mid Valley Landfill Groundwater Pump and Treat System.** Project Manager in charge of the design of the upgrade and expansion of the groundwater extraction, treatment and re-injection system at the Mid Valley Landfill. The system expansion included installation of 16 groundwater extraction wells and 19 re-injection wells over a 3/4 mile point of compliance, installation of conveyance piping and controls for the new wells, upgrade of the air stripper treatment system components, upgrade of the electrical system and process controls and instrumentation. Work included evaluation of the existing treatment system and preparation of design drawings, specifications and bid documents for the expansion.
- ❑ **EPC Eastside Landfill.** Member of the project team preparing the remedial investigation and feasibility study for the oil field waste disposal site in Kern County. Responsibilities included, preparation of a focused risk evaluation for the site, assistance in preparation of the feasibility study, and coordination and supervision of groundwater monitoring and reporting program.

- ❑ **Crittenden Landfill.** Conducted subsurface investigations and performed engineering evaluations for contaminated areas adjacent to and part of the Vista and Crittenden Landfills in the City of Mountain View, California. This included investigations of areas used for agricultural purposes, former warehouse and vehicle fueling areas, former material processing areas, areas of previous unauthorized disposal, and an associated welding shop. Contaminants of concern included pesticide, petroleum and heavy metal contaminated soils. Potential remedial options evaluated included on-site and off-site treatment and/or disposal of 60,000 cubic yards of pesticide-contaminated soils, 50,000 cubic yards of petroleum contaminated soils and construction debris, and a variety of smaller areas of unauthorized disposal.
- ❑ **Royal Boulevard Land Reclamation Site.** Project Manager supervising and coordinating post-closure activities for the closed inert waste landfill near the City of Carson, California. Work includes monthly inspections and reporting, coordination of site maintenance, and semi-annual groundwater monitoring and reporting for the Los Angeles Regional Water Quality Control Board.
- ❑ **Gardena Valley 1 & 2 Landfill - State Superfund Site, Gardena, California.** Project Engineer preparing the approved Remedial Investigation (RI) / Feasibility Study (FS) Workplan, implementing field operations including sampling of soil, groundwater, landfill gas, and soil pore liquids, preparing the approved RI Report, preparing the approved FS Report, preparing CEQA documentation, preparing the approved Remedial Action Plan (RAP), and coordinating community relations activities. All activities were performed for submittal to California DTSC.
- ❑ **Basin-By-Products Disposal Site.** Project Engineer preparing the RI/FS Workplan, implementing field operations including sampling of soil and groundwater, and preparing the interim RI Report. All activities were performed for submittal to California DTSC.
- ❑ **Cal Compact Landfill.** Member of technical staff preparing Remedial Investigation and Feasibility Study Work Plan site located in City of Carson, California.

LANDFILL MONITORING EXPERIENCE:

- ❑ **San Bernardino County Landfill Groundwater Monitoring Program.** Project Manager supervising and coordinating field activities for groundwater monitoring at 24 operating and closed municipal waste landfills within the County of San Bernardino. Work includes supervision and coordination of field crews in collecting groundwater, surface water, landfill gas condensate and soil pore gas samples, review of field data, coordination with the analytical laboratory, other technical staff and landfill operators, and development and implementation of a low-flow minimal drawdown sampling program.
- ❑ **Imperial County Groundwater Monitoring Program.** Project Manager supervising and coordinating field activities for groundwater monitoring at various operating and closed municipal waste landfills within Imperial County. Work included supervision and coordination of field crews in collecting groundwater samples, review of field data, coordination with the analytical laboratory, and other technical staff.
- ❑ **Santiago Canyon Landfill.** Project Manager in charge of operations and maintenance of the groundwater and condensate treatment system. The system includes a groundwater and

condensate extraction, collection and storage system, a metals precipitation pretreatment system, an air stripper for removal of organics and a final treated water storage and testing area. Work included routine and non-routine operations and maintenance of all system components, ongoing system evaluation, and development of recommendations for system modifications and improvements.

- ❑ **Santiago Canyon Landfill Water Quality Monitoring Program.** Supervised procurement and installation of purging and sampling pumps. Member of team implementing the sampling program (Santa Ana RWQCB).
- ❑ **San Bernardino County 1150.1 Monitoring Program.** Project Engineer for SCAQMD Rule 1150.1 monitoring and reporting programs for four active landfills in the County of San Bernadino. Work included coordination with field crews and analytical laboratories in completing all monitoring, sampling and analyses in accordance with the rule, reporting of exceedances and coordination with operators on mitigation measures and re-monitoring, and preparation and submittal of quarterly reports. In addition, assisted in the development of revised monitoring and report programs for the sites following update of the rule by SCAQMD.
- ❑ **San Bernardino County Landfill Gas Extraction and Treatment Systems.** Project engineer and client liaison for operations, maintenance and monitoring of landfill gas extraction and treatment systems at four sites in San Bernardino County. Work included coordination with field crews, subcontractors, vendors and operations personnel for each site to maintain the landfill gas extraction and treatment (flaring) systems in compliance with SCAQMD requirements while minimizing impacts to landfill operations.
- ❑ **San Bernardino County Landfill Perimeter Probe Monitoring.** Project Manager coordinating the monitoring of perimeter landfill gas detection probes for fifteen sites in the County of San Bernardino. Work includes coordination of field crews and data reduction and preparation for inclusion in the quarterly Subtitle 'D' monitoring reports.
- ❑ **Royal Boulevard Land Reclamation Site.** Project Manager supervising and coordinating post-closure activities for the closed inert waste landfill near the City of Carson, California. Work includes monthly inspections and reporting, coordination of site maintenance, and semi-annual groundwater monitoring and reporting for the Los Angeles Regional Water Quality Control Board.
- ❑ **Los Angeles to Pasadena Blue Line Construction.** Project Manager coordinating environmental oversight and compliance during construction of the Los Angeles to Pasadena Blue Line light rail system. Activities include field observations of contractor activities, monitoring of remediation efforts, review and auditing of storm water pollution prevention, soil sampling and characterization, review of contractor records for compliance, coordinating with waste disposal contractors and signing of waste manifests, and coordination with site contractors and the Construction Authority on environmental issues.

PROFESSIONAL EXPERIENCE:

1999 – Present Director, Environmental Services Division
1996 - 1999 Project Manager
 Bryan A. Stirrat & Associates
 Diamond Bar, California

1994 - 1996 Project Manager
 Aman Environmental Construction, Inc.
 Covina, California

1989 - 1994 Project Engineer
 Bryan A. Stirrat & Associates, Inc.
 Diamond Bar, California

EDUCATION:

University of California, Los Angeles (UCLA)
M.S., Environmental Engineering (1997)

California State Polytechnic University, Pomona, California
B.S., Civil Engineering (1989)

The Princeton Course on Groundwater Pollution and Hydrology

CERTIFICATIONS:

- 40-Hour Hazardous Waste Operation/Emergency Response
- 8-Hour Hazardous Waste Operations Site Supervisor Training
- 8-Hour HAZWOPER Refresher Training
- First Aid / CPR, 1995

PROFESSIONAL REGISTRATION / LICENSES:

- Professional Civil Engineer Registered in the State of California (#C 48725)
- Arizona Department of Environmental Quality Prequalified UST Consultant

PROFESSIONAL MEMBERSHIPS:

- American Society of Civil Engineers
- California Groundwater Association - Member
- National Groundwater Association - Member

1985 - 1992: Field Engineer
 Orange County Integrated Waste Management Department
 Santa Ana, California

EDUCATION:

- Coursework in Engineering, California State University, Long Beach

REGISTRATIONS:

- Solid Waste Associates of North America (SWANA) Certified Manager of Landfill Operations

CHRISTINE M. ARBOGAST, P.E.

Vice President, Solid Waste

Bryan A. Stirrat & Associates

Ms. Arbogast is a Registered Civil Engineer with more than 20 years of civil engineering experience in environmental and waste management projects. She has managed the development of landfill expansion and master development plans involving the coordination of engineering, design, permitting, and geotechnical / hydrogeological studies for small and large scale projects. In addition, she has been Project Manager, or Senior Reviewer during the preparation of closure plans for more than 40 California landfill facilities. Her permit related activities have required intensive regulatory agency compliance coordination in the preparation of engineering design plans and regulatory documents.

LANDFILL CLOSURE:

- ❑ **Project Manager** for modifications of the Final Closure and Post-Closure Maintenance Plan for the Coastal Landfill, Ventura County, California, to support the development of a golf course at this 83-acre site. This includes incorporating modifications to the site drainage plans, landscape plans, and landfill gas control system into the revised closure plans.
- ❑ **Project Manager/Engineer for Orange County's 120-acre Santiago Canyon Sanitary Landfill Closure and Post-Closure Maintenance Plan**, which included the development of both preliminary and final closure plan documents. Responsibilities also included administrating the preparation and implementation of a SWAT program.
- ❑ **Project Coordinator for the Kern Valley Landfill Closure Project and Evaluation Monitoring Program**, which includes the development of Final Closure and Post-Closure Maintenance Plans and an Article 5 Evaluation Monitoring Program.
- ❑ **Project Manager for Coyote Canyon Landfill Post-Closure Maintenance Plan** responsible for revising the Post-Closure Plan after completion of closure construction activities. This required coordinating efforts between the County, the landfill gas system operator, RWQCB, and LEA in addressing post-closure maintenance issues and responsibilities for one of the first sites to close under Title 14 closure requirements.
- ❑ **Project Manager** for the preparation of Final Closure and Post-Closure Maintenance Plans for the Iron Mountain Landfill, San Bernardino County, California; and six San Diego County landfills.
- ❑ **Senior Reviewer** for the preparation of Preliminary Closure and Post Closure Maintenance Plans for eight Imperial County landfill sites.
- ❑ **Project Manager/Engineer for Orange County's Prima Deshecha and Olinda Alpha Preliminary Closure and Post-Closure Plans**, which included the coordination and preparation of the closure documents in support of a revised Solid Waste Facilities Permit application.
- ❑ **Project Manager for the Forster Canyon Landfill Final Closure and Post-Closure Plans**, which included the development and review of closure documents and integration of the closure project with an adjacent residential development.

- ❑ **Project Engineer for the Royal Boulevard Land Reclamation Site Closure Plan** preparation and implementation. Duties included the development of the Closure Plan document, coordination of all design and construction drawings, bid package preparation and permitting assistance. The plan consisted of a layered final cover design, grading and drainage plans, and a park/landscape grower's nursery post-closure end use plan.
- ❑ **Project Engineer for Riverside County's Elsinore Sanitary Landfill Closure Plan**, which included developing and preparing the Closure Plan document and coordinating the preparation of all design drawings. The document included an evaluation of several cover options, a borrow study, drainage and grading plans, and a landscape design.
- ❑ **Project Engineer for the Altamont Sanitary Landfill Closure Plan Update**, which included revisions incorporating work completed by BAS.
- ❑ **Project Manager for the City of Los Angeles Lopez Canyon Landfill Final Closure and Post-Closure Maintenance Plan**, which included administration of the document preparation for partial and ultimate closure of the currently permitted disposal areas. Other responsibilities included overseeing preparation of a Report of Disposal Site Information update, a Periodic Site Review, a Preliminary Closure and Post-Closure Maintenance Plans for the landfill expansion, and Final Closure and Post-Closure Maintenance Plans and a Mitigated Negative Declaration for closure of a portion of the site.

MASTER PLANNING/SITE DEVELOPMENT:

- ❑ **Project Manager** for Site Development Plan and Permitting Documents, Prima Deshecha Landfill, San Juan Capistrano, California. Project Manager responsible for preparation of documents in support of future development projects at this 1,500-acre municipal solid waste landfill. Overall tasks have involved preparation of preliminary development plans, geotechnical and geologic evaluations, hydrogeologic investigations, phased development plans, visual mitigation measures, and construction plans/specifications. Regulatory compliance responsibilities have included obtaining a 404 Permit from the Army Corps of Engineers, 1601 Streambed Alteration Permit from the California Department of Fish and Game, 401 Water Quality Certification permit from the Regional Water Quality Control Board and Biological Opinion permit from the United States Fish & Wildlife Services for Zone 1 operations.
- ❑ **Project Manager for the Olinda Alpha Landfill Vertical Expansion**, which included the coordination of geotechnical and hydrogeologic studies, development of a Master Plan and interim and final landscape plans, and the preparation of a Report of Facility Information and Preliminary Closure and Post-Closure Maintenance Plans. This project required close coordination with the City of Brea Citizens Advisory Committee; the County Harbors, Beaches, and Park Department; and regulatory agencies in compliance with a Memorandum of Understanding between the City and County, which required the development of a regional park end use plan and a new or upgraded access road.
- ❑ **Project Manager** for evaluation of Master Plan Alternatives for the San Timoteo Sanitary Landfill, San Bernardino County, California. Four Master Plan final and bottom grading configurations were developed, for which volume calculations, preliminary development costs, and unit costs were prepared for various alternatives.

- ❑ **Project Manager** for evaluation of various Master Plan configurations for the Colton Sanitary Landfill. The study was conducted in order to assess potential development costs for the site.
- ❑ **Project Manager** for development of a Master Plan, lateral expansion excavation plans, and fill sequencing plans for the Savage Canyon Landfill, Whittier, California. The project has involved an extensive investigation of a fault located within the landfill footprint and the design of a bottom grading plan for a back canyon area which has undergone extensive landsliding. Master Plan work included development of bottom and final grading plans, final storm drain plans including a detention basin and fill sequencing plans for the first five years and every phase thereafter.

ADDITIONAL SOLID WASTE MANAGEMENT PROJECTS:

- ❑ **Engineering Support Services**, Prima Deshecha Landfill, San Juan Capistrano, California. Project Manager for a contract to provide on-call engineering support services at the Orange County Integrated Waste Management Department South Region Landfills. This has involved direction of more than 30 projects at the Prima Deshecha Landfill involving engineering, regulatory compliance, geology/hydrogeology, CEQA compliance, and biological surveys.
- ❑ **Project Administrator for the Lancaster Landfill** and Recycling Center Expansion responsible for preparation of a CUP application and Environmental Impact Report for the lateral and vertical expansion of a 102-acre landfill.
- ❑ **Project Administrator for the Colton Landfill site improvements and groundwater characterization study.** Responsibilities included managing the preparation of a Report of Disposal Site Information, Periodic Site Review, and Drainage Design Report, as well as administering a Seep Remedial Action Plan and Drainage Improvements Construction contract.
- ❑ **Administrator for the Frank R. Bowerman Landfill Master Plan** responsible for administering the contract for geotechnical, master planning, and liner design projects.
- ❑ **Project Manager for the permitting of a new landfill in Alamos Canyon in Ventura County,** which included administration of permit document preparation and landfill engineering design.
- ❑ **Project Manager/Engineer** for three seawater barrier improvement studies which included coordinating the investigation of area geohydrology, development of a groundwater model, evaluation of improvement alternatives, development of implementation plans, design of injection and observation wells, and construction of a Test Pilot Program.
- ❑ **Project Manager** for a groundwater recharge optimization study, which included coordinating data collection and interpretation, and development of recommendations for a regional groundwater basin model.
- ❑ **Staff member of the Los Angeles County Solid Waste Management Committee** responsible for implementation of the County Solid Waste Management Plan Public Education Program, evaluation of Finding of Conformance applications for waste treatment and disposal facilities, and preparation of the County Hazardous Waste Management Plan.

PROFESSIONAL EXPERIENCE:

- 1989 - Present: Vice President of Solid Waste,
Senior Project Manager
Bryan A. Stirrat & Associates, Inc.
Consulting Civil & Environmental Engineers
Diamond Bar, California
- 1986 - 1989: Civil Engineer I, Hydraulic/Water Conservation Division
Los Angeles County Department of Public Works
Alhambra, California
- 1984 - 1986: Senior Civil Engineering Assistant, Waste Management Division
Los Angeles County Department of Public Works
Alhambra, California
- 1982 - 1984: Student Assistant Engineer
CalTrans
Los Angeles District
Los Angeles, California

EDUCATION:

- California State Polytechnic University, Pomona, California
Bachelor of Science, Civil Engineering/Environmental Option (1984)
- Graduate Civil Engineering courses, University of Southern California,
Related Courses: Solid Waste Management, Hazardous Waste Management, Chemical and Biological
Processes in Environmental Engineering

PROFESSIONAL MEMBERSHIP:

- American Society of Civil Engineers
- Technical Outreach, Inc. - *Vice President*

PROFESSIONAL LICENSE:

- Registered Civil Engineer, California (#42578) - 1986

Mr. Baird currently is a Construction Services Manager and CQA Officer with GeoLogic Associates. Mr. Baird has participated in a wide variety of geotechnical and construction quality assurance projects throughout California, including landfill liner and cover construction, field explorations, geologic hazard evaluations, geotechnical analyses and design, report preparation, and field construction review and observation. Mr. Baird has extensive experience supervising CQA staff, mapping geologic structures, logging and sampling borings and trenches, and monitoring well installation and testing. His duties have also included the identification of low-permeability borrow materials, construction review of cover and liner placement, and preparation of construction certification reports.

EDUCATION:

California State University, Fullerton, B.S., 1990

SELECTED LANDFILL EXPERIENCE:

Ballard Canyon Landfill, Santa Barbara, California: Project Manager/CQA Officer during construction of final closure improvements.

Groveland (Big Oak Flat) Landfill, Tuolumne County, California: Project Manager/CQA Officer during construction of final closure improvements.

Tequesquite Sanitary Landfill, Riverside County, CA: Project Manager for geologic/geotechnical investigation of proposed borrow site for alternative final cap system construction. Work included seismic refraction surveys, subsurface investigations and laboratory analyses of various borrow and soil mix designs.

Kern Valley Landfill, Kern County, California: Project Manager/CQA Officer during construction of final closure improvements.

Highgrove Landfill, Riverside County, California: Project Manager/CQA Officer during construction of the alternative final cover.

Santiago Canyon Landfill, Orange County, California: Assistant Project Manager and Construction Services Manager for the preparation of the Final Closure and Post-Closure Maintenance Plans for final closure. CQA Manager during construction of alternative final cover.

Frank R. Bowerman Landfill, Orange County, California: CQA Task Manager during mass excavation and composite liner construction for Phase V-D. The Phase V-D construction project also included the Alternative Final Cover Demonstration Project constructed on the front face of the landfill.

Prima Deshecha Sanitary Landfill, Orange County, CA: Project Manager/CQA Officer for Phases

A, C1 and B composite liner construction including development of plans and specifications for Phase A mass excavation and liner construction for each phase.

Milliken Sanitary Landfill, San Bernardino County, CA: Project Manager/CQA Officer during Alternative final cap construction of the East Mound and North and East slopes.

Phelan Landfill, San Bernardino County, California. Project Manager/Quality Assurance Officer during construction of alternative final cap system. Duties included working with design engineer for preparation of construction plans and specifications, as well as supervision of CQA staff and as-built reporting.

Badlands Sanitary Landfill, Riverside County, CA: Project Manager/CQA Officer for construction of a composite liner system for Phases I and IV expansion.

West Miramar Sanitary Landfill, City of San Diego, CA: Project Manager for geologic and geotechnical investigations, and PM/CQA Officer during construction of Module 2/3, A, B, and C composite liner systems.

Coyote Canyon Landfill, Orange County, CA Conducted geotechnical investigations to develop Final Closure and Post-Closure Maintenance Plans.

Tajiguas Sanitary Landfill, Santa Barbara County, CA: Project Manager/CQA Officer during construction of the Phase I composite liner system.

Crazy Horse Landfill, Salinas, CA: Project Manager for construction quality assurance (CQA) services during construction of a Phase I composite liner system.

Olinda-Alpha Sanitary Landfill, Orange County, CA: Geologic mapping, subsurface investigation, slope stability analyses, groundwater well installation, and evaluation of potential on-site borrow resources for site expansion and development of the Master Plan.

Carrie F. Barton

Senior Planner

Education

- M.S., Marine Geology and Geochemistry, Massachusetts Institute of Technology, Cambridge, MA (1998)
- B.A., Earth Science, University of California at Berkeley, Berkeley, CA (1994)

Professional Affiliations/Workshops

- Association of Environmental Professionals
- CEQA Workshop, Association of Environmental Professionals, Fall 2003

Professional Experience

Ms Barton has more than 4 years of experience in environmental analysis and private and public land development, and 5 years of experience in applied science, including laboratory analyses and fieldwork. Ms. Barton has authored or co-authored a full range of CEQA and NEPA environmental documents, including major public transportation projects in urban areas and new private residential or mixed-use developments. She has a particular expertise in the evaluation of potential environmental impacts and interpretation of technical reports in the areas of geology and seismic hazards, water resources, and fiscal impact analysis.

SELECTED PROJECT EXPERIENCE

City of Burbank Land Use and Mobility Elements Update Program EIR

Ms. Barton serves as the Senior Planner for this project. In this role, she prepares modifications to specific Land Use and Mobility Elements sections. Ms. Barton also reviews applications for zoning variances and other occupancies for conformance to applicable ordinances and policies and prepares written project analysis including identifying appropriate land use policy, design issues and environmental requirements; and makes recommendations for action. The Land Use Element Update aims at addressing the new issues and opportunities currently facing the City, and meeting the current and foreseeable needs of the community while at the same time maintaining the quality of life and small town atmosphere that Burbank's residents have indicated is so important to them. The Mobility Element will replace the Circulation Element.

City of San Marcos – Heart of the City Specific Plan

As the Primary Author, Ms. Barton is responsible for analyzing and evaluating site and architectural plans, performing technical review and making recommendations, coordinating in-house review, and technical writing. She has reviewed the proposed amendment to the current General Plan and has communicated recommendations to senior level City staff. The *Specific Plan* guides the development of a 200±acre area located at the center of the City. Due to the site's proximity to California State University San Marcos, and access to SR-78 and a new commuter rail line, the City desires to amend the

Specific Plan to allow the area to become an employment center by providing for increased retail, office, hotel, and residential development.

Revised EIR for the Metro Orange Line, Los Angeles, California: Ms. Barton worked with a team of consultants to prepare a Revised EIR for the Metro Orange Line after a state appellate panel issued a temporary injunction suspending construction. The court found that the certified EIR had failed to adequately consider a range of alternatives to the 14-mile busway, which stretches from the North Hollywood Red Line subway station to Warner Center in Woodland Hills in the San Fernando Valley. In the highly contended project, the Revised EIR was prepared on a compressed timeline and written to satisfy the court's requirements and to withstand the scrutiny of the community group that had originally sued to suspend construction. Fewer than 6 months after the initial court's findings, the Revised EIR was completed and approved by the Metro Board.

Addendum to Final EIR and SEIR for Sunshine Canyon Landfill, City of Los Angeles and unincorporated County of Los Angeles: Ms. Barton was primary author of an EIR addendum for the development and operation of a highly controversial, 451-acre, Class III solid waste landfill located on both City and County of Los Angeles lands. The addendum particularly addressed the health risk concerns of neighboring residential communities, including the potential for the release of contaminants into air and water that could impact the local communities and local schools. Public health studies and the testimony of medical experts were integral parts of the environmental analysis.

EIR for Emerald Meadows New Development in Unincorporated Riverside County: Ms. Barton co-authored an EIR for a mixed-use development on 278 acres in the community of Rubidoux, in northwestern Riverside County. Particular concerns included increased traffic, compliance with airport land use plans.

Initial Study for Custodial Operations Facility for Metro Blue and Green Lines, Los Angeles County: As primary author, Ms Barton assessed the impacts of constructing an office building and parking lot to support the custodial services function for the Metro Blue and Green Lines. The project site was in the community of Willowbrook, an unincorporated portion of Los Angeles County south of Watts. Concerns included possible contamination from previous land uses and potential construction noise impacts to a daycare center abutting the site.

Initial Study and Environmental Assessment for Infrastructure Improvements in the Los Serranos Neighborhood, City of Chino Hills, San Bernardino County: The City of Chino Hills requested HUD funds to develop storm drain and street improvements in a historic neighborhood constructed in 1925. As primary author on both CEQA and NEPA documents, Ms. Barton addresses the needs of both HUD and City of Chino Hills staff.

Preliminary Environmental Study (PES) for Traffic Control and Monitoring System, Mitigation Project for the Extension of State Route 710, City of Pasadena: Ms. Barton was the primary author in assessing the impacts of installing intelligent transportation system (ITS) technology and "smart" traffic signals to alleviate traffic congestion along major corridors throughout the City of Pasadena. The PES adhered to CEQA, NEPA, California Department of Transportation (Caltrans), and Federal Highway Administration (FHWA) policies and procedures.

Ms. Battelle is an accomplished project manager with over 22 years of experience in geology, hydrogeology and environmental programs. With more than 18 years of direct experience in San Diego, Ms. Battelle has been involved in a wide range of projects throughout San Diego County as a project manager and a field geologist and has dealt with a wide range of contaminants including hydrocarbons, pesticides and PCBs, heavy metals and chlorinated compounds. She has conducted and/or managed Phase I site assessments, and soil and groundwater investigations having logged over 100 soil borings and installed over 70 groundwater investigation wells. She has extensive knowledge in appropriate methods for soil and groundwater sampling and testing, and data evaluation, conducted and/or managed remedial investigations, and developed remediation alternatives for consideration in detailed feasibility studies at numerous facilities. Most recently, Ms. Battelle has been responsible for water quality monitoring and evaluation of over 20 solid waste landfills in accordance with California regulations (Title 27).

EDUCATION:

San Diego State University, M.S., 1980
Oregon State University, Corvallis, B.S., 1978
EPA 40-hour health and safety course, 1986

PROFESSIONAL REGISTRATIONS:

Certified Hydrogeologist, California No. 609
Registered Geologist, California, No. 4869

RELEVANT PROJECT EXPERIENCE:

Miramar Landfill Hydrogeologic Investigation and Water Quality M&RPs, City of San Diego, CA Project Manager for an initial hydrogeologic characterization including geophysical surveys, construction of additional groundwater monitoring wells and lysimeters; preparation of a revised monitoring and reporting program (M&RP); and on-going quarterly/semiannual groundwater quality reporting for the active West Miramar Landfill for the past seven years and inactive South and North Miramar Landfills over the past six years. Also responsible for development and submittal of M&RPs for the inactive North and South Miramar Landfills.

Arizona Street and South Chollas Landfill Monitoring and Reporting Programs (M&RPs), City of San Diego, CA. Project manager responsible for water quality monitoring and reporting programs for these two inactive landfills within the City of San Diego. Also providing liaison services with the City regarding landfill gas impacts to groundwater at these two sites.

West Miramar Landfill Evaluation Monitoring Program (EMP), City of San Diego, CA. Developed an EMP and preliminary Engineering Feasibility Study in response to indications of a potential release to the vadose zone detected in lysimeters monitoring a portion of the unlined landfill. Provided rationale to the RWQCB to include proposed construction of the landfill gas collection system as the Corrective Action Program with continued monitoring. Also evaluated the occurrence of elevated total dissolved solids (TDS) in a compliance well and using down-hole geophysics determined that the likely cause

was related to the natural geologic materials and not a release from the landfill, avoiding costly EMP and CAP implementation.

Geologic/Hydrogeologic Investigations, Gregory Canyon Landfill, San Diego County, CA. Co-manager for hydrogeologic characterization in support of an Environmental Impact Report (EIR) to site a new landfill in San Diego County. Studies included a thorough literature review, field mapping, VLF geophysical surveys, and construction and geophysical testing of wells to assess the bedrock aquifer beneath the site. Provided regulatory liaisons with the SDRWQCB on groundwater issues and prepared geology and hydrogeology sections for the EIR. Public meetings and the response to comments on the draft EIR are being conducted toward certification of the final EIR.

San Bernardino County Landfill M&RP, CA. Region manager for groundwater monitoring and reporting for seven landfills in the Colorado River Basin for the past five years and seven landfills in the Santa Ana Basin for about three years in San Bernardino County. Responsibilities have included oversight of groundwater monitoring activities, coordination with the analytical laboratory, statistical and non-statistical analysis of the chemical data using the in-house program SAC-APP, and preparation of monitoring reports. The M&RP includes quarterly sampling and reporting of more than 200 monitoring points.

Imperial County Groundwater M&RP Program, Imperial County, CA. Project Manager for groundwater monitoring and reporting for 10 Imperial County solid waste landfills for three years. This program included semiannual sampling and reporting to include a summary of statistical analyses performed by GLA using the in-house statistical program, SAC-APP, and a discussion of the groundwater monitoring results and conclusions relative to indications of release for each of the sites.

MICHAEL CAMPBELL
SENIOR FIELD TECHNICIAN



Office Location: 225 West Hospitality Lane, Suite 100, San Bernardino, California 92408

Mr. Campbell serves as Senior Field Technician with GeoLogic Associates. He has over 15 years of experience performing a variety of geotechnical tasks including construction observation of monolithic alternative final covers, monitoring and testing during closure of Class I hazardous waste sites and expansion of Class III waste disposal facilities, observation and testing of fills related to grading operations, and subsurface investigations for structural distress of residential and commercial facilities.

EDUCATION:

California Polytechnic University, San Luis Obispo,
B.S., 1984

Nuclear Density Gauge Training Certification
40-Hour HAZmat Certification

RELATED PROJECT EXPERIENCE

Baker Landfill, San Bernardino County, CA.

Provided construction observation and quality assurance testing during construction of a 100,000 cubic yard monolithic final cover system.

Milliken Landfill, San Bernardino County, CA.

Provided daily construction quality assurance services during construction of the East Mound and North Slope monolithic final cover systems. Daily activities included borrow source testing, verification of fill thickness, fill placement coordination with Contractor, compiling field notes, and performing compaction and permeability tests on the completed final cover. Total volume of fill was 450,000 cubic yards.

Coachella Landfill, Riverside County, CA.

Supervised monolithic final cover placement, borrow source testing, and conformance testing for this 1.1 million cubic yard construction project. Supervised installation of moisture monitoring equipment following construction completion.

Needles Landfill, San Bernardino County, CA.

Provided daily construction oversight and soil testing during borrow source screening and construction of a 600,000 cubic yard monolithic final cover system.

Colton Landfill, San Bernardino County, CA.

Provided daily observation and testing during construction of this 75,000 cubic yard monolithic final cover system.

Phelan Landfill, San Bernardino County, CA.

Supervised construction of a 35,000 cubic yard monolithic cover and provided CQA testing services during construction.

Tequesquite Landfill, Riverside County, CA.

Performed daily observation of fill placement and CQA testing of the 750,000 cubic yard monolithic cover system. Blending of on-site and off-site soils was required to produce a material of the appropriate grain-size distribution to validate infiltration modeling results. As a result, careful testing of the blended soil product was required to ensure that these soils met the project specifications.

BKK Class I and Class III Landfills, West Covina, CA.

Project included closure of a Class I hazardous waste site, and expansion and closure of a Class III waste disposal site. Special field testing compaction, moisture, gradation, and permeability were required during the construction, as well as extensive record keeping for various regulatory agencies. In addition, canyon cleanouts and soil removal were performed that included approvals of storm drain backfills.

Elsinore Landfill, Riverside County, CA. Project included preparation of test pads to assess low-permeability materials along with construction observation and testing of a prescriptive final cover.

Crittenden Canyon Reconsolidated Fill, Mountain View, CA. Provided construction quality assurance (CQA) services during processing and placement of low-permeability material and placement of geotextiles in accordance with project specifications. Construction included installation of a sub-drain and landfill gas recovery system.

Sealed Double Ring Infiltrometer (SDRI) Testing, Various California Landfill Sites.

Performed construction and testing of SDRIs for the Bena Landfill, Kern County; Coyote Canyon Landfill, Orange County; Elsinore Landfill, Riverside County; and BKK Landfill, Los Angeles County. Reviewed and trained personnel involved in Quality Control and Quality Assurance. This included field in-place (BAT) micro permeability tests.

Mr. Constant has 30 years experience in the direct application of geotechnical engineering to a full range of project requirements. This has included treatment plant facilities; hydraulic structures and impoundments, highways and bridges; residential, commercial, institutional and industrial development, forensic studies; landfills; marine structures and seismic foundation design. Mr. Constant has dealt with seismic design criteria for the foundations of buildings and bridges, and geotechnical analyses have included liquefaction and seismically induced settlement and their mitigation. In addition, Mr. Constant has conducted and supervised geotechnical studies for the evaluation of the cause of distress for residential, commercial, institutional and industrial structures.

EDUCATION:

Imperial College of Science & Technology, D.I.C., M.S.,
1971

University of Alberta, B.S., 1970

PROFESSIONAL REGISTRATIONS:

California Civil Engineer No. C44506

California Geotechnical Engineer No. GE2278

Alberta Professional Engineer

SELECTED PROJECT EXPERIENCE:

Bakersfield Metropolitan Landfill (Bena) Engineering Analysis, Bakersfield, CA. Engineering review and analysis were undertaken for sealed double ring infiltrometer (SDRI) monitoring as part of a Test Pad Study to assess clay liner suitability.

BKK Class I and Class III Landfills, Geotechnical Studies, West Covina, CA. QA/QC activities performed since 1990 include borrow operations, Class I closures, Class III liner construction, and Class III closure. Also, evaluations and investigations were performed for drainage materials and geosynthetics for new infrastructure and assessment of alternatives for placement of the Class III low-permeability liner and cover.

Frank R. Bowerman Landfill, Geotechnical Studies, Orange County, CA. Geotechnical studies included a materials evaluation and stability of master plan front face and backslopes. Other geotechnical engineering was performed for elements of the Special Provisions and the CQA Plan for Phase IIIA and Phase IIIB construction including: earthwork, subdrain, clay liner, FML, and the drainage components of the leachate collection system.

Coyote Canyon Landfill, Geotechnical Studies, Orange County, CA. Engineering oversight was provided for geotechnical reports dealing with the test pad for the landfill closure, and two borrow sites as sources of low-permeability and/or random materials for final landfill cover. Geotechnical support was also provided during preparation of the Special Provisions for the closure improvements and perimeter drainage, and for the CQA Plan for construction of the final cover. Associated involvement continued throughout closure construction.

Santiago Canyon Landfill, Engineering Analysis, Orange County, CA. Oversight and engineering analyses

were provided for a geotechnical study for the proposed southeast borrow site.

Studebaker Road Extension, Long Beach, CA.

Geotechnical study for an at-grade bridge crossing of an abandoned landfill.

Crazy Horse Sanitary Landfill, Design Review, Monterey County, CA.

A pre-construction review of the geotechnical design was completed for the five-acre Phase I expansion area. This involved grading, drainage systems and the composite liner system, which consisted of bentonite modified sands and 80-mil HDPE. Engineering support was also provided to CQA.

Reservoir 2A Geotechnical Study, City of Orange, CA.

Performed geotechnical study for a 35MG steel reservoir. The major issue involved the stability of the tank pad, which was created over a cut-fill transition. Other investigated site features and/or mechanisms of distress included deformation of the surrounding pavement, expansive soils and infiltration of surface water.

Water Treatment Plant, LADWP Crystal Springs Yard, Glendale, CA.

Provided geotechnical recommendations for construction of vapor phase GAC tanks, pump stations, storage facilities, packed tower aerators, a control building and associated pipelines.

Orange County Water District, Green Acres Pipeline Extension, Newport Beach, CA. A preliminary geotechnical evaluation was performed for 26,000 feet of proposed pipeline.

Oakley Technical Center, Foothill Ranch, Orange County, CA:

This manufacturing facility and headquarters occupies 280,000 ft² of building area. Grading for the site included cuts and fills up to 80 feet deep. Non-standard slopes and retaining wall systems were employed to provide a contoured, natural appearance to the finished grades. Particularly close attention was paid to foundation preparation for footings and floor slabs due to stringent performance criteria.

Kimball Avenue Interceptor, Chino, CA: Design engineer for 4.5 mile long, 39 to 66 inch sewer line with invert depths of 8 to 25 feet. Wet soils and poor bedding conditions warranted detailed consideration.

MICHAEL A. CULLINANE, P.E.

Vice President of Engineering
Bryan A. Stirrat & Associates, Inc.

Mr. Cullinane has more than 20 years of experience managing the permitting, design, and construction of municipal solid waste landfill expansions, closures, and civil improvement projects. His experience has included the design of Subtitle D liner systems, performance of hydrology and hydraulic studies, design and construction of surface water drainage systems, and development of base and final grading plans and construction documents. Mr. Cullinane has made presentations to members of the Solid Waste Management of Association of America (SWANA) on issues raised by Subtitle D liner design regulations, and is a specialist in maximizing landfill facilities as a resource, while balancing the demands of operators, regulatory agencies, and citizens.

LANDFILL CLOSURE EXPERIENCE:

- ❑ **Illegal/Abandoned Disposal Site Remediation**, California Integrated Waste Management Board. Engineering Task Manager for general engineering support to the California Integrated Waste Management Board's Solid Waste Disposal and Co-disposal Site Cleanup Program (AB 2136). Project has involved design of clean closure of former burn dumps and illegal disposal facilities throughout the state.
- ❑ **Project Manager** for preparation of construction documents for closure of East Mound of the Milliken Landfill, San Bernardino County, California. Responsibilities included preparation of final grading, drainage, and erosion control plans.
- ❑ **Project Manager** for the design of the closure of the Coyote Canyon Landfill, a 300-acre regional metropolitan landfill. Also provided structural design for peripheral drainage structures, which included box culverts, trapezoidal and rectangular concrete channels, junction structure, and retaining walls.
- ❑ **Project Manager** preparation of construction plans and specifications for the closure of the Ballard Canyon Landfill, Santa Barbara County, California. The final cover system was an alternative to the prescriptive cover design that utilized a 60-mil thick high-density polyethylene (HDPE) flexible membrane cover (FMC) in place of the low hydraulic-conductivity soil material utilized in a prescriptive cover.
- ❑ **Project Manager** for preparation of construction plans and specifications for the closure of the Big Oak Flat Landfill, Tuolumne County, California. The final cover system consisted of a two-foot thick foundation layer composed of re-worked existing cover soils, a 60-mil thick geomembrane liner, a series of geonet drainage strips, a 16-ounce non-woven geotextile, and a one-foot thick vegetative layer composed of re-worked existing cover soils.
- ❑ **Engineering Task Manager** for final closure design of the Kern Valley Landfill, Kern County, California. Project involved development of final cover design, final grading plans, hydrology/sedimentation studies, groundwater/leachate control system plans, and landfill gas control plans.
- ❑ **Project Manager** for the design and implementation of closure plans for the Mountain View Landfill in Mountain View, California. Project included closure of three separate landfill sites, including final cover design, implementation of corrective action measures, and construction management.

- ❑ **Project Manager** for the closure of two inactive landfill sites at the Santa Maria Airport in Santa Barbara County, California. The project involves preparation of a Post-Closure Maintenance Plan, final grading and drainage design, and preparation of construction documents.
- ❑ **Project Manager** for closure of a small inactive landfill site at the Rose Hills Memorial Park in Whittier, California. Responsible for design of final cover system, hydrology/sedimentation studies, and final grading plans.
- ❑ **Project Engineer** for Design of Partial Closure and Post-Closure Maintenance Plan for the Crazy Horse Landfill, Salinas, California.
- ❑ **Project Manager** for design and implementation of closure plans for the Berry Street Mall in Roseville, California. Project included QA/QC for the clay cap installation and borrow-sites.
- ❑ **Project Engineer** for closure design for the Iron Mountain Landfill, San Bernardino County, California.
- ❑ **Project Manager** for development of the California Integrated Waste Management Board's AB 2136 Program for the clean-up of illegal and abandoned dump sites.
- ❑ **Project Engineer** for grading and drainage plans for Preliminary Closure and Post-Closure Maintenance Plans for the Santiago Canyon Landfill in Orange County, California.
- ❑ **Project Engineer** for the design and preparation of grading and drainage plans for the final closure plans for six inactive landfill sites in San Diego County.

LANDFILL EXPANSION EXPERIENCE:

- ❑ **Lined Cell Design/Construction Management Support**, Frank R. Bowerman Landfill, Orange County, California. Project Manager responsible for the design of four separate liner systems at the Frank R. Bowerman Landfill, Orange County, California. This included the first Subtitle D cell at the site. Also provided engineering support for three phases of liner construction at the facility.
- ❑ **Engineering Support for Site Construction Projects**, Prima Deshecha Landfill, San Juan Capistrano, California. Providing engineering support during the construction of Zone 1-Phase A, C1, and B composite liner systems at this municipal landfill facility. These construction projects have included excavation of stockpile and native over-burden materials and construction of engineered fills to support the new lined cells. The Phase B construction also includes landslide remediation and biological mitigation projects involving numerous agencies. Also responsible for preparation of as-built plans for each liner phase.
- ❑ **Disposal Site Classification and Siting Study, Expansion Feasibility Study**, Sonoma Central Landfill, Sonoma County, California. Engineering Task Manager for development of conceptual designs including estimates of anticipated site life. Prepared conceptual Master Plan which accounted for the client's air space requirements, limited geologic and hydrogeologic conditions, economic factors related to rock excavation and processing, and Title 27 requirements.

- ❑ **Lined Cell Design and Construction**, Santa Cruz Landfill, Santa Cruz Landfill, Santa Cruz, California. Project Manager for general landfill engineering consulting services for the City of Santa Cruz, 1994 - Present. Responsibilities have included directing the design and construction management for the development of two Subtitle D lined cells at the site, construction management for the closure of 10 chromium ponds, site master planning, and fill sequencing.
- ❑ **Lined Cell Design and Construction**, Crazy Horse Landfill, Salinas, California. Project Manager responsible for the expansion design, construction drawings, and grading plans, and construction management services for the expansion of the Crazy Horse Landfill, Salinas, California. This included the design of the first Subtitle D liner system at the site. Responsibilities included regulatory compliance, operations assistance, fill sequencing, and winterization plans. In addition to the design of the first lined cell, provided construction management and CQA for liner installation. Worked with the RWQCB in establishing new WDRs for the site.
- ❑ **Lined Cell Design and Construction**, Tajiguas Landfill, Santa Barbara County, California. Project included containment system design, fill sequencing and operational plans, construction documents, regulatory compliance, and construction support.
- ❑ **Lined Cell Design and Construction**, Kirby Canyon Recycling and Disposal Facility, San Jose, California. Project Manager for the permitting and design of the first Subtitle D cell at site. Four separate construction phases were developed for the Subtitle D lined cell. Provided construction management of the first two phases completed. Also developed fill sequencing within the lined cells.
- ❑ **Lined Cell Design and Construction Engineering Support**, Mid-Valley Sanitary Landfill, San Bernardino County, California. Project Manager for design of the lateral expansion of the existing 170-acre site into a 420-acre regional facility.
- ❑ **Landfill Expansion Design**, Toland Road Landfill, Ventura County, California. Project Manager for engineering and design services for the Phase 3 expansion. Project involves implementation of strategies to expand Phase 2 of the site during the design of Phase 3.
- ❑ **Lined Cell Design**, Los Reales Landfill, Tucson, Arizona. Project Manager for liner design and preparation of construction plans and specifications.
- ❑ **Engineering Task Manager** for design of Subtitle D liner system in support of the expansion of the West Miramar Landfill in San Diego, California. Provided design construction support for the first lined cell.
- ❑ **Engineering Task Manager** in support of Environmental Impact Report (EIR) development to site a new landfill in San Diego County.
- ❑ **Project Manager** for the design of a Class III Subtitle D liner system and Class II leachate impoundment at the Rock Creek Landfill, Calaveras County, California. Project involved development of an alternative petition for use of GCL versus clay for bottom and side slopes.

ADDITIONAL SOLID WASTE EXPERIENCE:

- ❑ **Project Engineer** for design of site drainage improvements, erosion control devices, construction management, and bidding assistance at the Colton Landfill, San Bernardino County, California.
- ❑ **Project Engineer** for the design and cost estimates for various sewer and water system alternatives for the Operating Industries, Inc. Landfill site; as well as miscellaneous on-site civil work consisting of North Slope grading plans, hydrology and hydraulic studies, erosion control, storm drain designs, and survey.
- ❑ **Project Engineer** for site planning, entrance road alignment, grading, drainage, and cost evaluation of two conceptual landfills in Ventura County.

PROFESSIONAL EXPERIENCE:

- 1989 - Present: Vice President of Engineering,
 Director of Engineering
 Bryan A. Stirrat & Associates, Inc.
 Diamond Bar, California
- 1984 - 1989: Associate Engineer
 Willdan Associates
 San Bernardino, California
- 1981 - 1983: Senior Engineering Technician
 Aurora Pump
 Vertical Turbine Pump Manufacturer
 City of Industry, California

EDUCATION:

California State Polytechnic University, Pomona, California
Bachelor of Science, Civil Engineering (1984)

Mount San Antonio Junior College, Walnut, California
Associate of Science, Engineering Emphasis (1981)

PROFESSIONAL MEMBERSHIPS:

- ❑ American Society of Civil Engineers (ASCE)
- ❑ National Society of Professional Engineers (NSPE)
- ❑ City and County Engineers Association of Riverside and San Bernardino Counties

PROFESSIONAL LICENSES:

- ❑ Registered Civil Engineer, California (#41981) – 1987
- ❑ Registered Civil Engineer, Arizona (#29150) – 1995
- ❑ Registered Civil Engineer, Montana (#14653) – 2001
- ❑ Certified Professional in Erosion and Sediment Control - 2001

Mr. Franzone's 24 years of geotechnical engineering experience includes project management and onsite field engineering in conjunction with subsurface exploration, foundation, slope stability, seismic hazard analysis, analysis and quality control of earthwork construction, landfill design and construction, and grading operations. Mr. Franzone has a comprehensive background in geotechnical investigations involving slope stability and slope failures, structural distress, major hillside residential projects and foundation/earthwork design for large industrial/commercial developments and high-rise buildings. He has extensive experience in failure analysis and remedial work using shoring/underpinning techniques and rock and soil instrumentation methods. In addition, Mr. Franzone has supported various landfill design projects, including development of mitigation measures for landslides and other geologic hazards.

EDUCATION:

MS, Univ. of Nevada, Geological Engineering, 1980
BS, Purdue University, Geological Engineering, 1978

PROFESSIONAL REGISTRATIONS:

Calif. Professional Civil Engineer No. 39552, 1985
Calif. Geotechnical Engineer No. 2189, 1990

SELECTED PROJECT EXPERIENCE:

Geotechnical Design, Newby Island Landfill, Milpitas, CA. Project Engineer for the 50-acre expansion of the existing landfill. The geotechnical design aspects of the expansion were evaluated including a detailed seismic hazards analysis, both static and dynamic slope stability of the cover, refuse, and liner; leachate generation quantities and drainage design, geotextile design of the liner protection, and refuse and foundation settlement analysis. The significant seismic issues included the proximity to the San Andreas Fault.

Geotechnical Design, Southcoast Landfill, Mendocino County, CA. Project Engineer for the 48-acre existing landfill. The geotechnical design aspects of the expansion were evaluated including a detailed seismic hazards analysis of the site located on the San Andreas Fault, both static and dynamic slope stability of the cover, refuse, and liner; as well as a final cover design with existing materials.

Geotechnical Design, Sonoma Central Landfill, Sonoma County, CA. Project Engineer for the 115-acre expansion of the existing landfill. The geotechnical design aspects of the expansion were evaluated including a detailed seismic hazards analysis, both static and dynamic slope stability of the cover, refuse, and liner; leachate generation quantities and drainage design, geotextile design of the liner protection, and refuse and foundation settlement analysis.

Geotechnical Design, Avenal Landfill, Kings County, CA. Project Engineer for the 46-acre expansion of the existing landfill. The geotechnical design aspects of the expansion were evaluated

including a detailed seismic hazards analysis, both static and dynamic slope stability of the cover, refuse, and liner; geotextile design of the liner protection, and refuse and foundation settlement analysis.

Geotechnical Design, Tajiguas Landfill, Santa Barbara County, CA. Project Engineer for the 30 acre expansion of the existing landfill. The geotechnical design aspects of the expansion were evaluated including a detailed seismic hazards analysis, response to third party review comments as well as preparation of the design report for the proposed storm drain along the access road.

Geotechnical Investigation and Design, Gregory Canyon Landfill, San Diego, County, CA. Project Engineer for geotechnical characterization in support of an EIR and design engineer for seismic and slope stability analysis to site a new landfill in north San Diego County. Studies include literature review, seismic hazards analysis, static and dynamic slope stability analysis for the cover and liner.

Geotechnical Investigation, Prima Deshecha Landfill, Orange County, CA. Project Engineer for a geotechnical investigation in support of landfill expansion. Project has included an evaluation of landslide slip planes and cut slopes in the Capistrano Formation, and the development of mitigation measures in support of landfill design.

Geotechnical Investigation, Frank R. Bowerman Landfill, Orange County, CA. Project Engineer for a geotechnical investigation of complex geological environment for landfill expansion area. Project included an investigation of a recently mobilized landslide area, geologic mapping and downhole logging of borings to identify the depth and geometry of the landslide. Also assisted in the development of mitigation measures for landslide stabilization.

RICHARD GENZEL, P.E.

Division Engineer

Bryan A. Stirrat & Associates

Mr. Genzel is a Registered Civil Engineer with over 26 years of civil engineering experience in municipal solid waste disposal facility design, public works, and civil engineering project infrastructure design. Mr. Genzel acts as Division Engineer for landfill closure plan development, landfill closure construction drawing preparation, design of grading, drainage systems, access roads, and operational fill sequencing for solid waste disposal sites. He also provides operations planning, and serves as project engineer for special projects.

LANDFILL CLOSURE DESIGN:

- ❑ **Milliken Sanitary Landfill**, Ontario, California. Developed Final Closure Construction Drawings for Phase 3 final closure construction.
- ❑ **Santa Maria Public Airport Landfills**, Santa Maria, California. Post Closure Maintenance Plan Preparation.
- ❑ **Trona Sanitary Landfill**, San Bernardino County, California. Closure Construction Drawings
- ❑ **Twenty-Nine Palms Sanitary Landfill**, San Bernardino County, California. Closure Construction Drawings.
- ❑ **Lenwood-Hinkley Sanitary Landfill**, San Bernardino County, California. Closure Construction Drawings
- ❑ **Santiago Canyon Landfill**, Orange County, California. Final Closure Construction Drawings-developed grading and drainage plans for use for final closure construction.
- ❑ **Santiago Canyon Landfill**, Orange County, California. Final Closure Post Closure Maintenance Plan - develop grading and drainage plans for use in FCPCMP. Hydrology and hydraulic calculation report. FCPCMP report editing.
- ❑ **Upland Landfill**, Upland, California. Perform preliminary final cover grading and drainage channel design.
- ❑ **Morongo Valley Sanitary Landfill**, Morongo, California. Developed final grading and drainage improvement drawings. Final cover design utilized a Geocomposite Clay Liner alternative to the prescriptive cover. Perimeter drainage channel utilized a Geoweb and concrete trapezoidal channel. Provided construction phase engineering support.
- ❑ **Needles Sanitary Landfill**, Needles, California. Developed final grading and drainage improvement drawings. Final cover design utilized a Mono-soil cover alternative to the prescriptive cover. Perimeter drainage channel design included rip-rap embankment protection.
- ❑ **Vista Landfill, Mountain View, CA**: Final closure improvement plans; design of grading; access roads, parking lots, and equestrian pathways (also required to meet ADA requirements for post-closure recreational uses); design of groundwater force main storm drain; grading and paving plan for project air compressor facility, and preparation of project specifications for this 66-acre site.

- ❑ **Crittenden Landfill, Mountain View, CA:** Design of Canyon Fill area dual subdrain pump and discharge piping system; low-permeability material cover; rerouting of landfill gas recover lines to the Laidlaw electrical generating facility, preparation of project specifications. Project included 500,000 cubic yards of canyon fill and reconsolidation of 50,000 cubic yards of inert demolition debris above the existing municipal refuse prism; grading for interim cover benches, down drains, storm drain, and access roads. Responsible for preparation of final closure improvements for this 40-acre site.
- ❑ **Shoreline Amphitheater, Mountain View, CA:** Responsible for preparation of final closure improvement plans utilizing a flexible membrane cover. Project included demolition, removal, and replacement of existing facility pedestrian access.
- ❑ **Coyote Canyon Landfill, County of Orange, CA:**
 - Redesign of 200 acres of this 400-acre landfill final closure construction drawing package to provide Gnatcatcher habitat mitigation area for the Orange County Transportation Corridor Authority; including down drain profiles and connections to storm drain; bench and SCE access road design; redesign of Coyote Canyon Road; development of design sections to retrofit monolithic cover section and composite cover section interface.
 - Provide construction manager technical and engineering support throughout project construction including trapezoidal channel and storm drain re-alignment revisions to avoid construction over refuse areas.
- ❑ **Needles Sanitary Landfill, Needles, CA:** Developed FCPMP for this Fifty acre landfill. Final cover engineered alternative cover design was a six (6) foot Mono-soil cover. Borrow area grading, final grading plan, including on and off-site and perimeter drainage FCPMP drawings were prepared. FCPMP text and closure/postclosure cost estimates were prepared.
- ❑ **Hesperia Sanitary Landfill, Hesperia, CA:**
 - Developed FCPMP for this Forty acre landfill. Final cover engineered alternative cover design was two foot of foundation soil, a geocomposite clay liner and a two (2) foot protective soil cover layer. Borrow area grading, final grading plan, including on and off-site and perimeter drainage FCPMP drawings were prepared. FCPMP text and closure/postclosure cost estimates were prepared.
 - Developed final grading and drainage improvement drawings. On-site drainage design included sediment/detention basins. Perimeter drainage channel utilized a Geoweb and concrete trapezoidal channel.
- ❑ **Republic Imperial Landfill, El Centro, CA:** Developed FCPMP for this thirty-one acre landfill. Final cover engineered alternative cover design was a four (4) foot Mono-soil cover. Borrow area grading, final grading plan, including on and off-site and perimeter drainage FCPMP drawings were prepared. FCPMP text and closure/postclosure cost estimates were prepared.
- ❑ **Milliken Landfill, Ontario, CA:** Developed preliminary grading conceptual plan and final grading plan, vertical expansion based on altering slope ratios from 3:1 to 2:1, at the north, east and south landfill slopes of Milliken Landfill. Perform hydrology/hydraulic calculations, soil loss calculations, and develop PCPMP cost estimate. Developed PCPMP text.

- ❑ **Colton Landfill Preliminary Closure/Postclosure Maintenance Plan:**
 - Develop Grading plan for a vertical expansion based on altering slope ratios from 3:1 to 2:1, prepare final closure postclosure maintenance plan documents. (Plan netted 6,200,000 cubic yards of additional air-space).
 - Drainage plans for final closure postclosure maintenance plans.
 - Submittal of PCPMP document to the Agencies, was deemed complete (first submittal) and is in technical review period.
 - Developed Partial Final Closure Improvement Construction Drawings. Included both phases of Construction Engineering Support.
- ❑ Task Manager for various revisions to Preliminary Closure/Postclosure Maintenance Plans for the following landfills:
 - Highgrove Landfill - Riverside County
 - Edom Hill Landfill - Riverside County
 - Big Bear Landfill - San Bernardino County
 - Barstow Landfill - San Bernardino County

LANDFILL EXPANSION DESIGN:

- ❑ **Mid-Valley Sanitary Landfill**, San Bernardino County, California. Developed Phases 1, 2, 3, and 4 liner construction drawings, including liner details, leachate collection and recovery system design, base and side slope liner system details, leachate pump system, stormwater sump and pumping system design.
- ❑ **Lancaster Landfill, Lancaster, California.** Senior Project Manager for the design of Phase 1A. This included design of a liner system consisting of geosynthetic clay liner, a 60-mil double-sided textured HDPE geomembrane liner, 12-inch thick drainage layer with geotextile separator or optional geocomposite drainage layer, and a 12-inch-thick minimum protective soil layer. A leachate collection recovery system was designed for the Phase 1A liner system.
- ❑ **Frank R. Bowerman Landfill**, Orange County, California. As senior project manager for the design of Phases VII-A, and VII-B, developed construction drawings for the groundwater protection system, stockpiling plans, drainage plans, erosion control facility plans, and LCRS header and connection to storage tanks.
- ❑ **Frank R. Bowerman Landfill**, Orange County, California. Developed interim excavation and liner phasing, and fill sequence plans for Phases V, VII-A, VII-B, V-D expansion areas. Developed designs to provide refuse stability buttress based on existing and proposed liner interface strengths. Performed volume analyses and site life calculations, and prepared Interim Phasing Design Report including liner and slope stability calculations.
- ❑ **Frank R. Bowerman Landfill**, Orange County, California. - provided engineering support for the 2003 update of the site's Master Development Plan.

- ❑ **Newby Island Landfill**, San Jose, California. Senior Project Manager for design of liner system for Sub Area 9C. Included design of conceptual excavation plan; preparation of construction level engineering design plans, specifications, and an engineer's cost estimate.
- ❑ **Otay Landfill**, San Diego, California. Senior Project Manager for the development of construction plans for Phase 3B
- ❑ **West Miramar Landfill**, San Diego, California. Developed construction plans for liner Modules D and E.
- ❑ **Toland Road Landfill**, Ventura County, California. Developed construction plans for Phases IIC and IIIA.
- ❑ **San Timoteo Landfill Cell 2 Phase 1 And 2 Liner Project**, Redlands, California.
 - Developed Cell 2 grading alternatives plans and report (preliminary cell conceptual development plans), for eight (8) cell grading configurations.
 - Developed Cell 2 Phases 1 and 2 Design Report: Including geologic and geotechnical investigation of underlying, slope stability analysis, seismic stability, liner stability analysis and seismic stability. Design report work included design of LCRS system based on HELP3 modeling.
 - San Timoteo Landfill Cell 2 Phases 1 and 2 Liner Improvement Drawings (15 acre lined cell, with 5.5 acres of encapsulated GCL side slope liner), netting 2,800,000 cubic yards of Cell air space.
 - San Timoteo Landfill Cell 2 Soil Ad-mix design: Development of a soil ad-mix design using screened native soils and a seven percent (7%) sodium bentonite ad-mix.
 - Test Fill Pad Construction, CQA and Monitoring: hired contractor, performed test fill pad construction, CQA, installation of SDRI, monitoring of test fill pad for permeability performance, and reported results.
 - Assisted client with construction contractor's proposal process, and bid evaluation.
 - Served as project manager for liner construction CQA, and construction phase engineering support.
 - Developed landfill cell stormwater/leachate management system construction drawings.
- ❑ **Milliken Landfill**, Ontario, California. Developed preliminary grading conceptual plan and final grading plan, for a partial vertical expansion based on altering slope ratios from 3:1 to 2:1, at the north landfill slope of Milliken Landfill. Perform hydrology/hydraulic calculations, and soil loss calculations, and develop FCPMP cost estimate. Develop and edit FCPMP text. (Plan netted an additional air-space volume of 1,300,000 cubic yards for this 140 acre site).
- ❑ **Victorville Sanitary Landfill, Victorville, Ca**: Developed expansion drawings and calculations for the JTD.

- ❑ **Barstow Sanitary Landfill, Barstow, CA:** Developed expansion drawings and calculations for the JTD.

SOLID WASTE - SUPPORT PROJECTS:

- ❑ **Colton Sanitary Landfill, Colton, CA:**

- South channel improvement plans: Develop Gabon tieback channel embankment plans for the protection of the south side of the Colton Landfill. Embankment allowed a vertical expansion of the south landfill face, netting over one-million cubic yards of additional refuse capacity.

- Provided construction phase CQA, and engineering support.

- ❑ TXI Riverside Cement plant and City of Oro Grande Landfill - Hydrology/hydraulics and design of onsite and off-site drainage improvements, for the landfill final closure construction drawings.

- ❑ Project Manager for a landfill expansion study - Mid-Valley Landfill in San Bernardino County, California. Expansion study involved 33 million cubic yards of air-space volume (grading and drainage studies).

- ❑ Task Manager for the preparation of periodic site review for the Woodville Landfill in Tulare County, California.

- ❑ Task Manager for the preparation of grading and drainage plans for the 15-acre Altimont Hills Composting Facility in Alameda County, California. Performed hydrology and hydraulic calculations for the revised grading and drainage concept.

- ❑ Prepared three Final grading plan scenarios for the final closure for Richmond Landfill (a Class I hazardous waste disposal site). Performed hydrology and hydraulic calculations for the revised grading and drainage scheme.

- ❑ Performed hydrology and hydraulic calculations to current grading concept for the Watsonville Landfill. The revisions were done for two different grading scenarios based on client request.

- ❑ BKK Landfill, West Covina, Ca: Hydrology/hydraulics, and design of one-half mile of on-site 100-year storm drain within the Class I Landfill area

EDUCATION / SPECIALIZED TRAINING

Bachelor of Science, Civil Engineering, California State Polytechnic University, Pomona, 1978

PROFESSIONAL REGISTRATIONS / AFFILIATIONS

Registered Civil Engineer, California, 1981

Registered Civil Engineer, Arizona (#33362), 1999

American Society of Civil Engineers

MARINA GRIGOROVA, P.E., R.E.A.

Project Manager

Bryan A. Stirrat & Associates

Ms. Grigorova has eight years of experience in environmental engineering and environmental research. She is responsible for conducting Phase I and II Environmental Site Assessments, Remedial Investigations, health risk analyses, preparation of Remedial Action Plans, Sampling Plans and Health and Safety Plans. She also has extensive knowledge of federal and state environmental statutes and regulations. Prior to joining BAS, Ms. Grigorova was a Research and Development Engineer with the Los Alamos National Laboratory in Los Alamos, New Mexico, where she was responsible for the analysis of state-of-the-art technologies for the remediation of mixed and solid waste and waste water.

SITE INVESTIGATION/REMEDICATION:

- ❑ **Illegal Dump Site Closure**, Nicholson Avenue Disposal Site, Long Beach, California. Assisted in construction management duties, performed sampling, prepared Remedial Investigation Report.
- ❑ **Illegal Dump Site Investigation**, 38th Street Disposal Site, San Diego, California. Performed sampling and assisted in preparation of investigation reports.
- ❑ **Illegal Dump Site Investigation**, City of Lindsay Illegal Dump, Tulare County. Prepared site specific Sampling Plan and Health and Safety Plan, performed sampling, prepared Site Investigation Report.
- ❑ **Site Investigation**, Gordon English Illegal Landfill, Redlands, California. Prepared site specific Sampling Plan and Health and Safety Plan, performed sampling, prepared Site Investigation Report.
- ❑ **Site Closure Services**, Valle Vista Disposal Site, Riverside County. Developed site specific Remedial Action Plan, including site sampling plan and health and safety plan. Provided permitting support and construction management assistance for the clean closure of a former illegal landfill.
- ❑ **Groundwater Pump and Treat System**. Staff Engineer for the design, construction and operation of the POC/CAP groundwater extraction and treatment systems at Mid Valley Sanitary Landfill and Milliken Sanitary Landfill, San Bernardino County, California. Both systems are pump-and-treat systems designed to remove volatile organic compounds.
- ❑ **Groundwater Treatment System Operation, Maintenance, And Monitoring**, Santiago Canyon Landfill, Orange County, California. Providing engineering support for operation of air stripping and metals precipitation treatment systems for groundwater and landfill gas condensate.
- ❑ **Oakhurst UST Site Investigation/Remediation**. Project Manager for the investigation of a UST site in Oakhurst, California, where soil and groundwater were contaminated by petroleum hydrocarbons, BTEX and MTBE. Work at the site included drilling of exploratory borings, construction of groundwater monitoring and vapor extraction wells, vapor extraction testing, and remedial design. Significant technical aspects of the project included the evaluation of alluvial, decomposed granite, and fractured bedrock zones and coordination with owners of nearby impacted potable water wells. The site is overseen by the Central Valley RWQCB and is a priority site on the state's UST Fund list. As Project Manager, provided coordination between the

site owner, RWQCB, the state UST fund, and surrounding well owners. Also coordinated all site activities and contractors.

- ❑ **Reedley UST Site Investigation/Remediation.** Project Manager for the investigation of a UST site in Reedley, California, where soil and groundwater were contaminated by petroleum hydrocarbons, BTEX and MTBE. Work at the site includes vapor extraction testing, and remedial design. Significant technical aspects of the project included the evaluation of potentially dynamic groundwater flows in the area resulting from seasonal pumping of the underlying aquifer. The site is overseen by the Central Valley RWQCB and is receiving funding from the state UST Fund. As Project Manager, provided coordination between the site owner, RWQCB, and the state UST fund. Also coordinated all site activities and contractors.
- ❑ **Ahwahnee UST Site Investigation/Remediation.** Project Manager for the investigation of a UST site in Ahwahnee, California, where soil and groundwater were contaminated by petroleum hydrocarbons, BTEX and possibly MTBE. Work to date has included the preparation of a site investigation work plan to investigation both groundwater and soil at the site. Anticipated field work includes drilling of exploratory borings, construction of groundwater monitoring wells and establishment of an ongoing groundwater monitoring program. The site is overseen by the Central Valley RWQCB and is receiving funding from the state UST Fund. As project manager, provides coordination between the site owner, RWQCB, and the state UST fund.
- ❑ **Los Angeles to Pasadena Blue Line Construction.** Project engineer assisting in the environmental oversight and compliance during construction of the Los Angeles to Pasadena Blue Line light rail system. The project includes field observations of contractor activities, monitoring of remediation efforts, review and auditing of storm water pollution prevention, soil sampling and characterization, review of contractor records for compliance, coordinating with waste disposal contractors and signing of waste manifests, and coordination with site contractors and the Construction Authority on environmental issues.
- ❑ **Site Investigation and Remediation Services,** Former Tank Farm, Norwalk, California. Project Engineer during investigation and subsequent removal of underground product piping. Work included inspection services during the excavation and removal of several thousand feet of product piping, excavation and disposal of petroleum impacted soils, and monitoring compliance with site health & safety and regulatory guidelines.
- ❑ **Soil Vapor Extraction Treatment System Construction and Operation,** Former Tank Farm, Norwalk, California. Provided design and general engineering support, construction management, data analysis, sample collection, O&M oversight and reporting on SVE system operation. SVE system consists of a network of vapor extraction wells and a thermal oxidation treatment unit.
- ❑ **Interpretation of Regional Groundwater Data,** Goe Engineering site, Industry, California. Providing engineering interpretation/analysis in support of this former metal manufacturing facility as part of the Superfund mediation action and proposed clean-up.
- ❑ **Site Closure Services,** Electric Motors Services, Alhambra, California. Prepared site specific Sampling Plan and Health and Safety Plan, assisted in sampling, and prepared Site Investigation Report. Obtained No Further Action status from Los Angeles Regional Water Quality Control Board.

- ❑ **Portland Cement Concrete (PCC) Study, Caltrans Construction Sites.** Member of technical team contracted to study the levels of hexavalent chromium in was generated by the grinding and cutting of PCC. The study included a review of reports from previous Caltrans highway construction projects, and an analysis of existing technical reports and laboratory testing data.
- ❑ **Risk Analysis,** EPC Eastside Landfill, Bakerfield, California. Providing health risk analysis in support of Remedial Investigation/Feasibility Study for this oil field disposal facility.

PROFESSIONAL EXPERIENCE:

- 1999 – Present Project Engineer
 Bryan A Stirrat & Associates
 Diamond Bar, California
- 1995 – 1998 Research & Development Engineer
 Los Alamos National Laboratory
 Los Alamos, New Mexico
- 1994 – 1995 Research Assistant
 Johns Hopkins University
 Baltimore, Maryland

EDUCATION:

- Johns Hopkins University
Master of Science, Environmental Engineering, 1995
- Moscow Institute of Fine Chemical Technology, Moscow, Russia
Bachelor of Science, Chemical Engineering, 1992

REGISTRATIONS:

- ❑ Registered Civil Engineer, California (#67877)
- ❑ Registered Environmental Assessor I, California (REA-07567)

CERTIFICATIONS AND TRAINING:

- ❑ California Groundwater Association Seminar on MTBE
- ❑ 40-Hour Hazardous Waste Operation/Emergency Response
- ❑ 8-Hour HAZWOPER Refresher Training

PROFESSIONAL MEMBERSHIPS:

- ❑ California Groundwater Association - Member

CHRISTOPHER W. HANSEN, P.E., R.E.A. II

Vice President – BAS Construction and Remediation

Mr. Hansen is a registered civil engineer with over 22 years of experience managing large, complex and controversial landfill and hazardous waste projects. He has been responsible for the engineering and environmental programs at the BKK Class I and Class III landfills, and was Environmental Manager for the Kettleman Hills Facility which is the second largest hazardous waste landfill facility in the United States. Mr. Hansen has directed successful remediation, closure and postclosure activities at several sites. He has designed and managed programs to monitor soil, groundwater, soil gas, landfill gas, waste, wastewater, surface water, stormwater, leachate, landfill cap emissions and ambient air. He has defended against hundreds of regulatory agency audits and inspections, has procured and revised scores of permits, and has a strong working knowledge of local, California and USEPA regulations.

PROJECT EXPERIENCE:

- ❑ **BKK Landfill Site Final Groundwater Remedy**, West Covina, California, Project Manager. Responsible for site characterization, interim remedial studies and negotiation with USEPA for selection of the final groundwater remedy. Achieved substantial cost savings with a perimeter contain-and-control remedy for the unlined 190-acre mixed hazardous and municipal waste landfill located in an urban setting. Innovative elements include the potential grandfathering of fourteen interim wells into the final remedy thereby obviating the need to drill new ones, an agreement not to pump highly-viscous fluids when encountered in leachate extraction wells, and several other practical solutions to complex and/or controversial issues. Also negotiated simple and quick solution with USEPA, DTSC and CIWMB to cap buried trash discovered outboard of landfill footprint. Negotiated practical remedy with USEPA Emergency Response Office to subsurface gas migration near landfill border with neighboring homes.
- ❑ **BKK Landfill Site Part B Postclosure Permit**, West Covina, California, Project Manager. Responsible for obtaining the first Part B postclosure permit for the closed Class I landfill. Negotiated with DTSC and achieved substantial cost savings for the groundwater (which represents the biggest cost element of the permit) and other monitoring programs, as well as for the 60 one-time studies and deliverables in the 2004 permit.
- ❑ **BKK Landfill Site RACER Postclosure Cost Estimate**, West Covina, California, Project Manager. Negotiated with DTSC and achieved \$107 million in savings in the agency's 2004 "RACER" cost estimate for 30 years of postclosure care for the Class I landfill.
- ❑ **Basin By-Products Site Investigation**, Wilmington, California, Project Manager. Responsible for remedial investigation of soil and groundwater at this truck yard that was built over the top of three old liquid waste disposal facilities. Currently implementing a Removal Action Workplan with DTSC which entails installation of an asphalt cap on remaining unpaved areas of the site.
- ❑ **Coalinga Facility Investigation**, Coalinga, California, Project Manager. Responsible for subsurface investigation at closed disposal facility in the Central Valley.
- ❑ **Greenfield Environmental Hazardous Waste Treatment Facility**, Phoenix, Arizona, Facility Manager. Responsible for obtaining permits, refurbishing an aging plant, remediating pockets of contaminated soil, and starting and running operations at a newly purchased plant.
- ❑ **Kettleman Hills Facility Inspection and Monitoring**, Kettleman City, California, Project Manager. Responsible for site inspections and monitoring of all environmental media. Obtained and implemented all permits. In charge of Health & Safety program.

- ❑ **Operating Industries Inc. Landfill Closure Design**, Monterey Park, California, Assistant Project Manager. Assistant director of technical team for closure design of Superfund site.

PROFESSIONAL EXPERIENCE:

- 2004 – Present Vice President, BAS Construction and Remediation, L.P.
Bryan A. Stirrat and Associates, Inc.
West Covina, California
- 1996 to 2004 Vice President, Engineering and Environmental Programs
BKK Corporation
West Covina, California
- 1994 to 1996 Senior Project Manager
TRC Environmental Solutions, Inc.
Irvine, California
- 1990 to 1994 Facility Manager, Greenfield Environmental of Arizona
Director of Environmental and Regulatory Affairs
BKK Corporation
Carlsbad, California
- 1987 to 1990 Environmental Manager, Kettleman Hills Facility
Chemical Waste Management, Inc.
Kettleman City, California
- 1983 to 1987 Environmental Engineer
Pacific Gas and Electric Company
San Francisco, California

EDUCATION:

- ❑ California State University Sacramento; Bachelor of Science in Civil Engineering (1982)
- ❑ Post-baccalaureate education in hydrogeology, site remediation and hazardous waste management with the University of California at Davis, Waterloo Educational Services, National Water Well Association, Government Institutes, Lion Technology, and McCoy and Associates

PROFESSIONAL LICENSES:

- ❑ Registered Civil Engineer, California (#239588)
- ❑ Registered Environmental Assessor I, California (#20165)
- ❑ Registered Environmental Assessor II, California (2001)

CERTIFICATIONS:

- ❑ 40-Hour Hazardous Waste Operations Training

Mr. Hower has more than 13 years of experience in geology, engineering geology, geologic modeling, landfill design, and construction quality assurance. Over the past six years, Mr. Hower has been integrally involved in the California Integrated Waste Management Board's Solid Waste Cleanup Program, completing hazardous waste characterization and remediation work at dozens of illegal or abandoned disposal sites throughout California. In addition, Mr. Hower has been involved with the geotechnical evaluation, design, and groundwater monitoring and reporting programs at numerous solid waste landfills in southern California. Mr. Hower also has unique expertise developing three-dimensional geologic modeling including one in support of an RI/FS for a state-listed site in southern California.

EDUCATION:

California State University, Long Beach, B.S., 1990
Graduate courses in engineering geology – California State University, Los Angeles.
OSHA 40-Hour HAZWOPER Training

PROFESSIONAL REGISTRATION:

California Registered Geologist, No. 6524
Certified Engineering Geologist, No. 2142

PUBLICATIONS:

Hower, John M. and Ferriz, Horacio "MCS Geologic Models Help Solve Three Environmental Problems," Proceedings of the 1994 Annual Meeting of the Geological Society of America, October 24-27, 1994.

RELATED PROJECT EXPERIENCE:

Environmental Assessment, National City Burn Dump and Marina Sites, San Diego County, CA. Lead field geologist responsible working with CIWMB to determine limit of waste at this illegal hazardous waste disposal site. Assessed potential cover soils at a nearby marina development project. Developed work plans coordinated work with State and Federal agencies, logging and sampling test pits. and preparing a report summarizing the analytical results and recommendations for borrow operations and final cover soil preparation. Coordinating final remediation design efforts, including cover borrow soil source evaluation, slope stability analyses and retaining wall design.

Construction Management and Environmental Assessment, Westley Tire Fire Site, Stanislaus County, CA. Lead field geologist responsible for documenting contractor and subcontractor costs during the \$13 million remediation of this site. Also responsible for coordinating geotechnical investigations to determine stability of oversteepened slopes, developed and implemented a groundwater monitoring program for the site, and collected soil samples documenting the waste tire and contaminated soil removal effort. Worked closely with CIWMB, the Central Valley RWQCB, and DTSC during this nine-month project.

Fort Bragg Burn Dump Site Characterization and Remediation, Mendocino County, CA. Lead field geologist responsible for characterizing burn and

providing construction management during remediation. Collected samples of burn ash to determine if waste classification. Background samples were collected and statistical analyses were performed to calculate background concentrations for heavy metals. Worked closely with the CIWMB and RWQCB throughout the site cleanup. Provided daily construction management services and guided cleanup activities. Collected samples of underlying soils to demonstrate the adequacy of the clean-up. Prepared the final report documenting the site-cleanup. The report was used by the CIWMB and NCRWQCB to allow the property to be transferred to the State of California Department of Parks and Recreation.

Site Remediation, Archie Crippen Illegal Disposal Site, Fresno, CA. Construction manager and lead field geologist documenting daily progress of work. Collected samples demonstrating cleanup and prepared final remediation report. Coordinated work with CIWMB, US EPA, Central Valley RWQCB, City and County officials.

Environmental Services and Groundwater Monitoring and Reporting, City of Santa Cruz Landfill, Santa Cruz County, CA. Task manager responsible for implementing groundwater monitoring and reporting services and providing a variety of environmental consultation services for the City of Santa Cruz Class III landfill. Works with the City and the Central Coast RWQCB to ensure compliance with Title 27 regulations. Recently completed installation of additional soil-pore gas monitoring probes to fulfill EMP requirements. Currently working with the City to develop a landfill gas interceptor trench system to mitigate gas migration and groundwater impacts.

Frank R. Bowerman Landfill, Site Characterization and Design, Orange County, CA: Project Geologist geotechnical investigation and site characterization. Work included field geologic mapping, downhole logging of borings, construction of monitoring wells and slope stability analysis for various phases of landfill expansion.

Slope Stability Analysis, South Miramar Landfill, San Diego, CA. Lead geologist responsible for field mapping and slope stability analyses for a drainage channel that cuts into this

closed landfill exposing landfill material. Slope stability analysis was performed for various proposed drainage improvements to eliminate/minimize further drainage scour while maintaining the integrity of the landfill slope cover.

Geotechnical Investigation and Monitoring & Reporting Program (M&RP) Development, Prima Deshecha, Orange County, CA. Lead geologist responsible for overseeing geotechnical investigations in support of an extensive site expansion for this landfill. Performed geologic mapping of cut slopes and downhole logging of over 20 large diameter boreholes to assess landslide activity in the two development areas. Drilled, logged, installed, developed and sampled 12 bedrock groundwater monitoring wells across the site. Provided geotechnical support for the revised Master Plan design negotiations with various Resource Agencies. Prepared a site-wide M&RP to monitor the deeper bedrock aquifer.

Geotechnical Investigation and M&RP Development, Savage Canyon Landfill, Los Angeles, CA. Lead geologist responsible for geotechnical/hydrogeologic investigation for proposed landfill expansion. Work included field mapping, downhole logging of borings, an investigation of the Whittier fault, and preparation of geotechnical investigation report. Subsequently developed a Title 27 compliant DMP and M&RP for the expansion area. Provided agency liaisons with RWQCB for approval of the DMP and M&RP on behalf of client.

Geotechnical Investigations, Puente Hills Landfill, Whittier, CA. Developed and managed geotechnical investigations for landfill expansion into the eastern canyon areas. Work included supervising extensive drilling and sampling to assess slope stability of the proposed expansion subgrade, a fault investigation, groundwater and surface water seepage flow assessments, review of two- and three-dimensional slope stability analyses, seismic hazard assessment, and in-grade geologic mapping.

Geologic Modeling, Palos Verdes Landfill, Rolling Hills Estates, CA. Project geologist for an RI/FS program. Used the Mapping Contouring System (MCS) software to create a three-dimensional geologic model of the 15.3 square mile area surrounding the Palos Verdes Landfill. The geologic model served as a digital framework for subsequent groundwater flow and contaminant transport model.

Slope Stability Analysis, Brawley Landfill, Imperial County, CA: Conducted slope stability analysis and geotechnical evaluation to assess the integrity of the landfill slopes being undercut by the adjacent New River. Work included logging of

geotechnical borings, collection of soil samples for laboratory testing in support of slope stability analysis, and preparation of the geotechnical report.

Slope Stabilization and Construction, Sybil Brand Institute for Women, Los Angeles County, CA: Project Geologist for geotechnical investigation of a distressed slope. Work included a drilling and downhole logging of borings to evaluate the depth and limits of the distressed slope resulting in recommendations to repair the slope and construct a crib wall for slope stabilization.

Geologic Investigation for Slurry Wall Design, Calabasas Landfill, Agoura, CA. Developed, commissioned, and managed a hydrogeologic investigation for the design of a cement-bentonite slurry wall, upgradient extraction wells and downgradient monitoring wells. Work included geologic mapping, drilling, seismic refraction surveying, and packer testing.

Groundwater Monitoring and Reporting, Santa Ana and Lahontan Region Landfill Sites, San Bernardino County, CA. For the last eight years served as the geologist responsible for assimilating quarterly groundwater and soil-pore gas chemistry data from nearly 300 sample points at 21 sanitary landfills in San Bernardino County. Work included data review, coordination with analytical laboratory and groundwater sampling crew, statistical analysis using in-house SAC-APP® computer program, trend analysis, report preparation, and regulatory compliance.

Gregory Canyon Landfill Site Development, San Diego County, CA. Field geologist assisting with preparation of EIR documents for review by the San Diego RWQCB. Conducted 24 and 72-hour constant rate pumping tests to evaluate aquifer properties, and modeled groundwater flow conditions of various landfill configuration scenarios using USGS' Visual MODFLOW to evaluate potential release scenarios.

Fault Investigation, Barstow Sanitary Landfill, San Bernardino County, CA. Logged soil profiles and bedrock exposed in trenches excavated across surface traces of the Lenwood fault. Work conducted in support of landfill expansion planning.

Groundwater Monitoring and Reporting, 10 Landfill Sites, Imperial County, CA. Lead Geologist responsible for coordinating semi-annual groundwater sampling and assimilating groundwater chemistry data from 45 sample points at 10 landfills in Imperial County. Work included data review, coordination with analytical laboratory and groundwater sampling crew, statistical analysis using in-house SAC-APP® computer program, trend

RICHARD L. HUFFMIRE

Vice President, Construction Services
Bryan A. Stirrat & Associates, Inc.

Mr. Huffmire is an experienced construction superintendent who oversees construction activities on BAS projects throughout California. Mr. Huffmire has supervised the construction of numerous public works projects, including coordination of construction schedules and maintenance for all project-related documentation, such as daily progress reports, change-orders, and pay applications.

WORK EXPERIENCE:

All the following projects have included comprehensive documentation, including meeting minutes, daily reports, schedules, payment applications, preparation and tracking of change-orders and submittals, photo logs and contract time accounting. Mr. Huffmire is also experienced in the use of computer programs such as Expedition (contract control software), Excel, and Microsoft Word for windows.

- ❑ **Program Manager**, Engineering Services Contract, California Integrated Waste Management Board, Solid Waste Disposal and Codisposal Site Cleanup Program. Coordinated engineering and construction management services for closure of more than 30 illegal and abandoned disposal sites throughout California. Provided constructibility review of engineering drawings, evaluated Site Investigation Reports and construction specifications, and provided technical assistance to field personnel during construction operations. Project has involved clean closure of illegal disposal sites and burn dumps.
- ❑ **Construction Manager** for site development projects at Frank R. Bowerman Landfill, Orange County, California. Projects have included Phase V-D expansion, expansion of site office facilities, and construction management during remediation of landslide at site.
- ❑ **Construction Manager** during development of Zone 1 Phases A&B and other projects at the 1,500-acre Prima Deshecha Landfill, San Juan Capistrano, California. The project involves fine grading, placement and compaction of a low permeability soil liner, installation of bottom and side slope HDPE geomembrane liner, installation of leachate collection system, and improvement and extension of on-site access roads.
- ❑ **Construction Manager** during the Phase I Construction Project at the 27th Avenue Landfill, Phoenix, Arizona. Major elements included processing, placement, and compaction of a low permeability material layer over approximately 130 acres of prepared subgrade; construction of drainage improvements; and placement of an erosion protection layer over the landfill.
- ❑ **Construction Manager**, Royal Boulevard Land Reclamation Site Closure, Torrance, California. This site, surrounded by a residential neighborhood, required recovery of inert foundry waste from adjacent properties and reconsolidation on site, import and placement of low-permeable and vegetative material, construction of A.C. perimeter roadway and 3,400 LF of concrete block wall, reconstruction of miscellaneous structures and garages, placement of geotextile over the entire site, and surface and sub-surface drainage improvements.
- ❑ **Construction Manager**, CAP Groundwater Treatment System, Milliken Landfill, San Bernardino County, California. Performed construction management during construction of a water conveyance and treatment system. Major components included installation of HDPE piping, reinforced concrete, electrical and instrumentation, and miscellaneous paving
- ❑ **Construction Manager** during construction of the Crazy Horse Landfill Phase I Groundwater Protection Project. Major elements of this project included mass excavation and grading;

processing, placement, and compaction of Bentonite amended low permeability material; installation of a leachate collection and recovery system placement of 90 mm geomembrane; installation of eight-ounce and sixteen-ounce geotextile; construction of the protective cover layer; and installation of miscellaneous drainage improvements.

- ❑ **Construction Manager** for the Berry Street Mall Closure Construction, Roseville, California. Closure activities for this 20-acre site included mass grading for subgrade preparation, import and placement of 130,000 cubic yards of random and low permeable material, installation of a leachate and gas collection system, construction of A.C. access roads, miscellaneous surface drainage improvements, and erosion control.
- ❑ **Coordination of Operation Maintenance and Monitoring Activities** for groundwater remediation and landfill gas collection and treatment systems. This includes weekly/monthly monitoring activities at the Peyton Cramer site, Newport Terrace site, Point Loma UST site.
- ❑ **Construction Manager** for the development of project specifications for West Miramar Landfill Liner Modules 2/3, Crittenden Landfill/canyon fill construction, Vista Landfill closure construction, and Shoreline Amphitheater Landfill closure.
- ❑ **Construction Manager**, Elsinore Landfill Closure, Elsinore, California. This 40-acre site required import and placement of over 200,000 cubic yards of foundation and low-permeable material, construction of trapezoidal drainage channels, subsurface and surface drainage improvements, miscellaneous reinforced concrete structures, geotextile installation and A.C. pavement.
- ❑ **Construction Manager**, Colton Landfill, Colton, California. Project included construction of interim access roads, drainage benches, drainage improvements, and erosion control devices.
- ❑ **Coordination of Field Monitoring Technicians** for groundwater monitoring program at the Calexico, Holtville, Hot Spa, Imperial, Niland, Ocotillo, Palo Verde, Picacho, and Salton City Class III landfill facilities.
- ❑ **Coordination of Field Monitoring Technicians** for groundwater sampling and 25 active and inactive landfill sites in San Bernardino County. Specific duties include coordination with analytical laboratories and site personnel, scheduling, project tracking and accounting.
- ❑ **Construction Supervisor** of Crossroads Business Park, a 100-acre site with over 2 million cubic yards of import. The project also included: construction of a 12 ft. by 12 ft. reinforced concrete storm drain box with lateral connections ranging from 72 in. RCP to 18 in. RCP; a VCP main line sewer, curb, gutter, and roadway construction; and coordination of all utility installations for the site. Also coordinated construction schedules. Maintained all documentation related to the projects, such as daily progress reports, change-orders and pay applications. Ensured compliance with contract documents and coordinated with various agencies and utility companies to expedite the completion of projects.
- ❑ **Senior Inspector/Project Manager** of Fairway Industrial Park, Fairway Drive improvements and reconstruction, Workman Mill road construction, and numerous public work projects.
- ❑ **Senior Inspector** for Davidson City Pump Plant, Effluent Screening Station, and the Secondary Treatment Facility/Biological Reactors, and for Los Angeles County Sanitation District projects ranging from main line installation to treatment plant construction. Typical projects included a variety of grading, reinforced concrete, masonry, mechanical, and electrical installations.

Primary responsibilities included verifying conformity with the plans and specifications, documentation of daily progress, coordination between the contractor and engineer, and review of contract change-orders and pay applications.

- ❑ As a General Contractor, was involved with the construction of single and multi-family dwellings, with responsibility for all phases of construction.

PROFESSIONAL EXPERIENCE:

- 1990 - Present: Vice President, Construction Services
Bryan A. Stirrat & Associates, Inc.
Consulting Civil & Environmental Engineers
Diamond Bar, California
- 1984 - 1990: Partner
Parker & Huffmire Construction Company
Cypress, California
- 1978 - 1984: Senior Inspector/Project Manager
National Engineering Company
City of Industry, California
- 1968 - 1978: Construction Inspector III (Senior)
L.A. County Sanitation Districts
Los Angeles, California

EDUCATION:

Long Beach City College
Long Beach, California

LICENSES:

- ❑ California State Contractors License No. 456135

KEITH A. JOHNSON. P.E.
Branch Manager, Arizona Office
Bryan A. Stirrat & Associates

Mr. Johnson is a Registered Civil Engineer with 17 years experience in solid waste management and environmental engineering. His experience encompasses the full scope of landfill development, operation, and closure services and includes siting studies, liner system construction, closure plan development, geotechnical assessment, financial studies, design of household hazardous waste collection facilities, and development of source reduction and recycling programs. Mr. Johnson was Project Manager for design and CQA services during the installation of the first geosynthetic clay liner at a solid waste facility in Arizona. Mr. Johnson's environmental experience includes site assessments, underground storage tank investigations and environmental monitoring of soil, water and air.

SOLID WASTE MANAGEMENT EXPERIENCE:

- ❑ **San Carlos Apache Tribe Open Dump Closures**, San Carlos, Arizona. Project Manager for the preparation of closure plans for the Tufa Stone, Six Mile, and Calva Road landfills.
- ❑ **Vincent Mullins Landfill Aquifer Protection Permit Application, Tucson**, Arizona. Prepared the aquifer protection permit application for the facility. This project included final cover design, groundwater modeling, hydrogeologic assessment and final cover source evaluation.
- ❑ **27th Avenue Landfill Closure Construction, Phoenix**, Arizona. Provided engineering support during the design phase of the project. Major project elements included processing, placement, and compaction of a low permeability material layer over approximately 130 acres of prepared subgrade; construction of drainage improvements; and placement of an erosion protection layer over the landfill.
- ❑ **New River Landfill Aquifer Protection Permit and Closure Plan**. Prepared closure plan for state approval including descriptions of site conditions, characterization of waste, site modifications to minimize potential for future leachate generation, groundwater monitoring program, and cost estimates to complete closure and conduct post-closure activities. The plan included the design of a residential transfer station to provide service to local residents after closure of the landfill.
- ❑ **Gila Bend Landfill Aquifer Protection Permit and Closure Plan**. Prepared closure plan for state approval. The plan included justification for the use of an alternative final cover design, based on University of Wisconsin capillary barrier research. Performed a borrow source investigation to determine if suitable construction materials were available on site. The plan also included an analysis to justify facility closure without installing groundwater monitoring wells or gas probes.
- ❑ **Closure of the 28th Street Landfill - Waste Management Unit A**, Sacramento, California. Project Manager for the construction of the final cover over this portion of the landfill. Closure construction included mining and transporting clay to be used for the final cover to the landfill, and preparation of plans and specification for the bid documents.
- ❑ **28th Street Landfill Final Closure/Post-Closure Maintenance Plan**. This document was submitted to the state in preparation for phased closure of the landfill. The plan included a cost analysis for the purchase and transportation of clay to the landfill.
- ❑ **City of Phoenix Cell 5 Landfill Gas Extraction System Design**, Phoenix, Arizona. Assisted with the preparation of plans and specifications for the Cell 5 landfill gas extraction system and related work. This project required coordination with the final closure construction to integrate the system into the future closure configuration.
- ❑ **Maricopa County Landfill Compliance Audits**, Phoenix, Arizona. Assisted with the preparation of compliance audits for eight solid waste landfills throughout Maricopa County. Identified all Federal,

State and local regulations applicable to each site, reviewed regulatory agencies records, reviewed site-specific files, plans and reports, and performed site inspections to determine the compliance status of each facility with applicable regulations.

- ❑ **Vulcan Materials Landfill Compliance Audits, Arizona and California.** Assisted with the preparation of environmental compliance audit of six Vulcan Materials solid waste facilities in California and Arizona. Conducted site inspections, reviewed regulatory agency records, site files, plans and reports, and determined the compliance status of each facility with applicable Federal, State and local regulations. Prepared comprehensive reports providing conclusions and recommendations.
- ❑ **Havasupai Tribe Landfill Operations Plan and Landfill Closure Plan,** Supai, Arizona. Prepared a landfill operations plan for the Tribe which maximized the landfill's remaining capacity. Prepared a closure plan which will allow the Tribe to self-perform much of the closure construction. Also developed a plan for the Tribe's long-term solid waste management.
- ❑ **City of Glendale Municipal Landfill,** Glendale, Arizona. Prepared the Solid Waste Facility Permit amendment for the Landfill. This project included the preparation of permit level drawings, information on the facility operations and design, the design of the lined northern expansion and the design of the final cover.
- ❑ **Los Reales Landfill Liner Design,** Tucson, Arizona. Assisted with the design and preparation of construction drawings and specifications for the 25.5 acre lined cell. The liner system consisted of a GCL, 60 mil HDPE membrane, and operations layer soil. This project also utilized a protective reinforced plastic sheet to protect the liner system from ultraviolet radiation until the operations layer soil is placed.
- ❑ **Glendale Landfill NPDES Permit preparation,** Glendale, Arizona. Prepared the National Pollution Discharge Elimination System (NPDES) Storm water Multi-Sector General Permit and the storm water pollution prevention plan for the 160 acre south parcel, the greenwaste processing area and the material recovery facility area.
- ❑ **Glendale Landfill Gas System Operation and Maintenance,** Glendale, Arizona. Project Manager for operation, maintenance, and monitoring of the site gas extraction and treatment system. The project includes maintenance, monitoring and adjustment of landfill gas wells, probe monitoring, correction/repair of system malfunctions, leaks, and verification of proper operation.
- ❑ **New River Non-hazardous Liquid Waste Facility Sludge and Soil Sampling Plan.** Prepared a plan to characterize the wastes using EPA SW-846 Criteria. The plan included criteria for disposal of both the liquid and solid wastes remaining in the ponds, and closure and post-closure procedures for the facility.
- ❑ **Northwest Regional Landfill Compost Program Operations Plan.** Design of the facility and preparation of the operations plan to comply with state aquifer protection permit guidelines. Facility plans included stormwater containment berms and a stormwater retention basin. Wastes to be processed at the facility included shredded green waste diverted from County landfills and non-hazardous liquid waste.
- ❑ **28th Street Landfill Gas Collection System.** Project Manager for the construction of an active gas extraction system for the 78 acre waste management unit A. The project consisted of the installation of gas extraction wells, gas collection header piping, a condensate storage tank, and a blower/flare station. The system was designed to collect and destroy odorous emissions and control migration from the landfill. Emission tests to confirm the destructive efficiency of the flare were also performed.
- ❑ **Groundwater Remedial Action Plan for the 28th Street Landfill, Tasks 1 and 2.** Preparation of the groundwater remedial action plan for the landfill. The plan included a hydrogeologic study, computer modeling of the groundwater regime and installation of groundwater remediation wells.
- ❑ **Curbside Collection Implementation.** Project Manager for the implementation of a City wide three bin curbside recycling program. Participated in the program's initial planning, purchase of equipment, initial routing of collection vehicles, and selection of a material recovery facility for sorting of recyclables.

- ❑ **Managed the City of Sacramento's 28th Street Landfill. Waste flow to this facility averaged 600 tons per day. The landfill won a Solid Waste Association of North America, Landfill Excellence Award, Category II, in 1992.**

CONSTRUCTION EXPERIENCE:

- ❑ **City of Phoenix Skunk Creek Landfill Cell 6 Excavation**, Phoenix, Arizona. Provided construction management during the excavation of 2.6 million cubic yards of soil for Cell 6 Phase III. The \$3.35 million dollar excavation project was completed on time and under budget.
- ❑ **City of Phoenix Skunk Creek Landfill Gas System Construction**, Phoenix, Arizona. Engineering support during the design of both the landfill gas migration control and full (NSPS) landfill gas extraction systems. Provided construction management for both systems. Both the migration control system and the \$3.6 million dollar NSPS system were completed on time and under budget.
- ❑ **City of Phoenix 19th Avenue Landfill Gas Extraction System Construction**, Phoenix, Arizona. Provided construction management during the expansion of the landfill gas extraction system. The system expansion included construction of 66 active landfill gas extraction wells, 4 multi-stage landfill gas monitoring probes, installation of 5,650 lineal feet of header pipe and 3,880 feet of gas collection pipe, modification of a flare station, fabrication and installation of 14 landfill gas condensate sumps, and start-up of the entire system.
- ❑ **Glendale Landfill Gas System Construction**, Glendale, Arizona. Engineering support during the design of NSPS landfill gas extraction system. Provided construction management for the installation of the system. The \$1.44 million dollar NSPS system was completed on time and under budget.
- ❑ **Maricopa County Cave Creek Landfill Liner Construction**. Project Manager and engineer for Cell "C" design and construction quality assurance services. The project included the first use of a geosynthetic clay liner at a solid waste facility in Arizona. The construction also included stormwater detention basins. Environmental assessment activities performed for this project included coordination of an archeology investigation, a wetlands delineation, 404 permitting and native species evaluation. The project was completed under the approved construction budget.

PROFESSIONAL EXPERIENCE:

1996 - Present	Branch Manager Bryan A. Stirrat & Associates, Inc. Phoenix, Arizona
1993 - 1996	Engineering Manager Maricopa County Solid Waste Management Department Phoenix, Arizona
1987 - 1993	Senior Engineer City of Sacramento Department of Public Works Sacramento, California
1984 - 1987	Project Manager Tecon Pacific, Inc Sacramento, California
1983 -1984	Engineer/Engineering Manager Western Art Stone Co. Inc. Brisbane, California

1981 - 1983 Staff Geotechnical Engineer
Donald E. Banta & Associates
San Jose, California

1979 - 1979 Geologist
Kerr McGee Resources
Casper, Wyoming

EDUCATION:

*Arizona State University, Del E. Webb School of Construction
M.S., Construction (2002)*

*San Jose State University, San Jose, California
M.S., Civil Engineering (1983)*

*University of California at Berkeley, Berkeley, California
B.S., Geology (1979)*

PROFESSIONAL MEMBERSHIP:

- Member American Society of Civil Engineers
- Member Solid Waste Association of North America
- Member American Public Works Association

PROFESSIONAL LICENSES:

- Registered Civil Engineer, California (#36659)
- Registered Civil Engineer, Arizona (#27880)
- SWANA Landfill Manager, (#199)
- OSHA 40-Hour Health and Safety Training

Mr. Lass, President of GLA, has 25 years of experience managing geotechnical and environmental projects. He has been manager and/or principal-in-charge for landslide abatement projects as well as the investigation, evaluation, design, and/or construction inspection of dams, bridges, reservoirs, pipelines, roadways, hillside and flatland commercial/industrial/residential developments, structure distress forensics, natural hazard mitigation, and seismic studies. Mr. Lass has also served as Project Manager for studies of numerous active and inactive landslides, ranging from simple rotational failures to massive complexes of multiple ancient and active landslides.

EDUCATION:

California State University, Los Angeles, M.S., 1978
California State University, Los Angeles, B.S., 1974

CALIF. PROFESSIONAL REGISTRATIONS:

California Registered Geologist, No. 3653
Calif. Certified Engineering Geologist, No. 1093
Calif. Certified Hydrogeologist, No. 18

RECENT PUBLICATIONS:

Lass, G.L., R. Keenan, E. Casas, A. Rivera, L.A. Mariscal, 2000, Performance Results of the Coyote Canyon, Milliken and Phelan Landfill Alternative Monofill Demonstrations: Proceedings of the 5th Annual Landfill Symposium of the Solid Waste Association of North America (April 12-14, 2000, Albuquerque, New Mexico).

Lass, G.L., Ferriz, H.G., Eisenberg, L.C., Niederman, C.S., 1996, Alternative Final Covers for Landfills in Arid and Semi-arid Regions – A Case Study: Proceedings of the 1st Annual Landfill Symposium of the Solid Waste Association of North America (November 4-6, 1996, Wilmington, Delaware).

PROFESSIONAL EXPERIENCE:

GeoLogic Associates - 1991-present - President In association with Mr. Bryan A. Stirrat (Bryan A. Stirrat & Associates) Mr. Lass formed GeoLogic Associates Inc. in March of 1991. Mr. Lass is responsible for the day-to-day operation of this geotechnical, hydrogeological, and environmental consulting firm, and also provides technical expertise and participates as project manager and principal-in-charge on a number of the company's projects.

Independent Consultant - 1990-1991 - Prior to forming GLA, Mr. Lass acted as an independent consultant on a number of environmental monitoring projects. These services were provided primarily to Moore & Taber and Bryan A. Stirrat & Associates.

Moore and Taber (AMEC) - 1977-1990 - Vice President and Director of Geology/Principal Geologist. Acted as geotechnical project manager and/or principal-in-charge for the investigation, evaluation, design, and/or construction inspection of numerous projects, including landfills, dams, bridges, reservoirs, pipelines, roadways, commercial/ industrial/residential

developments, structure distress forensics, natural hazard mitigation, and seismic studies.

SELECTED PROJECT EXPERIENCE:**Geotechnical and Hydrogeologic Investigation, Santa Cruz Class III Landfill, Santa Cruz, CA:**

Principal in Charge for geotechnical and hydrogeologic studies for landfill expansion and characterization of landfill impacts to groundwater. Project work included geologic and hydrogeologic characterization, monitoring system design and construction, liner design and construction, and permitting assistance

Geotechnical Investigation, Sonoma Central Landfill, Sonoma County, CA. Geologic, seismic, groundwater investigations, and conceptual design of proposed western expansion of this municipal landfill facility. This included extensive investigations of the suspected Dunham fault, which crosses the proposed expansion area.

Crazy Horse Sanitary Landfill, Monterey County, California: Development of groundwater monitoring programs to comply with U.S. Environmental Protection Agency (EPA) and California Article 5 requirements at this active 100+ acre facility, including hydrogeologic characterization, earthwork design, and CQA to support expansion.

Shoreline Landfill Geotechnical/Hydrogeologic Characterization, Santa Clara County, CA: Principal in Charge for hydrogeologic and geotechnical studies for closure of two separate landfills. Work included geotechnical analyses to identify a cost-effective cover design meeting the City's aesthetic requirements, QA services to monitor closure construction; and hydrogeologic analyses to identify a post-closure monitoring system. The site is now a regional park.

Geotechnical Investigation, Prima Deshecha Landslide, Orange County, CA: Principal in Charge for geotechnical investigations in support of an extensive site expansion for this landfill. Project included an assessment of significant landslide activity in two development areas, and coordination with RWQCB and environmental resource agencies to design a stream habitat as a mitigation for landfill expansion.

Frank R. Bowerman Landfill, Site Characterization and Design, Orange County, CA: Principal in Charge of site characterization and design to support master plan, detailed liner and cover design, geotechnical investigation, slope stability analysis and construction inspection for various landfill phases.

Geologic/Geotechnical Investigation, Olinda-Alpha Sanitary Landfill, Orange County, CA: Technical Lead for geologic mapping, subsurface investigation, slope stability analyses, and evaluation of potential on-site borrow resources for site expansion and Master Plan development.

Geotechnical Investigation, Coyote Canyon Landfill Closure, Orange County, CA: Principal in Charge of geotechnical investigations to develop Final Closure and Post-Closure Maintenance Plans including design and construction of an alternative final cover demonstration program with and real-time moisture monitoring stations to measure surface water infiltration through the cover.

Mid-Valley Sanitary Landfill, San Bernardino County, CA: Geotechnical investigations to support EIR development and master planning for site expansion program. Hydrogeologic studies, groundwater contaminant plume evaluation, remedial alternatives assessment and design, remediation pilot study, and Corrective Action implementation.

Santiago Canyon Landfill Hydrogeologic Characterization, EMP and Design, Orange County, CA: Technical Lead for hydrogeologic characterization of potential contaminant migration from this 180-acre landfill, borrow evaluation and earthwork design to facilitate closure, including an alternative final cover design.

Geotechnical Investigation, West Miramar Landfill, San Diego, CA: Principal in Charge for geologic/geotechnical investigations for phased development of this landfill. Project included geologic mapping, downhole geophysical logging, material testing and slope stability analyses in support of landfill expansion.

Geotechnical/Hydrogeologic Investigations, Gregory Canyon Landfill, San Diego County, CA: Principal in Charge for geotechnical studies and hydrogeologic characterization in support of an Environmental Impact Report (EIR) to site a new landfill in San Diego County. Studies included a thorough literature review, field mapping, VLF geophysical survey, and construction and geophysical

testing of wells to assess the bedrock aquifer beneath the site. Provided regulatory liaisons with the RWQCB on groundwater issues and reviewed geology and hydrogeology sections for the EIR. Assisted with public meetings and response to comments on the draft EIR toward EIR certification.

Altamont Landfill, Alameda County, CA: Slope stability and liner design to support expansion of this 800-acre site.

Bakersfield Metropolitan Landfill Geologic/Hydrogeologic Characterization at Bena, Kern County, CA: Principal in Charge for geologic and hydrogeologic characterization and preliminary design of this new 2,200- acre regional landfill.

Puente Hills Sanitary Landfill Hydrogeologic Characterization, Los Angeles County, CA: Principal in Charge of hydrogeologic characterization and well installation to support design of the groundwater monitoring system at this 500+ acre facility.

Elsmere Canyon Landfill Hydrogeologic Evaluation, Los Angeles County, CA: Geologic and hydrogeologic evaluation and preliminary design of this proposed 1,600-acre regional facility.

CIWMB Statewide Landfill Closure Contract, CA: Principal in Charge of California Integrated Waste Management Board contract to develop and implement closure and environmental monitoring at various closed, illegal, and abandoned landfill sites throughout the state. Project work includes site characterization, geotechnical studies, site remediation and restoration/closure.

Geologic/Geotechnical Investigation, Tequesquite Sanitary Landfill, Riverside County, CA: Principal in Charge for geologic/geotechnical investigation of proposed borrow site for Alternative Final Cover construction. Work included seismic refraction surveys, subsurface investigations and laboratory analyses of various borrow and soil mix designs.

Colton Landfill, San Bernardino County, CA: Hydrogeologic characterization and design of groundwater corrective action system to support re-permitting of this 100-acre facility.

NON-PRESCRIPTIVE (ALTERNATIVE) FINAL COVER SYSTEM PROJECTS:

Principal-in-Charge for design and regulatory approval of alternative cover systems at the following sites:

- **Baker Landfill, San Bernardino, CA** (1996 - 1999) Design and Construction.
- **Bakersfield Landfill, Kern County, CA** (1998 - Present) Design project.
- **Coachella Landfill, Riverside County, CA** (1996 - 1999) Design and construction project.
- **Colton Landfill, San Bernardino County, CA** (1996 - 1999) Design and construction.
- **Coyote Canyon Landfill, Orange County, CA** (1986 - Present) Design, construction and ongoing soil-moisture monitoring demonstration project.
- **Glendale Landfill, Glendale, Arizona** (1995 - 1996) Design and soil-moisture monitoring demonstration project.
- **Highgrove Landfill, Riverside County, CA** (1996-2000) Design and future construction project.
- **Mead Valley Landfill, Riverside County, CA** (1996-2000) Design and future construction project.
- **Milliken Landfill, San Bernardino County, CA** (1995 - Present) Design, construction and ongoing soil-moisture monitoring demonstration project.
- **Morongo Valley Landfill, San Bernardino, CA** (1996 - 1999) Design and construction project.
- **Needles Landfill, San Bernardino, CA** (1996-1999) Design and construction project.
- **Newberry Springs Landfill, San Bernardino, CA** (1996 - 1999) Design with construction scheduled for Fall 1999/Winter 2000.
- **Norton AFB, San Bernardino, CA** (1998) Cover construction dispute resolution.
- **Phelan Landfill, San Bernardino, CA** (1996 - Present) Design, construction and ongoing soil moisture monitoring demonstration project.
- **Picacho Landfill, Imperial County, CA** (1998-1999) Design project.
- **San Marcos Landfill, San Diego County, CA** (1999-Present) Design consultation project.
- **Santiago Canyon Landfill, Orange County, CA** (1996-Present) Design, construction and ongoing moisture monitoring project.
- **Tequesquite Landfill, Riverside County, CA** (1996 - 1999) Design and construction project.
- **Trona-Argus Landfill, San Bernardino, CA** (1996 - Present) Design with construction scheduled for Fall 1999/Winter 2000.

- **West Miramar Landfill, San Diego County, CA** (1998 - 1999) Cover evaluation for existing interim cover.

PRESCRIPTIVE FINAL COVER SYSTEMS:

Principal Geologist for design of prescriptive final cover systems at the following sites:

- **Berry Street Mall Landfill, Roseville, California** (1992 - 1993)
- **BKK Class I Landfill, West Covina, California** (1986 - 1988)
- **BKK Class III Landfill, West Covina, California** (1988 - 1990)
- **Crazy Horse Landfill, Salinas, California** (1993 - 1994)
- **Crittenden Landfill, Mountain View, California** (1995)
- **Elsinore Landfill, Riverside County, California** (1991 - 1992)
- **Encinitas Landfill, San Diego County, California** (1992 - 1993)
- **Gillespie Landfill, San Diego County, California** (1992 - 1993)
- **Jamacha Landfill, San Diego County, California** (1992 - 1993)
- **Poway Landfill, San Diego County, California** (1992 - 1993)
- **Royal Boulevard Land Reclamation Site, Torrance, California** (1989 - 1991)
- **Santa Cruz Landfill, Santa Cruz, California** (1995 - 1996)
- **Valley Center Landfill, San Diego County, California** (1992 - 1993)
- **Viejas Landfill, San Diego County, California** (1992 - 1993)

Betsy A. Lindsay

President/CEO

Education

- MURP, Master of Urban and Regional Planning California State Polytechnic University, Pomona, CA, 1989
- Graduate Program, Business Administration, Pepperdine University, Irvine, CA, 1989-1991
- Graduate Program, Public Policy and Administration California State University, Long Beach, CA, 1992
- B.A., Geography, California State University, Long Beach, 1978

Professional Registrations, Licenses, and Affiliations

- American Planning Association, Former Director of Professional Development
- Urban Land Institute
- Association of Environmental Professionals
- National Organization of Women Business Owners
- National Association for Female Executives
- OCTA Small Business Roundtable (SBR 99)
- Commercial Real Estate Women

Professional Experience

Ms. Lindsay possesses 21 years experience in the fields of environmental planning and permitting, redevelopment, fiscal impact analysis, economic development, and facility planning. Her primary responsibilities include business and project management, contract administration, resource allocation, and quality control. She also manages all corporate endeavors involving the permitting and processing of solid waste facilities (e.g., Class III landfills, transfer stations, and material recovery facilities). Specific responsibilities include overall project management, preparation and processing of CEQA/NEPA documents, and associated entitlement obligations for large-scale public/private infrastructure projects.

SELECTED SOLID WASTE EXPERIENCE

Sunshine Canyon Landfill Expansion, Sylmar, California (City portion). Ms. Lindsay is currently serving as Project Director responsible for oversight of all environmental documentation, preparation and entitlement processing for the proposed Sunshine Canyon Landfill in the City of Los Angeles. Also responsible for overseeing nine participating subconsulting firms, as well as in-house environmental staff. This combined landfill would have an approximate 90-million tons of disposal capacity, with a planned maximum intake rate of 11,000 tons-per-day (tpd).

Sunshine Canyon Landfill Expansion, Sylmar, California (County portion). Project Director for the proposed Sunshine Canyon Landfill in the County of Los Angeles responsible for preparing nine environmental documents, entitlement processing, including an Oak Tree and Conditional Use

Permit (i.e., 51 project conditions and seven separate monitoring programs), for this project in the City of Los Angeles. Also assisted County staff with the preparation of permit compliance documentation (i.e., pre-construction, construction, and operations) for required regulatory permits for project implementation. This landfill has an approximate 17-million tons of disposal capacity, with a planned maximum intake rate of 6,500 tpd.

City of Pomona Materials Recovery Facility. Ms. Lindsay has served as Project Director for a 6,000-tpd Materials Recovery Facility (MRF) with rail-haul capabilities. She coordinated planning and environmental efforts with the City's Director of Public Works, Economic Development Director, City Planner, and the planned Facility Operator (i.e., Taormina Industries) in preparation of all environmental documents and citizen participation workshops. The proposed MRF project was one of the most highly controversial projects within the City of Pomona. However, all project documentation prepared by Ultrasystems, under Ms. Lindsay's direction, was certified by the Planning Commission and City Council after several contentious public hearings.

SWT Transfer Station in the City of Compton. Ms. Lindsay served as Project Manager for the proposed expansion of this transfer station. She was responsible for the preparation of environmental documentation, including the traffic, air quality, noise, and aesthetic portions of the Environmental Assessment, and project entitlements for daily capacity expansion at this facility.

Mr. Lopez has more than 14 years of experience in all aspects of field work pertaining to geologic, geotechnical and hydrogeologic investigations. In addition, he is experienced in aquifer test data analysis, geophysical data analysis, groundwater flow modeling (Visual MODFLOW) and statistical analyses of groundwater quality data using a wide variety of software packages (Sanitas®, ChemStat®, SAC-APP®). He also has been responsible for analysis of soil and climatological data for the purpose of analyzing unsaturated flow through final cover systems. Mr. Lopez is well-versed in a wide array of geological field methods. In the last few years, he has logged more than 100 boreholes drilled using air-rotary coring, mud-rotary coring, dual-wall reverse air rotary, air-rotary casing hammer, sonic, hollow-stem auger, and bucket auger methods. Most recently, Mr. Lopez served as the lead field geologist/hydrogeologist for the hydrogeologic investigations at the proposed Gregory Canyon Landfill site. In this capacity, Mr. Lopez was responsible for providing the geologic and hydrogeologic services and coordinating all field activities including drilling, borehole geophysics, well construction and development, and aquifer testing.

EDUCATION

California State University, Fullerton, B.S., 1992
Orange Coast College, Costa Mesa, A.A., 1985
OSHA 40-Hour Health and Safety Training Course

PROFESSIONAL REGISTRATION:

California Registered Geologist, No. 6857.
California Certified Engineering Geologist No. 2143
California Certified Hydrogeologist No. 706

PUBLICATIONS

Lopez, W.B., 1991, "Depositional Environments and Provenance of the Saugus and San Pedro Formations, Las Posas-Camarillo Hills Area, Ventura County, California;" AEG Annual Field Trip Guidebook; Engineering Geology Along the Simi-Santa Rosa Fault System, Simi Valley to Ventura County, California. pp 76-80.

RELEVANT PROJECT EXPERIENCE:

Geotechnical Investigation/Environmental Sampling, Westley Tire Fire Site, Stanislaus County, CA. Staff Geologist responsible for logging and sampling exploratory borings to evaluate stability of oversteepened slopes during site remediation. Collected soil confirmation samples for analysis of VOCs and heavy metals to verify adequacy of remediation activities.

Infiltration Modeling and Settlement Analysis, Avenal Landfill, Kings County, CA. Staff Geologist responsible for evaluating leachate generation potential using US EPA's Hydrologic Evaluation of Landfill Performance (HELP) model. Results were used to design the leachate collection system for the proposed expansion area. Evaluated settlement potential of the landfill for use in Closure and Post-Closure Maintenance plans.

Geotechnical Investigation, Prima Deshecha Landfill Expansion, Orange County, CA. Staff Geologist for a geotechnical investigation in support

of landfill expansion. Performed downhole logging and field mapping of the geology to evaluate landslide slip planes and cut slopes in the Capistrano Formation, a key consideration in the landfill design.

Geotechnical Investigation and Materials Evaluation, Frank R. Bowerman Landfill, Orange County, CA.

Staff Geologist for geotechnical investigation, soils evaluation and laboratory testing to support site development. Work included field investigations and analysis of site geologic conditions to determine the stability of refuse and native cut slopes; rippability of on-site borrow materials; laboratory analysis of select borrow materials, and bentonite admixtures for use as low-permeability liner material. Current work includes geologic mapping and downhole logging of borings to evaluate the depth and geometry of a mobile landslide on a portion of the landfill expansion area.

Gregory Canyon Landfill Siting Project, San Diego County, CA.

Lead Geologist and Lead Hydrogeologist for geologic/hydrogeologic characterization of both alluvial and fractured crystalline bedrock aquifers in support of an Environmental Impact Report (EIR) to site a new landfill in San Diego County. Work included a thorough literature review; extensive field mapping, including fracture orientations in outcrop; a VLF geophysical survey to identify preferentially fractured bedrock likely to provide more productive groundwater wells; oversight and coordination during construction of 26 groundwater monitoring wells and geophysical testing of 18 bedrock wells to assess productive zones within the fractured bedrock beneath the site. Also conducted both step-drawdown and long term (24- to 72-hour) aquifer pumping tests to characterize the bedrock aquifer and demonstrate interconnection between wells along the point of compliance. Results of the field

investigations were used to develop a two-dimensional groundwater contaminant transport model and three-dimensional groundwater flow model in support of the monitoring and reporting program for the proposed Gregory Canyon Landfill.

Geotechnical Investigation, BKK Landfill, West Covina, CA. Staff geologist for geotechnical investigation, borrow evaluation and construction monitoring for development of the BKK Class III Landfill. Performed geologic mapping of cut slopes, laboratory and visual observation of potential low-permeability borrow materials and construction monitoring of clay processing and fill placement operations.

Newby Island Landfill Monitoring and Reporting Program (M&RP), San Jose, CA. Lead Hydrogeologist for groundwater and surface M&RP programs for this landfill on San Francisco Bay. Work includes oversight of groundwater sampling, and coordination with other subconsultants responsible for data entry, and the landfill manager providing inspection logs for landfill preparation of semiannual reports. Also responsible for water quality sampling and reporting for a holding pond so that the water can be pumped to the San Francisco Bay as needed, and preparation of a separate compost facility water quality report at the Newby Island Landfill. Most recently tasked with evaluating the current list of monitoring parameters and negotiating with the San Francisco Bay Region RWQCB for a reduced suite of parameters.

Shoreline Regional Park Water Quality Reporting Program, Mountain View, CA. Conducted oversight of subcontracted sampling personnel, statistical analysis using in-house statistical program, SAC-APP, and evaluation of the data and preparation of quarterly and annual water quality reports for this site.

Hydrogeologic Investigation and M&RP, Santa Cruz Landfill, Santa Cruz County, CA. As Lead Hydrogeologist, performed hydrogeologic investigation, design, construction, and aquifer testing of groundwater monitoring wells in fractured sedimentary rock. As Staff Geologist/Hydrogeologist, assisted with implementation of an EMP that defined the nature and extent of VOC contamination at the site. Also performing groundwater sampling and oversight of subcontracted groundwater sampling personnel, conducting statistical analysis using in-house statistical program, SAC-APP, and evaluation of the

data and preparing the quarterly and annual water quality reports for this site for six years.

French Camp, and Forward Landfill M&RPs, San Joaquin County, CA. Lead Hydrogeologist for groundwater and surface M&RP programs for these landfills. Work includes oversight of groundwater sampling, and coordination with other subconsultants responsible for data entry, and CAP O&M services, as well as the landfill manager providing inspection logs for landfill preparation of semiannual reports

Crazy Horse Landfill M&RP, EMP and CAP Evaluation, Monterey County, CA. As Staff Geologist, assisted with hydrogeologic characterization of multiple aquifers to evaluate the suitability of the existing CAP systems and develop recommendations for expanding and improving the remedial systems at the site. Conducted groundwater sampling and oversight of subcontracted groundwater sampling personnel for this 60 monitoring point water quality M&RP. Performed statistical analysis, data evaluation and preparation of the quarterly and annual water quality reports for this site for three years.

Hydrogeologic Characterization and Groundwater Monitoring and Reporting Program (M&RP), Stringfellow Hazardous Waste Site, Riverside County, CA. Staff Geologist for this high-visibility Superfund project and former Class I industrial waste disposal facility, for the California Department of Toxic Substances Control (DTSC). Work included logging of borings during field activities, which included drilling 33 borings, downhole video surveys, and recovery of about 2800 feet of continuous core in both alluvium and bedrock, and 1345 feet of oriented core in bedrock. At total of 22 aquifer pumping tests have been performed and evaluated along with data from over 400 on-site and off-site wells to support the 3-D groundwater flow model.

Lenwood Fault Study, Barstow, CA. As Staff Geologist, conducted detailed mapping of trenches to evaluate evidence of faulting in area proposed for landfill expansion.

Hydrogeologic Investigation, Pilot Demonstration Program, Mid-Valley Landfill, San Bernardino County, CA. Staff Geologist for geotechnical and hydrogeologic investigation for implementation of an Evaluation Monitoring Program. Work included logging of borings, observation of geophysical surveys, well construction and well development.

Hydrogeologic Investigation and Groundwater Modeling, Milliken Sanitary Landfill, San Bernardino County, CA. Staff Geologist for a hydrogeologic investigation including logging of borings, observation of well construction, and extensive aquifer pumping tests to evaluate the hydrogeologic characteristics of a two-tiered aquifer system in support of a Corrective Action Plan for remediation of a groundwater contamination plume.

Hydrogeologic and Geotechnical Investigation, Santiago Canyon Landfill, Orange County, CA. Staff Geologist for hydrogeologic and geotechnical investigation involving aquifer testing, characterization, and modeling, field mapping of borrow cut slopes, and slope stability analysis of native cut slopes and refuse fills. Also performed downhole logging of four borings.

Groundwater Monitoring and Reporting, Echo Class III Landfill, Fort Irwin, CA. Staff Geologist for groundwater M&RP, hydrogeologic investigation, and determination of water quality protection standards for this Class III landfill located within the Lahontan Region RWQCB. Project includes sampling and analysis of groundwater and soil-pore gas to identify landfill impacts summarized into a concise water quality report. Following installation of the final cover, the project included evaluation of moisture conditions in the cover for a 5-year period.

San Diego Landfill Systems, Borrego, Ramona, Sycamore and Otay Landfill M&RPs, San Diego County, CA. Lead Hydrogeologist for groundwater quality monitoring and reporting programs for four active landfills within the San Diego and Colorado River Basin Region RWQCBs. Work includes groundwater sampling, statistical analyses using the statistical program Sanitas, and preparation of semiannual reports. Also providing stormwater sampling services during the rainy season, annual leachate sampling and reporting and other regulatory liaison services with Allied Waste regarding landfill issues as needed.

West, North and South Miramar Landfill Hydrogeologic Investigation and M&RPs, San Diego, CA Staff Geologist for an initial hydrogeologic characterization including geophysical surveys, groundwater monitoring well and lysimeter construction and preparation of a revised M&RP. Lead Hydrogeologist responsible for on-going semiannual groundwater quality reporting for the

active West Miramar Landfill for the past nine years and inactive South and North Miramar Landfills over the past six years. More recently, assisted the City with the installation of dedicated electrical submersible and bladder pumps for all of the wells within the groundwater monitoring network so that low-flow sampling can be performed where ever possible at these landfills.

Arizona Street and South Chollas Landfill Reporting Program, San Diego, CA. Task Manager responsible for review of water quality data, preparation of non-statistical (trend) analyses, and semiannual reporting for these two inactive landfills. Providing input to the City regarding appropriate responses to the local RWQCB on this site, which is experiencing apparent landfill gas impacts.

Imperial County Groundwater Monitoring and Reporting Program (M&RP), Imperial County, CA. Staff Geologist for groundwater monitoring and reporting for 10 Imperial County solid waste landfills for three years. This program included semiannual sampling and reporting to include a summary of statistical analyses performed by GLA using the in-house statistical program, SAC-APP, and a discussion of the groundwater monitoring results and appropriate conclusions.

San Bernardino County 26 Landfill M&RP, CA. Staff Geologist assisting with water quality assessments and statistical analyses using GLA's in-house program, SAC-APP, for 13 landfill sites in the Santa Ana and seven landfills in the Colorado River Basin RWQCB regions of San Bernardino County, California. Responsible for statistical and non-statistical analyses, data evaluation, and preparation of quarterly and annual water quality. Also responsible for coordinating with field technicians to ensure proper sampling program is employed.

Unsaturated Flow Modeling, Various Sites, Southern CA. Performed unsaturated flow modeling to assess the performance of prescriptive and non-prescriptive monolithic final cover designs for 18 landfills in Southern California. Work included borrow soil sampling and documentation, computer modeling of historical precipitation patterns with different cover configurations to evaluate the long-term performance of the cover designs.

Mr. Mariscal is a staff engineer with over 8 years experience as a staff engineer and field technician. He has performed a variety of monitoring and testing duties during closure of Class I and Class III landfill sites and expansion of Class III waste disposal facilities. Mr. Mariscal has observed and conducted construction quality assurance control of composite liner systems for landfill expansions, corrective action feasibility studies, alternative final cover infiltration modeling, installation of final cover monitoring equipment and testing of fills related to grading operations and liner construction for underground storage tanks. Recently, his experience has focused on landfill closure per CCR Title 27 including work on alternative final cover designs. Mr. Mariscal has performed infiltration modeling for over 20 monolithic (ET) cover projects and has installed and monitored completed final cover systems at various landfill locations.

EDUCATION

1996, B.S., Environmental Engineering
Cornell University - College of Agriculture and
Life Sciences, School of Agriculture and
Biological Engineering, Ithaca, New York
1998, Certified Nuclear Gauge Safety Training Program,
Expires May 11, 2003
1998, Certified 40-Hour HAZMAT Safety Training,
Expires September 26, 2002

PROFESSIONAL ORGANIZATIONS

Member of The American Society of Civil Engineers-
Associate Member April, 1998
Member of The American Academy of Environmental
Engineers- 1998
Engineer-in-Training Certified, State of California-Jan.
1998

RELATED PROJECT EXPERIENCE

Milliken Landfill Alternative Final Cover Demonstration Project, San Bernardino County, California. Performed monitoring of the monofill alternative final cover for the East Mound Demonstration Area to evaluate the performance of the alternative (ET) final cover system. Monitored the infiltration performance of the system and modeled the prescriptive cover performance for comparison. The alternative cover demonstration relies on measurements of moisture movement in the cover system using soil moisture probes installed during final cover construction at different depth intervals of the completed final cover.

Phelan Landfill Alternative Final Cover Demonstration Project, San Bernardino County, California. Performed monitoring of the monofill alternative final cover for the North East Corner Demonstration Area to evaluate the performance of the alternative (ET) final cover system. Monitored the infiltration performance of the system and modeled the

prescriptive cover performance for comparison. The alternative cover demonstration relies on measurements of moisture movement in the cover system using soil moisture probes installed during final cover construction at different depth intervals of the completed final cover.

Needles Landfill Alternative Final Cover Demonstration Project, San Bernardino County, California. Monitored the monofill alternative final cover for the entire site to evaluate the performance of the alternative (ET) final cover system. Monitored the moisture probe sensors and modeled the prescriptive cover performance for comparison. The alternative cover demonstration relies on measurements of moisture movement in the cover system using soil moisture probes installed during final cover construction at different depth intervals of the completed final cover.

Coyote Canyon Landfill Alternative Final Cover Demonstration Project, Orange County, California. Monitored the performance of the monofill alternative final cover of the entire site to evaluate the performance of the alternative (ET) final cover system. Monitored the moisture probe sensors and modeled the prescriptive cover performance for comparison. The alternative cover demonstration relies on measurements of moisture movement in the cover system using soil moisture probes installed during final cover construction at different depth intervals of the completed final cover.

Coachella Valley Landfill, Riverside County, California. Observed and installed the final cover moisture monitoring equipment and sensors as part of the State and Federal regulatory record keeping. Performed geotechnical observation and testing tasks during construction of Monolithic Final Cover system and closure of the Class III waste disposal site. Conducted field CQA testing tasks including: compaction, moisture content, gradation, and permeability testing during construction, as well as extensive record keeping for various regulatory agencies.

Spadra Landfill, Los Angeles County, California. Performed geotechnical observation and testing tasks during construction of Monolithic Final Cover system and closure of the Class III waste disposal site. Conducted field CQA testing tasks including: compaction, moisture content, gradation, and permeability testing during construction, as well as extensive record keeping for various regulatory agencies. Observed and installed the final cover moisture monitoring equipment (neutron probes) and sensors as part of the State and Federal regulatory record keeping.

Twentynine Palms Landfill, San Bernardino County, California. Conducted modeling analysis for the revised alternative final cover for the site. New revised design proposes a thinner (ET) alternative cover for the site, which should significantly reduce closure costs for the client.

Lenwood Hinkley Landfill, San Bernardino County, California. Conducted modeling analysis for the revised alternative final cover for the site. New revised design proposes a thinner (ET) alternative cover for the site, which should significantly reduce closure costs for the client.

Anza Landfill, Riverside County, California. Conducted a full final cover soils evaluation and closure design for the Anza Landfill in Riverside County, California. Collected representative bulk borrow soils from the proposed borrow sources and submitted samples to laboratory testing for hydrological soils testing as required by ASTM specifications. Conducted infiltration modeling using the representative laboratory soils test results, potential vegetation conditions, hydrological data (precipitation and pan evaporation), using the LEACHM model. Designed an effective and efficient alternative monofill final cover system for the site and composed an alternative final cover report for review by the Regional Water Quality Control Board and other state and local agencies.

Big Bear Landfill, San Bernardino County, California. Conducted a full final cover soils evaluation and closure design for the Big Bear Landfill in San Bernardino County, California. Collected representative bulk borrow soils from the proposed borrow source (Big Bear Lake Dredge Project) and submitted samples to laboratory testing for hydrological soils testing as required by ASTM specifications. Conducted infiltration modeling using the representative laboratory soils test results, potential vegetation conditions, hydrological data (precipitation and pan evaporation), using the LEACHM model. Designed an effective and efficient alternative monofill final cover system for the site and composed an alternative final cover report for review by the Regional

Water Quality Control Board and other state and local agencies.

Apple Valley Landfill, San Bernardino County, California. Most recently completed three side by side Alternative Cover Assessment Project (ACAP) test pads at this arid site in western San Bernardino County. The three test pads include a State of California standard prescriptive cover, an alternative final cover, and a lined cover constructed within a lined lysimeter. These demonstration pads have been monitored since September 2001. The pads were constructed to determine the type of final cover that would be most suitable for this particular site and for other nearby closed arid landfill sites. Currently monitoring the test pads.

Apple Valley, Newberry Springs and Phelan Landfills, San Bernardino County, California. Aided in the installation of a 5 feet in diameter caisson lysimeter within the refuse prism at each of these locations. This caisson was instrumented with special moisture monitoring and gas monitoring equipment to determine the effects that may be ignored by the ACAP test pad. The 20 foot deep caisson was backfilled with refuse and then an 18-inch thick monofill cover was installed with special instrumentation to evaluate the role that upward vapor migration may have with respect to the total flux of moisture through landfill covers. Currently monitoring the caisson lysimeter.

Badlands Sanitary Landfill, Riverside County, California. Geotechnical quality assurance observation and testing of leachate collection and recovery system (LCRS) and composite liner installation. Performed field quality assurance monitoring during soil/liner installation.

Union Carbide Corporation, Torrance, California. Performed field quality assurance monitoring during installation of 120-mil composite liner for underground bullet tanks at an industrial chemical facility.

Central Park Sports Complex, Huntington Beach, California. Project included re-designing the engineered final cover for a section of the Sports Complex that overlies an old landfill site with hazardous waste disposal areas. Performed infiltration modeling analysis to model the infiltration performance of the new final cover for the sports complex park

KELLY McGREGOR

President – BAS Construction and Remediation

Mr. McGregor has more than 25 years of experience in environmental construction and solid and hazardous waste management. He began his career in the waste management business as a supervisor for Newpark Waste Treatment Systems, a company specializing in the treatment of oil and gas well drilling fluids. Mr. McGregor also worked for the BKK family of companies, providing hands on management and design expertise for BKK's Class I and Class III landfill operations and Greenfield's hazardous waste treatment facilities in Chula Vista and Phoenix, Arizona. As General Manager of BKK's Class I operations, Mr. McGregor oversaw the design and construction of the BKK leachate collection system and methane gas collection system. He supervised the design and development of BKK's ground water collection program and extraction well drilling program.

PROJECT EXPERIENCE:

- ❑ **General Manager of BKK Class I Landfill Operations**, West Covina, California (1982 – 1989; 1996 – 2004). Manager of day-to-day operations, including operation, maintenance, and monitoring of site landfill gas extraction and treatment system, wastewater collection and treatment system, stormwater management system, and other site facilities. Managed field staff responsible for site monitoring activities, and oversaw construction of upgrades to environmental control systems and civil infrastructure at site.
- ❑ **Construction Management** for the landfill gas extraction and treatment system improvements at the BKK, Mid-Valley, Milliken, San Timoteo, Colton, Keller Canyon, Ox Mountain, Olinda Alpha, Frank R. Bowerman, Newby Island, and Austin-Forward landfills.
- ❑ **Hazardous Waste Treatment Facility Development**. Oversaw the design and construction of California's first fully permitted hazardous waste treatment, storage and disposal facility, Appropriate Technologies II, Inc. in Chula Vista, California and Greenfield Environmental Inc. in Phoenix Arizona.
- ❑ **Groundwater Treatment System Design**. Designed a gravity fed 50-gpm portable leachate treatment system for the San Marcos landfill. The system treated over one million gallons of landfill leachate / condensate, which was then utilized for dust control.
- ❑ **Hazardous Waste Treatment Facility Operational Optimization**. Designed and implemented worker production measures and improved facility operations which increased the volume of waste processed at Aptec hazardous waste treatment facility from 40 to 300 drums per day.
- ❑ **Personnel Management**. Trained and assisted in the training of over 600 employees in occupational safety and health, hazardous materials handling, emergency response and spill containment.
- ❑ Constructed and operated six mobile, drilling fluid, dewatering filter presses and electro-floatation units.
- ❑ Developed and implemented a proprietary hazardous waste tracking system for TSDF facility operations.
- ❑ Prepared a facility EIR and relevant permits for hazardous waste TSDFs in California and Arizona and managed the facilities over a five year period.

- Designed and modified a series of aerosol can and propane cylinder automated recovery systems.
- Designed and implemented worker production and improved facility operations changes which increased the volume of waste processed at Aptec hazardous waste treatment facility from 40 to 300 drums per day.
- Provided emergency response services to the United States Environmental Protection Agency, the Drug Enforcement Agency, the Department of Justice, and the County of San Diego. These responses included seizures of large volumes of cocaine, handling drums with reactive waste and seizure of hazardous waste illegally destined for Mexico.

PROFESSIONAL EXPERIENCE:

- 2004 - Present: President
 BAS Construction and Remediation
 Diamond Bar, California
- 1982 - 2004: Vice President and General Manager
 BKK Corporation
 West Covina, California
- 1979 - 1982: Supervisor
 Newpark Waste Treatment Systems
 San Diego, California

EDUCATION:

- Mt. San Antonio College, Walnut, California; *Coursework in Engineering*
- Allegheny Community College, Pittsburgh; *Coursework in Administration of Criminal Justice*
- University of California at San Diego, *Coursework in Hazardous Materials Certification Program*

PROFESSIONAL REGISTRATION / LICENSES:

- California Registered Environmental Assessor
- General Engineering Contractors, California
- Well Drilling (Water) License, California

Dr. McMillan has more than 25 years experience in engineering geology, hydrogeology, geochemistry, and engineering geophysics. His professional career includes both practice and academic experience. He has managed projects for government agencies, public utilities, and corporations, and has participated in a diverse range of projects involving site characterization, seismic and fault investigation, analysis of slope and landslide stability, groundwater resource and hydrogeology investigation, forensic investigation and expert witness testimony. These projects pertain to power generation facilities, nuclear and solid waste containment, transportation facilities, and other infrastructure. He has directed all phases of projects including field investigation, laboratory testing and analysis, development of design criteria, and client and regulatory agency liaison.

EDUCATION

Stanford University, Ph.D., Applied Earth Sciences,
1979
California State University, Los Angeles, B.S.
Geology, 1970

PROFESSIONAL REGISTRATION

California Registered Geologist, RG 3771
California Certified Engineering Geologist, CEG 1152
California Certified Hydrogeologist, CHG 435
Washington State Certified Engineering Geologist and
Hydrogeologist No. 1408

RELEVANT EXPERIENCE

Bakersfield Metropolitan Landfill - Bena, Kern County, California: Project Manager (M&T AGRA) hydrogeologic characterization, clay borrow investigation, and construction monitoring, Phase 1A/B.

Project Reports:

- Report on the Evaluation of Alternative Liner Performance, April, 1994.
- Construction Report, Phase 1B, Bakersfield Metropolitan Landfill - Bena, Kern County, California, WRD No. 90-191, 8/28/92.
- Construction Report, Phase 1A, Bakersfield Metropolitan Landfill - Bena, Kern County, California, WDR No. 90-171, 4/14/92.
- Investigation of Faulting Revealed in Phase 1A, 11/26/91.
- Protocol for Investigation of Unforeseen Geologic Structures, 11/26/91.
- Evaluation of Faults and Stratigraphic Discontinuities Exposed on Phase 1A Cut Slope, 7/17/91.
- Site Geologic and Hydrogeologic Characterization, 9/15/89.
- Borrow Evaluation Summary, 9/15/89.

BKK Landfill, West Covina California.

Supervision of work conducted under the requirements of the Consent Order between BKK and EPA Region IX, EPA Docket No. RCRA-09-89-0019. The investigation involved drilling of soil borings, core drilling, and construction and development of 17 groundwater monitoring wells to characterize the hydrogeology and assess the presence and extent of soil and groundwater VOC contamination at off-site locations.

Project Objectives.

- Determine the limit of off-site groundwater contamination.
- Conduct Appendix IX testing of representative wells and establish a list of chemicals of concern for the site.
- Abandon from the groundwater monitoring program wells that are no longer productive.
- Establish the background quality of groundwater in each of the principal geologic units of the site (i.e., alluvium, conglomerate, upper shale, middle shale, sandstone, and lower shale), and assess the influence of shear zones, faults, and fractures on the hydrogeology of the site.
- Develop a suitable groundwater data base from which to prepare a risk assessment, including collection of additional data off-site, testing statistical methods of data evaluation, and selection of representative data to be validated.
- Provide specific information on hydraulic and aquifer properties of the fractured bedrock that will provide for the development of appropriate groundwater corrective measures.

Project Reports:

- McMillan, K., and J.E. McNamara (1995), Hydrogeochemistry of groundwaters, BKK Landfill, W. Covina, California, AEG/GRA Annual Meeting Program, p. 71.
- RCRA Facility Investigation, Additional Offsite Hydrogeologic Studies (Phase IV), Report of Field Conditions and Activities, BKK Landfill, Vols. 1-4, 6/30/94.

- RCRA Facility Investigation, Additional Offsite Hydrogeologic Studies (Phase IV), Appendix 10, Utility Water Analyses, BKK Landfill, Vols. 1-4, 6/30/94.
- Review: Sampling and Analysis Plan, Groundwater Monitoring Programs, BKK Landfill, 12/30/93
- Field Manual for Boring and Well Construction/Development Procedures, Offsite Hydrogeologic Investigation (Phase IV), 9/14/92.
- Recommendations for MW-30 Backup Well Installation, BKK Class 1 Landfill, 10/20/92.
- Review Proposed Barrier III, BKK Corporation Landfill, 10/14/92.

Kern Medical Center Emergency Facility, Bakersfield, California. California Division of Mine and Geology, Seismic Hazards Report (1991).

Bakerfield City Sanitary Landfill, Bakersfield, California. Prepared report on detection monitoring system feasibility (2001).

Prima Deshecha Landfill, Orange County California. In charge of geotechnical investigation and construction monitoring of landslide stabilization for the Phase 1B expansion (2003/2004).

Frank R. Bowerman Landfill, Orange County, California. In charge of geotechnical and hydrogeologic investigation for new Master Plan of landfill expansion (2003/2004).

Gregory Canyon Landfill, San Diego County, California. Conducted hydrogeologic characterization and modeling of fractured-rock aquifer related to permitting new landfill construction (2004).

Proposed Landfill Site AD-17, San Diego County, CA: Performed preliminary hydrogeologic and geotechnical feasibility evaluation of proposed landfill site in crystalline rock as part of a county-wide siting study.

Hydrogeologic Investigation, Central Landfill, Sonoma County, CA: Conducting a hydrogeologic investigation, landfill engineering and a fault study in support of landfill expansion. The fault study included extensive trenching to evaluate the age of faulting.

Santiago Canyon Landfill Slope Stability Analysis, Orange County, CA: Performed slope stability analysis for a proposed maintenance pad at this landfill.

CALEB MOORE, P.E.

Project Engineer

Bryan A. Stirrat & Associates

Mr. Moore is a Project Engineer with seven years in civil engineering and surveying services experience. He has designed and overseen the preparation of grading, sewer, storm drain, water and street plans for a variety of residential and commercial developments. Mr. Moore has also been party chief on topographic, boundary, and ALTA surveys; and performed construction staking including grading certifications, curb and gutter, utility lines, and building layout. In addition, he has performed construction staking calculations; analyzed draft topographic, boundary and ALTA surveys; and prepared record of surveys and tentative and final tract maps. Mr. Moore is skilled in a number of computer-based design tools, including Micro Station, Auto-CADD, InRoads, Eagle Point, LDD, TDS, AES, HEC-RAS, F0601, WSPG, and WMS. He also has experience with GPS survey equipment, and providing construction survey services.

RELATED PROJECT EXPERIENCE:

- ❑ **Drainage System Design:** Provided engineering and design support for the design of drainage improvements at landfill facilities throughout California. Performed hydraulic studies and designed storm drain features including natural and concrete channels, pipes, and basins. Projects have included:
 - Prima Deshecha Landfill Lined Cell Development Design, San Juan Capistrano, California.
 - Olinda Alpha Landfill Lower East Channel, Brea, California
 - South Coast and Laytonville Landfills, Mendocino County, California. Provided engineering support for drainage improvements in support of final closure design.
 - Jamestown, Tuolumne County, California. Provided engineering support for drainage improvements in support of final closure design.
 - Palos Verdes Landfill, Los Angeles County, California. Provided drainage system design in support of the development of a golf course at a former municipal landfill.
 - Coastal Landfill, Ventura County, California. Provided hydrology and drainage review in support of golf course development.
 - Kern Valley Landfill, Kern County, California.

- ❑ **Engineering Services:** Designed and oversaw the preparation of landfill final closure, liner expansion, grading, sewer, water, signing/striping, street lighting, and street plans. Designed masonry, concrete and gabion retaining wall structures. Performed hydrologic studies for landfill, residential and commercial sites. Prepared wind and hydraulic soil loss studies. Prepared erosion control plans and BMP reports. Coordinated and negotiated with governing agencies. Prepared engineers estimates, construction specifications and final closure documents.

- ❑ **Survey Services:** Performed construction staking and calculations. Analyzed maps and documents, reduced data, and drafted topographic boundary and ALTA surveys. Prepared record of surveys, tentative, and final tract maps.

- ❑ **Party Chief:** Lead a survey crew on topographic, boundary, and ALTA surveys. Performed construction staking, including blue tops, grading calculations, curb and gutter, rough and precise grading, utility lines, building layout, and specialty services for communications companies.

PROFESSIONAL EXPERIENCE:

2002 - Present: Project Engineer / Survey Manager
 Bryan A. Stirrat & Associates, Inc.
 Civil and Environmental Engineers
 Diamond Bar, California

1998 - 2002 Staff Engineer / Party Chief
 Marshall Engineering Group
 Glendora, California

EDUCATION:

California State Polytechnic University, Pomona
Bachelor of Science in Civil Engineering, 2001

REGISTRATIONS:

- ❑ Registered Civil Engineer, California (#66580)

Mr. Murphy is a California Certified Engineering Geologist and Hydrogeologist with more than 19 years experience in a full-range of environmental and geotechnical projects. Mr. Murphy's geologic, geotechnical, and hydrogeologic activities have included supervision and management of numerous site characterization studies for geotechnical and environmental projects, subsurface exploration, engineering analyses, hydrogeologic studies to determine the nature and extent of groundwater contamination, evaluation and design of remediation systems, preparation of permitting and compliance reports, and construction review. In addition to his project experience listed below, Mr. Murphy is acquainted with state and federal environmental regulations, and has assisted in numerous compliance and permitting efforts.

EDUCATION:

California State University at Fullerton, B.S., 1986
California State University at Los Angeles, graduate studies in Quaternary geology, 1991

PROFESSIONAL REGISTRATIONS:

Registered Geologist, California, No. 5393
Certified Engineering Geologist, California, No. 1770
Certified Hydrogeologist, California, No. 44

RELEVANT PROJECT EXPERIENCE:**Hydrogeologic Evaluation, Pilot Demonstration Project & Full-Scale POC CAP, Mid-Valley Sanitary Landfill, San Bernardino County, California:**

Project Manager responsible for geologic and hydrogeologic studies to characterize the nature and extent of groundwater contamination at and downgradient of the site. Work included design and construction of groundwater monitoring wells, aquifer pumping tests, borehole geophysical analyses, laboratory analyses, computer-based hydrogeologic modeling, definition of the lateral extent of groundwater impacts, evaluation and design of a cost-effective remedial response, development of a Pilot Study to verify the adequacy of the proposed remedial measures, and CAP implementation schedule.

Hydrogeologic Investigation, Puente Hills Sanitary Landfill, Los Angeles County, CA:

Conducted hydrogeologic investigation to support design of the groundwater monitoring system at the 500+-acre facility. Developed pumping test design and analyses to determine aquifer properties for extension of groundwater extraction wells.

Hydrogeologic Evaluation, EFS and CAP, Milliken Sanitary Landfill, San Bernardino County, CA:

Supervised investigation to determine the nature and extent of groundwater impacts and identify an appropriate mitigation response. Conducted negotiations with the RWQCB for preferred CAP.

Santa Cruz Landfill Monitoring & Reporting Program (M&RP), and Hydrogeologic Evaluation, Santa Cruz, CA. Supervised hydrogeologic studies to characterize landfill impacts to groundwater. Project work included geologic and hydrogeologic

characterization, monitoring system design and construction, and City and RWQCB agency liaison assistance. Work also included development and implementation of an EMP that defined the nature and extent of VOC contamination at the site and identified "continued monitoring" as the most appropriate response to site conditions. Manager of M&RP for the past six years.

Shoreline Regional Park Hydrogeologic Characterization and M&RP, Mountain View, CA.

Supervised hydrogeologic and geotechnical studies for closure of two separate landfills. Work included hydrogeologic analyses to identify a post-closure monitoring system. Since refuse cells at this facility were constructed below groundwater, hydrogeologic modeling was completed to help identify an appropriate means of mitigating leachate migration from the site. In addition to identifying an improved and cost-effective monitoring network, work currently involves analyses of water quality data and preparation of biannual Detection Monitoring Reports.

Crazy Horse Landfill M&RP, EMP and CAP Evaluation, Monterey County, CA.

Manager for hydrogeologic characterization and permitting to facilitate vertical expansion of the landfill. Following the release of VOCs to groundwater, hydrogeologic modeling was performed to evaluate the suitability of existing CAP systems, and develop recommendations for expanding and improving the remedial systems at the site.

Colton Landfill Hydrogeologic Study and CAP, Colton, CA.

Performed well construction and aquifer assessment to characterize the hydrogeologic conditions of the site. A contaminant transport model was developed, and remedial alternatives were evaluated to mitigate leachate migration to the adjacent river and regional aquifer. The proposed Corrective Action Program (CAP), a slurry trench and revetment system, was designed and constructed to remediate VOC-impacted shallow groundwater at the site.

THOMAS E. NUCKOLS, P.E.

Senior Project Manager, Bryan A. Stirrat Associates

Mr. Nuckols is a registered civil engineer specializing in landfill design construction and operational activities. He has coordinated field personnel, managed project schedules, and maintained project-related documentation such as daily progress reports, change orders, and pay applications for a variety of landfill construction projects. His construction experience encompasses the installation of landfill cell expansion HDPE liner systems, landfill cap HDPE liner and soil cover systems, state-of-the-art leachate treatment plants; leachate and condensate management systems; groundwater and gas monitoring wells; drainage improvements, pumping and irrigation systems; and support facilities such as roads, scale houses and other buildings. Mr. Nuckols has extensive experience in construction management related to landfill closures, and has provided construction management services for the Santa Cruz, Ballard, Lindsey, Greenfield, Brawley, Milliken, Mid-Valley, Colton, San Timoteo, Lopez Canyon, Coyote Canyon, Operating Industries and BKK Landfills.

RELATED PROJECT EXPERIENCE:

- ❑ **Construction Manager** for the closure of the Lindsey Burn Dump owned by the City of Lindsey. This project was financed and managed by the California Integrate Waste Management Board (CIWMB) under their Solid Waste Site Cleanup Program (SWSCP). The project budget was approximately \$525,000. Responsible for maintaining the project documentation and budget, providing technical and design assistance, and construction quality control. The project included removal and proper transport of characterized hazardous material; excavation, transport and reconsolidation of burn ash and other waste to main disposal area; excavation of clean soil from adjacent evaporation pond and haul to main disposal area for final cover cap; and construction of storm water collection and conveyance system.
- ❑ **Construction Manager** for the closure of the Greenfield Burn Dump owned by the County of Kern. This project was financed and managed by the CIWMB under their SWSCP. The project budget was approximately \$640,000. Responsible for maintaining the project documentation and budget, providing technical and design assistance, and construction quality control. The project included excavation, transport and reconsolidation of burn ash and other waste to main disposal area; excavation of clean soil from onsite recharge basin and haul to main disposal area for final cover cap; and construction of storm water collection and conveyance system.
- ❑ **Construction Manager** for the partial closure of the Brawley Dump owned by the County of Imperial. This project was financed and managed by the CIWMB under their SWSCP. Assisted the State Engineer in maintaining the project documentation, providing technical and design assistance, and construction quality control. The project included excavation, transport and reconsolidation of burn ash and other waste to main disposal area; processing the waste stream through a rotating screen to recover soil; haul and place soil for final cover cap.
- ❑ **Construction Manager** for the closure of the 30 year old closed Ballard Canyon Landfill owned by the County of Santa Barbara. The project budget was approximately \$600,000. Responsible for maintaining the project documentation and budget, providing technical and design assistance, and construction quality control. The project included removing the existing landfill gas extraction header system, regrading and compacting the foundation layer, installation of HDPE liner system, placement of vegetation soil layer and installation of storm water collection and conveyance system and perimeter fencing.

- ❑ **Construction Manager** for the closure of three canyon slopes and Cell 2 expansion at the Santa Cruz Landfill owned by the City of Santa Cruz. The project budget was approximately \$3,200,000. Responsible for maintaining the project documentation and budget, providing technical and design assistance, and construction quality control. The closure portion of the project included placement and compaction of monolithic low permeability soil on three canyon slopes and installation of storm water collection systems and all-weather asphalt paved benches and roads. The Cell 2 expansion included excavation and screen processing of approximately 180,000 CY of mudstone, placement and compaction of the two-foot low permeability foundation layer, placement of the HDPE liner system, one-foot LCRS layer and two-foot protective soil cover, and installation of the LCRS piping and storm water runoff conveyance piping.
- ❑ **Project Engineer** responsible for the design and construction technical support for the North and East Face Final Cover construction and Gas Extraction System for the County of San Bernardino Milliken Landfill operated by Norcal.
- ❑ **Construction Manager** for the upgrade of Flare Stations at four San Bernardino County valley landfills operated by Norcal/San Bernardino. Supervised and coordinated construction activities
- ❑ **Construction Manager** for the installation of 260 gas extraction wells at for the four San Bernardino County valley landfills operated by Norcal/San Bernardino. This included 68 gas wells at Colton Landfill, 61 gas wells at Milliken Landfill, 103 gas well at Mid-Valley Landfill, and 28 gas wells at San Timoteo Landfill, with a total well footage of 15, 400 lineal feet. Responsible for well design, construction schedule and supervision, coordination with County and Norcal staff, and preparation of construction Final Report. The well design and drilling procedure resulted in approximately \$600,000 of savings on a \$1,000,000 budget for conventional drilling technique.
- ❑ **Construction Supervision**, Rose Hills Landfill, Whittier, California. Project Engineer for the closure design and construction supervision of a small disposal site at the Rose Hills Memorial Park.
- ❑ **Supervising Engineer and Construction Manager** for the construction and implementation of the BKK Corporation's closed Class I West Covina Landfill Closure Plan. Specifically directed the activities of three drilling crews installing landfill gas recovery wells and groundwater monitoring wells, three pipe crews installing the gas collection systems, irrigation systems, condensate collection system and compressed air supply system and two electrical crews.
- ❑ **Construction Manager** for the installation of multiple-depth gas monitoring probes at three San Bernardino County Landfills operated by Norcal/San Bernardino. This included four probes at Baker Landfill, three probes at Hesperia Landfill and six probes at Milliken Landfills. Responsible for probe installation and supervision, and preparation of an As-built Report.
- ❑ **BAS Site Manager** for Operating Industries, Inc. Landfill (1992-1996). Responsible for the management and supervision of twenty-eight BAS employees at the facility. The project had an approximate annual budget of 7.5 million dollars. The project encompassed the monitoring of landfill gas emissions and mitigation, landfill gas extraction system operation, storm water runoff and leachate and condensate generation; the maintenance of the gas extraction system, flare stations, leachate extraction and transfer pumps, roads, benches, storm drain collection systems, irrigation system, slope cover and landscaping and general site facilities, and managing construction projects for permanent facilities such as the Leachate Treatment Plant (LTP), Process Air Handling System, and LTP sewer connection.

- ❑ **Design and Construction Manager** for numerous pumping and transport systems for leachate, and 20,000 SCFM landfill gas flare station at the BKK Landfill. Responsibilities also involved management of the construction of 6 MW landfill gas turbine cogeneration plant.
- ❑ Designed and developed special drilling techniques and tooling for constructing groundwater monitoring wells and gas/leachate extraction wells at the BKK Landfill. Responsible for the installation of over 1800 wells, totaling over 144,000 feet of well footage. These wells included groundwater monitoring wells, piezometers, landfill interior gas extraction wells, landfill shallow interior gas vent wells, landfill perimeter gas extraction wells, landfill perimeter gas migration probes, horizontal leachate collection wells and core holes.
- ❑ Maintained a close relationship with regulatory agencies throughout the geological site characterization, off-site landfill gas migration episode, implementation of special drilling programs, implementation of the Class I Closure Plan and general site activities at the BKK Landfill.

PROFESSIONAL EXPERIENCE:

- 1988 - Present: Senior Project Manager
 Bryan A. Stirrat & Associates, Inc.
 Consulting Civil and Environmental Engineers
 Diamond Bar, California
- 1981 - 1988: Director of Landfill Engineering
 BKK Corporation
 Torrance, California
- 1980 - 1981: Consulting Civil Engineer and Estimator
 Arroyo Construction Engineering
 Montrose, California
- 1972 - 1980: Project and Civil Engineer
 L.A. County Sanitation District
 Los Angeles, California
- 1966 - 1972: Design and Project Engineer
 Perlitter and Ingalsbe
 Consulting Engineers
 Los Angeles, California

EDUCATION:

- University of Southern California, Los Angeles, California
Master of Science, Environmental Engineering (1973)
- University of California, Davis, California
Bachelor of Science, Civil Engineering (1966)

PROFESSIONAL LICENSES:

- Registered Civil Engineer, California License No. 20321
- Licensed Drilling Contractor, California License No. 416998 C-57
- Licensed Building Contractor, California License No. 416998 B

PATENTS:

- Patent No. 5,069,285 granted in December, 1991 for dual wall development tooling. Equipment designed to meet EPA and ASTM standards for small diameter (2" - 6") groundwater monitoring and extraction wells. Equipment is called the Aqua DeveloperTM.
- 1991 Patent pending for an air operated educator type pump. Pump designed for the environmental, construction and mining industries to pump all types of fluids independent of fluid viscosity, temperature, pH and sediment content. Pump is called the EeVacTM Pump.

PROFESSIONAL MEMBERSHIPS:

- American Society of Civil Engineers (ASCE)
- National Groundwater Association (NGWA)
- California Groundwater Association (CGA)
State President, Technical Division (1991 & 1992)
State Vice President, Technical Division (1993, 1994 & 1995)
Branch President, Southern California Technical Branch (1991 & 1992)
- Groundwater Resources Association (GRA)

TECHNICAL PAPERS:

- Development of Small Diameter Wells - presented at NWWA 4th Annual Action Conference, Las Vegas, Nevada, May 1990.

SEMINARS:

- Monitoring Well Development - presented at CGA 42nd Annual Convention and Trade Show, Reno, Nevada, November 1990.
- Landfill Related Drilling Programs - presented at CGA Annual Seminar, Reno, Nevada, March 1993.
- Getting involved in the monitoring and environmental side of the groundwater industry - presented at CGA 46th Annual Convention and Trade Show, Reno, Nevada, November 1994.
- Monitoring in Landfills - presented at HAZMACON, San Jose, California, April 1995.

OUTDOOR DEMONSTRATION:

- Aqua DeveloperTM - demonstrated the well development device in one of the monitoring wells constructed for the convention at the NWWA 5th Annual Action Conference, Las Vegas, Nevada, May 1991.



Jill Ryer-Powder, Ph.D., D.A.B.T.
Principal, Health Sciences

(949) 481-8600 (phone); (949) 481-8700 (fax); jpowder@home.com

Diplomat of the American Board of Toxicology, 1990 (Re-certified in 1995, 2000)
Ph.D., Toxicology, Rutgers University, Piscataway, New Jersey, 1987
B.S., Nutrition, Cornell University, Ithaca, New York, 1982

Specialized Training

Post Doctoral Training, Children's Hospital of Los Angeles, 1987-1988

Professional Profile

Dr. Ryer-Powder is the Principal Health Scientist at Environmental Health Decisions. She brings 14 years of experience in risk assessment, Proposition 65 evaluation, litigation support, and occupational toxicology to human health hazard and evaluation projects. In her position, Dr. Ryer-Powder is responsible for strategic preparation, project management, and evaluation of chemical toxicity for risk assessment and product hazard evaluation projects. She is also involved in the investigation and analysis of legal and regulatory issues and controversial claims regarding chemical causation of diseases in humans. Her solid technical background, coupled with her frequent involvement in risk and hazard evaluation projects, gives her a broad perspective on the technical, economic and regulatory considerations for human health hazard evaluation work.

Dr. Ryer-Powder's expertise is in providing human health hazard evaluations work to private-sector clients. Dr. Ryer-Powder was a pioneer in the development of safe exposure levels for petroleum fuels and ammonia. She has extensively researched the toxicological issues surrounding human exposures to ammonia, chlorinated hydrocarbons, pesticides, metals, and petroleum hydrocarbons. In her experience in evaluating potential hazards from chemicals, she has worked extensively with USEPA Region IX, Cal/EPA Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, San Diego Regional Water Quality Control Board, Orange County Health Care Agency, Nevada DEP, and Arizona DEQ. Negotiations have involved presentation and approval of health risk assessments, health-based cleanup levels, and the setting of safe levels of exposure in the occupational and public arena.

Dr. Ryer-Powder has managed and performed more than 100 health risk assessments for local and national clients. Her site experience includes Preliminary Endangerment Assessment risk assessments, Proposition 65 evaluations, federal and state Superfund sites, Manufactured Gas Plant sites, RCRA sites, and Brownfields sites. She has prepared hundreds of Material Safety Data Sheets (MSDSs) and product labels for consumer and industrial products, including petroleum fuels, solvents, metals, fertilizers, pesticides, adhesives, and fabric protectors. She has worked with trade associations, private industry, and regulatory agencies to develop safe exposure levels to petroleum products and ammonia. She has also provided expert testimony in cases involving exposure to chlorinated hydrocarbons and petroleum hydrocarbons. Dr. Ryer-Powder has lectured on several occasions on the subject of risk assessment to students in the University of California system.

Chemical Expertise

Metals
Petroleum Hydrocarbons
Aromatic Chemicals
Chlorinated Hydrocarbons
Pesticides
Ammonia
Ozone

Technical Expertise

Human Health Risk
Assessment
Proposition 65 Analysis
Dose-Response Assessment
Exposure Assessment
Development of Occupational
Exposure Limits
Development of Material
Safety Data Sheets and
Product Labels
Provision of Expert
Testimony

Overall Capabilities

Risk Assessment
Risk Communication
Litigation Support
Occupational Hygiene and
Toxicology
Product Safety Evaluation

Project Experience

Senior Toxicologist in Preparation of Multimedia Multipathway Human Health Risk Assessment. For Home Depot, prepared a Human Health Risk Assessment and developed health-based cleanup goals for a site in Burbank, CA. This site, a former manufacturing facility, will be developed into a Home Depot. Provided services including negotiations with OEHHA, the LARWQCB, and the City of Burbank.

Lead Author in Preparation of Preliminary Endangerment Risk Assessment. For the San Marcos School District, prepared a Preliminary Endangerment Risk Assessment to evaluate the safety of building a school at a former farm site. Evaluated the exposure potential and toxicity of metals, nitrates, and pesticides.

Lead Author in Preparation of Preliminary Endangerment Risk Assessment. For the LA Unified School District, prepared a Preliminary Endangerment Risk Assessment to evaluate the safety of building a school at a former gasoline station / auto repair shop site. Evaluated the exposure potential and toxicity of TPH and metals.

Lead Author in Preparation of Several Preliminary Endangerment Risk Assessments for Los Angeles Unified School District. For the LA Unified School District, prepared several Preliminary Endangerment Risk Assessments to evaluate the safety of building a school at a former gasoline stations, former auto repair shop sites, and a former furniture manufacturing site. Evaluated the exposure potential and toxicity of TPH, VOCs, SVOCs, and metals. Included a school child and school teacher scenario.

Lead Author in Preparation of Preliminary Endangerment Risk Assessment. For BreitBurn and Company, prepared a Preliminary Endangerment Assessment risk evaluation for a large former oilfield located in Los Angeles, California. Chemicals of concern included total petroleum hydrocarbons in the gasoline, diesel, motor oil, and grease range along with volatile organic carbons.

Lead Author in Preparation of Preliminary Endangerment Risk Assessment. For FishKing Company, prepared a Preliminary Endangerment Assessment risk evaluation for a former fish processor located in Los Angeles, California. Chemicals of concern included metals and volatile organic carbons.

Project manager and Senior risk assessor in the planning, creation and negotiation of a risk assessment for a Redevelopment sites in Burbank, California. The client group is in the process of purchasing a contaminated site. I am charged with developing the risk-based closure strategy for the site. Regulatory agencies involved in the site closure include the LA Regional Water

Quality Control Board and the Department of Toxic Substances Control.

Lead Author in Preparation of Several Risk-Based Corrective Action (RBCA) Risk Assessments. For several clients in Northern and Southern California, prepared RBCA risk assessments a Preliminary Endangerment Assessment risk evaluation for former gasoline station sites. Chemicals of concern included benzene, toluene, ethylbenzene, and xylene.

Project manager and Senior Risk Assessor in the planning, creation, and negotiation of a risk assessment for the U.S. Army Corps of Engineers Kingman Army Airfield Site. For the Army Corps of Engineers, prepared a risk assessment to address metals and ammonia at the Formerly Used Defense Site (FUDS) Kingman Army Airfield facility in Kingman, Arizona. The risk assessment followed USEPA, Arizona Department of Environmental Quality, and US Army Corps of Engineers risk assessment guidance. Included both residential and worker receptors.

Senior scientist in Preparation of Several Risk Assessments to Evaluate Proposition 65 Compliance. Prepared risk assessments for a church, daycare center, and several commercial facilities to evaluate the need for a Proposition 65 warning. Chemicals included both carcinogens and reproductive toxicants. Performed air modeling to determine concentrations of Proposition 65 chemicals inside buildings.

Project manager and Senior risk assessor in the planning, creation and negotiation of a risk assessment for a state Superfund remedial action plan for a site in Escondido, California. The client group was represented by approximately 50 Potentially Responsible Parties. This risk assessment was the first using Monte Carlo that has been accepted by the California Department of Toxic Substances Control. Was invited to present at the Risk Assessment Advisory Committee to discuss the methodology used in the risk assessment.

Project manager and Senior risk assessor for the preparation of a risk assessment for the Unocal Ammonia Plant in Kenai, Alaska. Prepared risk assessment in compliance with air permitting process for the State of Alaska. Worked with the State of Alaska Department of Environmental Control.

Lead toxicologist in the development of health-based concentration goals for various media contaminated with middle-distillate petroleum constituents that had leaked from underground pipes in Guadalupe, California. Performed work for a major oil company. Site consisted of a beach and an inland recreational area. The potentially impacted media includes soils, surface water (an inland lagoon used for kayaking and a beach used for surfing and other recreational uses) and groundwater. Personally developed the

toxicity value to represent the range of petroleum constituents identified at the site as well as some exposure parameters that were unique to populations at the site. The resulting clean-up goal was less than the agency's default value used for Total Petroleum Hydrocarbon cleanup. Agencies involved included the California Department of Toxic Substances Control and Water Quality Control Board - Central Region.

Project manager for over 50 national and California-based health risk assessments for soil and/or groundwater contaminated with volatile organic compounds, metals and petroleum hydrocarbons. Sites included manufactured gas plant sites, dry-cleaning facilities, recycling facilities, gas and electric company facilities, and oil refineries. Worked with the California Department of Toxic Substances Control and several Regional Water Quality Control Boards to help obtain closure of these sites.

Senior scientist in the development of toxicity profiles and safe exposure levels for crude oil, diesel fuel, diluent, lubricating oil, and mineral spirits. Used the safe exposure levels in several risk assessment projects to obtain cleanup levels that were higher than the default value used by regulatory agencies for Total Petroleum Hydrocarbons. These toxicology profiles will be published as chapters in the second edition of *Clinical Principles of Environmental Health*.

Project manager for the review and/or preparation of hundreds of MSDSs and product labels for consumer and industrial products. Chemicals have included petroleum products (Unocal Corporation, Witco), solvents (Micronova Inc.), agricultural products (Unocal Corporation, Valent USA, IMC Global, CF Industries), adhesives (Loctite Corp.), metals (Unocal Corporation), cosmetics (Arsynco), resins (3D Systems), glass products (Allwaste), and fabric protection products (Guardian Inc.). Prepared hazard evaluations for each chemical component of every product. Work required an understanding of all regulatory information required for MSDS and label preparation (including OSHA, TSCA, VOC regulations, RCRA, CERCLA, DOT, and Proposition 65). Performed all work under the scrutiny of the Occupational Health and Safety Administration.

Senior scientist for the preparation of comments regarding the Reference Dose of Ammonia. Participated as a representative for Unocal Corporation in a task force through The Fertilizer Institute in the preparation of a document entitled *Health Effects of Ammonia* and submitted comments regarding the Reference Dose to the U.S. Environmental Protection Agency.

Senior scientist for the preparation of comments regarding the use of risk assessment in setting Threshold Limit Values. Prepared and submitted comments on behalf of Unocal Corporation to the Occupational Health and Safety Administration.

Senior scientist for the preparation of comments regarding the National Research Council's Community Emergency Exposure Level for Ammonia. Prepared and submitted comments on behalf of The Fertilizer Institute to the National Research Council.

Senior scientist for the preparation of comments regarding the California Office of Health Hazard Assessment's (OEHHA) Determination of Acute Toxicity Exposure Levels for Airborne Toxicants. Focused on the level derived for ammonia. Submitted comments to OEHHA on behalf of Unocal Corporation.

Senior scientist for the derivation of a safe level of dust being emitted into a facility as a result of production of a cardiac drug. Performed work for ALZA Corporation for the local fire department. Evaluated scientific data regarding the toxicology as well as the exposure potential to employees to arrive at a safe level, which was subsequently approved by the fire department.

Record of Employment

1999 – Pres., Principal Health Scientist, Environmental Health Decisions
1998 – 1999, Principal Health Scientist, Waterstone Environmental, Inc.
1997 - 1998, Supervising Health Scientist, McLaren/Hart, Inc.
1994 - 1997, Manager, Health Sciences, Environ Corp.
1992 - 1994, Senior Health Scientist, McLaren/Hart, Inc.
1988 - 1992, Supervisor, Product Safety Evaluation, Unocal Corporation
1987 - 1988, Children's Hospital of Los Angeles, Research Associate

Certifications

State of California – Department of Transportation Woman Owned Business –
Certification Number: CT-030680
State of California – Department of General Services – Certified Small Business

Professional Affiliations

Society of Toxicology
Southern California Society of Toxicology (President, 1999-00)
Sigma Xi
Society for Risk Analysis
American Chemical Society
Society for Hazard Communication

Awards and Honors

Sigma Xi, Rutgers University, 1988

Mr. Reason is a California Certified Hydrogeologist with more than 15 years experience in geologic and hydrogeologic investigations. His expertise includes providing technical support and project management oversight on numerous water quality monitoring and reporting programs (M&RPs) and groundwater well construction projects with an emphasis on municipal landfills in California. Mr. Reason also is experienced with developing evaluation monitoring and corrective action programs, and preparing closure reports for municipal solid waste landfills, and most recently he has been responsible for overseeing monitoring and reporting programs at 35 landfills within California. He also has extensive experience designing groundwater monitoring systems, reviewing and assessing site characterization data to determine the potential impact of solid waste landfills on local groundwater.

EDUCATION:

University of New Orleans, M.S., 1990

Southern Illinois University, B.S., 1985

PROFESSIONAL REGISTRATIONS:

California Professional Geologist, No. 6301

California Certified Hydrogeologist, No. 484

SELECTED LANDFILL EXPERIENCE:

Groundwater Monitoring and Reporting Program, Echo Class III Landfill, Goldstone Deep Space Communications Complex, San Bernardino County, CA. Project Manager for groundwater M&RP, hydrogeologic investigation, and determination of water quality protection standards for this Class III landfill located within the Lahontan Region RWQCB. Project includes sampling and analysis of groundwater and soil-pore gas to identify landfill impacts summarized into a concise water quality report. Following installation of the final cover, the project included evaluation of moisture conditions in the cover for a 5-year period.

Hydrogeologic Investigation, Goldstone Deep Space Communications Complex, San Bernardino County CA. Project Manager for installation and testing of 6 wells at the Echo and Mars Facilities at the GDSCC. The project includes development of a workplan for the well installation project, drilling and installation of 3 wells to depths of about 250 feet at the Echo Facility, drilling and installation of 3 wells to depths of 450 feet at the Mars Facility, and quarterly monitoring for 1 year.

Milliken Sanitary Landfill, EMP, EFS and CAP, San Bernardino County, CA. Assistant Project Manager overseeing geologic and hydrogeologic studies to characterize the nature and extent of contamination in multiple aquifers adjacent to this Class III landfill. Project scope included numerical modeling to predict VOC fate and transport with the uppermost aquifer, and preparation of an Engineering Feasibility Study (EFS) to determine the most cost-effective remedial alternative, followed by CAP system construction and O&M.

Site Evaluation, Pilot Demonstration Project & Full-Scale POC CAP, Mid-Valley Sanitary Landfill, San Bernardino County, CA. Peer Reviewer and project geologist for geologic and hydrogeologic studies to characterize the nature and extent of groundwater contamination adjacent to this Class III facility. Work included design and construction of groundwater monitoring wells, aquifer pumping tests, borehole geophysical analyses, laboratory analyses, computer-based hydrogeologic modeling, definition of the lateral extent of groundwater impacts, evaluation and design of a cost-effective remedial response, development of a Pilot Study to verify the adequacy of the proposed remedial measures (pump, treat and reinjection at the point of compliance [POC]), and full CAP implementation.

Hydrogeologic Characterization and Groundwater Monitoring and Reporting Program (M&RP), Stringfellow Hazardous Waste Site, Riverside County, CA. Assistant Project Manager for this high-visibility Superfund project and former Class I industrial waste disposal facility, for the California Department of Toxic Substances Control (DTSC). Work has included geologic and hydrogeologic investigations, development of a 3-dimensional groundwater flow model, semi-annual groundwater monitoring and reporting, and additional services as required in support of the site characterization, contaminant plume definition, and ultimately, site remediation. Field activities included drilling 33 borings, downhole video surveys, and recovery of about 2800 feet of continuous core in both alluvium and bedrock, and 1345 feet of oriented core in bedrock. At total of 22 aquifer pumping tests have been performed and evaluated along with data from over 400 on-site and off-site wells to support the 3-D groundwater flow model. Following collection of semiannual samples, statistical and trend analyses are presented with contaminant concentration maps as part of the semiannual reporting program for the DTSC. As the

Assistant Project Manager, responsibilities focused on the implementation of the groundwater monitoring and reporting program, oversight of the drilling, well construction and aquifer testing field activities, and completion of a Phase I investigation combined with a shallow soils investigation to identify potential impacts from former rocket fuel users/manufacturers.

County of San Bernardino Groundwater Monitoring and Reporting Program (M&RP) for 26 Landfills. Project Manager (1997 to present) for quarterly groundwater monitoring and reporting for 26 landfills in San Bernardino County, including seven landfills within the Colorado River Basin Region RWQCB. The monitoring and reporting program includes sampling, analysis, statistical evaluation, and report preparation. Project has also included review of monitoring systems to identify and eliminate redundant monitoring points, and coordination with subcontractors to transport leachate from the Heaps Peak Disposal Site to the Running Springs Water District for disposal.

Groundwater Monitoring and Reporting Program, Pitchess Detention Center Landfill, Saugus, CA. Project Manager for groundwater M&RP for this Class III landfill. Project includes sampling and analysis of groundwater, soil-pore gas, and soil-pore liquids to identify landfill impacts. The project also includes assisting the County of Los Angeles with negotiations with the RWQCB to reduce monitoring points and analytical constituents.

Groundwater Monitoring and Reporting Program, California Street Landfill, Redlands, CA. Project Manager for groundwater M&RP for the City of Redlands' landfill. Project included data analysis, report preparation and regular meetings with the RWQCB to discuss the M&RP status at the landfill.

Water Quality Reporting, Shoreline Regional Park Mountain View, CA. Peer Reviewer for semiannual Detection Monitoring Reports for this closed landfill. Work included review of groundwater sampling protocols, statistical analyses, and annual trend analyses, and report text for compliance with site-specific WDRs.

Groundwater M&RP, Waterman Landfill, San Bernardino, CA. Peer Reviewer for groundwater M&RP at this Class III Landfill. The program includes groundwater sampling, statistical analysis of the data, trend analyses annually, and reporting in compliance with site-specific WDRs.

Imperial County Groundwater M&RP, Imperial County, CA. Peer Reviewer for groundwater monitoring and reporting program for 10 Imperial County solid waste landfills for three years. This program included semiannual sampling and reporting to include a summary of statistical analyses performed by GLA using the in-house statistical program, SAC-APP, and a discussion of the groundwater monitoring results and appropriate conclusions.

West, North and South Miramar Landfill M&RPs, San Diego, CA Peer Reviewer for on-going semiannual groundwater quality reporting for the active West Miramar Landfill, and inactive South and North Miramar Landfills for more than six years. Initial monitoring and reporting was performed quarterly, but has been re-negotiated to a semi-annual frequency. Each report includes a summary of statistical analyses performed by GLA using the in-house statistical program, SAC-APP, and a discussion of the groundwater monitoring results and appropriate conclusions.

San Diego Landfill Systems, Borrego, Sycamore, Otay and Ramona Landfill M&RPs, San Diego County, CA. Peer Reviewer for groundwater quality monitoring and reporting programs for four active landfills within the County of San Diego. Work includes groundwater sampling, statistical analyses using the statistical program Sanitas, and preparation of semiannual reports. Also reviewed annual leachate sampling reports and other documents prepared for Allied Waste, as needed.

County of San Diego Groundwater Monitoring and Reporting Program. Supervised groundwater monitoring and reporting for 15 landfills for 2 years. Project included oversight of sampling crew and analytical laboratory, review of field and laboratory data, statistical and non-statistical data analyses, report preparation and attendance at regular meetings with the RWQCB to discuss project status at the various landfills.

Amended Report of Waste Discharge (ROWD), Eastern Regional Landfill, Placer County, CA. Project Manager responsible for preparation of an amended ROWD for this landfill on behalf of Placer County. Work included a review of pertinent geologic and hydrogeologic data, site historical water quality data, and attenuation modeling to value a theoretical release of inorganic constituents in groundwater to the Truckee River.

Hydrogeologic Investigation and Groundwater Modeling, Yucaipa Landfill, San Bernardino County, CA:

Peer Reviewer and project geologist for hydrogeologic studies associated with a VOC release from this closed landfill located adjacent to a regional park. Work included a geologic and hydrogeologic characterization by traditional and geophysical methods. The STING resistivity geophysical method was used to identify a complex of faults in bedrock beneath a thick alluvial section, which affect groundwater and contaminant flow. The STING data was used to guide the location of exploratory boring, temporary wells, and 8 permanent groundwater monitoring wells. Results of the field program (including quarterly groundwater quality data and aquifer pumping tests) were used to assess the aquifer characteristics and the VOC plume geometry. Groundwater modeling (including MODFLOW and MODPATH) were used to simulate flow and attenuation of contaminants with distance from the site.

Geologic/Hydrogeologic Investigation, Central Landfill, Sonoma County, CA.

Peer Reviewer and project geologist assisting with a geotechnical and hydrogeologic investigation, landfill engineering and a fault study in support of landfill expansion. The project included drilling of 8 borings to 100 to 300 feet, which were initially cored with HQ-wireline coring equipment and the reamed for borehole geophysical logging (caliper, electrical resistivity, acoustic televiewer and heat-pulse flow) and subsequently completed as groundwater monitoring wells. Step-drawdown and 24-hour aquifer pumping tests were performed within the fractured crystalline bedrock. The pumping test data, geophysical logs and water quality data were used to develop the characteristics of the bedrock aquifer and develop a groundwater monitoring network. A fault study was also performed and included extensive trenching to evaluate the age of faulting. All of this information was incorporated into a summary report in support of the landfill expansion design.

Hydrogeologic Investigation, Barstow Landfill Expansion, San Bernardino County, CA.

Project Manager and participant in logging of geologic borings for a geologic and hydrogeologic investigation in support of landfill expansion. The drilling program included construction of three groundwater monitoring wells to depths of 800 to 1000 feet. Following well construction, each well was equipped with a bladder pump for quarterly sampling. A geotechnical investigation was also completed including extensive trenching of suspected

on-site faulting, an on-site materials evaluation, and slope stability analysis. A summary report documented the hydrogeologic characteristics of the site, an interpretation of observed fault traces and age using age-dating of the formational materials, and geotechnical design recommendations for landfill expansion. All field work was coordinated and approved by the BLM and a biologist specializing in desert tortoise habitat to ensure that sensitive habitat was not affected.

Lenwood-Hinkley Sanitary Landfill, EMP and Pilot CAP System Design and Construction, San Bernardino County, CA.

Project Manager supervising geologic and hydrogeologic studies to characterize the nature and extent of contamination adjacent to this Class III landfill. Work included design and installation of a pilot-scale corrective action system.

Geologic/Hydrogeologic Evaluations, Various Landfills, San Diego and San Bernardino Counties.

Project geologist responsible for conducting geologic and hydrogeologic studies including drilling and well construction to characterize the site hydrogeology and/or the nature and extent of contamination at 11 sanitary landfills in San Bernardino County and six landfills in San Diego County.

Geotechnical Investigation, Landfill Expansion, Prima Deshecha, Orange County, CA.

Project Geologist responsible for providing technical support to characterize landslides in the Capistrano Formation associated with an extensive site expansion for this landfill.

March Air Force Base, Site 6 Landfill Closure, Riverside County, CA.

Task manager for preparing landfill consolidation plans and closure reports for 11 landfills and 3 contaminated sites. Also developed recommendations for revised M&RPs at the closed landfills.

Norton Air Force Base, IRP Site 2 Landfill Closure, San Bernardino County, CA.

As project geologist, provided technical support for development of a landfill Closure and Postclosure Maintenance Plan for IRP Site 2. Project work included development of a landfill consolidation plan, development of a sampling and analysis plan for landfill consolidation, and development of a revised groundwater M&RP for the site.



Mr. Runyan currently serves as a field technician for GeoLogic Associates. In this capacity, his duties have included geotechnical observation and testing during various construction projects including construction quality assurance for landfill liner systems and soil covers; building pads, trenches, and footings; residential site percolation testing; environmental soil sampling. Mr. Runyan has also participated in geologic/hydrogeologic investigations including aquifer testing, geophysical surveys, operations and maintenance activities associated with a range of remediation systems, and performed Phase I environmental site assessments.

EDUCATION/CERTIFICATIONS:

A.S., Crafton Hills College, Yucaipa, CA, 1999
8-hour Hazardous Waste Supervisor Training
OSHA 40-Hour HAZWOPER Training Course
Fork Lift Classroom and Operation-Specific Training
8-hour Drill Rig Safety Training,
Red Cross First-Aid and CPR Training

PUBLICATION:

L. Tyner, K. Brown, M. Thomas, J. Webb, T. Runyan, D. Patterson, and D. Caron, 1996, "Design Improvements for Increased Recovery of Free Product at Depths of 130' Using Pneumatic Pumps," *in Proceedings of the Air and Waste Management Association 89th Annual Meeting and Exhibition*, Nashville, Tennessee.

RELATED PROJECT EXPERIENCE:

Soil Sampling, Westley Tire Fire Site, Stanislaus County, CA. Provided field assistance during sampling of VOC and heavy metal contaminated soils. Samples collected using En Core sampling device.

Soil Cover System CQA, Huntington Beach Central Park Sports Complex, Huntington Beach, CA. Geotechnical observation and testing during construction of alternative final soil cover system. Testing included moisture/density, permeability and sample collection.

Soil Cover System CQA, Kern Valley Landfill, Kernville, CA. Geotechnical observation and testing during construction of final soil cover system. Special field testing of maximum density/optimum moisture and gradation were required during construction

Composite Liner CQA, FRB Landfill, Orange County, CA. Geotechnical observation and testing during construction of the composite liner system for the Phase V-D expansion. Performed field quality assurance monitoring during soil and geosynthetic material liner installation and during demonstrative alternative final cover construction. Provided quality assurance services during processing and placement of

low-permeability material.

Construction Observation and Testing, Various Sites, CA. Geotechnical observation and testing during construction and backfill of various construction projects including over excavations for building pads, utility trench backfill, footing observations.

Percolation Testing, Forecast Homes, Acton, CA. Performed percolation tests for septic systems.

ADDITIONAL PROFESSIONAL EXPERIENCE:

Sampling and Field Work Coordinator. Task manager/sample coordinator responsible for procurement, scheduling and executing field work and disposal of investigation derived waste for various groundwater monitoring and remediation programs. Also responsible for the collection of air, surface water, groundwater, soil gas, and soil samples.

Remediation Systems Operations and Maintenance Supervisor. Task manager/site supervisor responsible for design, construction, implementation, and operation and maintenance of remediation systems including free product recovery, pump-and-treat, air sparge, bioventing, and soil vapor extraction systems. Tasks also include coordinating with subcontractors and data entry of system data.

Aquifer Pumping Test Field Technician. Performs field-testing and data gathering for recharge, baildown, slug, and vacuum-enhanced pumping tests.

Geophysical Survey Technician. Conducted geophysical surveys using ground penetrating radar, Schonstedt, and EM-31 metal detectors.

Mr. Sapp is a California Registered Geologist and Certified Hydrogeologist with over 8 years experience. He has participated in a variety of hydrogeologic and geologic investigations, including: exploratory boring and well drilling, geologic field mapping, soil and water sample collection, drilling log preparation, aquifer pumping tests and hydrogeologic characterizations, data analyses, water quality assessments, statistical analyses, and report preparation. Mr. Sapp also has assisted in geologic hazards analyses and construction quality assurance projects. In addition to his professional experience, he has participated in neotectonic and geologic reconnaissance studies in southern California.

EDUCATION:

California State Univ., San Bernardino, B.S., 1995
California State Univ., Long Beach, M.S., in progress

REGISTRATIONS:

California Professional Geologist, No. 7582
California Certified Hydrogeologist No. 801

RELATED PROJECT EXPERIENCE:

Groundwater Monitoring and Reporting, Echo Class III Landfill, Fort Irwin, CA. Staff Hydrogeologist for hydrogeologic investigation for this Class III landfill located within the Lahontan Region RWQCB. Work included sampling and analysis of groundwater and soil-pore gas to identify landfill impacts. Following installation of the final cover, the project included evaluation of moisture conditions in the cover for a 5-year period.

Hydrogeologic Investigation and Groundwater Modeling, Yucaipa Landfill, San Bernardino County, CA: Staff Geologist and Hydrogeologist for hydrogeologic studies associated with a VOC release from this closed landfill located adjacent to a regional park. Field activities included a geologic and hydrogeologic characterization by traditional and geophysical methods. The STING resistivity geophysical method was used to identify a complex of faults in bedrock beneath a thick alluvial section, which affect groundwater and contaminant flow. The STING data was used to guide the location of exploratory boring, temporary wells, and 8 permanent groundwater monitoring wells. Performed logging of borings, observation during well construction and development, and conducted aquifer pumping tests. Results of the field program (including quarterly groundwater quality data and aquifer pumping tests) were used to assess the aquifer characteristics and the VOC plume geometry.

Hydrogeologic Evaluation, Stringfellow Acid Pits, Riverside County, CA. As Field

Geologist/Hydrogeologist for this high-visibility Superfund project and former Class I industrial waste disposal facility, supervised and logged the borings, observed coring, collected soil samples, supervised well construction and development and performed the aquifer pumping tests and analysis of the data in support of a hydrogeologic investigation. Field activities included drilling 33 borings, downhole video surveys, and recovery of about 2800 feet of continuous core in both alluvium and bedrock, and 1345 feet of oriented core in bedrock. At total of 22 aquifer pumping tests have been performed and evaluated along with data from over 400 on-site and off-site wells to support the 3-D groundwater flow model. Also assisted with the aquifer pump test data evaluation.

Geotechnical/Hydrogeologic Investigation, Prima Deshecha Landfill, Orange County, CA. Field geologist responsible for borehole logging, installation and development of groundwater monitoring wells in support of a geotechnical and hydrogeologic investigation. Also performed downhole logging of bucket auger boreholes in support of landslide evaluation.

Hydrogeologic Evaluation and POC CAP System Construction, Mid-Valley Sanitary Landfill, Fontana, CA. As Staff Geologist/Hydrogeologist, observed the construction, installation, and development of groundwater monitoring wells as part of an Evaluation Monitoring Program. This project utilized Air Rotary Casing Hammer drilling methods to identify multiple hydrostratigraphic units to depths of up to 500 feet below ground surface and "temporary wells" constructed in discrete groundwater intervals for sampling and quality analysis. Pumping tests and pump placement were also required at this site.

Geotechnical/Hydrogeologic Investigation, Barstow Landfill Expansion, San Bernardino County, CA. As Staff Geologist, logged borings for a geologic and hydrogeologic

investigation in support of landfill expansion. The drilling program included construction of three groundwater monitoring wells to depths of 800 to 1000 feet. Following well construction, each well was equipped with a bladder pump for quarterly sampling. Also assisted with the geotechnical investigation was also completed including extensive trenching of suspected on-site faulting, an on-site materials evaluation, and slope stability analysis. All field work was coordinated and approved by the BLM and a biologist specializing in desert tortoise habitat to ensure that sensitive habitat was not affected.

Milliken Sanitary Landfill, EMP, EFS and CAP, San Bernardino County, CA. Staff Geologist and Hydrogeologist conducting geologic and hydrogeologic studies to characterize the nature and extent of contamination in multiple aquifers adjacent to this Class III landfill. Project scope included numerical modeling to predict VOC fate and transport with the uppermost aquifer, and preparation of an Engineering Feasibility Study (EFS) to determine the most cost-effective remedial alternative, followed by CAP system construction and O&M.

Hydrogeologic and Geotechnical Investigation, Gregory Canyon, San Diego County, CA. Field Geologist responsible for mapping fractures as part of the preliminary site evaluation and groundwater modeling project to support permit applications for a new landfill in northern San Diego County. Field data was collated and integrated into a graphical stereo-net presentation to support hydrogeologic characterization of the site. Subsequent field activities included assistance with aquifer pumping tests to characterize the fractured crystalline bedrock aquifer.

Geotechnical Investigation, Olinda Alpha Landfill, Orange County, CA. As Staff Geologist, mapped fractures and bedding as part of slope stability study during the construction of a sediment detention basin in response to a potentially failing cut slope. Field data was then converted into both graphical stereo-net and analytical orthographic projections and integrated into a report of the findings.

Groundwater Monitoring and Reporting, Waterman Landfill, San Bernardino, CA. Staff Hydrogeologist assisting with water quality M&RP at the Waterman Class III Landfill in San

Bernardino, California. Duties include logistical preparation for sampling, data review, statistical analyses, and preparation of quarterly monitoring reports.

Groundwater Monitoring and Reporting, Pitchess Detention Center Landfill, Saugus, CA. Staff Hydrogeologist for preparation of groundwater M&RP and semiannual reporting for this Class III landfill. Project includes sampling and analysis of groundwater, soil-pore gas, and soil-pore liquids to identify landfill impacts.

Lahontan Region Groundwater Monitoring and Reporting Program, 12 Landfills, San Bernardino County, California. Lead Geologist/Hydrogeologist for water quality assessments at 12 San Bernardino County landfills located within the jurisdiction of the Lahontan RWQCB. Duties include logistical preparation for sampling, data review, statistical analyses, and preparation of quarterly monitoring reports.

Monitoring Well Replacement, Heaps Peak Sanitary Landfill, San Bernardino County, CA. Staff Geologist/ Hydrogeologist responsible for supervising and logging boring through crystalline bedrock, collecting soil and groundwater samples, and supervising well construction and well development for a replacement well at this San Bernardino County landfill.

Monitoring Well Replacement, San Timoteo Sanitary Landfill, San Bernardino County, CA. Staff Geologist/ Hydrogeologist responsible for supervising and logging boring, collecting soil and groundwater samples, and supervising well construction and well development for a replacement well at this San Bernardino County landfill.

San Gabriel Fault Investigation, CA. As Staff Geologist, evaluated the neotectonic character, seismic hazard, and recurrence interval of this southern California thrust fault. Study also included an evaluation of its impact to the local region with an emphasis on liquefaction potential.

Geotechnical Investigation and Liner CQA, Prima Desecha Landfill, Orange County, CA. As Staff Geologist performed geotechnical observation and testing during construction of the composite liner system for the Phase A expansion. Performed field quality assurance monitoring during geosynthetic liner installation.

MIKLOS (NICK) SOMOGYI

Environmental Specialist

Bryan A. Stirrat & Associates

Mr. Somogyi is an experienced environmental specialist with seven years experience performing Phase I and II Site Assessments, providing design services, construction oversight, and regulatory permitting activities. He has performed numerous site investigations, provided environmental oversight during the construction of light rail systems, and has designed water and wastewater treatment plants, stormwater management systems, and water distribution networks. Mr. Somogyi has been responsible for preparing permitting documents, and has performed inspection services during large earthwork projects.

CONSTRUCTION MANAGEMENT:

- ❑ **Construction Management**, Tajiguas Landfill, Santa Barbara County, California. Project Manager for Phase 1A groundwater protection project. Responsible for project documentation, including meeting minutes, daily reports, schedules, payment applications, preparation and tracking of change-orders and submittals, photo logs and contract time accounting.
- ❑ **Construction Management**, Half Moon Bay Disposal Site Clean-up. Providing environmental management and oversight during the clean up of hazardous household wastes at an abandoned farm previously donated to the California State Parks Department. Activities included field observations of contractor activities, monitoring of remediation efforts, characterizing potentially hazardous wastes, and arranging for proper disposal, and an inspection of site following clean-up to ensure all visible potentially hazardous wastes were removed.

Examples of hazardous wastes encountered included a leaking above ground diesel fuel storage tank, drums of unknown substances found to be various petroleum and paint products, diesel impacted soil, various household aerosol wastes, and several car batteries scattered about the site.

- ❑ **Construction Management**, Billingsley Illegal Disposal Site Closure, El Mirage, California. Provided construction management during site clean-up activities which included collection and removal of waste materials for proper disposal, the filling of a pre-existing trench with clean soils, scarification of surfaces to promote revegetation, and construction of berms to discourage unauthorized access to the property.
- ❑ **Los Angeles to Pasadena Blue Line Construction**. Provided environmental oversight and compliance during construction of the Los Angeles to Pasadena Blue Line light rail system. Activities include field observations of contractor activities, monitoring of remediation efforts, review and auditing of storm water pollution prevention, soil sampling and characterization, review of contractor records for compliance, coordinating with waste disposal contractors and signing of waste manifests, and coordination with site contractors and the Construction Authority on environmental issues.

Examples of remediation efforts encountered during environmental oversight included; lead and asbestos abatement on bridges and structures; surgical removal and disposal of point source contaminants including asbestos, lead, arsenic and petroleum hydrocarbons at multiple locations throughout the project; environmental investigations in which soil, soil gas, and ground water samples were collected and analyzed; and groundwater monitoring for groundwater encountered as a part of normal construction activities that required dewatering to facilitate construction.

SITE REMEDIATION:

- ❑ **Groundwater Treatment System Design**, Rialto, California. Provided engineering support for the design and construction of a groundwater pump and treat system being installed to mitigate perchlorate and volatile organic compound (VOC) impacts to groundwater threatening groundwater resources upgradient of one of a City of Rialto's municipal water supply well.
- ❑ **Regional Water Quality Control Board LUST Removal, Kern County, California.** Provided environmental management and oversight during the investigation and removal of a 6000 gallon underground gasoline storage tank that was believed to have leaked and impacted the ground water with MTBE. Activities included field observations of contractor activities, preliminary subsurface investigation to determine the extent and degree of soil impaction, reporting of preliminary investigations findings, development of a remedial action outline, removal of the UST and fuel dispensers, removal of soil impacted with gasoline components including MTBE, collection of conformation samples to determine the levels of contaminants remaining at the site, arrange for the disposal of soil impacted with gasoline, and the backfilling and resurfacing of the site to return it to original conditions.
- ❑ **Water Treatment Plant Design**, Beni Suef, Egypt. Primary project engineer for final design of water treatment plant, wastewater treatment system, and a fire protection system to be constructed at a cement processing plant. The 2 million GPD water treatment plant included basket strainers, contact clarifiers, gravity sand filters, chlorine disinfection, and UV light disinfection. The wastewater treatment system included the design of a gravity sewer system, a pump system and a wastewater treatment plant.
- ❑ **Site Remediation Plan**, Illegal demolition debris landfill, New York. Assisted in the preparation of approved site remediation plan, and took part in the on-site management of site remediation.
- ❑ **Stormwater collection and treatment system design**, solid waste transfer station, Brooklyn, New York. Responsible for design of system, including design of berms, catch basins, manholes, an oil/water separator. Also designed water distribution system that included hose bibs, piping and valving, approved backflow prevention devices, as well as connections to an existing water main.
- ❑ **Earthwork Construction Project**, High School Athletic Field Expansion, New York. Aided in the design and preparation of reports for proposed expansion which included a construction management plan and design of soil erosion control measures. After regulatory approval of project, responsible for managing project and completing projects procuring required permits, development of fill approval process, site inspection to ensure compliance with contract specifications, and relocation of existing sanitary and storm sewers within fill areas.
- ❑ **Engineering design reports** for construction and demolition debris processing facilities and regulated medical waste treatment facilities. Also prepared odor control plans and environmental assessment statements for a variety of solid waste facilities.

STORMWATER MANAGEMENT

- ❑ **Revised Stormwater Pollution Prevention Plans**, San Diego and Chula Vista Pacific Waste Maintenance Facilities. Project Engineer for the development of a revised SWPPP that identified potential pollutants of concern, and the structural and non-structural water quality measures needed to ensure that pollutant levels do not increase as a result of planned modifications to these facilities. The SWPPP addressed impacts to drainage basins, impaired water bodies, site drainage

characteristics, collection points, drainage systems, discharge locations, treatment areas, deficiencies, and areas of improvement. Calculations were also provided to verify that flow based and volume based criteria were met per NPDES regulations.

- **Revised Stormwater Pollution Prevention Plan**, Palomar Transfer Station, San Diego County, California. Prepare a site-specific SWPPP to address proposed modifications this transfer station. The plan identified the sources of pollution affecting the quality of industrial storm water discharges at the facility once the proposed modifications were complete, and described the Best Management Practices (BMPs) proposed to reduce pollutants in industrial storm water discharges after the modifications are complete.

PROFESSIONAL EXPERIENCE:

2001 – Present	Project Engineer Bryan A. Stirrat & Associates Diamond Bar, California
1998 – 2001	Junior Engineer Galli Engineering Melville, New York

EDUCATION:

Polytechnic University, Farmingdale, New York
Bachelor of Science, Environmental Engineering, 1998

CERTIFICATIONS AND TRAINING:

- 40-Hour HAZWOPER Certification
- 8-Hour HAZWOPER Refresher Training

BRYAN A. STIRRAT, P.E.

Civil and Environmental Engineer

President, Bryan A. Stirrat & Associates, Inc. (BAS)

Mr. Stirrat has 30 years of civil and environmental engineering and is a recognized expert in the design, operation, construction, and closure of municipal solid waste landfills. His experience includes siting, design, and permitting for landfill expansions and new landfill facilities; developing landfill leachate management and landfill gas control systems; solid waste planning studies, and development and implementation of site closure strategies. He has developed innovative landfill design and operational methodologies that have significantly reduced landfill operating costs and helped to extend site life. Mr. Stirrat has represented numerous public waste management agencies in the planning, design, and implementation of major landfill development programs. He has been Principal-in-Charge of projects at more than 200 landfill sites in California, Arizona, Oregon, Montana, Hawaii, and Mexico. Mr. Stirrat has been a member of the Solid Waste Management Association of North America's Landfill Gas Committee since 1990. In addition he served on the Governor's Task Force on Solid Waste, and the California Integrated Waste Management Board's Advisory Committee on the closure of municipal landfill facilities.

LANDFILL CLOSURE:

- ❑ **Chief Consulting Engineer** to a private developer building a public golf course at the Puente Hills Landfill. This includes design of final cover and landfill gas control system for the protection of public health and safety. This includes addition of soil cover material, installation of a geomembrane barrier system, design of landfill gas collection systems, and irrigation controls to monitor the amount of water applied to and infiltrating through the soil.
- ❑ **Chief Consulting Engineer** to the Anaheim Redevelopment Agency for landfill closure planning in support of the development of the Westgate Center, a large commercial center. The project includes evaluation of waste excavation, landfill capping, landfill gas control, and installation of a membrane systems under proposed structures.
- ❑ **Chief Consulting Engineer** to the California Integrated Waste Management Board's solid waste disposal and co-disposal site cleanup program. Responsibilities under this Engineering Services Contract have included site investigations, closure design, and construction support during the clean-up of more than 30 illegal and abandoned disposal sites and burn dumps in 15 California counties.
- ❑ **Chief Consulting Engineer** for the Closure, final cover design, drainage and grading plans, borrow evaluation, QA/QC Plan, Health and Safety Plan, and construction management services for the Elsinore Landfill, located in Riverside County, California.
- ❑ **Consulting Engineer** for the closure of the Coyote Canyon Landfill, Orange County, California. Project involved preparation of Final Closure and Post-Closure Maintenance Plans for this 300-acre site. This included development of final landfill disposal plans, final cover design, leachate and landfill gas control systems evaluation and design, storm drain designs, and construction support services.
- ❑ **Chief Consulting Engineer** for the County of Orange Integrated Waste Management Department providing the Closure and Post-Closure Maintenance Plans for the Santiago Canyon Landfill, County of Orange, California.

- ❑ **Chief Consulting Engineer** for the development of Final Closure and Post-Closure Maintenance Plans, San Diego County Landfill Sites: Poway Landfill, Viejas Landfill, Valley Center Landfill, Encinitas Landfill, Gillespie Landfill, Jamacha Landfill, and Bonsall Landfill.
- ❑ **Chief Consulting Engineer** for the City of Mountain View, California, on the closure of the Vista and Crittenden landfills.
- ❑ **Consulting Engineer** to Waste Management of North America providing fill-sequencing plans, updating the Closure Report, and providing recommendations for gas system improvements at the Altamont Landfill, Livermore, California.

LANDFILL EXPANSION/MASTER PLANNING:

- ❑ **Chief Consulting Engineer** to Norcal San Bernardino in the permitting of the expansion of the Mid-Valley Landfill, San Bernardino, California. The project involved expansion of an existing 170-acre landfill into a regional disposal facility. This involved lateral development of the site into six major excavation fill phases over a 400-acre area.
- ❑ **Chief Consulting Engineer** for the expansion and facility permitting for the Prima Deshecha Landfill, Orange County, California. The project has involved development of the site's Master Development Plan and two phases (Phases A and A1) of liner construction bid documents in support of development of this 1,500-acre regional metropolitan landfill.
- ❑ **Chief Consulting Engineer** to Norcal San Bernardino in the permitting of the expansion of the San Timoteo Landfill, San Bernardino, California.
- ❑ **Chief Consulting Engineer** for the Olinda/Olinda Alpha Landfill vertical expansion, Orange County, California. Project involved preparation of master plan and permitting assistance for the vertical expansion of this 340-acre metropolitan landfill facility.
- ❑ **Chief Consulting Engineer**, Master Development Planning & Phasing Design, Frank R. Bowerman Landfill, Orange County, California. The project included development of a comprehensive Master Development Plan for long-term site planning, intermediate phasing designs, operational designs, and coordination of refuse disposal and borrow excavation activities. Work also included the development of plans and specifications for liner construction documents.
- ❑ **Chief Consulting Engineer** for the master planning and development of the Flathead County Landfill, Flathead County, Montana. Project involves on-call solid waste engineering services in support of site development activities.
- ❑ **Chief Consulting Engineering** for master planning and development of the Glendale Landfill, Glendale, Arizona. Project has included review of the facility's master development plan, development interim fill sequencing plans, design of improvements to the gas extraction and treatment system, permitting and regulatory agency liaison, and preparation of end-use plans for the site's existing 140-acre footprint.
- ❑ **Chief Consulting Engineer** for the permitting and expansion of the West Miramar Landfill, San Diego, California, for the City of San Diego. Project has included design, permitting, and construction services during the development of four lined cells at this 807-acre site.

- ❑ **Chief Consulting Engineer** for the City of Salinas providing engineering design services for landfill expansion and preparation of the Draft and Final EIR for the Crazy Horse Landfill. The project included construction, engineering, operational, and permitting assistance for the master planning and development of this 160 acre Class III landfill.
- ❑ **Chief Consulting Engineer** for the siting and expansion of the existing Central Landfill located in the County of Maui, Hawaii. This included preparation of a master plan for vertical expansion and development of future phases of the site.
- ❑ **Chief Consulting Engineer** to the City of Santa Cruz for the expansion of the Santa Cruz Landfill, Santa Cruz, California. Provided general engineering consulting services to the City since 1994 during the development of lined cells at the facility.
- ❑ **Chief Consulting Engineer** for the development of Master Plans the Aca Verde and Valle Verde landfills, Acapulco, Mexico.
- ❑ **Chief Consulting Engineer** for the Municipality of Naucalpan (Mexico City) on the design of the 450-acre Corral-Del-Indio Landfill.
- ❑ **Chief Consulting Engineer** responsible for the design of the 170-acre Class III Municipal Landfill at the BKK site (opened July 1, 1987), West Covina, California.
- ❑ **Chief Consulting Engineer** to the Elsmere Corporation for the proposed municipal landfill in Elsmere Canyon in North Los Angeles County, California.
- ❑ **Chief Consulting Engineer** responsible for the selection of a potential landfill site (Alamos Canyon) in Ventura County for a large land developer. Study included siting, grading design, access road design, geotechnical evaluation, capacity studies, and groundwater evaluation.

SOLID WASTE PLANNING

- ❑ **Chief Consulting Engineer/Project Manager** for the preparation of the long-range Regional Landfill Options for Orange County Study (RELOOC). The primary objective of the study is to select a set of solid waste disposal options and/or technological alternatives to meet the long-term regional disposal capacity requirements of Orange County. Alternatives evaluated include expansion of existing landfill facilities, development of a new landfill, export of waste to out-of-county facilities, and use of alternative waste disposal technologies.
- ❑ **Chief Consulting Engineer** to Norcal/San Bernardino in the development of the Partnership Strategy Implementation Plan (PSIP), a long-range strategic planning study for the operation and management of 46 active and inactive landfills and transfer facilities in San Bernardino County, California.
- ❑ **Chief Consulting Engineer** for the North Orange County Landfill and Alternative Technology Study. Provided comprehensive engineering design and analysis during Phase II of the study. This included conceptual design of landfill disposal sites at four different locations within Orange County, California, incorporating resource recovery/recycling and assessing potential environmental impacts.

- ❑ **Chief Consulting Engineer** for preparation of a strategic plan for the management of 18 inactive refuse disposal sites for a large public landfill owner. The project included site inspections; evaluation of site maintenance costs; cost-benefit evaluation of sites based on costs for maintenance, corrective action requirements, and potential end-use options; and financial modeling of differing operations scenarios.
- ❑ **Chief Consulting Engineer** for the preparation of the Engineer's Statement for the Orange County Public Financing Authority Waste Management System Refunding Revenue Bonds Series 1997. This report included an evaluation of the current status of the County waste management system including a summary of system expenses (i.e., landfill closure funding, post closure funding, maintenance cost for the County's 22 closed sites, Article 5 funding, environmental liability).

LANDFILL REMEDIATION

- ❑ **Chief Consulting Engineer** on the BKK Landfill, 1984 to 1990, West Covina, California. Responsible for the preparation, design, and implementation of the Closure Plan for the 170-acre former Hazardous Waste Disposal Area.
- ❑ **Project Director** to the PRP Technical Committee for the site control and monitoring and leachate management systems (SCM/LMS) for the Operating Industries Landfill (Federal Superfund Site) in Monterey Park, California.
- ❑ **Chief Consulting Engineer** for Remedial Investigation/Feasibility Study (RI/FS) review and review of cost estimates for the Acme Hazardous Waste Landfill, Martinez, California.
- ❑ **Chief Consulting Engineer** for RI/FS Review, Remedial Action Plan preparation for the EPC Eastside Landfill, Bakersfield, California.
- ❑ **Chief Consulting Engineer** for RI/FS Review, and review of cost estimates for West Contra Costa Landfill, Contra Costa County, California.
- ❑ **Chief Consulting Engineer** for the RI/FS and Closure for the Royal Boulevard Land Reclamation Site, Torrance, California.
- ❑ **Chief Consulting Engineer** for the remedial action plan and closure of the Gardena Valley 1 and 2 Landfills for London Pacific Investments, Gardena, California.
- ❑ **Chief Consulting Engineer** for the preparation and implementation of an RI/FS workplan for the Basin By-Products site in Wilmington, California, for the BKK Corporation.
- ❑ **Chief Consulting Engineer** for the preparation and implementation of an RI/FS workplan for the Cal-Compact Landfill in Carson, California, for the BKK Corporation.

PROFESSIONAL EXPERIENCE:

1984 - Present: President and Principal Engineer
 Bryan A. Stirrat & Associates
 Consulting Civil and Environmental Engineers
 Diamond Bar, California

- 1978 - 1984: Director of Engineering
National Engineering Company
Industry, California
- 1975 - 1978: Head of Planning and Engineering
Los Angeles County Sanitation Districts
Solid Waste Management Department
- 1972 - 1975 Senior Design Engineer
Los Angeles County Sanitation Districts
Sewage Treatment Plant Design Department

EDUCATION:

- Missouri School of Mines
Bachelor of Science in Civil Engineering, 1967
- University of Southern California
Master of Science in Petroleum Engineering, 1972
- University of Southern California
Master of Science in Environmental Engineering, 1974
- California State University, Fullerton
Master of Science in Mechanical Engineering, (pending)

PROFESSIONAL MEMBERSHIPS/ACHIEVEMENTS:

- University of Missouri-Rolla, Academy of Civil Engineers
- Governor's Task Force on Solid Waste
- CIWMB Advisory Committee on Closure of Municipal Landfills
- Solid Waste Association of North America (SWANA) Landfill Gas Committee
- American Society of Civil Engineers (ASCE), Vice President, Los Angeles Section (1988)
- Member Pi Epsilon Tau, Petroleum Engineering Honor Society
- National Association of Corrosion Engineers Western Region - Engineer of the Year (1979)
- Elected into College of Fellows of the Institute for the Advancement of Engineering (1982)
- American Public Works Association
- American Society of Mechanical Engineers
- Southern California Waste Management Forum

PROFESSIONAL LICENSES:

- Registered Civil Engineer, California (#22631), Arizona (#29095), New Mexico (#17226)
- Registered Corrosion Engineer, California (#727)

Mr. Vincent is a Project Geologist with more than 16 years of experience in engineering geology and hydrogeology. He has extensive experience logging and sampling borings and trenches, installing and testing groundwater monitoring wells, extraction wells, and re-injection wells, mapping geologic structures, conducting geophysical surveys, and computer modeling of diverse geologic and hydrogeologic regimes. Mr. Vincent also performs a variety of tasks including pumping tests and well design, field construction coordination, review, and oversight, hydrogeologic and geotechnical analyses, geologic hazard evaluations, and slope stability analyses. Mr. Vincent also has extensive direct experience applying a range of computer-based models including hydrogeologic modeling of complex hydrogeologic conditions using Visual MODFLOW as well as other modeling programs.

EDUCATION

California State University, at Los Angeles, M.S.,
Geology, 1988
California State Univ. at Los Angeles, B.S., Geology,
1985

PROFESSIONAL LICENSES

California Registered Geologist No. 5767
California Certified Engineering Geologist No. 1873

SELECTED EXPERIENCE:

Geologic/Hydrogeologic Investigation, Central Landfill, Sonoma County, CA. Lead Geologist responsible for a geotechnical and hydrogeologic investigation, landfill engineering and a fault study in support of landfill expansion. The project included drilling of 8 borings to 100 to 300 feet, which were initially cored with HQ-wireline coring equipment and the reamed for borehole geophysical logging (caliper, electrical resistivity, acoustic televiewer and heat-pulse flow) and subsequently completed as groundwater monitoring wells. Step-drawdown and 24-hour aquifer pumping tests were performed within the fractured crystalline bedrock. The pumping test data, geophysical logs and water quality data were used to develop the characteristics of the bedrock aquifer and develop a groundwater monitoring network. A fault study was also performed and included extensive trenching to evaluate the age of faulting.

Hydrogeologic Characterization and Groundwater Monitoring and Reporting Program (M&RP), Stringfellow Hazardous Waste Site, Riverside County, CA. Lead Geologist for this high-visibility Superfund project and former Class I industrial waste disposal facility, for the California Department of Toxic Substances Control (DTSC). Work has included geologic and hydrogeologic investigations, development of a 3-dimensional groundwater flow model, semi-annual groundwater monitoring and reporting, and additional services as required in support of the site characterization, contaminant plume definition, and ultimately, site remediation. Field activities included drilling 33 borings, downhole video surveys, and

recovery of about 2800 feet of continuous core in both alluvium and bedrock, and 1345 feet of oriented core in bedrock. A total of 22 aquifer pumping tests have been performed and evaluated along with data from over 400 on-site and off-site wells to support the 3-D groundwater flow model. Following collection of semiannual samples, statistical and trend analyses are presented with contaminant concentration maps as part of the semiannual reporting program for the DTSC.

Hydrogeologic Investigation and Groundwater Modeling, Pilot Demonstration Program, Mid-Valley Landfill, San Bernardino County, CA. Lead Geologist for geotechnical and hydrogeologic investigation for proposed landfill expansion including implementation of an Evaluation Monitoring Program. Utilized computer aided groundwater model to assist in the design and development of an extraction and reinjection system for Corrective Action.

Hydrogeologic Investigation and Groundwater Modeling, Milliken Sanitary Landfill, San Bernardino County, CA. Lead Geologist for a hydrogeologic investigation including extensive aquifer pumping tests to evaluate the hydrogeologic characteristics of a two-tiered aquifer system in support of a Corrective Action Plan for remediation of a groundwater contamination plume, and drilling and installation of groundwater extraction wells. Utilized computer groundwater modeling to estimate effective pumping and reinjection conditions on the aquifer.

Geotechnical Investigation, Barstow Landfill Expansion, San Bernardino County, CA. Lead Geologist responsible for conducting extensive field mapping and seismic refraction surveying to identify evidence of Holocene faulting through a proposed landfill expansion area.

Geotechnical/Hydrogeologic Investigation, Santa Cruz Class III Landfill, Santa Cruz, CA. Lead Geologist for geotechnical/ hydrogeologic studies for landfill expansion and characterization of

landfill impacts to groundwater. Project work included geologic and hydrogeologic characterization, monitoring system design and construction, liner design and construction, and City and RWQCB liaison assistance. Work also included development and implementation of an EMP that defined the nature and extent of VOC contamination at the site. Based on the site conditions, a "continued monitoring" approach was recommended and approved by the RWQCB.

Geotechnical Investigation, Frank R. Bowerman Landfill, Orange County, CA. Lead Geologist for a geotechnical investigation of complex geological environment for landfill expansion area. Project included an investigation of a recently mobilized landslide area, geologic mapping and downhole logging of borings to identify the depth and geometry of the landslide.

Geotechnical and Hydrogeologic Investigation, EPC Disposal Facility, Bakersfield, CA. Lead Geologist for geotechnical and hydrogeologic study in support of an RI/FS. Work included packer testing for evaluation of fluid flow in fractured sedimentary rocks and soil pore gas sampling of the vadose zone to evaluate VOC migration. Monitoring wells were installed in continuously cored borings and slug and bail tests were conducted. Also conducted extensive drilling and soil sampling to characterize the contaminant levels in soil surrounding this hazardous waste disposal site. Currently responsible for overseeing water quality monitoring and preparation of semiannual water quality monitoring reports.

Hydrogeologic Investigation, Gregory Canyon Landfill, San Diego County, CA. Staff Geologist responsible for drilling oversight and preparation of boring logs through crystalline bedrock. Conducted long-duration aquifer pumping tests in crystalline bedrock to assist with the aquifer characterization and performed pumping test data analysis using computer based aquifer test software in support of the hydrogeologic investigation.

Geotechnical Investigation, Prima Deshecha Landfill Expansion, Orange County, CA. As Staff Geologist, performed in-grade geologic mapping and trench logging during the excavation of the Phase A1 fill area. Identified shear planes that resulted in modification of the composite liner system design.

Geologic Mapping, San Timoteo Landfill, San Bernardino, CA. Lead Geologist responsible for conducting detailed geologic mapping of complex "badlands" area characterized by poorly indurated,

young sedimentary rock in proximity to the San Jacinto fault.

Geotechnical Investigation, Savage Canyon Landfill, Whittier, CA. Staff Geologist responsible for conducting in-grade mapping of an excavation of an old, non-engineered fill to identify removal limits and geologic strata and structural conditions beneath the fill.

Geotechnical and Hydrogeologic Investigation, Elsmere Canyon Landfill, Santa Clarita, CA. Staff Geologist for investigation of the proposed landfill included fault investigations, on-site materials investigations, packer testing, and well design and installation in sedimentary and fractured igneous rock.

Geotechnical and Hydrogeologic Investigation, Bakersfield Metropolitan Landfill, Bena, CA. Staff Geologist for site characterization; groundwater monitoring well design, construction, testing, materials assessment for geotechnical performance and use as low-permeability liner and cover; and paleoseismological investigations of on-site faults.

Hydrogeologic Study, Colton Landfill, Colton, CA. Staff Geologist for well construction and aquifer assessment using a variety of well testing techniques. The hydrogeologic conditions of the site were defined, a groundwater and contaminant transport model was developed, and remedial alternatives were evaluated to mitigate leachate migration to the adjacent river and regional aquifer.

Shoreline Landfill, Hydrogeologic Modeling Study, Santa Clara County, CA. Staff Geologist for hydrogeologic study including modeling of existing and predicted future groundwater flow at an existing Class I landfill site using finite element computer modeling software. Slope stability analyses were also performed to evaluate how remediation efforts might effect stability of the refuse prism and cover constructed on sensitive bay mud.



Beverly Voran

Community Outreach & Public Scoping

Education & Training

- B. A. Microbiology, University of Kansas, Lawrence, Ks.
- M.A. Psychology, University of Kansas, Lawrence, Ks.
- M.A. Urban Planning (pending), School of Architecture & Urban Planning, UCLA
- Certified in Conflict Resolution

Technical Training & Research

- Underground Tunnel Safety Training
- Underground Self-Rescue Training
- Heavy Rail Training & Certification
- Construction Safety Training Certification
- Analytic Chemist, Metal Plating Test Laboratory, Minneapolis, MN
- Diagnostic Microbiologist, Hennepin County General Hospital, Minneapolis, MN.
- Research and Teaching Assistant, University of Minnesota Medical School
- Research Assistant, U. of Kansas, Departments of Chemistry and Microbiology

Experience

Ms. Voran specializes in building partnerships and facilitating dialogue between communities and public/private projects that impact those communities. Early involvement by public affairs specialists will establish goodwill at the beginning of the project, and can dramatically reduce costly delays, negative publicity, claims and lawsuits. Ms. Voran retains extensive experience working with a variety of stakeholders including homeowners/residents, businesses, environmental groups, government agencies, elected officials and community organizations. She has a vital understanding of role politics play and has successfully managed many high profile, controversial projects.

She served on the Governor's Advisory Council on Women, and is the recipient of the California Community Service Award. She has been a member of the Board of Directors for several community-based agencies. In addition to her community work, she has served as a legislative advisor to a number of elected officials at the national, state and local levels.

Ms. Voran is also experienced in a number of technical fields including Microbiology, Chemistry and Biochemistry, and is knowledgeable about environmental pollution and toxic waste. She holds a Bachelors degree in Microbiology with a minor in Chemistry, and a Masters degree in Physiological Psychology from the University of Kansas. In addition, she has a Masters degree (pending) in Transportation Planning from the University of California, Los Angeles, and is certified in Conflict Resolution.

Technical Areas of Responsibility

- **Conducting pre-construction and opinion surveys** to determine support/opposition and to lower/mitigate risk
- **Planning and conducting** visioning and scoping processes
- Creating **strategic plan** for short- and long-term outreach and mitigation programs
- **Managing and advocating for environmental issues**, conducting environmental surveys
- Developing **communications strategy** targeted for specific groups and situations
- **Training** in-house technical and public affairs staff based on strategic plan
- **Facilitating group processes** that ensure accommodation of diverse cultural, economic, religious, gender, ethnic and geographic differences
- **Creating and managing a database** of stakeholders and issues
- **Writing, editing and synthesizing technical information** into user-friendly language
- **Producing and disseminating informational and training materials** including print and electronic media – newsletters, fact sheets, maps, power point presentations
- **Establishing ombudsperson services/telephone hotlines** for stakeholders
- **Providing liaison** to elected officials and government agencies
- Developing a **media relations** strategy
- Creating unique **artwork and design**

SELECTED PROJECT EXPERIENCE

The Southern California Regional Rail Authority (Metrolink). Provided support to in-house community relations and marketing staff. Created newsletters for distribution to customers and elected officials, conducted door-to-door information drops.

The Los Angeles County Metropolitan Transportation Authority, Community Relations, Metro Red Line, Segment 3 Tunnel Project. Provided support to in-house marketing and public affairs staff. Participated in creating new strategic plan for public affairs outreach and mitigation on North Hollywood subway extension. Established database tracking system for rapid response to community complaints and concerns. Created newsletters, fact sheets, direct mail pieces, information boards, electronic media presentations for public education efforts. Organized and conducted community open houses, tours of construction site, and media events. Interfaced with construction management team, tunneling contractor, elected officials, chambers of commerce, local businesses, homeowners associations, environmental groups and the media. Provided training to engineering and technical staff.

Parsons Engineering Sciences, Environmental Monitoring & Compliance Program, LACMTA Metro Red Line, Segment 3 Tunnel Project. Member of environmental monitoring and compliance team. Surveyed hillside residents to locate seasonal springs, native vegetation, and to obtain permission for environmental teams to access private property for identification and monitoring purposes. Conducted residential surveys and created database responses. Acted as liaison between Parsons Engineering Sciences, the MTA and the community.

ADDITIONAL PROJECT EXPERIENCE

- Los Angeles City College
- City of Los Angeles, Police Department/Lodestar Management Research
- City of Azusa Proposed New Library
- Robertson Park and Recreation Center Master Plan, Sacramento
- Franklin Boulevard Revitalization Plan, Sacramento
- Hawthorne Boulevard Revitalization Plan, Lawndale, CA
- Riverside County Integrated Plan

- General Plan Update, City of Azusa, CA
- Fair Oaks/ Orange Grove Specific Plan, Pasadena
- General Plan Update, City of Azusa, CA
- The Southland Corporation
- The Rand Corporation
- The Mega-Cities Project

Community Outreach Expertise

- Save Our Beach, local environmental initiative campaign, community organizing
- Yes on Z, local environmental initiative campaign, community organizing
- The Mega-Cities Project at University of California, Los Angeles
- The Southland Corporation, neighborhood survey, Los Angeles, CA
- Standard Communications, community organizing, neighborhood surveys, Santa Monica, CA

Publications

"Blasting Under Hollywood, A Community Relations Case History," The Journal of Explosives Engineering, May/1998

"Rebuilding Support for the Los Angeles Subway," American Public Transit Association, Conference Proceedings, 1998

Professional Affiliations & Awards

- Board of Directors, Women's Transportation Coalition, Los Angeles
- Past Member, Board of Directors, Women's Transportation Seminar, Los Angeles
- Women's Transportation Seminar Graduate Scholarship Award
- UCLA Graduate School of Architecture and Urban Planning Fellowship
- State of California Community Service Award

Community Involvement

- President, Board of Directors, A Window Between Worlds, 1992-1997
- Member, Board of Directors, Chris Brownlie AIDS Hospice Foundation, 1987-8
- California Governor's Advisory Council on Women, Member

Mr. Warner has 16 years of geotechnical engineering and project management experience on civil, environmental, structural, and transportation engineering projects, including slope stabilization; foundations; dams; subsurface investigations; laboratory testing; seismic engineering; FE analyses; grading; containment & remediation; construction oversight; hydrology; groundwater hydrology; engineering geology & geophysics; and construction plans/specifications. Mr. Warner is proficient in field investigations, soil testing, analyses, computer modeling, CAD-based design; report preparation; presentations; budgets; and client relations.

EDUCATION:

MS, UC Berkeley, Geotechnical Engineering, 1993.
BS, UC Berkeley, Civil Engineering, 1987.

PROFESSIONAL REGISTRATIONS:

Calif. Professional Civil Engineer No. 47957, 1991
Pennsylvania, Professional Engineer No. 051778-E, 1996

SELECTED PROJECT EXPERIENCE:

Landfill Stability:

Newby Island Landfill, Milpitas, CA: Project Manager and Engineer for currently ongoing site characterization and geotechnical study to assess landfill expansion potential. Being situated on margins of the San Francisco Bay, consolidation of Bay Muds, liquefaction, and slope stability are primary issues of concern at this site.

Frank R. Bowerman Landfill, Orange County, CA: Mr. Warner managed subsurface investigations, laboratory testing, and conducted 2-D and 3-D stability analyses of natural landslides and landfill subgrade slopes as Project Engineer in support of ongoing construction and expansion master plan studies.

Olinda-Alpha Landfill, Orange County, CA: As Project Engineer, Mr. Warner has conducted 2-D and 3-D stability analyses of landfill slopes in support of landfill expansion design.

Tajiguas Sanitary Landfill, Santa Barbara County, CA: As Project Engineer, Mr. Warner has conducted 2-D and 3-D stability analyses of landfill subgrade slopes in support of landfill expansion design.

Flathead County Landfill, Whitefish, MT: As Manager and Project Engineer, Mr. Warner supervised laboratory testing and performed stability analyses for construction of a new landfill cell.

Transportation:

Hayward Fault Location Study, State Route 238, Caltrans: Mr. Warner conducted an extensive field study to accurately locate traces of this active fault in the vicinity of a proposed major highway realignment. This study involved air photo and ground

surface geologic/geomorphic mapping, magnetometer and seismic refraction geophysical investigations, trench logging, and extensive mapping of displaced cultural features.

Geotechnical Study for EIR, State Route 152, Caltrans: Mr. Warner conducted a field study and literature review to assess the potential impacts and determine proposed mitigation measures for various alternatives to widen this rural highway. As part of this investigation, Mr. Warner managed a fault trenching study to locate the active Sargent fault as it crossed US Route 101 at the Pajaro River Bridge.

Loma Prieta Earthquake Recovery Team, State Route 17, Caltrans: Mr. Warner participated in the emergency response effort for State Route 17 through the Santa Cruz Mountains after the 1989 Loma Prieta Earthquake. He performed damage assessment reconnaissance and assisted the resident engineer with management of multiple construction contracts to reopen this vital transportation link.

University Park Airport, State College, PA: Mr. Warner managed the geotechnical investigation for runway expansion and rehabilitation at this small commercial airport and provided recommendations for embankment construction, runway extension pavement design, and a pavement overlay for the existing runway.

Slope Stabilization:

Felton Landslide, State Route 9, Caltrans: Mr. Warner designed a mechanically stabilized embankment as an emergency repair to this rural highway in the Santa Cruz Mountains. The steep terrain and location adjacent to the environmentally sensitive Cowell Redwoods State Park made rapid establishment of vegetation on the ½ to 1, 45-foot high slope above the San Lorenzo River critical to the project's success.

Landslide, State Route 1, Caltrans: Mr. Warner incorporated lightweight volcanic backfill, geocomposite drains, geogrid reinforcement, and a vegetated synthetic erosion control mat in his design for this landslide repair in order to meet environmental, access, and right-of-way constraints on a scenic coastline stretch of State Route 1 in Sonoma County. As project engineer, he was responsible for all aspects

of this repair, including subsurface investigation, stability analyses, design, preparation of plans and specifications, and construction oversight.

Jenner Landslide, State Route 1, Caltrans: Mr. Warner supervised drilling, performed stability analyses, and provided engineering oversight during construction on this micropile stabilized landslide in Sonoma County at the mouth of the Russian River.

Soil Stabilization Toe/Face of Wall, State Route 84, Caltrans: As part of construction oversight, Mr. Warner designed a geogrid reinforced backfill slope as a contract change order to stabilize the natural slope and embankment at the face of a micropile supported retaining wall.

West End Bypass Slope Stabilization, US Route 19, Pennsylvania Department of Transportation: Mr. Warner was the project engineer for slope stabilization project to widen this busy, four-lane controlled access highway near downtown Pittsburgh. Precarious overhanging sandstone and hazardous rockfall due to interbedded sandstone and shale were typical. Mr. Warner determined predominant rock joint sets by stereographic projection and then performed block stability analyses. He performed computer rockfall trajectory analyses to design rockfall fence height and managed preparation of plans and specifications for rock scaling and installation of rock bolts, "dental" shotcrete and dowels, draped rockfall nets, and high-energy rockfall fences.

Seismic Analyses:

Seismic Finite Element and Slope Stability Modeling, United Rock Products, Irwindale, CA: Mr. Warner performed site response analyses, spectral matching, 2-D finite element modeling, and slope stability analyses to assess the stability of high quarry slopes in consolidated alluvial deposits.

Environmental:

Quincy Landfill Superfund Site, City of Quincy, IL: This landfill was an unlined municipal and industrial waste landfill. Mr. Warner was the Project Engineer managing analyses and design of the selected remedial alternative and associated site improvements. He performed and supervised engineering analyses for slope stability, settlement, Universal Soil Loss Equation evaluations, frost penetration, pavement design, storm water hydrology evaluations and hydraulic design of storm water structures, and leachate production estimates using HELP infiltration/evapotranspiration model and groundwater data. Mr. Warner confirmed leachate compatibility with bentonite in the geosynthetic clay liner (GCL), the HDPE leachate collection piping, and other remediation components. He performed cost

estimates and managed preparation of plans and specifications for earthwork, concrete, cover system, leachate collection and underground storage system, storm water conveyance structures, passive landfill gas collection system, and site access and control facilities.

Radioactive Soil Containment Cell, Fansteel, Inc., Muskogee, OK: This project involved soil-cement stabilization/solidification of low-level radioactive soils in a permanent, aboveground storage cell and a process line to reclaim metals from contaminated soils. Mr. Warner managed treatability studies to optimize the soil-cement mix design with respect to cost, durability, permeability, and leachability. He performed and supervised engineering analyses for slope stability, liquefaction, riprap filter criteria and erosional stability, settlement, and frost penetration depth. In addition, he designed a mat foundation for a process material storage silo and a structural steel platform to elevate a large slurry dryer.

Radioactive Soil Containment Cell, Sequoyah Fuels, Inc., Muskogee, OK: This project involved preliminary design and treatability studies for the stabilization/solidification of low-level radioactive soils at a nuclear reactor fuel processing facility. Mr. Warner managed treatability studies to evaluate several soil-cement and soil-fly ash mix designs. In addition, he performed slope stability, site hydrology, cover infiltration, and radiation shielding and dose analyses.

Walls/Bridges:

West End Transfer Tunnel, Naval Reactor Facility, Idaho National Engineering and Environmental Laboratory: Mr. Warner performed static and seismic analyses to evaluate loading conditions on a cut-and-cover reinforced concrete tunnel used to transfer expended reactor cores for processing. Using seismic input motions and soil, rock, and structure properties, he performed finite element soil-structure interaction analyses to evaluate dynamic earth pressures, shears, moments, and acceleration response spectra for the tunnel structural design.

Busway Walls, Port Authority Of Allegheny County, PA: Mr. Warner evaluated geotechnical design parameters, determined earth and water pressures, and performed anchor capacity, bearing capacity, and wall structural calculations in support of a value engineered design of permanently anchored concrete walls along several miles of a dedicated busway facility on a former railroad alignment.

Lane Bane Bridge, US Route 40, Pennsylvania Dept. of Transportation: Mr. Warner supervised drilling and performed abutment distress investigations for rehabilitation of this four-lane, multi-span arch bridge over the Monongahela River.



B. Michael Yacyshyn, P.E.

Director, Northern California Operations - Bryan A. Stirrat & Associates

Mr. Yacyshyn has gained broad experience in waste management issues over the last 13 years. Issues that he has addressed include: disposal site permitting, design, construction, closure, and remediation. Prior to his waste management involvement he was a practicing geotechnical engineer and geotechnical specialty contractor in the western United States for over 12 years. In addition to his waste management experience, he has designed numerous foundation systems for a wide variety of structures and analyzed existing and proposed slopes for a variety of facilities. He also worked for an international specialty geotechnical contractor who specializes in site improvement techniques. In this capacity he designed and managed numerous projects where poor foundation conditions required some type of improvement. Several of these sites involved structures located over municipal solid waste or construction debris landfills.

He has managed several multi-disciplinary projects. One project involved the permitting for a proposed 20,000-ton per day landfill in the desert of southern California. He also managed a team responsible for investigation and remedial design of illegal, orphaned and abandoned landfills throughout California for the California Integrated Waste Management Board. He has first hand knowledge of regulatory and technical issues associated with landfill siting, permitting, design, construction, and closure; and he is experienced in dealing with all aspects of landfill design, including slope stability, settlement, gas control, and surface and groundwater control issues. He has also performed modeling for water balance, alternative cover infiltration, and liquid containment performance of alternative liner systems. In addition, Mr. Yacyshyn is very familiar with the current municipal solid waste regulatory environment in California.

SELECT PROJECT EXPERIENCE:

- ❑ **Landfill Remediation & Closure**, California. Served as the program manager for an AB 2136 engineering services contract with the California Integrated Waste Management Board (CIWMB). This project was designed to assist the CIWMB staff in implementing AB 2136 for numerous illegal dumpsites around California. The scope of work involved design and remediation of orphaned, illegal, and abandoned landfills throughout California. Mr. Yacyshyn was the primary contact with the CIWMB, and managed and coordinated a team of six subconsultants. He either managed or oversaw a wide range of projects under this program from clean closure of small illegal dumpsites to the design and construction of a remedial landfill gas management system. Services were provided at over 40 sites in the 3-plus year contract.

Work entailed providing site workplans that emphasize salvaging recyclable materials and finding the lowest cost method for cleanup. The workplans are then provided to cleanup contractors for costing and fine-tuning of the construction approach. Construction management oversight for the cleanup effort was also provided. The sites ranged from simple scoop and haul surface cleanups to complex burn dump capping. Sites can also include landfill gas redesign.

- ❑ **Class III Landfill Closure**, Fresno County, California. Lead engineer for the development of a clean closure plan and subsequent design drawings and specifications for the Mendota Disposal site. The project entails excavation of waste from the 22-acre site, demolition of a former transfer station, and preservation of a levee adjacent to the Fresno Slough. Waste excavation will occur in phases to address San Joaquin Valley Air Quality Management District limits on vehicle emissions.
- ❑ **Class III Landfill Closure**, Santa Maria, California. Mr. Yacyshyn was the Project Manager to prepare Preliminary Final Closure and Post-Closure Maintenance plans for the Santa Maria Landfill (Landfill). The Landfill is divided into three distinct areas: the Inactive Area, the Active

Area, and the Expansion Area. The closure plan is focused on the Inactive and Active areas. The Inactive Area is about 68 acres in size and was landfilled in the 1950s and 1960s. Previous studies concluded that the majority of waste in the inactive area is burn ash residue. The City placed a thick soil cover ranging from about 3 to 12 feet thick over the inactive area in the late 1990s in anticipation of converting the area into a tournament recreational facility.

The Active Area is an unlined 118-acre area. The City proposed an accelerated closure process for the Inactive Area coupled with development of a new lined cell. The City is required to cease disposal of MSW in the Active Area after November 30, 2002. The City's recently revised WDRs allow for the disposal of hydrocarbon soil in the Active Area and the Expansion Area. Disposal of hydrocarbon soils will continue in the Active Area after MSW disposal ceases there. The continued fill placement will enable appropriate final grades to be constructed to achieve the required minimum final cover grades.

Mr. Yacyshyn led the evaluation of the adequacy of the existing soil cover over the Inactive Area using an unsaturated flow model. The modeling results indicated that a minimum thickness of 3 feet of the existing soil cover provides acceptable performance as a monolithic (e.g., evapotranspirative cover) alternative final cover for areas of the future recreational complex that will not be irrigated. A more traditional final cover system including a geosynthetic layer will be used for the irrigated portions of the final cover.

- ❑ **Class II Surface Impoundment Closure**, San Joaquin County, California. Project Manager for the development of a Final Closure Plan that addressed mitigation of salt impacts to groundwater. Various closure scenarios were evaluated, including the prescriptive clean closure option. Closure of the surface impoundments will be coupled with treatment of impacted groundwater. The permitting process involved close interaction with the Central Valley RWQCB. Design and final closure construction of a geomembrane final cover system was completed in 2005. The approved final cover system saved the client several million dollars relative to the prescriptive closure requirements.
- ❑ **Class II Surface Impoundment Closure**, Solano County, California. Project Manager for the development of a preliminary closure plan (PCP) for Class II surface impoundments associated with an industrial water treatment plant. Salt impacts to shallow groundwater have necessitated the closure of the surface impoundments. Various closure options were analyzed and addressed in the PCP.
- ❑ **EPA Oversight**, Santa Barbara and Los Angeles Counties, California. Provided varied services on three EPA Superfund sites in California. Served as Senior Technical Consultant for EPA on the Casmalia Resources Hazardous Waste Management Facility in Santa Barbara County. Mr. Yacyshyn reviewed all solid-waste related submittals from the PRPs, with a focus on geotechnical and geosynthetic issues. The focus of the work was the design and construction of the final RCRA-equivalent cover for the Pesticides/Solvents Landfill and subsequent construction. Design of the final cover for the remaining landfills and assessment of the stability of several impoundment dikes were also addressed. In-situ testing methods and interpretation of results, slope stability, settlement, constructability, construction techniques, and revegetation were issues that were analyzed.

Mr. Yacyshyn also provided Senior Review for EPA's Del Amo Superfund site in Los Angeles County. Mr. Yacyshyn reviewed geotechnical and geosynthetic issues during the design and construction of the RCRA-equivalent final cover system for these waste pits. Waste compressibility and geosynthetic durability were major issues this site.

Served as a senior reviewer and slurry wall consultant for remedial options at the Oil Landfill in Monterey Park, California. Various final cover options were reviewed, as were liquid levels within the landfill. Slurry walls were considered for control of offsite migration of liquids.

- ❑ **Landfill Remediation & Closure**, San Francisco, California. Project Manager for subconsultant services to evaluate remedial options for various landfill sites at the Presidio of San Francisco (Presidio). Over 15 landfills and fill sites located throughout the Presidio require remediation. The remedial options range from clean closure to capping with a single-composite cover system. Preservation and enhancement of sensitive biological habitat and compatibility with postclosure uses were considered in evaluating each remedial option.

Assignments also include development of preliminary design for closure of the Presidio's largest landfill, Landfill E. Remedial options for Landfill E include complete clean closure or partial clean closure, consolidation, and construction of a RCRA-equivalent final cover. A comprehensive exploration of Landfill E was completed to provide data on waste characteristics, vertical and lateral extent of waste, groundwater conditions, and engineering characteristics for waste and native materials. Preliminary closure design was completed that included partial consolidation and capping. A gas vent layer was included in the final cover design to enable landfill gas control if required at a later date.

Providing waste management support for the closure of Landfills 8 and 10. Landfill 10 is situated near sensitive habitat and also underlies a portion of an existing parking lot slated for redevelopment activities. Landfill 10 is characterized by a steep, seismically unstable slope. Slope stability analysis of various closure configurations was completed. Slope stabilization using a buttress fill and/or pin piles was evaluated. Construction documents will be developed after a Focused Feasibility Study is approved.

- ❑ **Class III Landfill Closure**, San Bernardino, California. Served as the Air Force's Senior Technical Reviewer for the design and construction of the on-site landfill at Norton Air Force Base. The project included waste consolidation, final cover construction, landfill gas system construction, and surface water management system improvements. The final cover was a monolithic cover intended to limit surface water infiltration through evapotranspiration and soil layer storage capacity. An excavation management plan was also developed for waste consolidation efforts.
- ❑ **Class III Landfill Closure/Post-Closure Maintenance Plans**, San Diego County, California. Served as the Principal Reviewer for a third-party review of the Engineering Evaluation/Cost Analysis and the final Closure Plan and Post-Closure Maintenance Plan for the Box Canyon Landfill at Marine Corps Base Camp Pendleton, in San Diego County. All aspects of the investigation and design were reviewed. Comments regarding each document were provided. An alternative final cover, proposed by the designer, included a barrier layer composed of a geosynthetic-clay liner. Slope stability and the proximity of a nearby elementary school were primary concerns.
- ❑ **Class III Landfill Closure**, Orange County, California. Senior Technical Reviewer for the development of final closure plans and specifications for the onsite landfill at the Seal Beach Naval Weapons Station. This site is located adjacent to a National Wildlife Refuge and was subject to tidal inundation. Because of the nature of the waste deposited in this landfill, and the 20-plus years since the facility was active, an alternative monolithic cover was proposed. The closure entailed consolidation of several waste pits, establishment of new final grades, final cover construction, and surface water management system improvements.

EDUCATION:

- ❑ M.Sc., Geotechnical Engineering, University of California, Berkeley, 1981
- ❑ B.Sc., Civil Engineering, University of Massachusetts, Amherst, 1979

REGISTRATION:

- ❑ Registered Professional Engineer, California, 1984, No. 38976

PROFESSIONAL EXPERIENCE:

- 2004 - Present: Director, Northern California Operations
Bryan A. Stirrat & Associates
Roseville, California
- 2000 - 2004: Branch Manager, Associate, Board of Directors (2004)
Golder Associates Inc.
Roseville, California
- 1994 - 2000: Western Region Manager, Waste Management Services
CH2M Hill, Inc.
Santa Ana and Sacramento, California
- 1993 - 1994: Principal Engineer, Marketing Manager
M&T Agra, Inc.
Anaheim, California
- 1992 - 1993: Landfill Services Manager, Senior Project Manager
Geosyntec Consultants
Huntington Beach, California
- 1989 - 1992: Branch Manager, Senior Geotechnical Engineer
Kleinfelder, Inc.
Irvine, California
- 1988 - 1989: Senior Geotechnical Engineer
Staal, Gardner & Dunne, Inc.
Ventura, California
- 1985 - 1988: Project Engineer
GKN Hayward Baker, Inc.
Ventura, California

GARY ZUPPARDO

Manager of Field Services and Operations
Bryan A. Stirrat & Associates, Inc.

Mr. Zuppardo is Manager of the BAS Field Services Division, and has extensive experience in the monitoring and collection of groundwater, surface water, soil pore gas and landfill gas. In addition, Mr Zuppardo has expertise in the construction, operation and maintenance of extraction and treatment systems for landfill leachate, contaminated groundwater, landfill gas, and soil pore gas. Specific systems for which Mr. Zuppardo has construction and/or O&M experience include soil vapor, groundwater, and landfill gas extraction systems; GAC treatment systems, landfill gas flares, thermal oxidizers, air strippers, biological treatment systems, and metals treatment units.

RELATED PROJECT EXPERIENCE AND SKILLS:

- ❑ **Soil Vapor Extraction and Treatment System Operations, Maintenance, and Monitoring**, Norwalk, California. Field Manager for the operations, monitoring, and maintenance of a soil vapor extraction system. The system includes over 25 vertical and horizontal extraction wells and two thermal oxidizer units that pull a total of 750 scfm of soil pore gas. Additional tasks at this site included the coordination of field crews performing routine groundwater and floating product monitoring and sampling at the site.
- ❑ **Combined Groundwater/Soil Vapor Extraction and Treatment System Operations, Maintenance, and Monitoring**, Manhattan Beach, California. Supervising Technician. The systems included groundwater and soil pore treatment with granular activated carbon and resins. The operations and maintenance program also included routine sampling of groundwater monitoring wells.
- ❑ **Groundwater Monitoring Services**, San Bernardino County Landfill Sites, San Bernardino County, California. Field Operation and Maintenance Manager for groundwater monitoring and maintenance program at 25 sites operated by the County of San Bernardino. This work included the installation, operation and maintenance of various types of groundwater sampling and monitoring systems including, automated bailers, pneumatic bladders pumps, electric submersible pumps, electronic water level meters, pressure transducers, bubblers, and pneumatic packers.
- ❑ **Groundwater Monitoring Services**, Avenal Landfill Site, Avenal, California. Field Manager coordinating the routine monitoring and sampling of groundwater wells and lysimeters at a landfill site in Avenal, California. Activities also included the monitoring of enclosed areas for the accumulation of landfill gas.
- ❑ **Sub Title D Perimeter Probe Monitoring**, San Bernardino County Landfill Sites, San Bernardino County, California. Field Operations Manager for monitoring of soil pore gas probes in accordance with Sub Title D perimeter probe monitoring requirements at 19 landfill sites operated by the County of San Bernardino.
- ❑ **NPDES Storm Water Monitoring Program**, San Bernardino County, California. Field Operations Manager for the NPDES storm water monitoring program at 25 sites operated by the County of San Bernardino.
- ❑ **Landfill Gas Extraction and Treatment System Operations and Maintenance**, San Bernardino County, California. Field Operation and Maintenance Manager for landfill gas extraction and treatment systems at 5 sites operated by the County of San Bernardino. This

work includes all field work necessary to optimize the landfill gas production at the sites while maintaining site compliance with SCAQMD requirements.

- ❑ **Groundwater Monitoring Program**, Imperial County Landfill Sites, Imperial County, California. Field Operation and Maintenance Manager for groundwater monitoring program at eight sites.
- ❑ **Groundwater Sampling Program**, Kern County Site, Bakersfield, California. Field Manager coordinating the sampling of groundwater wells and sumps at a former hazardous waste landfill currently the subject of a State Superfund investigation and closure. Groundwater sampling included the use of low-flow, minimal drawdown sampling techniques.
- ❑ **Landfill Gas Extraction and Treatment System Operation and Maintenance**, City of Glendale Landfill, Glendale, Arizona. Site maintenance manager for operation, maintenance and monitoring activities. This includes various routine and unscheduled/emergency activities for gas extraction system and flare station.
- ❑ **GAC Treatment System Operations and Maintenance**, Plaza Alicante, Garden Grove, California: Provided construction and operations and maintenance services for a granular activated carbon (GAC) landfill gas treatment system which treats gas migrating from nearby site. Project involves routine maintenance of system components including carbon canisters, pumps, and blowers. Also provided construction management during system installation.
- ❑ **Groundwater Treatment System Operations, Maintenance, and Monitoring**, Santiago Canyon Landfill, Orange County, California. Supervising Technician. The system includes a groundwater and condensate extraction, collection and storage system, a metals precipitation pretreatment system, an air stripper for removal of organics and a final treated water storage and testing area. Responsible for routine and non-routine operations and maintenance of all system components and ongoing system operational evaluation.
- ❑ **Site Control and Monitoring Services**, Operating Industries, Inc. Superfund Site, Monterey Park, California. Provided construction support and operations and maintenance services for site facilities including, landfill gas recovery and migration control systems, a flare station, leachate collection wells, pump systems, an irrigation system, a final cover system, and access roads. Also provided construction management for the installation site improvements, such as wells and probes.
- ❑ **Air Quality Monitoring Program** Four County of San Bernardino County sites. Responsible for coordinating field monitoring services in compliance with South Coast Air Quality Management District Rule 1150.1. Sampling program consists of integrated surface sampling, instantaneous landfill surface monitoring, perimeter probe monitoring, ambient air monitoring, meteorological monitoring and stack testing.
- ❑ **Operating Industries, Inc. Superfund Site**, Monterey Park, California. Provided construction inspection services for the construction of upgrades to landfill gas flare station.
- ❑ **Operating Industries, Inc. Superfund Site**, Monterey Park, California: Provided peer review and inspection services for complete electrical drawings included in the operations and maintenance manual for upgrades to the flare station.

- Operating Industries, Inc. Superfund Site**, Monterey Park, California: Provided construction management services for the installation of pneumatic pumps for the leachate collection system.
- Royal Boulevard Land Reclamation Site**, Torrance, California: Conducted groundwater monitoring services as part of project to provide long-term post-closure maintenance of this inert foundry waste disposal site.
- QA/QC Program:** Responsible for the calibration and maintenance of the following monitoring equipment:
 - Organic Vapor Analyzers (OVA-108 & OVA-128)
 - Spectrec PAS 3000 Personal Air Monitoring Pumps
 - Gastec NP-204 and XP-204 Gas Indicators
 - Gastec GX-82 Combustion Gas Indicators
 - Gastec GX-3N Gas/Oxygen Indicator
 - Kurz Series 1440 Flow and Temperature Meters
 - Organic Vapor Monitors (OVM 580A & 580B)
 - Lantec Gas Extraction Monitors (GEM 500: GM. 1.1)
 - Bachrach Sentinel 44 Personal Gas Monitors
 - Hydac pH/E.C./Temperature Meter
- Responsible for maintaining up-to-date equipment calibration logbooks, site activity log-books, and a personal activity logbook on a daily basis.

PROFESSIONAL EXPERIENCE:

- 1990 - Present: Manager of Field Services and Operations
 Bryan A. Stirrat & Associates
 Consulting Civil & Environmental Engineers
 Diamond Bar, California
- 1988 - 1990 Construction Inspector
 Warren Construction
 General Contractor
 Walnut, CA

RELATED TRAINING AND EDUCATION:

- 40-hour Hazardous Waste Training
- 24-hour HAZWOPR/Supervisor Training

PROFESSIONAL MEMBERSHIPS

- Solid Waste Association of North America



APPENDIX L

SUBCONSULTANT STATEMENTS OF
QUALIFICATIONS

UltraSystems

Alpha Analytical Laboratories

Chambers Group

United Pumping



ULTRASYSTEMS ENVIRONMENTAL



STATEMENT OF QUALIFICATIONS
ENGINEERING SERVICES FOR LANDFILL AND DISPOSAL SITE REMEDIATION





STATEMENT OF QUALIFICATIONS: ULTRASYSTEMS ENVIRONMENTAL, INC.
PRESENTED TO: BRYAN A. STIRRAT & ASSOCIATES

SECTION 1

ULTRASYSTEMS ENVIRONMENTAL - EXECUTIVE SUMMARY



UltraSystems Environmental, Incorporated (UltraSystems) is a full-service planning and environmental consulting firm, serving both public and private sector clients throughout the State of California, with a strong emphasis in working with Southern

California municipalities and transportation agencies. Since the inception of UltraSystems over a decade ago, the firm has become widely recognized in its efforts to promote and integrate the principles of environmental protection and sustainable development into municipal planning and administration. UltraSystems assists municipalities and other public agencies in the development of land-use plans, long-range and short-range goals, action-oriented objectives, and in minimizing significant community and environmental impacts for any proposed project. Our professional staff places a great deal of focus on developing land-use and transportation systems, which must be successfully coordinated at the development stage if they are to promote efficient use of resources, good road safety, environmentally friendly solutions, safe local environments and residential areas, and an efficient flow of traffic.



Over eighty percent (80%) of UltraSystems' contracts have been awarded by federal, state, municipal and public agencies. Our success in working closely with these agencies has enabled our firm to become proficient in understanding how these agencies are structured and we have adjusted our internal system accordingly. UltraSystems has enjoyed the opportunity to work in the throughout the State of California, assisting various agencies in balancing economic stability and a high quality of life with the ever-increasing flux of new residents and businesses into the local communities and regions. Our professional staff has provided Environmental Impact Reports (EIRs) for General Plan Amendments, Specific Plans, as well as redevelopment and new development projects. Specific to landfill projects, our staff has clearly demonstrated a successful track record in landfill planning, permitting, and engineering, including mitigation of potential and identified environmental impacts. Furthermore, any task order assigned to UltraSystems under this contract with the California Integrated Waste Management Board, CIWMB), will receive the full support of our extensive in-house support services, including a specifically designed Quality Assurance and Quality Control (QA/QC) programs developed specifically for landfill projects.

Landfill Facilities – Our Knowledge, Our Experience, Our Goals...

UltraSystems has extensive experience with evaluating the potential environmental and health risks of Class I and III Landfills, as well as a working knowledge of the various regulatory agencies which may be involved in the project such as the Office of Environmental and Health Hazard Assessment, The California Integrated Waste Management Board (CIWMB), The South Coast Air Quality Management District (SCAQMD), The RWQCB, the State Department of Toxic Substances Control (DTSC), and both the U.S. and California Environmental Protection Agencies.

The technical experts at UltraSystems have completed literally thousands of investigations involving environmental toxicology, health risk assessment, hazardous waste management, human health and ecological risks from hazardous waste facilities, characterization and feasibility studies, remedial investigations, corrective action measures, hydrologic evaluations, surface water/ground water migration studies, soil chemistry, air toxics risk assessments, environmental monitoring, chemical fate and transport analysis and transport media including leachate, runoff, soil, air, surface water, groundwater from hazardous waste sites and facilities.





STATEMENT OF QUALIFICATIONS: ULTRASYSTEMS ENVIRONMENTAL, INC.
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The UltraSystems Team has the requisite professional talents and technical resources to successfully manage any landfill and solid waste task order assignments from initial assessment to post-closure maintenance. We look forward to the opportunity to demonstrating our abilities to the BAS project team.

PART 2 **ULTRASYSTEMS – WHO WE ARE AND WHAT WE DO**

UltraSystems utilizes a broad range of experience with federal, state, municipal, transportation, water, and recreational, as well as residential, commercial, industrial, institutional, and infrastructure-related projects to prepare legally defensible studies in full compliance with the Cal-EPA toxics regulations, Public Health and Safety Code guidelines, the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) guidelines, as well as applicable Caltrans and Federal Highway Administration (FHWA) specifications. UltraSystems is a leading provider of environmental review, compliance, and monitoring support to the State of California and local public agencies, as well as to private sector developers through a combination of unparalleled results, commitment to quality, and professionalism. Our overall goal is to provide the highest quality services and environmental documents possible in the most cost-effective and timely manner. The following Table illustrates areas of technical expertise UltraSystems is capable of providing, or areas that are managed by on a task order process by a designated Project Manager:

AREAS OF TECHNICAL EXPERTISE	
<p><u>Planning Services</u></p> <ul style="list-style-type: none"> ▪ Zoning and Special Purpose Legislation ▪ Opportunities and Constraints Analysis ▪ Urban Land Use Studies ▪ Graphics/Visual Impacts and Studies <p><u>CEQA/NEPA Compliance</u></p> <ul style="list-style-type: none"> ▪ EIR and EIS Documentation ▪ Mitigation Monitoring ▪ Citizen Participation ▪ Permits and Entitlements ▪ Regulatory compliance <p><u>Construction Environmental Management</u></p> <ul style="list-style-type: none"> ▪ Stormwater Prevention Planning ▪ Hazardous Building Materials ▪ Grading and Trenching Monitoring <p><u>Hazardous Waste</u></p> <ul style="list-style-type: none"> ▪ Phase I, Phase II, Phase III Investigations ▪ Remedial Action Plans ▪ Health Risk Assessment ▪ Brownfields Redevelopment 	<p><u>Technical Studies</u></p> <ul style="list-style-type: none"> ▪ Aesthetics ▪ Air Quality Impacts ▪ Paleontology ▪ Biological Sciences ▪ Historic Preservation ▪ Socioeconomics ▪ Geotechnical and Geologic Analysis ▪ Hydrology ▪ Infrastructure Capacity Analysis ▪ Noise Evaluations and Analysis ▪ Traffic/Transportation Engineering ▪ Water Pollution Evaluation ▪ Utility Studies <p><u>Industrial Hygiene and Indoor Air Quality</u></p> <ul style="list-style-type: none"> ▪ Industrial Hygiene Practice ▪ Indoor Air Quality (Mold) ▪ Remedial Action Plans ▪ Asbestos, Lead and Mold Abatement



STATEMENT OF QUALIFICATIONS: ULTRASYSTEMS ENVIRONMENTAL, INC.
PRESENTED TO: BRYAN A. STIRRAT & ASSOCIATES

SECTION 2 OUR APPROACH TO ANY PROJECT

Our Approach for Any Project Undertaken:

- **Assign the Most Qualified, In-House Professional Staff to Specific Task Orders.** Our designated Project Manager, **Gene Anderson**, will serve as a dedicated extension to BSA's staff and the single point of contact for the duration of the project. Gene has been actively involved in the field of environmental consulting since the early 1970's. He has successfully prepared over **320 environmental documents** for a broad range of projects encompassing various multidisciplinary areas of technical expertise, focusing on waste management and landfill projects. Gene has also successfully managed significant, high profile projects requiring numerous subconsultant partners at various tiers of the project team. His project experience within Riverside County is evident throughout his professional career.
- **Designated CEQ/NEPA Task Order Specialist.** Kendall Jue serves as a CEQA/NEPA Task Order Specialist for all major environmental documents. With over 23 years of hands-on project experience, Kendall has worked primarily with municipalities, airport facilities, and transportation agencies in Southern California. As a CEQA Task Order Specialist, Kendall provides technical review and directs all permitting requirements. He retains extensive regulatory agency experience and is well recognized in the industry.
- **Retain a Clear Understanding of the Big Picture for Each Project Undertaken.** Increased public opposition to landfills and more stringent environmental regulations are demanding changes in disposal and handling of solid waste. Our team of experts has the experience and capability to deal with the large number of physical, economic, technical, and overall community perception constraints that frequently accompany expansion efforts and development of landfills, as well as the impacts on properties adjacent to these landfill facilities. The UltraSystems Team retains experienced professionals who understand the needs of solid waste industry and the local municipalities that need to meet the demands of the ever-changing regulations that have become a complex aspect of their daily operations. We also understand the growing needs of local communities and how this growth correlates to the specific expansion plans for landfill facilities. The UltraSystems Team presents team of specialists qualified in an array of solid waste management practices. As a team, we will strive to obtain a viable balance between the needs of the industry and the community it serves.
- The Ultrasystems Team understands the key ingredients for project success include appreciating and embracing the **sophistication of stakeholders' and understanding** of how the potential project may impact or benefit their respective neighborhoods; the importance of **early, meaningful and continued public involvement; concise and accurate communication** of the project goals and objectives; and **real-time information-sharing with decision makers**. We believe these ingredients support a formula which fosters cooperation, managed expectations and ultimately - project success.
- **Feasibility and Prioritizing - Completing a Project within the Established Time Frame.** UltraSystems will **meet the required delivery or performance schedule for any assigned task order**, taking into consideration all existing contracts, on-going projects, and anticipated contract awards. We will place the needs of this contract as a priority.



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- **Performing Internally.** UltraSystems retains the necessary internal **organizational, accounting, and operational controls** for the duration of the contract period with BSA and the CIWMB.
- **With any project,** UltraSystems is committed to a **high record of integrity and business ethics.**

An Early Commitment – Focusing on One Task Order at a Time

Each professional staff member and subconsultant partner will be designated to play a specific role for the task order at hand. Each professional team member will serve on the Project Team for the duration of our involvement, thus ensuring our commitment from day one. Our professional team identifies potential constraints, which will assist our team in identifying an overall project plan, thus avoiding costly delays and unnecessary budget expenditures during the course of the project. A factor of our success rate with environmental documents and technical studies, specifically with CEQA/NEPA documentation and permitting requirements, can be attributed to our **support and incorporation of advanced planning measures and the frequent monitoring of all task orders assigned to the UltraSystems team.**

A major test to the success of any project is the way in which unforeseen conditions and occurrences are identified, communicated to the project team and to BSA and the CIWMB's fundamental staff, and managed by the professionals supporting the UltraSystems team. Our commitment to any project begins with our familiarity and understanding of the "big picture". **Understanding what is expected from the UltraSystems Team at any given point and time enables our team members the ability to focus on critical elements of individual project task orders.** The professionals of UltraSystems understand that the basic philosophy of keeping a project on track involves maintaining individual project tasks and activities by allocating the appropriate resources and professional staff members with the right technical knowledge and experience. The UltraSystems Team is fully committed to proactive communication, striving to continue our successful partnership with between the professionals designated to our project team and CIWMB representatives. The very success of accurate environmental documents depends on the efforts of everyone involved, a bridge between all team members, and open communication channels to ensure the quality of work efforts and ethics.

Identifying Potential Constraints at the Very Beginning

UltraSystems' professional staff knows how to effectively streamline the environmental documentation and permitting processes to reduce unnecessary delays. Responsible agencies will utilize the analyses in environmental document as a basis for issuing or denying a permit. **Through early consultation with applicable permitting agencies and by addressing fundamental environmental issues head-on at an early stage in the process, UltraSystems avoids potential delays and/or the redesign of critical elements in any of the proposed alternatives due to need for additional environmental analysis.** As deemed necessary, UltraSystems utilizes the Notice of Preparation (NOP) process as a form of early consultation. The NOP is required to be distributed to all responsible State, federal and local agencies, as well as to trustee agencies, which may have jurisdiction over the project area.

- **Record of Meeting Schedules for Contacts of a Similar Nature**

Our clients indicate that we have a strong record of meeting project schedules. We keep projects on track through team communication and the anticipation of possible delays. Before initiating a major work order, the UltraSystems Team will hold a special meeting to discuss tasking and schedule constraints. Minutes from these meetings will be incorporated into the overall project schedule. Schedules will be distributed to all parties in hard copies



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and by e-mail. Most importantly, the schedule is more than simply a reporting tool. It is an “early warning device” to anticipate possible delays and proactively manage activities. Our “percent complete” schedule will realistically measure work order progress. With such advance notice, each team leader can respond quickly to avoid task slowdowns and maintain schedule.

▪ **Our Team Approach**

Close, regular communication and coordination with BSA and the CIWMB staff, the various regulatory agencies, and all members of our team is of paramount importance to the overall success of this contract. Microsoft Project™ will be an important tool in scheduling and communicating deadlines, milestones, and in the integration of the various work orders. To be completely effective these participants must be able to function as a team. Another key to our success in coordinating work orders has been our online Extranet. The Extranet allows client to access UltraSystems data and reports through a secure, password-protected site. This allows the rapid sharing of data and reports. We have been able to work with clients through this approach to revise major documents in less than 24 hours.

▪ **Financial Security & Insurance**

UltraSystems is a financially secure corporation. As a professional environmental consulting firm, we retain the financial resources and organizational capabilities to conduct and complete all services we have indicated in these documents that we are capable of providing. Understanding the type of projects and overall goals of our clients’ needs has enabled our firm to provide safety protocols for all projects. We understand that knowledge is the best defense against unsafe conditions. The goal of UltraSystems is to produce a working environment that is safe, yet productive.



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SECTION 3 THE ULTRASYSTEMS PROJECT TEAM

Team Members	Year s Exp.	Education	Project Role
Betsy A. Lindsay, President & CEO	24	<ul style="list-style-type: none"> ▪ MURP, California State Polytechnic University, Pomona ▪ B.A., Geography, California State University, Long Beach 	Principal-In-Charge; Contract Administration; Technical (QA/QC) Oversight
Gene Anderson, Director of Environmental Services	27	<ul style="list-style-type: none"> ▪ Juris Doctorate Program (Environmental Law), Loyola University of Los Angeles, College of Law, 1980 ▪ B.A., Environmental Studies, California State University, Sacramento, 1978 ▪ B.A., Philosophy, University of California, Los Angeles, 1975 	Project Manager; Technical Review; Development of Environmental Documents
James Aidukas	26	<ul style="list-style-type: none"> ▪ B.S., Mechanical Engineering, Arizona State University – 1970 ▪ Senior Executive Short Course, Stanford University – 1984 ▪ OSHA 	CEQA Documentation and Permit Support
Kendall Jue, Senior Project Manager	23	<ul style="list-style-type: none"> ▪ Coursework completed for M.S. in Environmental Studies, California State University, Fullerton ▪ B.A., Geography - Analysis and Conservation of Ecosystems, University of California at Los Angeles (UCLA), September 1978. 	Project Manager; CEQA Task Order Manager; Environmental Permitting; Development of Env. Documents
Carrie Barton, Senior Planner & Technical Writer	9	<ul style="list-style-type: none"> ▪ M.S., Marine Geology and Geochemistry, Massachusetts Institute of Technology, Cambridge, MA (1998) ▪ B.A., Earth Science, University of California at Berkeley, Berkeley, CA (1994) 	Senior Planner; Technical Writer
Tina Garg, Environmental Analyst & Technical Writer	4	<ul style="list-style-type: none"> ▪ M.S., Planning, University of Southern California, School of Policy Planning and Development ▪ B.A., Panjab University, Chandigarh College of Architecture, India ▪ Member of the American Planning Association (APA) 	Assistant Planner; Environmental Analyst ; Technical Writer
Dan Herlihy, RG, CEG CHG, REA, Project Manager	28	<ul style="list-style-type: none"> ▪ M.S., Geology, University of New Hampshire ▪ B.S., Geology, Long Island University (Southampton College) 	Specialist - Hazardous Materials, Geology, Hydrology, Water Quality; QA/QC
Michael Rogozen, D. Env., Senior Principal Engineer	37	<ul style="list-style-type: none"> ▪ D.Env., Environmental Science and Engineering, University of California, Los Angeles, CA, 1978 ▪ M.S., Systems Engineering, University of California, Los Angeles, CA, 1968 ▪ B.S., Engineering, University of California, LA, CA, 1966 	Senior Principal Air Quality Engineer; QA/QC
Howard Chang,	13	<ul style="list-style-type: none"> ▪ M.S., Environmental Studies 	Noise & Air Quality



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Team Members	Years Exp.	Education	Project Role
Senior Air & Noise Scientist		<ul style="list-style-type: none"> B.S., Public Health & Information Systems OSHA 40-Hour Health and Safety Training for Hazardous Waste Workers 	Scientist
Sandra Murcia, Biologist	25	<ul style="list-style-type: none"> M.S., Wildland Resource Science (Specialty in Wildlife), University of California, Berkeley, 1982 B.S., Forestry, University of California, Berkeley, 1973 	Biologist – Biological Resources; Supervising Field Biologist; QA/QC; Technical Review
Melissa Clemons, Field Biologist	10	<ul style="list-style-type: none"> B.S., Wildlife Biology, Humboldt State University, Arcata 	Field Biologist; Assistant Technical Writer
CJ Fotheringham; Botanist & Field Biologist	12	<ul style="list-style-type: none"> M.S., Biology, California State University, Los Angeles, 1999 B.A., Biology, Occidental College, 1996 Geological Society of America since 2002 Ecological Society of America since 1994 ISOMED (The International Society of Mediterranean Ecologists) since 1994 Southern California Botanists since 1993 California Native Plant Society since 1993 	Field Biologist & Botanist; Technical Writer
JD Stewart, Paleontologist (as needed)	29	<ul style="list-style-type: none"> B.S., Zoology, California State Polytechnic University, Pomona 	Paleontology Expert – Technical Review
Beverly Voran, Community Outreach Specialist (as needed)	27	<ul style="list-style-type: none"> B. A., Microbiology, University of Kansas, Lawrence, Ks. M.A., Psychology, University of Kansas, Lawrence, Ks. M.A., Urban Planning (pending), School of Architecture & Urban Planning, UCLA Certified in Conflict Resolution 	Community Outreach & Public Scoping

PART 2

PROFESSIONAL STAFF

Betsy A. Lindsay, Principal-In-Charge, Project Manager

Project Role: Contract Administration, Professional and Technical Resource Allocation, and Client Support to Project Team, QA/QC

Ms. Lindsay has over 24 years experience in the fields of environmental planning and permitting, redevelopment, fiscal impact analysis, economic development, and facility planning. Her primary responsibilities include business and project management, contract administration, resource allocation, and quality control. Specific responsibilities include overall project management, preparation and processing of CEQA/NEPA documents, and associated entitlement obligations for public/private infrastructure projects.

Firm Affiliation:
UltraSystems Environmental

Years of Experience: 24

Educational Background:

- MURP, Master of Urban and Regional Planning California State Polytechnic University, Pomona
- B.A., Geography, California State University, Long Beach



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Relevant Project Experience:

Sunshine Canyon Landfill Expansion, Sylmar, California (City portion). Ms. Lindsay is has served as the Project Director responsible for oversight of all environmental documentation, preparation and entitlement processing for the proposed Sunshine Canyon Landfill in the City of Los Angeles. She was responsible for overseeing nine participating subconsulting firms, as well as in-house environmental staff. This combined landfill would have an approximate 90-million tons of disposal capacity, with a planned maximum intake rate of 11,000 tons-per-day (tpd).

Sunshine Canyon Landfill Expansion, Sylmar, California (County portion). Served as the Project Director for the proposed Sunshine Canyon Landfill in the County of Los Angeles responsible for preparing nine environmental documents, entitlement processing, including an Oak Tree and Conditional Use Permit (i.e., 51 project conditions and seven separate monitoring programs), for this project in the City of Los Angeles. Also assisted County staff with the preparation of permit compliance documentation (i.e., pre-construction, construction, and operations) for required regulatory permits for project implementation. This landfill has an approximate 17-million tons of disposal capacity, with a planned maximum intake rate of 6,500 tpd. She is currently working on an Addendum related to the revised CUP conditions at this facility.

City of Pomona Materials Recovery Facility. Ms. Lindsay has served as Project Director for a 6,000-tpd Materials Recovery Facility (MRF) with rail-haul capabilities. She coordinated planning and environmental efforts with the City’s Director of Public Works, Economic Development Director, City Planner, and the planned Facility Operator (i.e., Taormina Industries) in preparation of all environmental documents and citizen participation workshops. The proposed MRF project was one of the most highly controversial projects within the City of Pomona. However, the Planning Commission and City Council certified all project documentation prepared by Ultrasystems, under Ms. Lindsay’s direction, after several contentious public hearings.

SWT Transfer Station in the City of Compton. Ms. Lindsay served as Project Manager for the proposed expansion of this transfer station. She was responsible for the preparation of environmental documentation, including the traffic, air quality, noise, and aesthetic portions of the Environmental Assessment, and project entitlements for daily capacity expansion at this facility.

Firm Affiliation:
UltraSystems Environmental

Years of Experience: 27

Educational Background:

- BA, Environmental Studies, California State University, Sacramento
- Juris Doctorate Program (Environmental Law), Loyola University of Los Angeles, College of Law

Gene Anderson, Project Coordinator; Quality Assurance & Quality Control (QA/QC)

Project Role: Provide Supervision & Management for Task Order Assignments throughout all Phases of the EIR Process; QA/QC; Serve as a liaison between the client, Project Team members, and regulatory agencies; maintains the schedule and budget; and provides public hearing support services

Mr. Anderson has 27 years of project management and environmental planning experience. His specialties include land use; solid waste, specifically with landfill construction, expansions, planning, and closures; transportation; aesthetics; energy; earth and water resources; air quality; solar access (shade/shadow); and community facilities planning. During his career, he has prepared and directed numerous environmental studies that were subject to the requirements of the California Environmental Quality Act (CEQA) and National Environmental Protection Act (NEPA).

Mr. Anderson has managed and processed more than 320 environmental documents for a wide





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range of projects, including: master plans, general plans, large-scale specific plans, heavy-rail, subway, transportation/circulation, co-generation power plants, port expansions, biological restoration, downtown redevelopment projects, high-rise office/retail complexes, business parks, regional shopping centers, industrial parks, landfills, and multi-family and single-family residential projects. He has also managed large-scale projects within the counties of Los Angeles, Orange, Riverside, and San Bernardino; and the cities of Alhambra, Anaheim, Burbank, Carson, Costa Mesa, Fountain Valley, Huntington Beach, Los Angeles, Ontario, Orange, Palm Springs, Pasadena, Redlands, Riverside, Rolling Hills Estates, San Bernardino, San Dimas, San Jacinto, Santa Ana, Seal Beach, Vista, West Covina, and 29 Palms.

Mr. Anderson is the Director of the Environmental Services Department. As the director, he is responsible for the day-to-day operations of the department overseeing staff assignments and ensuring the quality of the documents produced. Mr. Anderson also serves in the capacity of Project Director/Senior Project Manager for high profile projects.

Relevant Project Experience:

Sunshine Canyon Landfill, City of Los Angeles. UltraSystems recently completed CEQA documentation for the proposed Sunshine Canyon Landfill within the City of Los Angeles. This proposed Class III landfill facility would connect to the operational landfill in the County of Los Angeles.

The proposed facility would be one of the largest urban landfills in the Southern California region, resulting in a net disposal capacity of 90 million tons and ultimately encompassing ±451 acres, with a planned maximum intake rate of 11,000 tons per day (tpd).

Proposed onsite ancillary facilities include both a plant material center and an environmental learning center. The public educational learning center would be established to promote recycling, materials recovery, and source reduction activities by increasing public awareness of critical waste management issues and encouraging voluntary public agency participation. Educational programs, including tours of the landfill facility, would educate children and young adults about the importance of recycling, materials recovery, and source reduction.

A plant materials center would be utilized for the germination of native tree seed stock (e.g., coast live oak, canyon live oak, big-cone Douglas-fir, sycamore, maple, and black walnut trees) and native vegetation gathered in and around the Sunshine Canyon area. These species would be used as part of revegetation programs in Sunshine Canyon. Currently, the existing nursery is recognized as one of the largest growers of coast live oak trees in the Southern California region.

EI Sobrante Landfill. Under contract to Waste Management, a visual analysis was prepared because the project site is located in close proximity to a known public vista and a designated scenic highway. The visual analysis evaluated the physical changes caused by the project, and the manner in which those changes could, (1) effect a viewer from a public vista or scenic highway, and/or (2) effect the ability of a viewer to see the surrounding environment. The visual analysis did not analyze the physical attributes (beauty) of the project, but it did analyze the public views from the residential areas located west of the I-15 Freeway and from Cajalco Road (a designated scenic highway), and how the project would physically change those views. The visual analysis was prepared from the perspective a viewer; a viewer being the person who sees the view.

The aesthetic analysis evaluated the physical attributes of the project. The aesthetic analysis did not evaluate a person's psychological responses to the beauty of the project. The analysis examined the manner in which the project would appear as a result of its physical changes to the environment. An



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PRESENTED TO: BRYAN A. STIRRAT & ASSOCIATES

aesthetic analysis is generally performed when a jurisdiction has specific aesthetic goals or design guidelines in an adopted plan that relate specifically to the way a project is suppose appear. There were no adopted aesthetic goals or design guidelines that the project or site was required adhere to. As such, the aesthetic analysis for this project evaluated how the project site would appear from six different public viewpoints that surround the project site. The aesthetic analysis also described what the project site would look like at any one given time during the life of the project from a public viewpoint within the residential area west of the I-15 Freeway.

Bel-Art Transfer Station. UltraSystems prepared an IS/MND for the proposed expansion of the Bel-Art Transfer Station, located at 2501 East 68th Street in the City of Long Beach and within the County of Los Angeles. The Bel-Art Facility is located on a 3.2-acre parcel and receives and processes up to a maximum of 1,500 TPD of municipal solid waste, including green waste, recyclables and construction and demolition debris. The proposed expansion would allow this existing facility to receive up to 4,000 TPD of solid waste materials.

Pomona Materials Recovery Facility and Transfer Station, City of Pomona. UltraSystems prepared a project-level EIR for the development and operation of a regional 6,000-ton per day (tpd) Materials Recovery Facility (MRF) serving the eastern San Gabriel Valley. The proposed project consisted of the development, operation, and maintenance of a MRF within the jurisdictional boundary of the City of Pomona. This approximately 25-acre facility would receive, process, recycle, and compact up to 6,000 tpd of municipal solid wastes received from the City of Pomona and other cities located within the San Gabriel Valley. This MRF is equipped with rail-loading capabilities. After processing and inspection, transfer trucks to local Class III landfill sites for end disposal would transport residual wastes from this facility.

If no landfill space is available locally, residual wastes would be processed, then compacted into intermodal containers and transported via rail systems to remote Class III landfill locations (i.e., either in-State or out-of State). Additional features of the MRF include a community buy-back center for the public to recover and recycle materials, and an educational/environmental learning center.

Regional Solid Waste Association Transfer Station, City of Vista. The City of Vista is a member agency in the Regional Solid Waste Association (RSWA). The RSWA has six member cities in total, and is proposing to construct a transfer station for municipal wastes in the City of Vista. This project is very controversial, and there is an organized opposition group fighting the RSWA each step of the way. Mr. Anderson is managing a project team that includes four subconsulting firms, and he is responsible for directing the project team in preparing the EIR, preparing the written responses to the comments received during the 45-day public review period on the Draft EIR, and finalizing the CEQA process. The major issue that has arisen revolves around diesel emissions (particulates in the soot) that the California Air Resources Board identified as being carcinogenic in August 1998. Other issues include transfer trucks and collection trucks on City streets, odors, visual resources, wetland issues, runoff, and downstream impacts on plant and animal life.

Firm Affiliation:
UltraSystems Environmental

Years of Experience: 26

Educational Background:

- B.S., Mechanical Engineering, Arizona State University
- Senior Executive Short Course, Stanford University

James Aidukas, CEQA Documentation and Permitting Support

Project Role: *Provide CEQA Documentation and Permitting Support for the Duration of the Project*

James Aidukas specializes in project design and implementation. Mr. Aidukas specializes in a wide range of services for successful project approval, including permitting approvals and compliance, engineering support,





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CEQA/NEPA documentation, and project design experience. Mr. Aidukas serves as President of own consulting firm since 1999 to the present, and also as a consultant to UltraSystems Environmental.

James T. Aidukas previously served as the Director of Environmental Affairs for Browning Ferris Industries (BFI), a solid waste management company. Since then, Mr. Aidukas has managed the successful expansion of the Sunshine Canyon Landfill since 1988. Most recently, the Los Angeles City Council approved the expansion of the landfill in December of 1999. The Board of Supervisors approved the Los Angeles County expansion in 1990. This has been one of the most complicated land use matters in both the City and County in the past decade. The CEQA documentation for the County expansion was challenged in Superior, Appellate, and the Supreme Courts and was upheld. Additionally, permitting approvals were challenged at the agency board levels and were upheld.

Relevant Project Experience:

Browning Ferris Industries. Obtained final permits for the City Extension Landfill construction which included the Corps of Engineers 404 permit, the California Department of Fish and Game 1603 Agreement, Regional Water Quality Control Board 401 certification, City of Los Angeles Traffic Improvement "T" Condition Permits, City of Los Angeles Zone Change "Q" Condition requirements, pre-construction permits, building permits, and wetlands mitigation design and permitting.

Minergy, a Wisconsin Energy Corporation. Served as a consultant in the development of a California market for sewage sludge to glass recycling. Provided technical, regulatory and market development guidance to the corporation.

Patriot Resources, L.L.C., an independent California oil company. Provided Patriot with permitting direction in the City of Los Angeles, developed a negotiating strategy to settle differences with a powerful environmental group and negotiated a long-term settlement between the City of Los Angeles, the North Valley Coalition and Patriot, allowing oil well development without continued discretionary permitting delays for a 20-year period.

Kendall B. Jue: CEQA Task Order Specialist

Project Role: Serve as the CEQA Task Order Manager; Environmental Permitting, QA/QC

Kendall Jue has over 23 years experience in the preparation of environmental impact assessment documentation. He is highly familiar with the requirements of both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). During his career, he has actively participated in the environmental analysis for natural resource development for mining and geothermal energy in compliance with the U.S. Bureau of Land Management (BLM) and U.S. Forest Service (USFS) NEPA guidance; highway improvement projects in compliance with the California Department of Transportation's (Caltrans) requirements; and major infrastructure projects in compliance with the regulations of various local, state and federal agencies such as the Los Angeles County Metropolitan Transportation Authority (MTA) for light rail tracks and stations, U.S. Air Force (USAF) for southern California military installations, and the Ports of Los Angeles and Long Beach for marine port

Firm Affiliation:

UltraSystems Environmental

Years of Experience: 23

Educational Background:

- Coursework completed for M.S. in Environmental Studies, California State University, Fullerton
- B.A., Geography - Analysis and Conservation of Ecosystems, University of California at Los Angeles
- UCLA Extension Course: CEQA Issues and Trends



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facilities. He also participated in the preparation of the environmental document for one of the most controversial projects in the Los Angeles area, the expansion of the Los Angeles International Airport.

Relevant Project Experience:

City of San Marcos – Heart of the City Specific Plan. Mr. Jue serves as the UltraSystems Project Manager for the preparation of a new 200±-acre area located at the center of the City of San Marcos. The City desires to amend the Specific Plan to allow the area to become an employment center by providing for increased retail, office, hotel, and residential development. In this capacity, Mr. Jue is responsible for the preparation of project reports and budget tracking for both management and clients, making adjustments with client approvals for additional work beyond project scope and conferring with project personnel to provide technical advice and to resolve problems.

Los Angeles International Airport Master Plan Environmental Impact Statement/Environmental Impact Report (EIS/EIR). Mr. Jue served as Deputy Project Manager for the preparation of the joint EIS/EIR for the proposed Los Angeles International Airport Master Plan. Mr. Jue had an active role in the final review of the various environmental discipline sections of the Draft EIS/EIR, verifying that requested changes were properly implemented. He participated in the Public Hearings for the Draft EIS/EIR and reviewed the over five thousand comment letters to classify the individual comments by topics for response by the appropriate technical staff. As Deputy Project Manager, he coordinated with CDM staff and the EIS/EIR subconsultants to develop proposed work scope and budgets for contract amendments as the project progressed.

Imperial Project EIS/EIR: Mr. Jue conducted the internal Quality Assurance/Quality Control review of the Draft EIS/EIR for an open-pit, heap-leach, precious metals mine and processing facility proposed to be developed in eastern Imperial County, California, approximately 20 miles northwest of Yuma, Arizona. Major contributor to the Responses to Comments on the Draft EIS/EIR. As a result of some Comments, Kendall expanded the discussion of analyses previously conducted for several disciplines including roadway safety due to proposed intersection and roadway realignments, and environmental justice pursuant to the U.S. Environmental Protection Agency's Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis, which was issued after the Draft EIS/EIR was circulated. Due to project delays, Kendall conducted an extensive review of the existing project setting to verify that no new, unanticipated changes had occurred that could change a previously less than significant impact to one that may be potentially significant.

Firm Affiliation:
UltraSystems Environmental

Years of Experience: 9

Educational Background:

- M.S., Marine Geology and Geochemistry, Massachusetts Institute of Technology, Cambridge, MA (1998)
- B.A., Earth Science University of California at Berkeley, Berkeley, CA (1994)

Carrie Friedman Barton, Senior Assistant Planner

Project Role: Provide Technical Review and Writing Support

Ms Barton has more than 4 years of applied experience in private and public land development, and 5 years of applied experience in science, including laboratory analyses and fieldwork. Her experience is complemented by an education in earth sciences, which includes advanced studies in geology and chemistry. This is particularly beneficial to the evaluation of environmental impacts and interpretation of technical reports in the areas of geology and soils, hazardous materials, water resources, and mineral resources

Relevant Project Experience:





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City of Burbank Land Use and Mobility Elements Update Program EIR. Ms. Barton serves as the Senior Planner for this project. In this role, she prepares modifications to specific Land Use and Mobility Elements sections. Ms. Barton also reviews applications for zoning variances and other occupancies for conformance to applicable ordinances and policies and prepares written project analysis including identifying appropriate land use policy, design issues and environmental requirements; and makes recommendations for action. The Land Use Element Update aims at addressing the new issues and opportunities currently facing the City, and meeting the current and foreseeable needs of the community while at the same time maintaining the quality of life and small town atmosphere that Burbank’s resident’s have indicated is so important to them. The Mobility Element will replace the Circulation Element.

City of San Marcos – Heart of the City Specific Plan. As the Primary Author, Ms. Barton is responsible for analyzing and evaluating site and architectural plans, performing technical review and making recommendations, coordinating in-house review, and technical writing. She has reviewed the proposed amendment to the current General Plan and has communicated recommendations to senior level City staff. The Specific Plan guides the development of a 200±-acre area located at the center of the City. Due to the site’s proximity to California State University San Marcos, and access to SR-78 and a new commuter rail line, the City desires to amend the Specific Plan to allow the area to become an employment center by providing for increased retail, office, hotel, and residential development.

La Pata Park, City of San Clemente. Ms. Friedman Barton prepared all environmental documents for the La Pata Park project in the City of San Clemente. The final Mitigated Negative Declaration was recently submitted to the City. Ms. Friedman Barton prepared a Screencheck IS/MND, sans technical studies (i.e., traffic study, noise, aesthetics, and air quality), for the City of San Clemente to submit to the State in order to help secure Prop 40 grant funding. The Screencheck IS/MND was presented an assessment of the project’s potential environmental impacts, which could be used by the City, along with a description of how they intend to complete the CEQA process within one year from the grant award announcement, to obtain funding. UltraSystems has now been approved to finalize the IS/MND, which includes overseeing the work of subconsultants to complete the necessary technical studies, as well as assisting the City of San Clemente with public noticing and processing of the IS/MND.

Dan Herlihy, REA, PG, CEG, CGH, Senior Geologist & Hydrogeologist, Hazardous Materials Specialist
Project Role: Specialist - Geology, Hydrology, Hazardous Materials & Water Quality

Mr. Herlihy has been selected as a Subject Matter Expert (SME) by the California Board of Registration for Geologists and Geophysicists to develop qualifications for the practice of hydrogeology in California. His hydrologic experience includes soil and groundwater assessments for remediation investigations and feasibility studies, and groundwater resource studies in unconsolidated and fractured rocks. Mr. Herlihy has conducted dozens of single well slug tests, production well step drawdown tests, and multi-well long term aquifer tests in shallow low permeability water table aquifers, and deep high permeability artesian aquifers. Aquifer test evaluation included delayed drainage, leakage, no flow and recharge boundary conditions, fluctuating atmospheric pressure conditions, and well spacing from a few feet to a quarter mile. Mr. Herlihy has developed

Firm Affiliation:
UltraSystems Environmental

Years of Experience: 28

Educational Background:

- University of Wyoming - Hydrogeologic studies under National Science Foundation Traineeship - Spears & Belford Fellowships
- University of New Hampshire - MS Geology
- Long Island University (Southampton College) - BS Geoloav - Cum Laude





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conceptual, finite difference and analytical modeling solutions to design groundwater remediation programs and to assess groundwater resources.

Relevant Project Experience:

Bradley Landfill, Waste Management Corporation. Three deep (up to 300 feet) dual completion groundwater-monitoring wells were installed and historic data from existing wells were used to: 1) characterize groundwater quality up-gradient and down-gradient of the landfill in the San Fernando Valley to verify the direction of groundwater flow and historic groundwater level fluctuations, 2) establish spatial changes in groundwater quality and magnitude of groundwater level fluctuations, and 3) further delineate a known fault within the alluvial aquifer system. Based on the findings of the study, groundwater quality, levels and flow direction were controlled by the nearby groundwater recharge spreading grounds located up-gradient of the landfill. The landfill could potentially impact portions of this recharged groundwater, a fault in the area was mapped within a 50-foot area of certainty in the vicinity of the landfill. The three wells were included in the monitoring program for the landfill.

Chiquita Canyon Landfill, Laidlaw Waste System. Groundwater monitoring wells were installed in the vicinity of a new landfill expansion area for the Chiquita Canyon Landfill near Santa Clarita, California. and, the expansion area was geologically mapped. Based on the mapping and the groundwater study, the direction of groundwater flow and groundwater quality was determined to flow to the Santa Clarita River, which was an intermittent gaining stream. Areas of existing groundwater impact were identified, and a groundwater monitoring plan and contingency plan were prepared to protect the nearby surface water and groundwater resources. A permit application for the expansion area was submitted to the Regional Water Quality Control Board and was approved. The landfill area expansion was constructed.

Campo Landfill, Mid-American Waste Systems. Mr. Herlihy participated in the estimation of costs to develop a landfill on the Campo Indian Reservation near the south San Diego County border with Mexico. Mr. Herlihy attended public hearings with Mid-American Waste Systems to advise Mid-American of technical detail during the public hearing process to gain regulatory and tribe approval for the landfill.

Phase I in Santa Ana River Floodplain. Mr. Herlihy conducted a Phase I Environmental Site Assessment (ESA) for approximately 250-acres of proposed property development southwest in the section of I-60 and the Santa Ana River in Riverside California to identify: 1) likely presence of hazardous substances or petroleum products, 2) conditions that indicate a release, or a material threat of a release, of hazardous substances or petroleum products into the subsurface or surface water, and 3) issues that may have an environmental impact on the subject property. Based on the findings the Phase I ESA, the subject property consisted of: 1) Emerald Meadows Ranch, a horse training facility, within the floodplain, 2) industrial properties including a Chevron Service Station at 3070 Rubidoux Boulevard and A&A Equipment Rental Company at 5030 30th Street along the north boundary, and 3) family homes throughout the remainder of the property. The Emerald Meadows Ranch used local groundwater produced from two wells at the facility.

The West Riverside Landfill, adjoining the subject property north of I-60, was active from 1965 to 1983. No environmental problems related to this closed facility were discovered. Minor spills of used oil were observed at the Emerald Meadow Ranch and A&A (Engelauf) Equipment Rental Company. These include: 1) oil staining near cracked concrete in the maintenance shop at Emerald Meadow Ranch, and 2) staining and spills of oil on soils in the vicinity of the outdoor wash pad at the A&A (Engelauf) Equipment Rental Company facility. Based on these findings a soil sampling and



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analysis plan was recommended to assess the potential impact to near-surface soils in area of oil staining at the Emerald Meadows Ranch and A&A (Engelauf) Equipment Rental Company.

Stringfellow Superfund Site, Glen Avon. Mr. Herlihy was retained by the IT Corporation (IT) to prepare a sampling and analysis plan (SAP) on behalf of the California Department of General Services, Real Estate Services Division (RESD) and the California Department of Toxic Substances Control (DTSC) in support of a variance for the disposal of filter cake solids containing pesticides at concentrations above the US Environmental Protection Agency (EPA) universal treatment standard (UTS). Filter cake solids were wastes generated from the ongoing groundwater remediation program at the Stringfellow Hazardous Waste Facility (site) in Glen Avon, California.

The filter cake was historically disposed of as a hazardous waste in a landfill. However, filter cake derived from one (A-Stream) of the six (A- through F-Streams) liquid wastes treated contained pesticides: 4,4'-DDE [1,1'-dichloro-2,2-bis(p-chlorophenyl)ethylene]; 4,4'-DDD [1,1-dichloro-2,2-bis(p-chlorophenyl) ethane]; 4,4'-DDT[1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane]; and 2,4'-DDT[1,1,1-trichloro-1-(4-chlorophenyl) methane].

Firm Affiliation:
UltraSystems Environmental

Years of Experience: 5

Educational Background:

- M.S., Conservation Biology, University of Queensland, Australia, 2004
- B.S., Zoology, University of California, Santa Barbara, 1999
- Continuing Education, Language Development and Social Foundations of Education, California State University, Los Angeles, 2001

Sandra Murcia, Biologist
Project Role: Provide Biological Resources Review, Studies & Analysis

Ms. Murcia has extensive experience in the specialized fields of wildlife biology and terrestrial ecology. This includes conducting numerous wildlife surveys, wildlife habitat evaluations, population studies, and impact analyses. Ms. Murcia retains a broad range of knowledge about many wildlife species, their habitat relations and interactions, and the interactions between human activities, wildlife and wildlife habitat. She has been involved in the following: assessing wildlife habitat, conducting impact analyses, developing mitigation, preparing technical documents in accordance with NEPA, CEQA, and Endangered Species Laws, assisting Project Managers and technical staff for wildlife and vegetation surveys, and report preparation, and conducting

surveys for endangered species.

Relevant Project Experience:

- Endangered Antioch Dunes Evening Primrose Survey
Completed an annual two-day census of the entire population of Antioch Dunes Evening Primrose (*Oenothera deltoides var. howellii*) during its peak bloom season at the Antioch Dunes National Wildlife Refuge. This refuge is a dynamic riverine dune system located along the San Joaquin River and is home to three endangered species. All primrose were counted and their blooming or non-blooming status was recorded. Trained volunteers and other interns to recognize plant at different growth stages.





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▪ Habitat Restoration

Mechanically removed Yellow starthistle, Russian bullthistle, and Spring vetch from the Antioch Dunes NWR on a regular basis in order to allow native plants to grow successfully. Led a group of volunteers (including a Boy Cub Scout group) along a flood channel on the Mayhews unit of the Don Edwards National Wildlife Refuge to pick up waste and debris as part of Coastal Clean-up Day 2005.

▪ Vegetation Surveys

Conducted percent cover estimates of vegetation in salt marsh habitat as part of a population study of the Salt Marsh Harvest Mouse. Used a 1 m sq. quadrat to estimate percent cover of the following vegetation in the marsh; *Salicornia virginica*, *Atriplex patula*, *Cotula coronopifolia*, *Distichlis spicata*, *Ditrichia graveolens*, *Frankenia salina*, *Hordeum spp.*, *Grindelia humilis*, *Jaumea carnosa*, *Limonium californicum*, *Polypogon monspeliensis* and *Typha latifolium*.

Assisted with upland vegetation transect surveys of native and non-native species (*Lolium multifolium*, *Bromus diandrus*, *Cotula*, and *Hordeum spp.*). Also estimated percent cover of most common vernal pool species (*Downingia concolor*, *Cotula coronopifolia*, *Frankenia salina*, *Limnanthes douglasii*, and *Lasthenia conjugens*) at Warm Springs Seasonal Wetland, a vernal pool grassland in the San Francisco Bay that provides protection for various endangered species.

▪ Report/Technical Writing

- Prepared NEPA documentation, Environmental Action Statement, Refuge Compatibility Determination, Public Notice and Special Use Permit for Alameda County Water District to install groundwater-monitoring wells on levees adjacent to Mowry Slough, property of the U.S. Fish & Wildlife Service and part of the San Francisco Bay National Wildlife Refuge Complex. During the process, met with Water District personnel on-site to discuss special conditions of the proposed project. In addition, worked with Cargill Salt Inc., Ohlone Audubon Society, and Citizens to Complete the Refuge during the Public Review stage of the project.

Wrote technical reports for the SF Bay National Wildlife Refuge Complex on the population status of Endangered Contra Costa Wallflower, Endangered Antioch Dunes Evening Primrose and Caspian tern populations for the 2005 season.

Michael Rogozen, D. Env., Senior Air Quality Engineer

Project Role: Provide Supervision and Technical Review for all Research and Assessments Related to Potential Impacts of Air Quality as Pertaining to CEQA Documentation

Michael Rogozen is experienced in project management, health risk assessment, air and industrial wastewater permitting in California, ambient monitoring, dispersion modeling, pollution control technology assessment, economic analysis of air pollution control alternatives, air toxics emission inventory development, offsite consequence analysis, environmental database design, survey design and management, source test design and analysis, subsurface methane investigations, regulatory analysis, and technical writing and editing.

Firm Affiliation:

UltraSystems Environmental

Years of Experience: 39

Educational Background:

- D.Env., Environmental Science and Engineering, University of California, Los Angeles, CA, 1978
- M.S., Systems Engineering, University of California, Los Angeles, CA, 1968
- B.S., Engineering, University of California, Los Angeles, CA, 1966



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Relevant Project Experience:

Task Manager, Orange Line Air Monitoring, Los Angeles Metropolitan Transportation Authority, San Fernando Valley, California. Mobilized equipment and staff within one week to begin daily monitoring of ambient dust concentrations, and weekly sampling for ambient arsenic and lead at the fence lines of the Orange Line busway right-of-way. Prepares daily and biweekly reports. Conducted special study of residential exposure near MTA equipment yard. Analyzed South Coast Air Quality Management District fugitive dust rules and recommended compliance measures. **Result: Provided defensible documentation that DTSC action levels for total dust, arsenic, and lead have not been exceeded at the ROW fence lines and in the Victory Park neighborhood; increased contractor awareness of regulatory requirements.**

Task Manager, Review of Air Quality Analysis in Puente Hills Landfill Draft EIR, Pomona, California. Reviewed analyses of particulate emissions and odor problems that were in a draft EIR for expansion of the Puente Hills Landfill. In addition to correcting several minor calculation errors, he found some weaknesses in the method used to calculate emissions after multiple mitigation measures were implemented. These defects were addressed by the client for the final EIR. **Result: Improved the technical quality of the air analysis.**

Principal Investigator, Environmental Justice Initiative No. 8 (Field Inspection Technology), South Coast Air Quality Management District. This project had two main components. The first was an evaluation of the District's resources for responding to citizen complaints about air pollution and to monitor ambient air quality during emergencies, such as refinery fires. The second was a comprehensive evaluation of the state of the science of field sampling and analytical technology. Dr. Rogozen and his staff reviewed portable gas chromatography/mass spectrometry, open-path Fourier transform infrared spectroscopy, ultraviolet differential optical absorption spectroscopy, tunable diode laser spectroscopy, real-time particulate monitoring instruments, and "artificial nose" technology. He also evaluated recent improvements to conventional sampling and monitoring equipment (e.g. portable flame ionization detectors) and instrumentation that was not yet commercially available (e.g. thermal imaging infrared spectrometry). For each technology, Dr. Rogozen described principles of operation, found examples of how the technology has been used for ambient air measurement by other agencies, and recommended ways that it could be used by the District. **Result: Assisted AQMD in planning purchase of equipment for monitoring ambient air quality in cases of emergency.**

Firm Affiliation:
UltraSystems Environmental

Years of Experience: 13

Educational Background:

- M.S., Environmental Studies
- B.S., Public Health & Information Systems
- OSHA 40-Hour Health and Safety Training for Hazardous Waste Workers

Howard Chang, Noise Impact Analysis and Air Quality – CEQA Documentation Scientist

Project Role: Provide Research and Assessments Related to Potential Impacts of Noise and Air Quality as Pertaining to CEQA Documentation

Mr. Chang presents a diversified background in environmental sciences with an emphasis on air quality and noise assessments. Mr. Chang has performed a broad range of environmental services for federal, state, public agencies, and private sector clients. His project profiles have encompassed hydrogeology, hydrology, remedial technology and management, environmental documentation, geographic



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information systems, and air quality and noise impact field studies. His experience has also involved the development and implementation of state and federal air quality attainment plans, numerous rules, and regulations.

Mr. Chang services as an air and noise specialists for planning; the development and implementation of rules and regulations; and air quality modeling. Mr. Chang retains technical capabilities include the preparation, assessment, and processing of projects to ensure compliance with the respective guidelines of CEQA and NEPA.

Relevant Project Experience:

- New Source Performance Standards (NSPS) Tier 2 gas sampling, reporting, and development of work plans
- Determination of landfill gas (LFG) generation rates utilizing computer models
- Air quality emission evaluation and permitting
- Air quality compliance assistance and reporting for Municipal Solid Waste Landfills (MSW)
- Performance of regulatory compliance audits and interface with local, state, and federal agencies
- Environmental auditing, assessment, and audit report preparation
- Air quality compliance modeling
- Noise impact field studies, assessments, and documentation
- Storm Water (SW) compliance
- Wastewater discharge evaluations
- Surcharge statement preparation
- Air sampling of Vapor Extraction System and on-site FID analysis

JD Stewart, Senior Paleontologist – (As Needed)

Project Role: Paleontology Support Services; Technical Review

Dr. Stewart has more than 25 years of experience with the Mesozoic and Pleistocene fossil record of North America, and 18 years of experience in Cenozoic paleontology of southern California. Fishes, marine reptiles, and rodents are among his specialties. He was curator of fossil marine reptiles and fishes at the Natural History Museum of Los Angeles County for 17 years. His responsibilities at BFSa include supervision of field monitors, preparators and curatorial assistants; monitoring and field collection, particularly larger vertebrates; fossil preparation and identification; and preparation of CEQA-mandated paleontological monitoring and mitigation reports required by local governmental agencies. He has authored or coauthored more than 90 published papers and abstracts on vertebrate systematics (fishes, birds, marine reptiles and mammals), paleontology, biostratigraphy, and biogeography. Dr. Stewart continues his investigations as a Research Associate at the Natural History Museum of Los Angeles County.

Firm Affiliation:

UltraSystems Environmental

Years of Experience: 25

Educational Background:

- Ph.D. Degree, Systematics and Ecology, University of Kansas, Lawrence, 1984
- M.A. Degree, Systematics and Ecology, University of Kansas, Lawrence, 1979
- B.A. Degree, Biology, University of Kansas, Lawrence, 1974

Relevant Project Experience:

CEQA Documentation Support

Field Director for Paleontological monitoring include supervision of field monitors, preparators and curatorial assistants; directing and excavating fossils, monitoring and field collection, particularly larger vertebrates; fossil preparation and identification; and preparation of CEQA-mandated paleontological monitoring and mitigation reports required by local governmental agencies. Current field location is Temecula Ridge Apartments (Riverside County).



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Firm Affiliation:
UltraSystems Environmental

Years of Experience: 27

Educational Background:

- B. A. Microbiology, University of Kansas, Lawrence, Ks.
- M.A. Psychology, University of Kansas, Lawrence, Ks.
- M.A. Urban Planning (pending), School of Architecture & Urban Planning, UCLA
- Certified in Conflict Resolution

Beverly Voran, Senior Paleontologist – (As Needed)

Project Role: Provide Services Related to the Paleontology; Site Surveys and CEQA Support Documentation

Ms. Voran specializes in building partnerships and facilitating dialogue between communities and public/private projects that impact those communities. Early involvement by public affairs specialists will establish goodwill at the beginning of the project, and can dramatically reduce costly delays, negative publicity, claims and lawsuits. Ms. Voran retains extensive experience working with a variety of stakeholders including homeowners/residents, businesses, environmental groups, government agencies, elected officials and community organizations. She has a vital understanding of role politics play and has successfully managed many high profile, controversial projects.

She served on the Governor's Advisory Council on Women, and is the recipient of the California Community Service Award. She has been a member of the Board of Directors for several community-based agencies. In addition to her community work, she has served as a legislative advisor to a number of elected officials at the national, state and local levels.

Ms. Voran is also experienced in a number of technical fields including Microbiology, Chemistry and Biochemistry, and is knowledgeable about environmental pollution and toxic waste. She holds a Bachelors degree in Microbiology with a minor in Chemistry, and a Masters degree in Physiological Psychology from the University of Kansas. In addition, she has a Masters degree (pending) in Transportation Planning from the University of California, Los Angeles, and is certified in Conflict Resolution.

Relevant Project Experience

Parsons Engineering Sciences, Environmental Monitoring & Compliance Program, LACMTA Metro Red Line, Segment 3 Tunnel Project. Member of environmental monitoring and compliance team. Surveyed hillside residents to locate seasonal springs, native vegetation, and to obtain permission for environmental teams to access private property for identification and monitoring purposes. Conducted residential surveys and created database responses. Acted as liaison between TNDG Engineering Sciences, the MTA and the community.



STATEMENT OF QUALIFICATIONS: ULTRASYSTEMS ENVIRONMENTAL, INC.
PRESENTED TO: BRYAN A. STIRRAT & ASSOCIATES

SECTION 4 QUALIFICATIONS AND EXPERIENCE

The following individuals and organizations can be contacted to obtain information concerning the quality of our work products and professional representations. Following each reference is a brief description of one or more related work assignment that Ultrasystems has performed for that entity. Lists provided immediately following the project references is not intended to be complete, but only a representation to illustrate the range of activities that we have performed for these clients.

Project: **Sunshine Canyon Landfill Expansion, County of Los Angeles**

Client: Browning-Ferris Industries of California, Inc.
Dave Edwards, Regional Manager
14747 San Fernando Road
Sylmar, CA 91342
818/362-1567

Lead Agency: County of Los Angeles
Department of Regional Planning, Impact Analysis Section
320 West Temple Street, Room 1348
Los Angeles, CA 90012
Frank Meneses, Section Head
213/974-6461

Description: Prepared a comprehensive project-level EIR for the extension of the Sunshine Canyon Landfill on a 215-acre site located in the County of Los Angeles. Following approval by the County Board of Supervisors, the North Valley Coalition of Concerned Citizens (NVC) and the City of Los Angeles filed separate lawsuits in the Superior Court of California, County of Los Angeles against the County of Los Angeles and Browning-Ferris Industries (BFI) challenging the project entitlements, the legal sufficiency of the certified EIR, and the amendments to the County of Los Angeles General Plan. In addition, based on a CEQA challenge filed after project approval, Ultrasystems provided successful litigation support in defense of the County's actions.

UltraSystems prepared a comprehensive project-level Environmental Impact Report (EIR), including supporting project entitlements, for the development of a 17 million-ton major Class III landfill facility with a daily capacity of 6,000 tons. The scope of work required coordination with various local, regional, State and federal agencies, including the County Departments of Public Works, Health Services; Parks and Recreation and Fire; the County Sanitation Districts of Los Angeles County; and the California Integrated Waste Management Board.

Altogether, 18 environmental documents, along with numerous technical/monitoring documents and compliance programs, were prepared and submitted to County agencies, compliance committees, technical advisory committees, and citizen's groups. There were a total of 19 public hearings held by the County Regional Planning Commission and Board of Supervisors prior to project approval.



**STATEMENT OF QUALIFICATIONS: ULTRASYSTEMS ENVIRONMENTAL, INC.
PRESENTED TO: BRYAN A. STIRRAT & ASSOCIATES**

Project: Sunshine Canyon Landfill, City of Los Angeles

Client: Browning-Ferris Industries of California, Inc.
Dave Edwards, Regional Manager
14747 San Fernando Road
Sylmar, CA 91342
818/362-1567

Lead Agency: City of Los Angeles
Department of City Planning, Environmental Review Section
221 N. Figueroa Street, 15th Floor
Los Angeles, CA 90012-2601
Irene Paul, ERS Project Coordinator
213/580-5555

Description: UltraSystems prepared the CEQA documentation for the proposed Sunshine Canyon Landfill within the City of Los Angeles. This proposed Class III landfill facility would connect to the operational landfill in the County of Los Angeles. The proposed facility would be one of the largest urban landfills in the Southern California region, resulting in a net disposal capacity of 90 million tons and ultimately encompassing ±451 acres, with a planned maximum intake rate of 11,000 tons per day (tpd).

Proposed onsite ancillary facilities include both a plant material center and an environmental learning center. The public educational learning center would be established to promote recycling, materials recovery, and source reduction activities by increasing public awareness of critical waste management issues and encouraging voluntary public agency participation. Educational programs, including tours of the landfill facility, would educate children and young adults about the importance of recycling, materials recovery, and source reduction.

A plant materials center would be utilized for the germination of native tree seed stock (e.g., coast live oak, canyon live oak, big-cone Douglas-fir, sycamore, maple, and black walnut trees) and native vegetation gathered in and around the Sunshine Canyon area. These species would be used as part of revegetation programs in Sunshine Canyon. Currently, the existing nursery is recognized as one of the largest growers of coast live oak trees in the Southern California region.

Project: Sunshine Canyon Landfill Extension Closure/Post Closure

Client: Browning-Ferris Industries of California, Inc.
Dave Edwards, Regional Manager
14747 San Fernando Road
Sylmar, CA 91342
818/362-1567

Lead Agency: City of Los Angeles LEA
Department of Environmental Affairs
201 North Figueroa Street
Los Angeles, CA 90012
Joe Maturino, Program Manager
213/580-1070

Description: UltraSystems, under review authority of the City of Los Angeles, is presently preparing environmental documentation to implement mandatory closure and post-closure maintenance plans for the existing inactive landfill located in Sunshine



**STATEMENT OF QUALIFICATIONS: ULTRASYSTEMS ENVIRONMENTAL, INC.
PRESENTED TO: BRYAN A. STIRRAT & ASSOCIATES**

Canyon. This existing landfill consists of two inactive fill areas, encompassing 205± acres, with a waste placement of 25 million tons.

The environmental document consists of a Mitigated Negative Declaration (MND), Findings, and Mitigation Monitoring Plan. Information contained in the MND includes a technical analysis of final grading, final cover layer placement, biological impacts in relation to surface water drainage control improvements, and planned revegetation programs. Post-closure maintenance activities for this facility would be for a period of not less than 30 years.

Project: **Sunshine Canyon Landfill On-Site Solid Waste Recovery and Recycling Program**

Client: Browning-Ferris Industries of California, Inc.
14747 San Fernando Road
Sylmar, CA 91342
Dave Edwards, Regional Manager
818/362-1567

Lead Agency: County of Los Angeles
Department of Environmental Affairs
201 North Figueroa Street
Los Angeles, CA 90012
Joe Maturino, Program Manager
213/580-1070

Description: Preparation of a comprehensive Solid Waste Source Reduction and Recycling Program for implementation at this landfill facility in compliance with AB 939, in anticipation of the County's development of a Source Reduction and Recycling Element (SRRE).

Project: **El Sobrante Landfill**

Client: Waste Management
10910 Dawson Canyon
Corona, CA 91719
Raymond Grier, P.E., District Manager
909/277-1740

Lead Agency: Riverside County Waste Resources Management District
1995 Market Street
Riverside, CA 92501
Lesley B. Likins, Senior Planner
909/955-1370

Description: Under contract to Waste Management, a visual analysis was prepared because the project site is located in close proximity to a known public vista and a designated scenic highway. The visual analysis evaluated the physical changes caused by the project, and the manner in which those changes could, (1) effect a viewer from a public vista or scenic highway, and/or (2) effect the ability of a viewer to see the surrounding environment. The visual analysis did not analyze the physical attributes (beauty) of the project, but it did analyze the public views from the residential areas located west of the I-15 Freeway and from Cajalco Road (a designated scenic highway), and how the project would physically change those views. The visual analysis was prepared from the perspective a viewer; a viewer being the person who sees the view.



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The aesthetic analysis evaluated the physical attributes of the project. The aesthetic analysis did not evaluate a person's psychological responses to the beauty of the project. The analysis examined the manner in which the project would appear as a result of its physical changes to the environment. An aesthetic analysis is generally performed when a jurisdiction has specific aesthetic goals or design guidelines in an adopted plan that relate specifically to the way a project is suppose appear. There were no adopted aesthetic goals or design guidelines that the project or site was required adhere to. As such, the aesthetic analysis for this project evaluated how the project site would appear from six different public viewpoints that surround the project site. The aesthetic analysis also described what the project site would look like at any one given time during the life of the project from a public viewpoint within the residential area west of the I-15 Freeway.

- Project: **Pomona Materials Recovery Facility and Transfer Station, City of Pomona**
Client: City of Pomona
505 S. Garey Avenue
Pomona, CA 91766
909/469-2082
- Lead Agency: City of Pomona
505 S. Garey Avenue
Pomona, CA 91766
909/469-2082
- Description: Ultrasystems prepared a project-level EIR for the development and operation of a regional 6,000-ton per day (tpd) Materials Recovery Facility (MRF) serving the eastern San Gabriel Valley. The proposed project consisted of the development, operation, and maintenance of a MRF within the jurisdictional boundary of the City of Pomona. This approximately 25-acre facility would receive, process, recycle, and compact up to 6,000 tpd of municipal solid wastes received from the City of Pomona and other cities located within the San Gabriel Valley. This MRF is equipped with rail-loading capabilities. After processing and inspection, residual wastes from this facility would be transported by transfer trucks to local Class III landfill sites for end disposal.

If no landfill space is available locally, residual wastes would be processed, then compacted into intermodal containers and transported via rail systems to remote Class III landfill locations (i.e., either in-State or out-of State). Additional features of the MRF include a community buy-back center for the public to recover and recycle materials, and an educational/environmental learning center.



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PRESENTED TO: BRYAN A. STIRRAT & ASSOCIATES

SECTION 5 INSURANCE COVERAGE

UltraSystems has a Combination Environmental Services Policy which includes the following coverage's: General Liability, Professional Liability and Pollution Liability, with limits of 2,000,000 each Occurrence and 4,000,000 General Aggregate. The insurer affording coverage is Hudson Specialty Insurance Company and is rated by Best's as having a Financial rating of "A" Excellent.

SECTION 6 PROFESSIONAL REFERENCES

Please feel free to contact the following individuals and agencies to obtain feedback concerning both the adequacy of our work effort and the level of technical support provided:

- **City of Highland**
27215 Base Line
Highland, CA 92346
Rick Hartmann, Community Development Director
T: 909/864-8732
- **City of Burbank**
275 East Olive Avenue
Burbank, CA 91510
Barbara Lazar, Project Manager
T: 818/238-5250
- **Metropolitan Transportation Authority**
One Gateway Plaza
Mail Stop 99-22-9
Los Angeles, CA 90012
Carl Ripaldi, Environmental Specialist II
T: 213/922-7304
- **Metropolitan Water District**
700 N. Alameda Street
Los Angeles, California 90012
Jeff Ford, Project Manager
T: 213/4217-5687
- **County of Orange, Resources and Development Management**
300 N. Flower Street
Santa Ana, CA 92703
Chris Kubasek, Chief
T: 714/834-3471
- **City of Riverside**
3900 Main Street
Riverside, CA 92522
Debbie Anderson, Associate Engineer
T:909/826-5517
- **Pacific Properties**
3993 Howard Hughes Parkway, Suite 200
Las Vegas, NV 89109
James W. Stockhausen, Executive VP
T: 702/734-4644
- **Brown-Ferris Industries**
14747 San Fernando Road
Sylmar, CA 91342
Jim Aidukas, Senior Project Consultant to BFI
T: 213/977-6083
- **County of Los Angeles**
900 South Fremont Avenue, 11th Floor
Alhambra, California 91803-1331
Michelle Chemiente, Project Manager
T: 626/458-5199
- **Orange County Transportation Agency**
550 S. Main Street
P.O. Box 14184
Orange, CA 92863
Glenn Campbell, Project Manager
T: 714/560-5700

ALPHA ANALYTICAL LABORATORIES



STATEMENT OF QUALIFICATIONS
ENGINEERING SERVICES FOR LANDFILL AND DISPOSAL SITE REMEDIATION



STATEMENT OF QUALIFICATIONS

ALPHA ANALYTICAL LABORATORIES, INC.

208 Mason St.
Ukiah, CA 95482
(707) 468-0401
clientservices@alpha-labs.com

April, 2005

ALPHA ANALYTICAL LABORATORIES, INC.

STATEMENT OF QUALIFICATIONS

The following is an overview of ALPHA ANALYTICAL LABORATORIES' personnel, facilities, equipment, capabilities and goals for the near future.

I. **Certifications:**

California DOHS Certification for complete chemical, organic chemical, and bacteriological analysis of drinking water; DOHS Certification for organic and inorganic analysis of hazardous waste; and DOHS Certification for organic and inorganic analysis of waste water. All of the above are included in DOHS, ELAP Certification # 1551. Small Business Administration # 0001025 – valid through August 31, 2005

II. **Qualifications and Experience:**

ALPHA ANALYTICAL LABORATORIES, has been a California certified Environmental laboratory since 1982. Prior to 1982, we were Multi-Tech Laboratories, Inc., and were established in 1974. During our tenure we have successfully conducted environmental analyses, both short term and on going, for numerous clients in the public and private sector. A partial list of clients include;

California Regional Water Quality Control Board, CALTRANS, City of Cloverdale, City of Healdsburg, City of Ukiah, City of Willits, EBA Wastechologies, Eel River Sawmills, SCS Engineers, Foss Environmental, Mendocino Redwood Co., Georgia Pacific, Metcalf & Eddy, Pacific GeoScience, PG&E, SHN Consulting Engineers, Sonoma County Water Agency, URS Dames & Moore, Winzler & Kelly, U.S. Air Force, U.S. Army Corps of Engineers. Sonoma County Water Agency, Sonoma County Landfills.

We currently employ 35 scientists and technicians. The following is a list of key personnel:

LABORATORY DIRECTOR: Bruce L. Gove - Principal - B.S. Entomology - 1971 - Calif State University, Pomona.

PERTINENT EXPERIENCE: 29 years experience in staffing and supervising overall laboratory throughput from sample login to final results reporting. 15

years experience in bench work AA, wet chemistry and gas chromatography analyses. 29 years with Alpha Labs.

VICE PRESIDENT/BUSINESS MANAGER: Robert Phillips - Principal - B.A. Accounting/Business Management - 1979 - Calif. State University, Sonoma.

PERTINENT EXPERIENCE: Mr. Phillips has several years experience in Business Management, Accounting, and Development in both large and small businesses. Field Sampling experience includes 14 years of various types of sampling. 14 years with Alpha Labs.

QUALITY CONTROL/QUALITY ASSURANCE OFFICER: Cheryl Watson - B.S. Chemistry - 1994 - Calif. State University, Sonoma - B.A. Fine Arts - California State University, Northridge.

PERTINENT EXPERIENCE: 13 years experience in Gas Chromatography, specializing in petroleum and pesticide analyses. 7 years experience in developing QA/QC procedures and maintaining laboratory control and precision charts. 19 years with Alpha Labs.

ORGANICS SUPERVISOR: Marvin Gove - B.S. Physics - 1962 - University of California - Riverside.

PERTINENT EXPERIENCE: 22 years experience in supervising the Organics Department. Expertise includes trouble shooting GC systems, QA/QC development and management skills. 22 years with Alpha Labs.

INORGANICS SUPERVISOR: James Shoberg - B.S. Geology - 1988 - California State University - Sonoma.

PERTINENT EXPERIENCE: 6 years experience in supervising the Inorganics Department at ETC, Santa Rosa. Expertise includes data review for correctness, adherence to data quality objectives, departmental purchasing and budgeting, hiring, firing, training, performance reviews and maintenance and repair of instruments. Jim is also our IT professional. 9 years with Alpha Labs.

SAMPLE CONTROL Director: Karen Daly - A.A. - Business - 1966 - St Louis Community College.

PERTINENT EXPERIENCE: 13 years experience as Sample Control Officer - LIMS system expertise including sample login to final reporting - ultimately responsible for sample receipt and integrity. 13 years with Alpha Labs.

SAMPLE CONTROL OFFICER: Sheri Speaks

PERTINENT EXPERIENCE: 6 years experience as sample control officer. 6 years at Alpha.

GC ANALYST: Malisa Davis – B.S. Environmental Studies – California State University, Sonoma - 2003

PERTINENT EXPERINCE: 8 months experience analyzing Gasoline Range Organics, Aromatic Volatiles, Pesticides and PCB's.

GCMS ANALYST: Mark Schuy - B.S. Chemistry - University of California - Davis - CA - 1991.

PERTINENT EXPERIENCE: 14 years experience in Volatile Organics Analyses, QA/QC development, MDL studies, repairing and maintaining Volatile, GCMS instrument systems. 14 years at Alpha

GCMS ANALYST: Nathan Holloway – B.S. Chemistry – Middle Tennessee State University, Murfreesboro, TN – 2000

PERTINENT EXPERIENCE: 2.5 years experience in GCMS Volatile Analyses – Methods 8260, 524.2. Also experienced in repairing and maintaining Volatile GCMS instrument systems.

GCMS ANALYST/METHOD DEVLEOPMENT SPECIALIST: Laura Williams – M.S. Chemistry – Michigan Technological University – 1999

PERTINENT EXPERIENCE: Developed and implemented EPA 8270 Certification at Alpha. Has experience with GCMS using Ion Trap, HPLC, and SPME technology.

INORGANICS ANALYST: Tom Let - M.S. - Administration - 1975 - University Of Southern Illinois.

PERTINENT EXPERIENCE: 17 years experience in AA, GFAA and ICP analyses. Tom is our Safety Officer and is also responsible for Hazardous Waste Disposal at Alpha.

III. Facilities:

We are currently housed in a brand new, state of the art laboratory facility in a commercially zoned area of Ukiah, in Northern California. Our new lab includes over 11,000 square feet of laboratory and storage.

IV. Capital Equipment:

Organics:

- 1, HP 6890 Gas Chromatograph W/5976 MS Detector for EPA 8270 – June 2004
- 2, HP 6890 Gas Chromatograph W/5973 MS Detector for EPA 8260 - Oct 99
- 1 Varian 3700 Gas Chromatograph - Apr 82.
- 5 Varian 3400 Gas Chromatographs - Dec 83 - Mar 94.
- 1 HP 6890 Gas Chromatograph W/Auto Sampler – Feb 2003
- GC Detectors - Dec 83 – Jan 2004.

- 2 Hall Detectors - Chlorinated VOC's
- 4 PID Detectors - Aromatic VOC's.
- 5 FID Detectors - Non Specific - Petroleum Hydrocarbons
- 5 ECD Detectors - Chlorinated Pesticides & PCB's
- 4 PE Nelson Total Chrome Data Systems - .
- 7 personal computers - Dec 87 – Mar 2002.
- 7 Varian Auto Samplers - Dec 83 – Jun 2000
- 3 Archon Auto Samplers for VOC's

- 1 Dohrmann Model D-80 TOC Analyzer with Auto Sampler - Aug 95
- 1 Shimadzu Model 5050 TOC Analyzer with Auto Sampler – Mar 2003

Inorganics:

- 1 Thermal Jarrel Ash “Trace Scan” Sequential ICP - Oct 94
- 1 Thermal Jarrel Ash Auto Sampler for above ICP.
 - 1 IBM Compatible 486 PC with “Enable” software for analytical management of above ICP.
- 1 Perkin Elmer 5000 GFAA W/Auto Sampler - Apr 95
- 1 Dionex 2010I Ion Chromatograph W/Auto Sampler - computer controlled.
- 1 Dionex, DX600 Ion Chromatograph W/Auto Sampler for Hexavalent Chrome by EPA 218.6

General:

- 7 vehicles - 1990 - 2002

- 1 1973 Cessna 210 Airplane - Nov 95

V. Location - Transportation - Shipping:

Alpha Analytical is located in Ukiah, California, about 120 miles north of San Francisco on U.S Hwy 101.

Shipping:

UPS - Overnight, 2nd Day Air and 1 to 3 Day surface delivery. Saturday delivery is also available - contact lab.

FEDEX - Overnight and 2nd Day delivery - overnight charges are the same for any destination in the continental U.S.

VI. Goals For The Future:

Alpha Analytical plans to serve the growing analytical market in California, Oregon and Nevada for the foreseeable future. Our continuing goal is to provide quality, legally defensible data to our clients. In addition, we provide a level of personal service to our clients that is second to none.

VII. Projects: Listed below are some of our recent and/or current projects/contracts.

County of Sonoma – Sonoma County Water Agency – Ellen Simm – current since 1998 – County wide testing for Sonoma County – includes drinking water and waste water treatment plant testing, CTR and Storm Water Testing. Project value - \$250,000 yearly.

County of Sonoma – Integrated Waste Division Landfills – Mr. Don Poindexter and Mr. Glenn Morelli - Current since 1998 – Provide laboratory and field work for Monitoring wells, streams, ponds, stormwater, various soils, etc. as needed. Provide custom EDD reports and emergency response as required. Project value - \$200,000 yearly.

Advanced GeoEnvironmental – Stockton, Santa Rosa - Bob Marty – current since 1991 – Analyze soils and groundwater for petroleum hydrocarbons - \$50,000 yearly.

SCS Engineers - Santa Rosa/Eureka – Linda Mackey – current since 1995 – Analyze soils and groundwater for petroleum hydrocarbons and various semi-volatile compounds – Project value - \$200,000 yearly.

SHN Consulting Engineers & Geologists - Steve Salzman - 1991-92. Analyzed ground water samples for VOC constituents by EPA 502.2 to establish extent of Benzene contamination from a landfill. Services provided included nightly sample pickup by aircraft for the duration of the project. Project value - \$20,000.

Mendocino Forest Products - Cheryl Meyers – Ukiah, Ft. Bragg, - current since 1976 - Analyze soils and groundwater samples to comply with NPDES, and CTR requirements, landfill and storm water monitoring - \$60,000 yearly.

City of Ukiah – Rick Senior – Current since 1975 - Purgine, field filtration, sampling and analyzing groundwater from monitoring wells and leachate for VOC's, metals, pesticides and Bioassay by various EPA methodologies. Project value – \$95,000 yearly.

County of Mendocino - Dept. Of Public Works – Paul Caylor – Current since 1976 - Testing of ground water from monitoring wells and leachate for VOC's, metals and pesticides by various EPA methodologies. Project value - \$80,000 annually.

City of Willits - Dave Madrigal – Current since 1985 - Testing of ground water from monitoring wells and leachate for VOC's, metals and pesticides by various EPA methodologies. Project value - \$30,000 - yearly.

City of Healdsburg - Dept. Of Public Works - Bill Robertson/Mac McCarthur – Current since 1990 - Bacteriological and Title 22 analyses of public drinking water and waste water. Project value - \$40,000 yearly.

City of Cloverdale - Mike Falleri – Current since 1990- Bacteriological and Title 22 analyses for public drinking water and waste water. Project value - \$30,000 yearly.

NRC Environmental – Tod Roloff – provide emergency and ongoing analyses of various environmental spills in Northern Calif. – \$50,000 yearly.

Calif. State Water Resources Control Board – Chris Cochrane – Voluntary Domestic Water Testing Program – VOC's and Metals - \$100,000 – April – June 2004.

City of Hayward – Farid Ramezanzadeh – Wastewater Treatment Plant Organics Testing – February – Present 2005.

City of Hayward – Dije Ndreu – Water Pollution Source Control – Organics Testing – May – Present 2005.

City of Daly City – Mark Baker – Wastewater Treatment Plant – Analytical for both drinking water and wastewater regulatory compliance – April – Present 2005.

City of Palo Alto – Changam Naidu – Wastewater Treatment Plant – Analytical for various projects – March – Present 2005.

Yolo County Flood Control & Water Conservation District – Max Stevenson - Voluntary Domestic Water Testing Program – March 2005.

CHAMBERS GROUP



STATEMENT OF QUALIFICATIONS
ENGINEERING SERVICES FOR LANDFILL AND DISPOSAL SITE REMEDIATION





Chambers Group, Inc.

statement of qualifications

**Comprehensive
Environmental
Services**



**Environmental Studies
and Permitting**

**Environmental
Mitigation Monitoring
Programs**

Biological Resources

Cultural Resources

**Geographic
Information Systems**

Qualifications

Over the span of three decades, Chambers Group, Inc. has earned respect as a company that knows environmental compliance and resource management issues. We deliver scientific objectivity, environmental expertise, and defensible technical documentation that assist clients in meeting the stringent compliance requirements of federal, state, and local regulatory agencies.

This long-term history of interpreting and advising on complex environmental legislation and regulations has resulted in a unique expertise that makes us a leader in the industry. Chambers Group delivers high-quality professional products, innovative solutions, and timely execution of projects.

Our commitment is to provide quality services that solve problems and achieve optimal results. We are accustomed to mobilizing on short notice, working under rigorous conditions, and meeting demanding schedules. We have worked with the region's leading agencies, structured award-winning strategies and effectively addressed environmental concerns on high-profile, controversial projects. Our documents are recognized by clients and agencies as easily readable, technically credible, and legally defensible.

Background

Chambers Group is a certified Disabled Veteran Business Enterprise (DVBE) and Small Business Enterprise (SBE). The firm was established in 1978 to provide interdisciplinary environmental consulting services to private business, industry, and government agencies. Our staff of dedicated professionals provides clients with expertise in environmental studies and permitting; mitigation monitoring, biological resources, cultural resources, as well as Geographic Information System (GIS) and computer modeling.

We have wildlife biologists, botanists, marine biologists, wetland and restoration specialists, environmental analysts, cultural resources professionals, environmental planners, GIS analysts as well as an archaeological and paleontological field crew to provide expert environmental services.

These professionals have expertise in complying with environmental regulations such as the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act (ARPA), Native American Graves Protection and Repatriation Act (NAGPRA), Clean Water Act, and Clean Air Act. We have successfully prepared thousands of environmental and planning reports and studies in compliance with these and other regulations.

Environmental Services

- NEPA/CEQA Compliance (e.g., Environmental Impact Reports, Environmental Impact Statements, Environmental Assessments, and Mitigated Negative Declarations)
- Biological Resources Analysis/Management (terrestrial, aquatic, and marine biological resources)
- Coastal, Marine, and Estuarine Resources Planning/Management
- Habitat Restoration and Revegetation Program Design
- Habitat Conservation Plan Preparation
- Wetlands Delineation
- Cultural Resources Management
- Historic American Building Survey and Historic American Engineering Record (HABS/HAER) Documentation and Large Format Photography
- Ethnographic Studies and Native American Consultation
- Native American Tribal Environmental Services
- Paleontological Studies
- Building Conservation and Restoration Programs
- Environmental Mitigation and Monitoring Services for Construction Projects
- Mitigation Development Programs
- Storm Water Pollution Prevention Plans
- Water Quality Analysis
- Environmental Justice
- Permitting and Regulatory Compliance (e.g., Section 404/1602 permit processing)
- Ecological Risk Assessment
- Health Risk Assessment
- GIS / CADD Service

Office Locations

Chambers Group is headquartered in Irvine, California. We also maintain offices in Redlands, San Diego, and Sacramento, California as well as Reno, Nevada.

Corporate Headquarters

17671 Cowan Avenue, Suite 100
Irvine, CA 92614
Tel: (949) 261-5414
Fax: (949) 261-8950
Contact: Coleen Mayercheck

Inland Empire

302 Brookside Avenue
Redlands, CA 92373
Tel: (909) 335-7068
Fax: (909) 335-6318
Contact: Craig Neslage

San Diego

12526 High Bluff Drive, Suite 300
San Diego, CA 92130
Tel: (619) 287-1497
Fax: (858) 792-3421
Contact: Walter Odening

Sacramento

P.O. Box 162696
3104 "O" Street, Suite 344
Sacramento, CA 95816
Tel: (916) 455-7859
Fax: (916) 455-7860
Contact: Eugenia Laycheck

Reno

3100 Mill Street, Suite 100
Reno, NV 89502
Tel: (775) 323-3555
Fax: (775) 323-3554
Contact: Paul Strobel

Visit us on the web at
www.chambersgroupinc.com

Over nearly 30 years, Chambers Group has served a wide variety of public and private sector clients. Our public sector client list is impressive, and includes high-profile agencies such as:

- California State Lands Commission
- California Real Estate Services Division
- Metropolitan Water District of Southern California
- Orange County RDMD
- Orange County Transportation Authority
- California Department of Transportation
- County of Los Angeles Department of Public Works
- Los Angeles Unified School District
- US Army Corps of Engineers
- US Bureau of Land Management
- US National Forest Service
- US National Park Service
- US Air Force
- US Army
- US Marine Corps
- US Navy
- Federal Energy Regulatory Commission
- General Services Administration
- California Energy Commission
- California Public Utilities Commission
- Southern California Gas Company
- Southern California Edison

Selected Listing of Private Sector Clients:

- Granite Construction
- Sukut Construction
- Pardee Construction Company
- Sverdrup Corporation
- Shea Homes
- William Lyon Homes, Inc.
- Otay Land Company
- Pulte Homes
- Meritage Homes
- Distinguished Homes
- RBF Consulting
- Kleinfelder
- Taylor and Associates
- Whiting-Turner Consulting
- Kiewit
- SunCal
- Parsons Brinckerhoff
- CDM
- Fluor
- Parsons Transportation Group
- SAIC
- Tetra Tech
- Earth Tech
- PBS & J
- Allen and Anshen

Technical Excellence and Quality Management

Our established reputation as a leader in a technically complex industry, combined with a comprehensive quality management program, enables us to achieve client objectives efficiently, consistently, and without unwelcome “surprises.” The following are just a few of the ways we ensure that our clients enjoy the quality of service they deserve:

- **We know the regulations.** Our experienced staff provides expert interpretations of the complete spectrum of environmental and planning legislation.
- **We know the agencies.** We have completed numerous projects directly for federal, state, and local regulatory agencies. This experience has given us a thorough knowledge of agency protocol and requirements, which also benefits our private sector clients.
- **We have a successful track record.** With nearly 30 years of experience, we have the expertise and credibility to produce high-quality documentation that is technically credible and legally defensible.
- **Senior managers review all work products.** All documents, maps, and drawings undergo review by senior management, as well as technical experts, before they are submitted to the client.
- **Our clients are partners on our team.** Instead of merely providing scientific information, the Chambers Group project managers review project details with our clients to explain compliance options, thus enabling the clients to make informed business decisions while complying with agency requirements.
- **We measure our success** by how consistently we meet project deadlines, control costs, and maintain client satisfaction. The majority of our business is with our existing clients.





Environmental Studies and Permitting

SERVICES

CEQA Compliance

EIRs, NDs, ISs

NEPA Compliance

EISs, FONSIs, EAs

Permit Processing

Regulatory Assistance

Environmental Constraints / Benefits Analysis

Air, Noise, and Water Quality Analysis

Land Use Compatibility and Policy Analysis

Environmental Justice

Visual Assessment

Public Participation and Outreach Programs

Peer Review



Experience

Chambers Group has performed thousands of environmental studies for public and private entities throughout the western United States. Chambers Group's environmental studies and permitting services vary in size. Examples of services we routinely provide include reviewing a minor section of a document, collecting and analyzing data, preparing a full Environmental Impact Reports / Environmental Impact Statements (EIR/EIS), and performing long-term mitigation monitoring services.

Besides having extensive experience with clients from the private sector, Chambers Group has also completed numerous projects directly for federal, state, and local agencies. This blend of experience enables us to assist our clients in complying with all regulations while proceeding with the project in a cost-effective manner.

NEPA and CEQA Document Preparation and Review

Environmental laws and regulations, such as the National Environmental Policy Act of 1969 (NEPA) and the California Environmental Quality Act of 1970 (CEQA), require permitting agencies to consider the environmental consequences of most proposed development projects prior to issuing permits. Formal planning and documentation are often required as the basis for determining these consequences.

Based on the scope of the project or facility, requirements vary from preparing a comprehensive EIR or EIS to conducting a records and literature search. An EIR or EIS may include studies, such as marine biological surveys, archaeological surveys, air pollutant emissions modeling, comprehensive economic analyses, land use analyses, visual resource analyses and systems safety analyses. In many instances, a project benefits-constraints evaluation will be the initial step, possibly leading to the preparation of alternative development, impact assessment and permit acquisition.

Chambers Group offers the capability to prepare these documents or provide comments on the adequacy of environmental documentation prepared by others. Our expert review will assure applicant companies and permitting agencies that analyses are accurate and defensible and that conditions imposed on project permits are reasonable, feasible, and environmentally sound. In addition, we have extensive experience with highly controversial projects, such as major land development projects, hazardous material storage facilities; major water, oil, and gas pipelines; and offshore oil and gas development. Chambers Group deals very effectively with the public, agency personnel, and decision makers.

Permit Processing and Regulatory Assistance

Most business activities and proposed development projects are regulated by several different governmental entities. These include federal, state, regional, and local agencies with different, extensive, and sometimes conflicting requirements that must be met before each individual agency will approve a project.

Professional permitting requires extensive knowledge of governmental rules, regulations, statutes, and guidelines. Chambers Group can handle all your permitting requirements, including initial preparation of permit applications, all necessary environmental documentation, meetings with agency staff to negotiate reasonable permit conditions, and appearances before agency boards and governing bodies, including public presentations. We can also develop audit programs to determine an existing facility's environmental needs, as well as compliance programs to assist in conducting your business in an environmentally sound, yet cost-effective manner.

Other Services

Chambers Group has proven expertise in conducting stand-alone land use and environmental resource studies. Some of these include:

- preparation and evaluation of alternative land use plans, Master Plans for existing or proposed projects, and installation of Master Plans for military projects;
- planning and analysis of proposed community development and land use features or issues, such as facility siting and design studies, land use impact studies for EISs, land use compatibility studies and resource plans,
- transportation and traffic analyses, and utilities, public access, and human health and safety studies;
- baseline and impact studies for noise, water quality, and air quality (sampling, data analysis, and monitoring);
- biological resource analyses, including biological surveys and habitat analyses, threatened and endangered species studies, wetlands analyses, impact analysis, mitigation planning, and resource management plans;

- geotechnical soils, erosion, sedimentation, and other hydrological analyses;
- analyses of existing plans for projects in the area being considered to determine potential conflicts and consistency with pertinent planning regulations and policy, and evaluate related direct, indirect, and cumulative impacts;
- recreation studies, including planning, design, surveys, and economic evaluation methods (e.g., willingness-to-pay, user day values, contingent valuation methods) for coastal, river, and reservoir projects;
- aesthetics and visual analyses using computer simulations to define and evaluate potential visual impacts and model future conditions, including mitigation measures, by use of photographs, CADD files, and renderings;
- socioeconomic and economic analyses, surveys, research, demographic and economic projections, project impact assessments, and benefit-cost studies;
- public involvement and agency coordination, facilitation of public scoping meetings, EIS public comment hearings, and issue resolution and negotiation;
- development of mitigation monitoring programs; and
- expert witness services for hearings and litigation.

Key Personnel – Environmental Planning

James M. Smithwick, REA, RPA, CEM **Director, Environmental Planning** *Ph.D., Environmental Studies*

Dr. Smithwick is an environmental planner and permitting manager with strong practical knowledge of and in-depth experience in environmental documentation. He has worked in the Central Valley and the Mojave Desert region including Merced, Fresno, Palmdale and Edwards Air Force Base. His background includes environmental program and project management, regulatory compliance, mitigation planning and monitoring, field supervision, technical support, QA/QC, cost containment, safety and health compliance, and training. He conducts environmental baseline surveys, natural resources surveys as well as prepares management plans and mitigation/monitoring plans. He is experienced in regulatory

Statement of Qualifications

compliance and initiatives such as the National Environmental Policy Act (NEPA), California Environmental Quality Act (CEQA), National Historic Preservation Act (NHPA), Native American Graves Protection and Repatriations Act (NAGPRA), Endangered Species Act (ESA), Clean Air Act (CAA) and Clean Water Act (CWA). His on-the-ground management and administration expertise includes practiced cost containment on multi-million dollar projects. Multi-projects, multi-tasking. Managed several teams of five to 15 engineers, environmental scientists, geologists, biologists, archaeologists, risk communicators and technicians. Participated in technical discussions with clients, federal and state regulators and attorneys, and regularly organized public meetings participating as topic specialist. Met scheduled project milestones and goals with quality deliverables. He has performed QA/QC for work products accomplished by project teams. Served as client point of contact responsible for all tasking, assigning technical resources, managing subcontractors, approving deliverables and monitoring project control system reports to attain quality, to coordinate and maintain schedules and to control costs. Prepared and presented summary progress, financial and technical reports to contract administrators, contracting officers, and technical points of contact.

Susan Lamoureux

Senior Program Manager

**M.A., Social Ecology Planning and Public Policy
B.A., History/Political Science**

Ms. Lamoureux has been a planning/environmental and project manager for over 32 years. She has experience in preparing CEQA/NEPA environmental studies, General Plans, zoning ordinances, specific plans, land use compatibility studies, traffic studies, redevelopment plans, marketing feasibility studies, park plans, and environmental audits. Her CEQA and NEPA experience has covered the complete spectrum of educational, residential, commercial, special use, public, industrial, and governmental projects. Ms. Lamoureux has extensive experience in planning and the knowledge of environmental laws and regulations. She is very experienced in public presentations and holds a certificate in Public Participation.

Linda Brody

Senior Program Manager

Bachelor of Environmental Design

Ms. Brody has more than 27 years of experience in preparing environmental documents under CEQA and NEPA. Her areas of expertise include project management, focusing on water reservoir and water systems improvement; recreational development; wastewater treatment and recycling; marine terminal and offshore oil spills; flood control; and water and natural gas pipelines. She also has expertise in land use and visual analyses. Her visual analyses experience has included the use of U.S. Forest Service (USFS) and U.S. Bureau of Land Management (BLM) programs, as well as customized analyses. Ms. Brody's earlier background includes CEQA and NEPA work and project work for the U.S. Environmental Protection Agency (EPA) in support of establishing effluent guidelines, and permitting and environmental work in support of alternative energy projects (oil shale, coal gasification, tar sands, and solar programs) in Colorado, Utah, and Wyoming.

Judy McKeehan, RPA

Principal, Compliance Programs

M.A., Archaeology, B.A., Anthropology

Ms. McKeehan has 20 years of multi-disciplinary team management experience in the environmental profession including: project performance and compliance with federal, state, and local regulations; implementation of environmental mitigation monitoring plans for complex construction projects, preparation of reports; interpretation of geomorphological processes for botanical studies and coastline and stream reconstruction; and direction of cultural resources surveys and checklists for CEQA/NEPA Preliminary EAS, excavation, and coordination with Native American groups. Responsibilities include development of mitigation monitoring programs; managing and coordinating technical resource specialists and field monitors; developing and conducting environmental compliance training programs for construction personnel; reviewing and analyzing applicants' submitted documents; preparing time-sensitive status reports for agencies (FERC, CEC, CSLC, CPUC); interaction with jurisdictional agencies (Corps, BLM, CDFG, USFS, RWQB, etc.); and field inspections. Compliance issues dealt with include: endangered plant and animal species, erosion and sedimentation control, archaeology, geology, paleontology, hazardous

Statement of Qualifications

waste, air and noise quality, and restoration / revegetation. Projects include multi-year construction for oil and natural gas pipelines, fiber-optic conduits, multiple lane highways, open-pit coal mines, harbors, hazardous waste repositories, military base cleanup, landfills, and geothermal power.

Larry Freeberg

Project Manager

Ph.D. Oceanography, B.S., Chemistry

Dr. Freeberg has more than 27 years of technical experience in the environmental industry. His background includes environmental management and documentation, hazardous and toxic materials control and remediation, underground storage tank (UST) removal and fuel contaminant remediation, and program/office management certified by the California Department of Transportation (Caltrans) to prepare Storm Water Pollution Prevention Plans (SWPPPs) through the approval and implementation stages to ensure compliance with state and federal regulations. He also has extensive governmental and military experience. He was the Project Manager for natural gas pipeline construction and restoration compliance inspection support to the Federal Energy Regulatory Commission (FERC). He was the Program Director for environmental planning and compliance of crude oil storage at the Department of Energy's (DOE's) Strategic Petroleum Reserve (SPR) Program, as well as the Department of Defense's (DOD's) base fuel storage sites in the U.S. and overseas. He has managed a variety of environmental projects that range from extensive nationwide construction and restoration monitoring, environmental compliance of large oil and fuel storage/distribution facilities, UST compliance site assessments and remediation planning for soil and groundwater, to CEQA/NEPA evaluations and EIS preparation, site investigations, property audits, and pollution prevention studies.

Mike DeVore

Senior Project Manager

M.S., Environmental Studies, B.A., Geography

Mr. DeVore has more than 13 years of experience managing and preparing CEQA and NEPA analyses for a variety of projects, including redevelopment plans, annexations, mixed-use Specific Plans, General Plan Amendments/zone changes, infrastructure expansions, and major public/institutional facilities. He manages and prepares CEQA documentation, including public notices, initial environmental studies, Environmental Assessments (EAs), Findings of No Sig-

nificant Impact (FONSIs), Environmental Impact Reports (EIRs) (including focused, program, and supplemental/subsequent EIRs, and EIR addenda), Environmental Impact Statements (EISs), Mitigated Negative Declarations (MNDs), Mitigation Monitoring and Reporting Programs (MMRPs), Findings of Fact, responses to public comments, and Statements of Overriding Considerations (SOCs). He is experienced with Geographic Information System (GIS), database management, and visual analysis/simulations.

Kevin B. Shannon

Senior Environmental Planner/ Project Manager

B.A., Economic Geography

Mr. Shannon has more than 18 years of experience encompassing the private sector and the public sector, which includes experience in planning departments, an engineering department, a transit agency, councils of government, and a Local Agency Formation Commission. He has experience in the preparation of environmental studies, planning studies, demographic studies, and zoning ordinances and has successfully managed complex planning studies and capital projects from inception through completion. His areas of expertise include project management, solid waste management and planning, land use studies, and demographics. His environmental studies experience has included project-level analysis of large-scale mixed-use developments, solid waste facilities, transportation facilities, residential projects, public schools, a church campus, and conducting third-party technical adequacy reviews. Mr. Shannon has also served on a number of committees that have included a habitat conservation plan advisory committee, a solid waste management technical advisory committee, a transit service advisory committee, and on several site plan review committees.

Environmental Mitigation Monitoring Programs

SERVICES

CEQA / NEPA

Mitigation Monitoring Plans

Mitigation and Compensation Plans

Construction Training

Permitting Assistance

EIR/EIS

Agency Coordination

Sensitive Resources

Restoration Plans



Experience

Chambers Group has nearly 30 years of experience in conducting environmental studies under both NEPA and CEQA. Our experience includes managing major controversial projects as well as projects that involve multiple jurisdictional boundaries, requiring close coordination with, and cooperation of, local, federal, and state agencies.

Mitigation Monitoring Plans and Compensation Plans

Chambers Group has prepared numerous Mitigation Monitoring Plans and Mitigation and Compensation Plans. In addition, we have implemented plans developed both by us as well as those developed by other agencies. Specific mitigation monitoring program services provided by Chambers Group include:

- Identifying sensitive resources, providing management and restoration plans, and developing mitigation measures during final design to avoid, minimize, and/or compensate for impacts.
- Preparing technical documents, survey reports, supplemental EIR/EIS, and EIR/EIS addenda, including Mitigation Monitoring Plans
- Providing necessary resource specialists and environmental monitors to implement Mitigation Monitoring Plans.
- Developing Construction Training and Mitigation Monitoring Programs necessary to assure construction contractors' compliance with mitigation requirements.
- Providing permit assistance for all project aspects, including implementation and coordination stipulated in the monitoring plan, and attending meetings as necessary for successfully completing design plans and specifications.
- Coordinating with the client's engineering and environmental staffs, resource agencies, and construction contractors regarding project schedules and the effects of design changes on the environment.
- Submitting status reports to the regulatory or jurisdictional agency or client on the effects of construction alignment changes, construction method changes, and related issues with regard to compliance activities.
- Anticipating issues and providing solutions to avoid conflict.



Goals of a Mitigation Monitoring Plan

1. Preconstruction phase analysis of the project plans that relate in any way to environmental protection or permitting for the project.
2. In-field observation and documentation of environmental surveys and all construction activities.
3. Post-construction restoration compliance and evaluation.

Why Chambers Group for Environmental Mitigation Monitoring Programs?

Chambers Group's mitigation monitoring staff for construction of complex, large-scale right-of-way and linear projects provides the most experienced team for this type of work in the western United States.

We have developed this expertise over the past three decades through our work on behalf of utilities and transportation authorities providing monitoring services for installation of water, oil and natural gas pipelines, high-voltage transmission and distribution lines, long haul fiber optics networks, as well as construction of new toll roads and improvements to existing highways.

A compliance monitor must ensure regulatory compliance with applicable permit conditions, environmental regulations, and resource mitigation measures during project construction.

Our staff members have comprehensive working knowledge of environmental resources, cultural resources, erosion control measures, restoration requirements, air quality, water quality and sensitive species/habitats. Their extensive experience with both large-scale and small-scale projects throughout the western United States has given them an unmatched ability to coordinate and communicate clearly and diplomatically with construction personnel.

We have established protocols to foster consistent communication and track project progress, and we allocate resources to meet budget and schedule requirements—made even more cost effective for our clients via our web-based project management system — [Environmental Studio.Net](#).

While we track project schedules and budgets with state-of-the-art software, our project controls do not stop at the computer. All project managers undergo a thorough in-house project management training program developed by senior management. Because our success depends on client satisfaction, staff performance evaluations are based on how our employees satisfy client requirements. We expect our project managers and their teams to understand and meet our clients' criteria for project success.



Biological Resources

SERVICES

**Biological Resource
Analysis/Management**

Restoration Ecology

**Marine and Aquatic
Resources**

**Ecological Risk
Assessment**

Wetlands Delineation

**404/1600 Permit
Applications**

Experience

Chambers Group staff includes highly experienced terrestrial and marine biologists as well as restoration ecologists involved in the natural resource disciplines. Our projects have involved characterization of biological resources and assessment of the potential for sites to support threatened and endangered species, as well as presence/absence surveys for sensitive plant and wildlife resources. We provide mitigation monitoring services during construction to minimize impact to habitats as well as ensure the success of restoration and revegetation activities. Project areas include coastal, wetlands, rivers, streambeds, flood plains, state and national parks, landfills, coastal sage scrub, chaparral, mountain, and desert habitats in the western United States.

Overview

Chambers Group's diverse staff of plant ecologists, wildlife specialists, and aquatic and wetlands professionals are involved in a broad spectrum of projects ranging from field surveys to development of comprehensive mitigation programs. We have experience in conducting major field surveys requiring large teams of personnel for surveying remote areas such as deserts or forests, preparing natural resources and habitat management plans, wetlands delineations and marsh restoration, and enhancement for both coastal and inland wetlands. Studies are conducted using progressive techniques in data collection and analysis in compliance with state and federal regulations. Complex regulations have been established to ensure these important resources are considered in the environmental review process.

Chamber Group's skilled team of biological resources specialists help advance projects while complying with legislation, regulations, and stipulations regarding significant resources on or near project sites. Our specialists are experienced in all aspects of biological resource analysis/management, evaluation, and mitigation.

We know that by providing successful compliance activities, we can assist in preserving and managing valuable biological resources. These activities require a delicate mix of scientific knowledge, sensitivity to cultural values, and expertise with local, state, and federal regulations. Our multidisciplinary teams address each client's unique needs and each resource's distinct significance.



Services

- Biological Resource Analysis / Management
- Habitat Conservation Plans (HCP)
- Habitat Evaluation Procedures (HEP)
- Threatened and Endangered Species Surveys
- Endangered Species Permitting
- Habitat Restoration and Revegetation
- Restoration Ecology
- Marine and Aquatic Resources
- Resource Management Plans
- Ecological Risk Assessment
- Wetlands Delineation
- Hydrogeomorphic Analysis
- Natural Resource Damage Assessments
- Wildfire Hazard and Mitigation Assessments
- Quality Assurance Plans
- Sampling Assurance Plans
- Botanical Surveys/Vegetation Maps
- On- and Offshore Marine Surveys
- Natural Resource Damage Assessments

Threatened and Endangered Species

Chambers Group's services in this area include presence/absence surveys, evaluation of habitats, and analysis of population parameters. Our



staff holds specific permits to work with sensitive wildlife species such as the, Palos Verdes Blue Butterfly, Coastal California Gnatcatcher, Quino checkerspot butterfly, and Southwestern Willow Flycatcher. We also offer coordination with wildlife agencies and assist in a full range of consultation services under the federal and state endangered species acts. We have authored many Biological Assessments for the Section (7) Consultation process. We have also developed Habitat Conservation Plans for the Section (10) Consultation process.

Biological Surveys and Habitat Analysis

Survey services range from small parcels of land to large acreages, and from biological reconnaissance to detailed, long-term studies. We also provide detailed habitat evaluations and specialized studies.

Impact Analysis and Mitigation Planning

We perform detailed impact analyses of proposed projects on biological resources, including quantification of potential habitat loss. Many of



these analyses center around formulation of mitigation measures and measures to compensate for habitat loss. We also design and implement mitigation monitoring plans in accordance with recent environmental regulations.

Resource Management Plans

Many agencies require Resource Management Plans for major developments within areas containing sensitive biological resources. These studies may supplement or serve



as implementation plans and mitigation monitoring. Chambers Group has extensive experience in preparing Resource Management Plans, including initial agency coordination and scope approval, plan preparation and processing, and final implementation.

The scope of the Resource Management Plan frequently requires development of detailed procedures for preservation and restoration of resources. Chambers Group routinely prepares detailed implementation plans, including full identification of responsibility for plan implementation.

Mitigation Monitoring

Chambers Group has provided biological monitoring services for over twenty years. These services include mitigation



monitoring plans, coordination with agencies to determine specific responsibilities for various program elements, preconstruction surveys for sensitive species, onsite monitoring to assure compliance, and post-construction documentation of compliance with the plan. We also

Statement of Qualifications

review proposed and existing plans to measure their effectiveness against their original intent.

Our staff works closely with clients during project construction to assure that mitigation monitoring and permit compliance are conducted efficiently without disrupting construction schedules. We can provide the mitigation monitoring plan in conjunction with an EIR or as a separate document.

Restoration and Revegetation

Restoration and Revegetation Plans are commonly required for construction activities that impact native habitat.



Revegetation of graded sites is a difficult and specialized activity that requires a detailed understanding of the ecology of native vegetation and soil organisms. Chambers Group is uniquely qualified in this regard. Our restoration ecology team leader has a broad background in academic research and practical experience. He introduced several innovative restoration techniques in common use today, including land imprinting and mycorrhizal inoculation, which he developed over the past twenty years. The Chambers Group restoration team consequently has full access to these and other complex and powerful methods.



Marine and Aquatic Resources

Chambers Group specializes in analyzing dredging impacts and assessing the effects of toxic materials releases into marine and aquatic environments. Chambers Group's background ranges from surveys of coastal waters and streams, to inter-tidal and SCUBA surveys and sampling the offshore environment to depths of over 1,400 feet. We also have extensive experience in analyzing wetland habitats and developing mitigation and restoration plans.



The marine and aquatic sciences assess the complex interactions among the physical, chemical, and biological environments. Studies of the oceans, bays, harbors, wetlands, streams, and lakes require specialized sampling and analysis techniques. Chambers Group offers services and capabilities in all phases of marine and aquatic sciences.

Marine and Aquatic Services

- **Sampling and Surveying**
 - Sediment and water column sampling
 - Intertidal, subtidal, and deep water biological surveys
- **Modeling and Monitoring**
 - Habitat Evaluation Procedures (HEP)
 - Water quality analysis and modeling
 - Wetlands
 - Dredging impact analysis
 - Toxic material releases into aquatic environments
- **Analysis and Mitigation**
 - Habitat restoration
 - Natural Resource Damage Assessments
 - Wetlands restoration
 - Dredging impact mitigation
 - Eelgrass surveys and mitigation
- **Permit Assistance and Documentation**
 - Consultation with regulatory agencies
 - Permit filing and development of processing guidelines
- **Other Services**
 - Expert testimony
 - EIR and EIS preparation
 - Ecological risk assessment
 - Database management

Marine Studies

Marine sampling presents formidable challenges to the investigator. Chambers Group has been the leader in the development of equipment and methodologies to study the oceans. In water deeper than 100 feet, remote sampling and observation techniques must be used. Chambers Group has been among the leaders in using manned submersibles and remote-operated vehicles to study the deeper waters of the ocean.



In shallower water, SCUBA diving is often used for observation and sampling. Chambers Group helped pioneer the development of sampling equipment for underwater surveys. For example, we designed a specialized underwater photographic device that takes excellent photographs, even under rough and dirty conditions. Chambers Group maintains a scientific diving program that adheres to the SCUBA diving requirements of the U.S. Army Corps of Engineers.

Mitigation Planning and Habitat Restoration

Chambers Group has been actively involved in all phases of mitigation planning, implementation, and monitoring for marine and wetlands habitats. As part of the environmental documentation process, significant impacts are identified, and a detailed mitigation plan is prepared. Often, the mitigation may require habitat restoration. Habitat restoration measures that may be implemented for marine and wetlands impacts include creating an artificial reef, transplanting eelgrass, and restoring coastal wetlands.



Wetlands

Chambers Group has conducted a variety of coastal and freshwater wetlands studies. These studies have included jurisdictional wetlands delineations, analysis of impacts on wetlands from coastal development and stormwater discharges, as well as wetlands restoration projects. Several studies have included comprehensive analyses of wetlands ecology. Studies have included sampling of fishes, benthic invertebrates, small mammals, insects, and water quality in wetlands, as well as assessing wetland bird use. A senior staff member at Chambers Group was one of the first scientists in the United States to be certified as a wetlands delineator under the rigorous standards of the U.S. Army Corps of Engineers Wetlands Delineator Certification Program.



Facilities

Laboratory

The Chambers Group's marine laboratory houses offshore and intertidal sampling equipment and provides space for sample processing and storage. This facility supports Chambers Group's scientific diving program and includes tools, transects, photographic equipment, sampling and sorting equipment, collecting devices, and SCUBA equipment. Microscopes and a large collection of California algae, adult and larval fishes, and invertebrates, as well as a library of keys to California species, are maintained. Chambers Group maintains an extensive collection of underwater slides of California fauna and flora to aid in species identification from field and photographic samples. All field equipment is stored in the lab when not in use and four-wheel-drive vehicles are available as needed.



Computer Facilities

Chambers Group owns a variety of software and computer-based equipment to support study efforts. The Geographic Information System (GIS) is used in preparing land use plans, assessing environmental impacts, and compiling field data into usable information. A Global Positioning System (GPS) precisely maps localized resources in the field, with palm-top computers available to download field data for immediate analysis. The GPS is based on radio signals from satellites that provide the exact position of the receiver on the earth's surface. Based on the level of accuracy needed, the GPS can be used for relative surveys to the 10 meter level or down to the centimeter level for more precise surveys.



Key Personnel – Terrestrial and Marine Biology Group

Walter Odening - Director of Biology

Ph.D., Botany/Ecology; M.S., Biology

Dr. Odening has over 30 years of operations and program management experience for major environmental consulting firms. He has conducted or directed the successful completion of more than 300 ecological and multidisciplinary projects. He has specialty expertise and experience in NEPA and CEQA, biological and ecological studies, site/route selection and ranking, ecological risk assessments and impact analysis, ecological/natural resource damage assessments, wetlands evaluations, and Endangered Species Act consultations. His experience includes the preparation of mitigation plans including revegetation, habitat enhancement and restoration planning, relocation of sensitive species populations, development and conduct of long term monitoring programs, and in habitat protection/conservation planning.

Chris Blandford

Biology - Biology Group Manager

B.S., Ecology and Systematic

Mr. Blandford has a comprehensive background in managing large biological resources programs, conducting biological surveys and preparing environmental documents. As principal biologist, he has been active in managing projects ranging in complexity and diversity. He has management experience in the areas of scheduling surveys, supervising staff, ensuring complete data collection, quality controlling report preparation, interacting effectively with agency personnel, maintaining client communication, and meeting project deadlines. Throughout his career, he has conducted reconnaissance-level and focused wildlife surveys, Habitat Quality Analyses, focused sensitive species surveys, line distance sampling, quantified impacts to biological resources, authored biological technical reports and biological resource sections of environmental documents, implemented mitigation programs for large-scale projects, performed restoration compliance inspections in several U.S. states, and conducted wetlands and jurisdictional waters delineation surveys.

Noel Davis

Marine Biologist, Wetlands Specialist

Ph.D., Biological Oceanography

Dr. Davis has more than 26 years of experience in managing estuarine, freshwater, and oceanographic environmental studies. She is responsible for managing the aquatic and marine portions of Environmental Impact Reports (EIRs), Environmental Impact Statements (EISs), and Environmental Assessments (EAs) for both on-shore and offshore projects. She has conducted numerous marine studies and is also responsible for wetlands and water quality assessments in conjunction with 404 Permit evaluations and environmental reports.

Ted St. John

Restoration Ecologist

Ph.D., Physiological Plant Ecology

Dr. St. John is a plant ecologist with a career-long interest in the biological interactions that make ecosystems function. Over the past 33 years, he has completed projects on behalf of public works departments, military installations, utilities, water districts, cities and counties, federal agencies, transportation authorities, and developers, as well as research work in plant ecology. He specializes in restoration and revegetation programs as well as maintenance and success monitoring of riparian and other native habitats. His work has included wildlife corridors, streambeds and rivers, wetlands, highways, landfills, pipelines, and post-fire sites. This work has been carried out in desert, coastal and mountain areas. He is an expert in native plant species, selection of seed material, verification of specifications, and installation methodologies. His education and experience include a range of disciplines in several native environments, contributing to a perspective on ecosystem function that is unique among scientists and restoration practitioners. During his research career, he broke new ground on several fronts, including a new fundamental mechanism by which mycorrhizal fungi assist in the acquisition of plant nutrients. He is largely responsible for introducing mycorrhizal inoculation and land imprinting into standard restoration methodology in southern California, and has influenced other restorationists toward ecological thinking.



Cultural Resources

SERVICES



Cultural Resource Management

Field Surveys

Archival Record Research

Predictive Models

Archaeological Site Testing and Data Recovery

Paleontological Mitigation Plans

Historic Building Conservation and Restoration Plans

NRHP, CRHR, HABS, HAER

404 Permit Applications

Experience

Chambers Group has extensive experience in surveying, evaluating, and managing cultural resource sites and properties. Chambers Group successfully completes projects while taking into account the goals of clients, agency officials, Native Americans, and other interested parties. Our staff is highly trained in all aspects of archaeological investigations required under historic preservation law.

Overview

The primary goal of cultural resource management is to identify, evaluate, and treat the full range of significant prehistoric and historic archaeological resources and historic structures. Under Section 106 of the National Historic Preservation Act (NHPA), federal permitting agencies must take into account the effect of a proposed development project on eligible cultural resources, and a mitigation plan must be developed and implemented. Land developers must follow Section 106 procedures when they need a 404 permit to impact wetlands and drainages. Under the California Environmental Quality Act (CEQA), cultural resources must be evaluated for importance, and mitigation measures consisting of preservation or recovery must be applied.

Cultural resources are usually identified by a field survey. Once identified, cultural resources or historic properties must be evaluated by determining whether the cultural resource meets NRHP eligibility criteria or CEQA criteria. Evaluation for prehistoric cultural resources consists of delineating site boundaries, obtaining a small sample to determine whether site contents might yield information important in prehistory, and assessing site depositional integrity (determining whether association and context of features and artifacts have been affected). Sometimes, artistic value is applicable, which is the case with rock art sites. Evaluation of historic resources requires historical research to establish the historical associations and context for the resource. It may also require subsurface excavation. Architectural evaluation is necessary in the case of historic structures.



Services

Cultural resource programs are tailored to meet the needs of each project. Specific services may include the following:

- field surveys to identify cultural resources and assess direct and indirect impacts of proposed projects;
- identification of historic structures, uses, land use studies, and interviews with occupants or living relatives;
- development of predictive models and preparation of overviews that synthesize known archaeological and historical data and identify research priorities and problem areas;
- site testing (limited excavation) to evaluate significance to American pre-history, history, and culture in terms of applicable CEQA or NRHP criteria;
- Archaeological Treatment Plans and research designs for eligible or important pre-historic and historic archaeological sites that will be adversely affected by proposed activities;
- mitigation of impacts through excavation (data recovery) of significant sites that cannot be preserved through avoidance;
- on-site mitigation monitoring during construction;
- architectural evaluations to determine the significance of standing historic structures;
- Historic Resources Treatment Plans for significant historic structures which include provisions for historical and architectural documentation per Historic American Building Survey/ Historic American Engineering Record (HABS/HAER) requirements;



- preparation of collections from evaluation and data recovery to meet federal curation standards, if required. Chambers Group also advises clients on collections management and curation procedures if requested.
- interact closely with Native American groups to identify concerns regarding sensitive issues such as burials, cemeteries, sacred religious sites, and traditionally valued plants and animals. In many instances, Native American monitors are required onsite during excavation.

Chambers Group has considerable experience with many of these groups in the western United States, including the Chumash, Juaneño, Gabrielino, Serrano, Yokuts, and Mono groups of California; the Southern Paiute of Utah and Nevada; and the Navajo, Hopi, Zuni, and Laguna Pueblo of Arizona and New Mexico.

Chambers Group also has extensive experience in survey, evaluation, and impact assessment of marine archaeological



sites off the coast of California, and identification, assessment, and mitigation of paleontological resources throughout the western United States.

Key Personnel – Cultural Resources

Judy McKeehan, RPA Archaeologist

M.A., Archaeology, B.A., Anthropology

Ms. McKeehan has 19 years of international archaeological and geomorphological management and field experience (United States, Egypt, Greece, Israel, Turkey). She has managed environmental mitigation compliance and monitoring programs for projects in 14 states and has managed or prepared documents for numerous NEPA/CEQA projects since 1989. Her responsibilities include coordinating and managing resource specialists and field staff, reviewing and analyzing documents, preparing status reports, interaction with jurisdictional agencies, and field inspections. She has managed mitigation issues dealing with archaeology, geology, pale-

Statement of Qualifications

ontology, restoration of adobe and stone structures in California and Egypt, erosion and sedimentation control, hazardous waste, air and noise quality, and endangered species habitats. As the Oversight Appointee for jurisdictional agencies (Federal Energy Regulatory Commission [FERC], BLM, USFS, California Department of State Lands), her projects included multi-year construction for more than 2,000 miles of natural gas pipelines. She has served as Archaeologist and/or Mitigation Manager for optical fiber cable installation, multiple lane highways, oil pipelines, landfills, hazardous waste repositories, geothermal power, water systems as well as dams and harbors for a wide range of construction management firms and utilities. In addition, Ms. McKeehan has participated on projects including multi-year construction for oil and natural gas pipelines, fiber-optic conduits, multiple lane highways, open-pit coal mines, harbors, hazardous waste repositories, military base cleanup, landfills, and geothermal power. These projects included managing major western U.S. desert habitats, plains grasslands, migratory bird flyways, agricultural and urban lands, and river and wetland crossings in the Sierra Nevada, Rocky Mountains, Wasatch and Cascade Ranges. Ms. McKeehan has worked with numerous Native American groups either directly or contracted including Klamath, Pitt River (three bands), Yokut, Ohlone, Me-wuk, Salinian, Chumash (San Luis Obispo, Santa Barbareno, Ventureno groups), Tataviam, Kitanemuk, Tongva, Serrano, Cahuilla, Gabrielino, Juaneno, Luiseno, and Diegueno.

Philip de Barros, RPA **Archaeologist**

Ph.D., Anthropology (Archaeology),
M.A., Education, B.A., History

Dr. de Barros has over 25 years of experience in the fields of archaeology and cultural resource management in California and the western United States. Since 1985, he has served as the Principal Investigator and/or Project Manager on over 125 cultural resources projects. These projects have involved archival research, reconnaissance and intensive surveys, research designs, test excavations, data recovery excavations, cultural resource management plans, HABS/ HAER documentation, the preparation of agreement documents (such as Memorandum of Agreements [MOAs], Programmatic Agreements, and Findings of Effects documents), Native American concerns, and Section 106 coordination. Dr. de Barros meets the Secretary of

the Interior Standards for both Prehistoric and Historic Archaeology.

Hugh Wagner **Paleontologist**

Ph.D., Geology, M.A., Paleontology

Dr. Wagner has 25 years of experience as a paleontologist and paleontologic consultant involved in NEPA and CEQA compliance. He has extensive paleontologic resource management experience conducting and managing paleontologic resource-impact assessments and impact mitigation programs for large construction projects in California, Oregon, Nevada, Utah, Wyoming, and New Mexico. His project experience includes municipal solid waste landfills; natural gas pipelines; highways; business parks; housing developments; and planned communities. Clients have included private industry, public utilities as well as federal, state, county, city, and regional agencies. Paleontologic resource assessments entailed data searches (literature reviews, archival searches, field surveys, and consultation with other paleontologists) to develop baseline inventories, evaluation of the scientific importance of resources and the potential for disturbance by adverse project-related impacts, and formulation of mitigation measures to reduce these impacts to an acceptable level. He supervised and participated in the complete curation of substantial vertebrate fossil collections into the Museum of Paleontology, University of California, Berkeley; Los Angeles County Museum of Natural History; San Bernardino County Museum; and Paleontological Collections of Orange County. He has contributed significant fossil specimens to the California Academy of Sciences and San Diego County Museum. He has an extensive paleontologic research background in land mammal faunas and vertebrate biostratigraphy of Tertiary continental formations of central and eastern Oregon, northwestern Nevada, California, and Montana.

Jay Sander **Field Director/Senior Archaeologist** M.A., Anthropology

Mr. Sander has 11 years of cultural resources experience in California. His principal focus is in lithic technology, the strategies of mobile hunters and gatherers as well as the development of social complexity. Mr. Sander has participated in and supervised all aspects of archaeological fieldwork, including survey, test excavation, data recovery, and construction monitoring, particularly within the deserts and mountain regions of



Statement of Qualifications

southern California and Arizona. He has surveyed over 23,000 acres and excavated more than 25 archaeological sites in the Great Basin, Mojave, Sonoran, and Colorado Deserts. Mr. Sander has participated in or directed numerous projects for the Federal government, including the survey of thousands of acres for agencies such as the Bureau of Land Management, the Bureau of Reclamation, the National Park Service, the USFS, the U.S. Army, Air Force, Marine Corps, and Navy. Mr. Sander conducted archival research relating to the Federal government's compliance with the NAGPRA inventory for the USACE. Mr. Sander has conducted a large number of projects for state and local agencies and has been involved in a number of archaeological projects for private landowners, developers, small businesses, and large corporations.

JoEllen Ross-Hauer **Senior Archaeologist** B.A., Anthropology

Ms. Ross-Hauer has over 11 years of experience in cultural resources management and has participated in and supervised in several aspects of archaeological fieldwork, including surveys, test excavations, data recovery, and construction monitoring, particularly within the Midwest, Colorado, Great Basin, California and the Southwest. She has conducted evaluations of historic and prehistoric archaeological sites for eligibility for the National Register of Historic Places (NRHP) and has worked on prehistoric sites affiliated with the Shoshone, Paiute, Fremont, Anasazi, Hohokam, Pre-Archaic and Archaic cultures, as well as several native California groups. She has recorded and mapped hundreds of prehistoric and historic archaeological sites and has identified and analyzed thousands of prehistoric artifacts. Ms. Ross-Hauer has extensive experience conducting analysis of prehistoric artifacts, including shell beads, bone tools, flaked stone artifacts, ceramics, and ground stone tools. She has contributed to and authored several cultural resources technical reports synthesizing findings from work on projects in California and the Great Basin. Her primary responsibilities include assisting with proposal and report preparation, supervising personnel, and conducting fieldwork.

Susan M. Underbrink, RPA **Staff Archaeologist**

M.A., Anthropology, emphasis - Archaeology

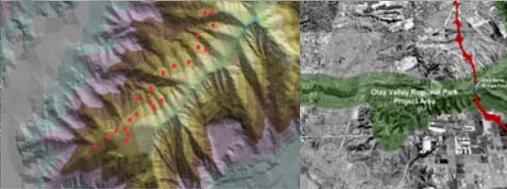
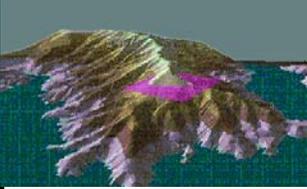
Ms. Underbrink is a cultural resources specialist with 9 years of professional experience, primarily as a field archaeologist. She is a Registered Professional Archaeologist. Ms. Underbrink has performed many phases of both historic and prehistoric archaeology as crew chief, laboratory technician, and field technician. Archaeological experience includes conducting and supervising surveys, test excavations, and monitoring projects. Her technical skills include survey, mapping, site recording, testing, laboratory analysis, construction monitoring, and report preparation. Ms. Underbrink has experience in southern California, Nevada, New Mexico, Illinois, Texas and Peru.



Geographic Information Systems



SERVICES



Data Preparation and Management

Geographical Modeling

GPS and Survey Planning

Permitting Plan Assistance

Risk Assessments

Spatial Analysis

Land Use Plans

Environmental Impact Assessments

Vegetation Mapping

A Geographical Information System (GIS) is an important tool for preparing land use plans, assessing environmental impacts, and compiling field data into usable information. Because of its ability to analyze and synthesize various types of information in a variety of formats, GIS is a true information system rather than just another data retrieval tool.

Our highly skilled staff sets Chambers Group apart from other firms that offer GIS services. Chambers Group established itself as a leader of innovative data management and interpretation techniques using GIS long before other firms had even heard of the technology. Today Chambers Group remains at the forefront of GIS application development.

Chambers Group has full capabilities to conduct environmental modeling and mapping with GIS hardware and software. A GIS is an organized collection of computer hardware, software, and data designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced data.

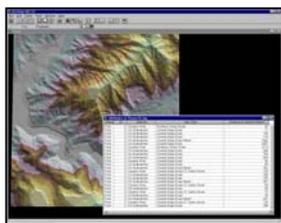
GIS can be designed to meet a range of needs, from production of maps to detailed analytical studies. In designing a GIS database for any project, Chambers Group always considers potential long-range uses of the system. In other words, we do not simply design the system to meet the needs of the immediate project; we design the system to continue to fulfill the client's long-term information needs.

Over the last decade, GIS has evolved from a map-based system to a system for data integration. Today's GIS dataset incorporates all data that can be geographically referenced. This includes "mappable" data (such as points, lines, polygons, and annotation) and other, nonstandard information such as digital photographs (photographs of a facility, artifact, person, or vegetation community), video imagery, referenced documents (a section from a facility's master plan), and other computer files (CAD, Windows graphics, or spreadsheet files). This new generation creates a "living" GIS that serves as a central tool for storing, retrieving, and using information.

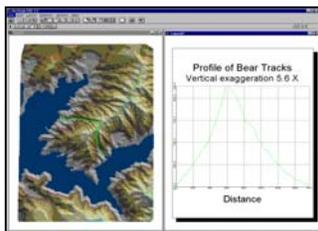


Purposes

The primary purpose of using GIS is to manipulate data into usable information that provides insight to the user. It is this ability to perform analysis and synthesis with a GIS that makes it an information system rather than merely a data retrieval system. Chambers Group uses the GIS to perform several categories of analysis/synthesis on a dataset. The following categories are typical examples of GIS applications:



- **Spatial Relationships.** A GIS dataset can be used to form spatial relationships and measure context and/or adjacency (for example, to evaluate a new flight corridor where the center line of flight is buffered by 1/4 mile on each side).
- **Spatial Statistics.** This action generates new data and information from existing datasets using a statistical function. Examples of this type of application would include a slope map generated using elevation data, or a three-dimensional surface map generated from transect information on tortoise densities.
- **Feature Statistics.** Information for a geographic feature can be shown in many ways, such as coordinates and elevations of points along a corridor, or a pie chart for tortoise burrows showing relationships among depth, width, and height.
- **Visual Analysis.** GIS can be used to model existing and future landscapes that can be viewed from any perspective. For example, in one project for a mining operation, the GIS generated both existing conditions and the mining view of the project site and surroundings.



- **Overlay Analysis.** This is the most common form of analysis/synthesis performed on GIS. By this method, several layers (such as vegetation, soils, roads, and so forth) can be overlaid and combined, unioned, averaged, added, or any number of other functions to derive a new layer.
- **Special Applications.** The GIS can produce special applications of data or data sets, including custom data management (shoreline inventories, resource databases), modeling (visual analysis, oil spills), and custom mapping and display (presentation graphics).

Input

Chambers Group GIS is prepared to take your pregenerated data in multiple formats including ESRI formats, AutoCAD DXF, digital imagery, tabular data files and hard copy maps. Our staff has been specially trained to record data in formats compatible with our GIS. Whether you provide us with your data, we collect data for you or we combine your data with the extensive databases available to us, with Chambers Group, you are stepping up to the leading edge of GIS Technology.

Output

The types of output that can be derived from a GIS are typically divided into two categories: hard copy output and digital output. For hard copies, Chambers Group can print maps in a range of formats, including:



- pen plotters (up to 42 by 60 inch) on our new HP 5000 PS plotter; laser printers (up to 11 by 14 inch); Textronic Phaser III color printer (up to 11 by 17 inch); electrostatic plots (up to 36 by 60 inch)

Other hardcopy output from Chambers Group includes tabular data (tables) and screen photographs/slides. Digital output can be produced for a range of media in MS-DOS, and Macintosh formats. Output from our ESRI based system includes ArcGis coverages and shape files, AutoCAD DXF, and many other graphic formats. Database files can be exported to a wide range of programs, including dBASE, Fox Pro, Lotus 1-2-3, Excel, and others. Chambers Group ensures that all output meets stringent standards for content and accuracy.

UNITED PUMPING



STATEMENT OF QUALIFICATIONS
ENGINEERING SERVICES FOR LANDFILL AND DISPOSAL SITE REMEDIATION



STATEMENT OF QUALIFICATIONS

**United Pumping Service, Inc.
Hazardous Waste/Remediation Contractor
14016 E. Valley Blvd.
Industry, California 91746
818/961-9326 FAX: 818/961-3799**

**Licensed A - General Engineering Contractor
Licensed Demolition Contractor
Hazardous Substances Removal and Remedial Action Certification
Asbestos Abatement Certification**

**California License No. 617639
Arizona License No. 099563
Nevada License No. 36920**

SUMMARY

United Pumping Service, Inc. (U.P.S.) is a fully qualified environmental remediation, transportation, and emergency spill response contractor. The company is a Certified small Disadvantaged Business and offers a full spectrum of hazardous waste handling and remedial action activities.

With a background of more than 24 years in hazardous waste removal/transportation, and more than 13 years in solving remedial action problems for clients, U.P.S. brings an outstanding level of technical experience, physical resources, and practical know-how to each job.

Services: Hazardous waste handling
Waste identification & profiling
Lab packing
Decontamination of equipment, tanks, and structures
Demolition of equipment and structures
Contaminated soil excavation and removal
Above and below ground tank removal
Waste transportation and disposal
Hazardous materials emergency spill response

Health & Safety Program

U.P.S. has extensive health and safety experience in many working environments. The company's health and safety program is managed by well trained, experienced, certified people.

Experience

U.P.S. has successfully completed more than 900 remediation and/or emergency response projects for clients in petroleum, chemical, aerospace, heavy manufacturing industries and the public sector. Major projects are often performed concurrently.

Responsibility

A strong financial position and bonding capability, a sound reputation with clients and vendors alike, and appropriate insurance coverages, assures clients that U.P.S. is capable of successfully completing any project taken on, and that the company stands behind it's work.

Conclusion

U.P.S.'s remedial experience, practical know how, proven track record and long standing reputation, assure sound remediation/hazardous waste services for your company or client. Large or small, simple or complex, selecting U.P.S. will assure the successful completion of your project.

CORPORATE HISTORY/BACKGROUND

United Pumping Service was founded in 1970 by Eduardo T. Perry, providing vacuum truck service to industry. The company grew as a result of providing high quality specialty services such as corrosives removal.

During this time, United Personnel developed extensive experience in the handling of extremely hazardous materials on a routine basis. This made the company well matched for the hazardous waste needs of the Aerospace/Defense Industries.

In 1974 United Pumping Service incorporated and continued to grow as a service oriented hazardous waste transportation firm. The company continued to specialize in highly corrosive materials and designed and built it's own custom equipment. As customer's hazardous waste needs changed, the company broadened it's capabilities to include numerous transportation and remediation services. Demand for non-transportation services grew and the company began performing contaminated soil and U.S.T. excavations/removals as well as site decontaminations.

In the meantime, various members of Mr. Perry's family had joined the firm, adding to it's strong core of key managers. As new regulations were imposed, the firm moved quickly to provide the hazardous waste removal and site remediation services clients needed to remain in compliance.

In 1982, United initiated it's first hazardous materials emergency response contract with the State of California, Department of Transportation. This new service matched well with the company's capabilities as the firm had already been providing emergency service to aerospace firms for many years. Additional emergency response contracts with various municipalities and private sector clients were also obtained.

The following years included steady growth and the capture of a larger market share, particularly in the aerospace industry. United continued to develop specialized capital equipment and broaden it's range of capabilities. The firm began focusing on medium to large sized remediation projects as both a primary and subordinate contractor. The firm was very successful, particularly in decontamination/demolition projects where it's crews were well adapted.

As aerospace/defense spending declined with the end of the "Cold War", United further developed and emphasized it's remediation capabilities. The firm invested in required management personnel and capital equipment.

The firm continues to provide the best service available with a "Ranch Hand" team philosophy where all employees work hard and "wear different hats" to assure customer satisfaction.

SERVICES AND CAPABILITIES

During the more than 24 years of hazardous waste cleanup and removal, United has developed a broad base of capabilities. As a result, United is able to offer the following services:

- Sampling and identification
- Hazardous materials handling and packing (lab packing)
- Decontamination of tanks, equipment, and structures.
- U.S.T. Removal
- Contaminated soil excavation and removal
- Demolition of process lines, equipment, and structures
- Waste Transportation and Disposal
- Hazardous materials emergency spill response

Sampling and Identification

To satisfy client sampling/identification needs United provides a variety of sampling/identification services.

In many instances, the identification of a sample may be unknown. United has various personnel trained and equipped in the "Haz Cat" identification method for unknown materials. All sample taking and handling is performed in compliance with regulations.

Both onsite and offsite laboratory services are available through various prominent certified laboratories.

Hazardous Waste Handling

To augment clients' hazardous waste management programs, U.P.S. provides a variety of hazardous waste handling services.

U.P.S. provides crews to perform hazardous waste management services at customers' premises on routine or as needed basis. These services include:

- Hazardous waste collection, segregation and consolidation
- Waste labeling and inventory preparation
- Waste compaction and consolidation

Hazardous waste handling for clients has been very beneficial as it has enabled our customer's to fulfill their needs without maintaining costly full time employees on staff.

Waste Identification and Profiling

United Pumping Service, Inc. supervisors and project manager have been trained in the HAZ CAT method of identifying unknown materials. They are able to identify unknown substances based upon the results of a series of bench tests. This information is vital in determining how wastes are to be packaged, shipped and disposed of, as well as what safety precautions are required for field personnel.

Additional laboratory analysis is often obtained and submitted to disposal facilities along with waste profile forms. Customer waste profiles are tracked internally and are rushed through disposal facility waste acceptance procedures as needed.

Decontamination of Tanks, Equipment, and Structures

In many remediation projects, the surface areas of tanks, equipment and structures have been contaminated with a variety of hazardous residues. U.P.S. is fully equipped to decontaminate all of these areas through various mechanical and chemical methods. These items are often decontaminated and reused, resold, or recycled, to recover their value.

U.P.S. has decontaminated many types of surfaces and worked with virtually all forms of contaminants including heavy metals, M.D.A., petroleum and lead. Common decontamination methods include high pressure washing, steam cleaning, sand blasting, acid leaching, bead blasting, and wiping by hand. In each case, United has provided practical solutions and succeeded in achieving client objectives.

Demolition of Equipment and Structures

When decontamination of equipment and/or structures is completed or uneconomical to perform, demolition is often required. U.P.S. provides demolition services for both contaminated or non hazardous items. Some areas may require partial or complete demolition prior to decontamination and scrap phases.

Over the years United has performed numerous demolition projects such as, plating production lines, overhead and sub-grade ventilation systems, concrete vaults, steel tanks, cooling towers, concrete slabs and entire buildings.

Contaminated Soil Excavation and Removal

U.P.S. assembles and implements efficient and cost-effective contaminated soil removal programs tailored to meet specific project criteria. Services include excavation, shoring, spreading, aeration, transportation, and disposal. Since U.P.S. owns it's own equipment and employs it's own operators, project scheduling is not a problem.

U.P.S. has vast experience in this area, particularly on sites with limited access, over head restrictions, on rights of way, inside buildings, and on rough terrain. U.P.S. maintains open accounts at a great many T.S.D.F.'s for soil burial, fixation, or thermal treatment.

Above and Below Ground Tank Removal

United Pumping Service, Inc. has complete capability of above and below ground tank removal. This capability includes unearthing, draining, washing and extraction of tanks. All work is performed in strict conformance with South Coast Air Quality Management District's Rules 1166 and 1149. Usually tanks are decontaminated and recycled for scrap, partially offsetting project cost.

The U.P.S. organization has vast experience removing tanks, particularly those posing unusual challenges due to access restriction and/or time constraints.

Waste Transportation and Disposal

U.P.S. transports all forms of hazardous waste, excluding radioactives, explosives and some compressed gases. The U.P.S. organization provides a full line of transportation services utilizing a company owned and operated fleet of equipment. U.P.S. transports hazardous waste throughout the continental United States.

As the 63rd transporter to be licensed as a hazardous waste hauler in California, U.P.S. has the experience and where with all to get the job done regardless of the type of waste or mode of transportation. Over the past 24 years, U.P.S. has successfully completed tens of thousand of hazardous waste shipments without a release.

U.P.S. clients enjoy prompt waste profiling and waste acceptance into many waste disposal facilities. Due to U.P.S.'s large volume as a hazardous waste agent for it's clients, U.P.S. client's typically enjoy reduced disposal fees and no profiling fees. U.P.S. maintains open accounts and active working relationships with a great many T.S.D.F.'s, thus availing it's clients of vast disposal options.

HAZARDOUS MATERIALS EMERGENCY SPILL RESPONSE

U.P.S. is fully qualified to provide emergency spill response services to it's clients. The firm performs hazardous materials cleanups for clients throughout Southern California, on highways, water ways, and client facilities. U.P.S. utilizes skilled, experienced field personnel and company owned equipment for rapid, safe, and efficient responses. U.P.S. responds to any release except for radioactives, explosives and some compressed gases.

The firm has worked under open master purchase agreement with the State of California, Department of Transportation for this past twelve years. During that time, U.P.S. has performed approximately 800 hazardous materials release cleanups. Many have required subgrade and/or water way work.

Private sector projects have included rail right of way releases as well as spills resulting from fires, earthquakes, and illegal drug laboratories.

U.P.S. is capable of responding to multiple spills simultaneously. All field personnel are crossed trained in hazardous materials emergency spill response.

REGULATORY COMPLIANCE/HEALTH AND SAFETY PROGRAM

United Pumping Service, Inc. (UPS) is proud of our exceptional compliance record in employee safety and in the management of hazardous waste/materials. UPS staff maintains and works from an extensive federal and state regulatory data base in identifying special requirements and delineating the various options available under current regulations pertaining to the remediation and transportation of hazardous waste/materials.

UPS was awarded a certificate of achievement from the California Highway Patrol for maintaining a Consecutive Satisfactory Rating Since 1990. This rating is related to operational terminal biennial inspection for our compliance with applicable laws and regulations relating to motor carrier safety. We also, are proud of our consecutive Satisfactory Rating with the United States Department of Transportation.

With reference to our Workers' Compensation, our average Experience Modification factor for the past ten years is 79%. The following is a loss analysis using our OSHA 200 log information for 1994 and employee man hours. There were 17 employee injuries and 0 resulted in lost time. A total of 142,344 employee man hours were worked. The number of employee hours worked includes technicians, drivers, and office employees. This equates to a Incidence Case Rate of 12.2% and 1.4% lost work case rate. The Industry average lost work case rate for our classification is 6.9%, which is several times our current rate.

Every project we work on involves dangerous chemicals that are not only dangerous to our employees but could damage the environment and/or the public safety. Therefore, any injured worker is required to be seen by the Company Doctor to be evaluated for chemical exposure. Also, we have a company policy that prohibits any employee from working with limitations or disabilities. Additionally, all employees must participate in company drug and alcohol screening program. You can rest assured that when one of our trucks and/or crews are handling your chemicals, they are drug free, experienced, and in fit condition for the work.

We feel that there are many factors involved in a successful safety program. At U.P.S. we have been concentrating on three main areas; 1. Specialized training for every driver and technician. 2. Experienced Personnel. 3. Well maintained equipment.

We are committed to an on-going successful safety program and continuously strive for improved results.