Qualifications to Provide Professional Services Related to Environmental Concerns at District Facilities

Prepared for:

Santa Monica-Malibu Unified School District
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SECTION 1 – INTRODUCTION

AMEC Environment and Infrastructure, Inc. (AMEC), is a diversified technical and engineering firm that specializes in helping our clients manage and solve tough, complex challenges the world over.

Through our experience; we have developed a thorough understanding of the objectives and concerns of our clients allowing us to successfully synthesize these objectives in a cost-efficient manner to support various aspects of a project, including the aspects of the program outlined in the request for qualification for time and services to the Santa Monica-Malibu School District (District). We do this by bringing some of the world's most technically accomplished, pragmatically oriented scientists and engineers with a singular focus on creating the right solutions for our clients. We strive and continue to be our clients' partner of choice to solve a wide range of technical challenges, from interfacing with regulators to developing and managing programs.

Background information about AMEC and our office locations is provided in Appendix A.

Project Understanding

It is our understanding that the scope of serves contemplated for this Request for Qualifications (RFQ) includes professional services, oversight and supervision of all directly provided and/or subcontracted investigative field work, oversight of all laboratories testing and monitoring; and professional analysis and reporting. The primary tasks services will include:

- Indoor Air Quality Testing for polychlorinated byphenyls (PCBs)
- Implementing Best Practices for window caulking
- School Property Evaluation and PCB Abatement Program

AMEC has local and regional experience related to assessment, characterization and remediation of PCB-impacted media (including building materials concrete, soil, and sediments); developing sampling and analysis plans to meet US EPA Toxic Substances Control Act (TSCA) PCB regulations; buildings materials assessment; air monitoring during PCB-related soil removals; evaluating human health risks related to PCB; reviewing and validating PCB data; and supporting public participation and communications activities. In addition, the proposed AMEC project manager has experience working with Department of Toxic Substances Control (DTSC) and the United States Environmental Protection Agency (US EPA) Region 9, TSCA Coordination unit on PCB-related matters.

Our project related experience that highlights these elements are presented in Section 2 and the proposed project teams experience is summarized in Section 3. Our understanding of the scope and services and preliminary process for completing the work is presented in Section 4. Addition information requested in the RFQ is provided in Section 5.

SECTION 2 – PROJECT RELATED EXPEREINCE

The following projects demonstrates AMEC's relevant experience for PCB investigation, management and abatement (including building demolition); working with multi-media site investigation, removal and remedial activities under the oversight of the DTSC on private properties; and experience with US EPA, Region 9, TSCA Coordination unit.

PCB Non-Time Critical Removal Action, Hangar 1, Moffett Field, California. AMEC implemented a remedial action of PCBs contained within roofing materials at Hangar 1. Hangar 1 is a massive structure 1100 feet long by 330 feet wide and 198 feet tall, constructed in 1933 to house the dirigible airship, USS Macon. Hangar 1 is one of the world's largest freespan structures, covering 8 acres.

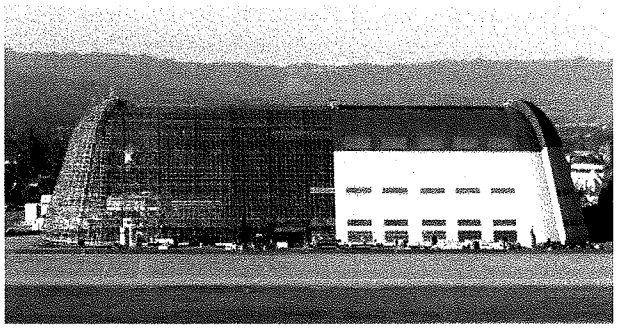
The project was presented with unique challenges associated with implementing an environmental cleanup action at an historic building. Specific challenges included:

- Protection of the nearby residents from potentially-contaminated air and dust emissions
- Maintaining effective community outreach to address the concerns of the local citizens, the site owner, elected officials, and hangar preservationists, whose expectations for hangar preservation and reuse did not always align with the Navy's responsibilities for environmental cleanup.
- Worker safety issues associated with demolition at extreme heights.

> "AMEC has exceeded the government's expectations with regard to not only handling the Non-Time Critical Removal Action work elements, but as well as community relations and project planning... AMEC is commendable and deserving of this outstanding rating."
> ***Bryce Bartelma, Navy Remediation Project Manager***

AMEC's work included asbestos abatement and demolition of 3 stories of structures on the interior of the hangar; coating over 2 million square feet of structural steel with an epoxy coating; and removal and disposal of the siding. AMEC prepared all sampling plans for floor surfaces, soil, water, and air to demonstrate the PCB removal action met TSCA requirements.

AMEC coordinated and communicated with NASA, the former base's current tenant and the public; attended and presented at Remediation Advisory Board (RAB) meetings; and conducted preservation of historically sensitive items. Due to the Hangar's nature as a public landmark and an American Society of Civil Engineering historical structure, the project received significant local and national attention. AMEC was responsible for public relations related to the remediation and supported the Navy Project Manager at monthly RAB meetings. The team gained the confidence of local community groups through its overall project approach including preservation of historical artifacts found in the structure. Through direction by the Navy, AMEC also interfaced with US EPA, State Historic Preservation Office, Regional Water Quality Control Board (RWQCB), NASA, and the primary tenant at the base. AMEC prepared fact sheets and held



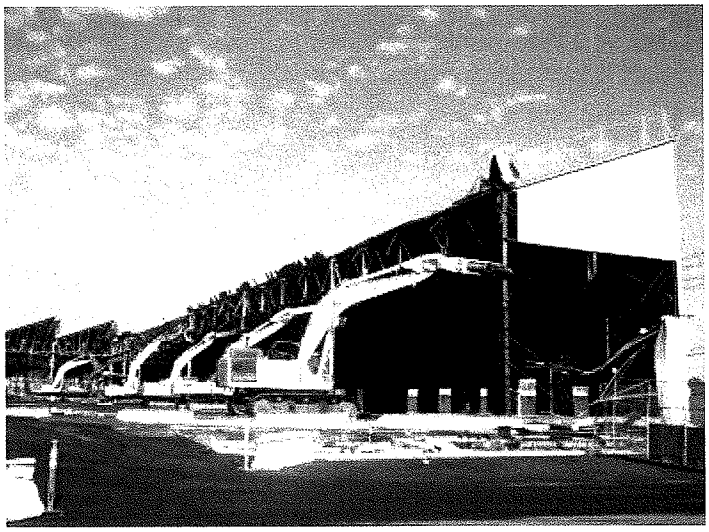
Moffett Field, Hangar 1 with exterior roofing half removed during PCB Removal Action. January 2012

community outreach meetings for NASA to inform the tenant of AMEC's approach to the project including traffic and environmental controls that would be implemented during construction.

AMEC received an "Excellent" CCASS rating by the Navy, the highest rating given for performance.

Confidential Client Site Characterization, Demolition and Remediation. AMEC was retained to provide environmental engineering and consulting services for the assessment, demolition and remediation of a former manufacturing facility in southern California. The facility consisted of approximately 625,000 square feet of manufacturing buildings on a 27-acre site.

The initial phase of work focused on reviewing historical documents and assessing the environmental conditions of the property through standard using due diligence methods. Based on the results, AMEC developed sampling plans and performed extensive to characterize building materials, concrete, soil, soil vapor, and groundwater at the site. The sampling results indicate the presence of PCBs, volatile organic compounds (VOCs), Stoddard solvent, and metals at concentrations that warranted evaluation. A baseline human health risk assessment (HHRA) was conducted to assess areas that warranted evaluation based on an anticipated future industrial land use scenario and to establish site-specific risk-based remediation goals (RBRGs) for the chemicals of concern (COCs). The assessment data and results and the HHRA were used to develop a Feasibility Study (FS) and Remedial Action Plan (RAP) pursuant to a DTSC Imminent and Substantial Endangerment and Consent Order (Order) and US EPA pursuant to TSCA.



In addition, RBRGs were developed for PCBs (as Aroclors) detected in soil and concrete. These RBRGs for PCBs took into considerations not only the Aroclor compounds but also the dioxin-like PCB congeners. Considering the high costs associated with PCB congener-specific analysis, AMEC developed an approach that would allow decision-making based on Aroclor concentrations while satisfying US EPA's concerns for the dioxin-like congeners. Additional soil and concrete characterization was conducted in which samples were analyzed for both dioxin-like PCB congeners and Aroclors. Samples were targeted to areas where Aroclors were previously reported at concentrations above and below the proposed RBRGs. Linear regression analyses were then performed to evaluate the relationship between the results of the two analyses and estimate a formula that could be used to: 1) estimate dioxin toxic equivalent (TEQ) concentrations for samples only analyzed for Aroclors, 2) support (or refine) the proposed Aroclor RBRGs, and 3) support remediation confirmation sampling at a significantly reduced cost. Based on the regression analyses, the Aroclor RBRGs were slightly lowered that originally proposed, and subsequently approved by US EPA in 2012.

Demolition work was divided into two phases (above- and below-grade). AMEC prepared contractor demolition and remediation specifications, solicited contractor bids for the above- and below-grade work, prepared sampling plans, health and safety plans and engineering cost estimates, assisted with contractor selection, and provided construction management oversight.

The above-grade demolition planning work included conducting hazardous material surveys for asbestos-containing materials [ACM]), lead-based paint, mercury switches, non-candescent lighting, PCB-containing light ballasts and equipment, and other regulated substances. The results of the hazardous material surveys were incorporated into the demolition plans and specifications.

The above-grade demolition work was initiated with the mitigation of hazardous building materials and then demolition of above-grade features to the building's slabs. During above-ground demolition, AMEC monitored the contractor's performance and adherence to project plans and specifications, maintained project documentation, operated a wastewater treatment system, conducted perimeter and ambient air monitoring and sampling, and assisted the contractor with waste characterization sampling. Following completion of the above-grade demolition work, AMEC prepared a report documenting the decommissioning and removal of the above-ground features including the hazardous building materials, building structures, furnaces, process equipment, and other structures.

The second phase work consisting of the below-grade demolition and remediation of PCB-, VOC-, arsenic- and Stoddard solvent-impacted soils and PCB-impacted concrete is in progress pursuant to the Order and US EPA (specifically for the PCB-related matters pursuant to TSCA). As part of the RAP approval process, AMEC assisted DTSC with public notice and meeting for the remedy. The below grade demolition and remediation work is in progress, and the work includes 1) removal and offsite disposal of PCB-impacted concrete, 2) shallow excavation and offsite disposal of PCB- and arsenic-impacted soils, 3) verification sampling for PCBs, perimeter air monitoring for dust, PCBs, VOCs and metals, 5) designing, constructing and operating an SVE system to mitigate TCE- and other VOC-impacted soil, 5) designing, constructing, and operating a bioventing/SVE system to mitigate Stoddard solvent impacted soil, and 6) monitoring groundwater for VOCs.

City of Riverside Remedial Investigation (RI) and Potential Responsible Party (PRP). AMEC was selected by the City of Riverside to assist the City with the remedial investigation (RI) and Potential Responsible party (PRP) identification for a former publicly owned treatment works (POTW) located on an approximately 62-acre, City-owned parcel called the Agricultural Park. The POTW ceased operating in the early 1960s; however, sludge containing PCBs was discovered during demolition of the former POTW digester. Site investigation and waste characterization activities were performed on behalf of the developer by another consultant, who had recommended that the concrete from the former POTW facilities be disposed of off-site as hazardous waste. The City retained AMEC to take over site investigation activities and assist its legal staff in researching PRPs for the PCBs at the site. Through working directly with the U.S. EPA, AMEC was successful in gaining approval for sampling and characterizing the concrete in accordance with TSCA guidelines, which resulted in all of the concrete debris from the former POTW being characterized as non-hazardous waste.

AMEC has assisted the City in its preparation for, and presentation of, public meetings with local residents to discuss the discovery of PCBs at the site and the planned investigation and cleanup activities. AMEC prepared contractor performance specifications and a work plan for demolition, debris consolidation, and site assessment activities. The work plan was approved by the County of Riverside Department of Environmental Health. Regulatory oversight was transferred to DTSC. AMEC assisted the City in its interaction with DTSC and completing the first phase of the remedial investigation for the site, and assisted the City with planning additional public meetings, responsible party negotiations, and remedial planning.

PCB Decommissioning Facility Demolition. AMEC conducted a multi-media investigation to evaluate the nature and extent of facility related contamination in concrete (floors, walls,

driveways, and sidewalks), soil, and groundwater. PCBs were detected on various impervious building components, in building concrete, and in soil adjacent to and beneath the building. AMEC completed a focused feasibility study to evaluate potential remedial alternatives for the site and the client selected the clean closure alternative for the facility. AMEC prepared a Closure Plan describing the methods for implementation of the clean closure alternative. The clean closure alternative included the demolition of the site structure and excavation of all soil containing PCBs at a concentration exceeding 1 milligram per kilogram (mg/kg), and the transportation of all wastes (some with PCB concentrations of greater than 50 mg/kg) to an appropriate disposal facility.

The Closure Plan specified 1) an asbestos survey and the preparation of abatement specifications, 2) preparation of bid specifications used by the Client to solicit a contractor, 3) oversight of the demolition/remediation contractor selected by the Client during building demolition, 4) various waste determinations for wastes generated during the project, 5) the design of a TSCA-compliant confirmation soil sampling program, 6) the collection of confirmation soil samples in accordance with the program to document the removal of all soil with PCB concentrations exceeding 1 mg/kg, and 7) the preparation of a Closure Report documenting all aspects of Closure Plan implementation.

The AMEC Closure Report received US EPA approval without comment. Following US EPA approval of the Closure Report and upon fair compensation to the owner for the value of the structure that was demolished, our Client (a tenant of the site) was released from its lease, and all other obligations associated with the site.

SECTION 3 – PROJECT TEAM/KEY PERSONNEL

As noted earlier, we have local and regional experience related to various elements of the scope of services outlined in the RFQ. The proposed AMEC project team and key personnel are shown on the organization chart on page 9.

Some of our key resources for PCB related work include Linda Conlan, PG (assessments and remediation), Michele Peterson (PCB assessments and risk assessments), Dr. Linda Hall (Toxicologist), Calvin Hardcastle, PE (engineering and remediation), Donald Kubik, CIH, PG (health and safety) and Ana Bernhardt (quality control and data review). Brief bio's for our technical staff are provided below, and resumes are present in Appendix B. In addition, to lead project resources, we have additional staff and technical resources that can assist with the sampling and investigation aspects of the project.

The proposed Project Manager, who will be the point of contact for District for the implementation of this program, is Linda Conlan. Ms. Conlan's qualifications are described below.

- **Linda Conlan, PG (Irvine, CA)** - Ms. Conlan has more than 22 years of experience managing and conducting multi-constituent, multi-discipline projects ranging from site assessments, remediation, due diligence, facility closures, demolition, and RCRA facility investigations. Her understanding of environmental issues/impacts associated with various types of manufacturing and industrial sites provides a foundation for conducting assessment and remediation projects. She has also directed teams on a variety of projects, including those involving multiple stakeholders, property owners, the local community and various regulatory agencies. She has experience investigating various media impacted with chlorinated solvents, PCBs, Stoddard solvent, petroleum hydrocarbons (TPH), perchlorate, and metals; conducting PCBs investigations and cleanups under the TSCA; developing indoor air sampling plans, and managing remedial actions related to chlorinated solvents, TPH and PCBs. Some of her more recent experience includes managing and overseeing remediation and demolition projects, including those with PCB-impacted media, within the Los Angeles area. Ms Conlan also has experience with various agencies including DTSC, US EPA Region 9, Regional Water Quality Control Board (RWQCB; Los Angeles), City of Santa Monica, and other city and county health care agencies.

The Project Manager is experienced with similar types of sampling and analysis projects as outlined in the RFQ, and from this experience; can successfully synthesize the Districts objectives in a cost-efficient manner to support various aspects of the anticipated program. The Ms. Conlan will allocate and manage our technical resources and subcontractors to meet the time lines sensitive to the program, and manage costs. The key element for success in implementing the scope of services will be our management process and approach in which we set up clear lines of communication; prepare well-defined project goals and objectives; utilize well-established procedures and quality control checks; and organize experienced, efficient, and effective project teams. This management style will lead to an organized and efficient program that can meet the elements listed in the RFQ.

Ms. Conlan will maintain direct and frequent communications with the District, project stakeholders, and the project team. At the commencement of the project, the tasks, project-specific goals and expectations, schedule and budgets will be clearly defined and effectively communicated so that the work performed daily will focus on the same set of goals. The project team will evaluate the information obtained during the implementation of the scope of services and will provide routine updates to the District.

In addition to performing the requested scope of services, the Project Manager will implement administrative tracking and controls to monitor project budgets, invoices, and schedule. Our Project Manager will use a well-coordinated system of technical, financial, and administrative elements aided by appropriate computer technology.

In addition, to the Project Manager, other key project team members background and experience is provided below.

- **Dr. Linda Hall (Oakland, CA)** - Dr. Hall is a Senior Associate Toxicologist and risk assessor with more than 25 years of experience in environmental toxicology, human health effects assessment, environmental forensics, and litigation support. Dr. Hall has led and conducted human health risk assessments under US, state, and international regulatory requirements for sites involving the evaluation of human health risks from exposure to contaminants detected in soil, sediment, air, groundwater, and surface water.

  Dr. Hall has evaluated health effects associated with exposure to dioxins and dioxin-like compounds, metals, pesticides, petroleum hydrocarbons, and VOCs, and has developed health-effects based ingestion and inhalation guidelines for these substances. Dr. Hall led pesticide health risk assessments for state-and county-wide insect eradication programs that evaluated both conventional and atypical pesticides. She has conducted, managed, and peer-reviewed health risk assessments for California maritime ports, rail yards, and intermodal facilities, focusing on health impacts from the combustion of diesel and other fuels. Dr. Hall has assessed premature mortality and morbidity impacts on community health from diesel particulate matter, and has derived and/or provided peer-review of maximum allowable dose level (MADL) derivations for phthalates and proprietary chemicals under California's Proposition 65.

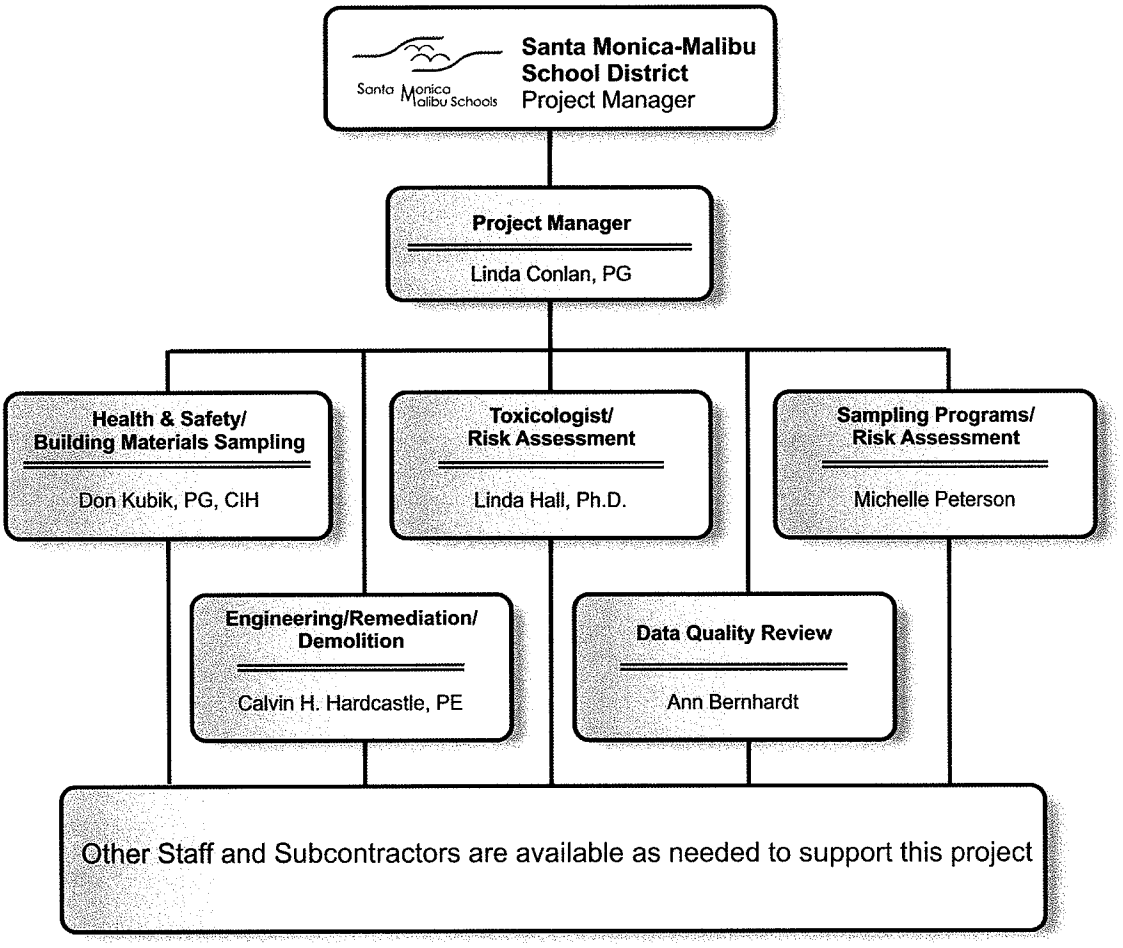
  Dr. Hall has prepared risk communication materials for numerous clients; these materials have been used to communicate and interpret the results of human health risk assessments to the public, to client corporate and internal staff, and to public relation firms. She has prepared Fact Sheets, risk communication white papers, briefing papers, risk-related presentation materials for public meetings, and extensive written responses to public comments on health risk assessments.

  Dr. Hall is working in the emerging field of health impact assessment (HIA), and has reviewed, evaluated, and prepared white papers on HIA, and has supported HIA efforts for resource extraction projects in Malaysia. She has actively followed and evaluated the development of a Cumulative Health Impacts model developed by the State of California which utilizes various chemical, public health, and socioeconomic indicators to identify disproportionately impacted communities within the State.

- **Michele Peterson RG, LG (Oregon)** - Ms. Peterson has more than 19 years of environmental consulting experience that includes investigation and evaluation of sites potentially impacted by PCBs. She has designed and implemented sampling programs to evaluate PCBs in soil, groundwater, and sediment. She has also conducted risk assessments to evaluate the potential for PCBs to contribute to unacceptable risk for human and ecological receptors from exposures to soil, groundwater, surface water, sediment, fish tissue, and through consumption of human breast milk. Ms. Peterson is responsible for negotiating investigation and risk assessment approaches with regulating agencies, and performing or managing the work, including data review and interpretation, tabulation of results, and presenting verbal and written conclusions to the appropriate stakeholders.

- **Calvin Hardcastle, PE (Irvine CA)** - Mr. Hardcastle has more than 32 years of process and environmental engineering experience. He has worked in environmental consulting for the past 26 years. His expertise includes investigation and remediation of contaminated soil vapor, soil, and groundwater as well as developing site closure strategies. He also has experience with assessing and mitigating PCB-impacted soil, concrete and building materials. He also provided principal oversight and technical review on a wide variety of environmental projects including regulatory compliance audits, due diligence evaluations, site investigations, site mitigation, and construction/demolition projects. He has also served as the lead design or reviewer on various engineering projects including design and construction of multi-media remediation systems, water conveyance pipelines, and groundwater extraction and treatment facilities.
- **Donald Kubik, PE (Oakland, CA)** - Mr. Kubik has diverse experience in the environmental and industrial hygiene/health and safety fields. Mr. Kubik has managed and performed industrial hygiene/health and safety-related projects including health and safety audits, indoor air quality monitoring, mold testing, health and safety plan preparation/implementation, health and safety training, respiratory protection programs, hearing protection programs, and construction site monitoring. In addition to client-related consulting services. He has also managed, implemented, and designed corporate health and safety/risk management programs and currently administers the Corporate Health and Safety Program, Injury and Illness Prevention Program, and Hazard Communication Program for AMEC. His environmental background includes performing and managing numerous Phase I environmental site assessments (ESAs) for public and private organizations. Mr. Kubik also has extensive experience in conducting and managing most aspects of Phase II ESAs including building materials sampling. Phase II ESAs usually result in the development and implementation of remedial plans, including building demolition and soil and groundwater remediation.
- **Ana Bernhardt (Oregon) -** Ms. Bernhardt is a Quality Control Program Manager with 22 years of experience. Her efforts focus on large-scale environmental programs with an emphasis in information management and data quality. Ms. Bernhardt prepares Quality Assurance Project Plans and analytical Statements of Work; selects analytical methodology; evaluates laboratory proposals; establishes QA/QC parameters; and coordinates deliverables and turnaround times. Ms. Bernhardt provides auditing services to assess analytical laboratory procedures, documentation, defensibility of data packages and electronic deliverables. Ms. Bernhardt has supported multiple PCB projects in sampling plan development, data use and validation, laboratory coordination, data interpretation, and overall quality role for AMEC deliverables. As a former laboratory analytical chemist, she is very familiar with US EPA analytical protocols, data assessments, laboratory procedures, and laboratory quality assurance.

Organization Chart



In addition, AMEC has work with a number of subcontractors, some of which supported the projects presented in Section 2. A list of potential subcontractors is provided below, and this list may be augmented later to support the services outlined in the RFQ.

Potential Subcontractors

Subcontractor Name	Service Provided
Aurora Industrial Hygiene	Asbestos, lead, and other hazardous building materials surveys, testing, and monitoring
SubSurface Surveys & Associates	Geophysical surveying and utility clearance
Interphase Environmental, Inc.	Direct-push soil and soil vapor sampling
Cascade Drilling	Environmental and limited access drilling and soil sampling
Calscience Environmental Laboratories, Inc.	Laboratory chemical analyses
TestAmerica, Inc.	Laboratory chemical analyses
Dulin & Boynton	Land surveying
American Integrated Services, Inc.	Waste management services, profiling, transportation, hazardous building materials abatement, soil removal, and disposal
Intrinsik (formerly McDaniel Lambert)	Community outreach and public communications

SECTION 4 – PROJECT UNDERSTANDING

AMEC understands that the District wants to develop a programmatic approach for implementing the scope of service described in the RFQ, with the focus on the assessment of indoor air quality and maintenance and/or abatement of the PCB-impacted building materials and dust; and which the program may later be applied to other schools in the District. We also understand that that in addition to the District, there are a number of stakeholders (teachers, students, community, DTSC, US EPA, and others) that want to achieve a similar objective to reduce potential human health hazards in indoor and outdoor areas, as applicable.

If selected for this project, we would first work with the District to develop a programmatic approach to meet the objective(s). In general, our approach will include several steps, some of which will be conducted simultaneously to minimize delays in developing plans and obtaining data and information related for the Malibu High School and Juan Cabrillo Elementary School. In addition, we will coordinate with DTSC and US EPA regarding the approach. In general, our approach will include:

- developing an understanding of the building conditions (heating and ventilation systems, etc,) and materials (specifically dust and window caulk) associated with the school structures and potential source of PCBs and other chemicals in soil.
- developing an indoor air quality monitoring plan that will be used to collect baseline data (air and dust wipe samples) and similar data during potential building renovations or building material abetment work.
- implementing the indoor air quality plan.
- developing building materials sampling plan(s) for window caulk and dust.
- implementing building materials sampling plan.
- developing soil sampling plans and implementing these plans.
- reviewing data and conducting risk assessments based on the sampling results.
- developing Best Practices that would work for the Districts building maintenance and construction activities. The Best Practices would also include potential abatement methods in the event that dust and window caulk require removal.
- communicating results and next steps to the District and stakeholders.

We would use the results of the indoor air quality sampling to evaluate the need for implementing the next steps of the program, including implementation of Best Practices for abatement of dust and window caulking if reasonable or no action if not required. If PCB concentration levels in indoor air samples (as participates) and/or in dust wipe samples are within acceptable levels deemed by DTSC and US EPA, then AMEC would assist the District with developing a Best Practice for dust and window caulking. If the PCBs levels exceed an acceptable level deemed by DTSC and US EPA, then AMEC would work with the District to implement the appropriate abatement measure for the materials.

Details of our approach can be refined after we have a better understanding of the site conditions and timelines that are needed to meet the overall objectives of the District and stakeholders.

SECTION 5 – OTHER ELEMENTS OF THE RFQ

Health and Safety: the AMEC Health, Security, Safety, and Environment "HSSE" Pre-qualifications table and statistics are presented in Appendix C.

Insurance: Below are AMEC's insurance modifications

The respondent shall be required to maintain, at its sole cost and expense, the following types of insurance coverage:

(a) Commercial General Liability $1 Million occurrence/$5 Million aggregate [Can be met with SUPPLEMENT WITH UMBRELLA/EXCESS LIABILITY POLICY],
(b) Business Automobile Liability $1 Million, (c) Contractor's Professional Liability (errors and omissions) $1 Million ~~occurrence~~ claim/$5 Million aggregate,
(d) Contractor's Pollution Liability $1 Million occurrence claim/$5 Million aggregate, and
(e) Workers Compensation as statutorily required. Identical requirements are mandated for all subcontractors.

The District shall be identified as an additionally ~~named~~ insured on ~~all such~~ Commercial General Liability and Contractor's Pollution Liability insurance ~~policies~~

APPENDICES

Appendix A – AMEC Background

Appendix B – Key Resumes

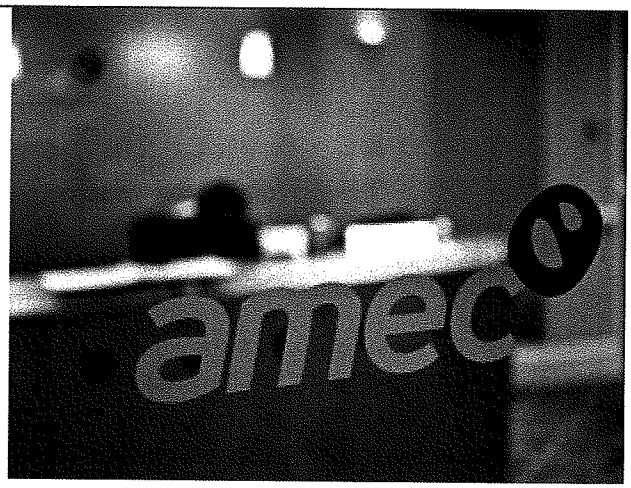
Appendix C – Health, Security, Safety, and Environment "HSSE" Pre-qualifications and Statistics

Appendix D – Rate Schedule (provide under separate cover)

APPENDIX A
AMEC Background

Environment & Infrastructure overview

AMEC's Environment & Infrastructure business supports projects throughout the life of an asset, from concept through construction, operation and rehabilitation or decommissioning by incorporating innovation and efficiency that result in faster, more reliable and cost-effective project delivery.



The AMEC advantage

AMEC is a leading supplier of consultancy, engineering and project management services to our customers in the world's oil and gas, mining, clean energy, environment and infrastructure markets. With annual revenues of some $6.6 billion, AMEC designs, delivers and maintains strategic and complex assets in 40 countries and employs more than 29,000 people worldwide.

AMEC's Environment & Infrastructure business focuses on environmental consulting, engineering design and construction management. Drawing on an experienced local footprint with a wide geographical reach to support the needs of our clients, we offer complete solutions to public and private sector clients worldwide.

With AMEC's global structure, our clients benefit from experts with a broad understanding of local conditions coupled with easy access to some of the world's most renowned experts in their fields.

Our professionals are dedicated to the consistent achievement of industry-leading standards of excellence, innovative problem-solving and smart application of technology.

AMEC provides a full range of services to clients in the following sectors:

- Government
- Industrial/Commercial
- Water
- Transportation
- Mining
- Oil & gas
- Clean energy

Based on annual revenue, Engineering News-Record consistently ranks AMEC in the top two percent of the world's Top 500 Design Firms. We have also ranked at the top of our sector in the Dow Jones Sustainability Index since 2004.

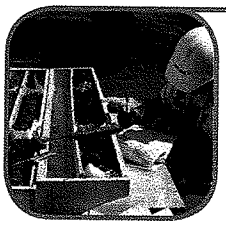
Safe and sustainable delivery

We understand the work we do impacts everything from the water we drink, the power we use and the roads we travel, to the cultural and natural resources we treasure. We develop sustainable solutions with a focus on optimizing life cycle, maximizing benefits and minimizing impacts to the environment and stakeholders and doing so with a commitment to safety first.

Diversified services to meet our clients needs

Civil/site

- planning
- design
- grading/drainage plans
- stormwater management
- utilities



Geosciences

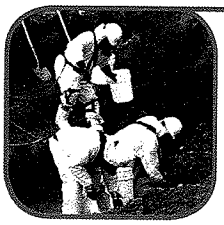
- geotechnical
- geology
- seismology
- hydrology
- hydrogeology
- meteorology

Construction/demolition

- construction management
- monitoring
- decontamination/ decommissioning
- demollition
- remedial construction
- nuclear construction management

Materials engineering

- soils
- concrete
- NDE for metals
- welding engineering
- forensics



Environmental engineering

- assessment
- remediation
- hazardous/toxic materials
- sediments
- oceanography

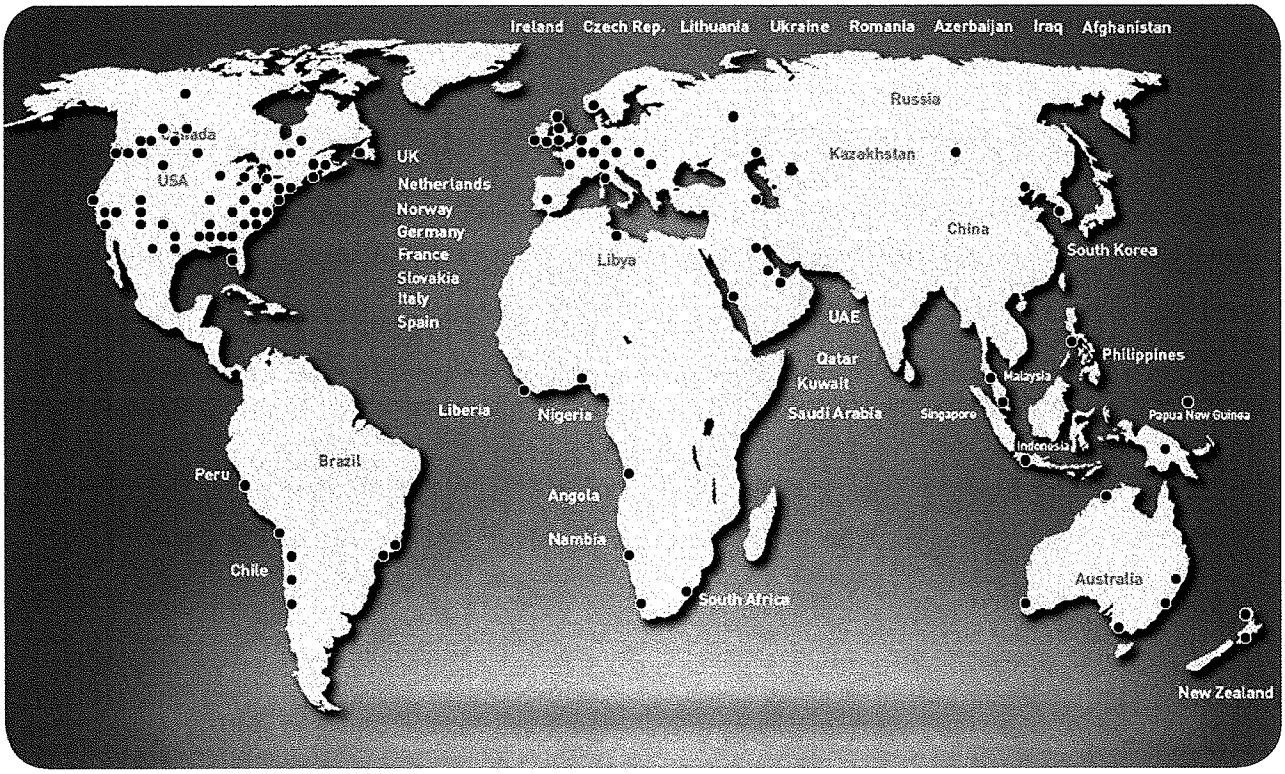
Water resources

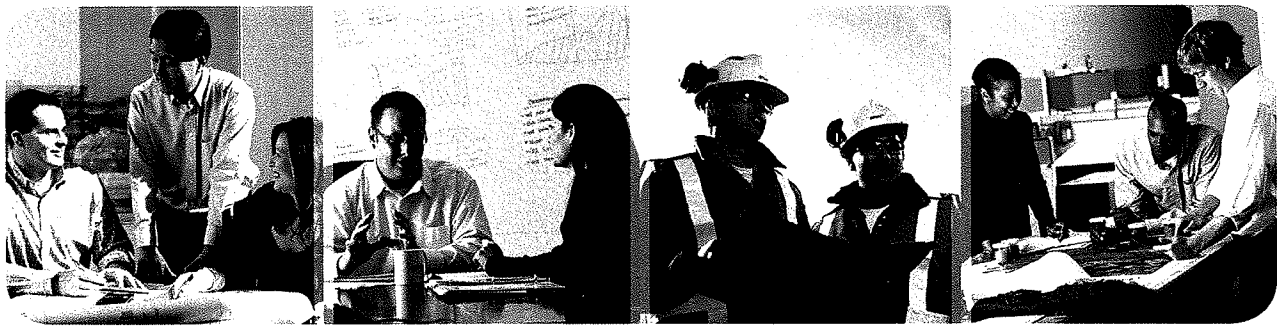
- watershed management
- groundwater modelling
- TMDL studies
- stream restoration

Environmental sciences

- NEPA SEPA
- terrestrial ecology
- wetlands
- cultural resources
- natural resources

World skills on your doorstep





APPENDIX B
Key Resumes

Linda M. Conlan, PG

Principal Geologist

Professional summary

Ms. Conlan has more than 22 years of experience managing and conducting multi-constituent, multi-discipline projects ranging from site assessments, remediation, due diligence, facility closures, demolition, and RCRA facility investigations. She has worked with a variety of clients ranging from industrial/manufacturing, construction materials, petroleum, developers, aerospace, and federal clients. Her understanding of environmental issues/impacts associated with various types of manufacturing and industrial sites provides a foundation for conducting assessment and remediation projects and evaluating properties for acquisition and/or divestiture. She has also directed teams on a variety of projects, including those involving multiple stakeholders, property owners, the local community and various regulatory agencies. Additionally, she has experience investigating various media impacted with chlorinated solvents, perchlorate, Stoddard solvent, petroleum hydrocarbons (TPH), polychlorinated biphenyls (PCBs), and metals; conducting PCBs investigations and cleanups under the Toxic Substances Control Act (TSCA); and managing remedial actions related to chlorinated solvents, TPH and PCBs.

Some of her more recent experience includes managing and overseeing remediation and demolition projects within the Los Angeles area. Ms. Conlan has experience with various agencies including Department of Toxic Substances Control (DTSC), U.S. Environmental Protection Agency (US EPA), Regional Water Quality Control Boards (RWQCB; Los Angeles, Central Valley, and Santa Ana Regions), City of Santa Monica, City of Vernon, Los Angeles County Fire Department, Ventura County, and other city and county health care agencies.

Professional qualifications/registration(s)

Professional Geologist, CA No. 6943, 1999

Education

M.S., Geology, California State University, Long Beach, 1995
B.S., Geology/Chemical Science, Florida State University, Tallahassee, 1983

Representative projects

Manufacturing Facility Closure, Demolition and Remediation to Support Property Transaction and Redevelopment, Southern California: Managing and overseeing the assessment, remediation and demolition of a 27 acre facility in Southern California. Work at this site began in 2005, and includes various tasks from conducting Phase I and II Environmental Site Assessments [ESAs]; coordinating and negotiating site cleanup requirements with the local City environmental health department, DTSC and US EPA; developing site specific risk-based remediation goals (including those related to the PCBs and dioxin-like PCB congeners); developing and implementing sampling plans for PCB-impacted materials and other media; preparing demolition specification and contractor bid packages; preparing remediation and demolition engineering cost estimates; developing and implementing multi-media remedial designs; providing construction management oversight during demolition and/or remediation; and overseeing hazardous buildings materials surveys and abatement work (including asbestos containing materials, dust containing metals, and concrete containing PCBs). To support the remedy for this property a Feasibility Study (FS) and Remedial Action Plan (RAP) was prepared, along with a Screening Level Human Health Risk Assessment (HHRA) and a U.S. EPA PCB Notification Plan pursuant to the TSCA. Ms Conlan also assisted DTSC with community outreach activities related to the RAP approval process. The implementation of the RAP is being conducted pursuant to an Imminent and Substantial Endangerment and Consent Order (Order) and TSCA (with respect to PCBs) and includes onsite and offsite disposal of PCB-impacted concrete,

soil vapor extraction (SVE) of volatile organic compound (VOC) impacted soil, SVE/bioventing of Stoddard solvent impacted soil, excavation and disposal of PCB- and metals-impacted soil, perimeter air monitoring, and verification sampling for chemicals of concern (including PCBs). The demolition and remediation activities are in progress.

Site Assessment/Remediation, Former Manufacturing Facility, Confidential Client, Santa Monica, California: Former Project Manager. Responsible for overseeing subsurface investigations and remediation work at a former 120 acre manufacturing facility. The facility was decommissioned in the late 1970s and converted into a large business complex, City Park and residential properties. Investigations focused on soil, soil vapor, and groundwater impacted with chlorinated VOCs, mainly trichloroethene [TCE]. Recent investigations focused on assessment of shallow soil vapor and potential indoor air impacts related to soil vapor intrusion within the office buildings, monitoring soil vapor and groundwater impacts, conducting an assessment of PCBs and metals in shallow soil, and remediation of soil impacted with VOCs using SVE. Ms. Conlan's role in this project included managing, developing and overseeing the technical aspects of the project, evaluating the nature and extent of impacts, assisting with community outreach activities, coordinating with stakeholder, and providing regulatory interaction and negotiations with the RWQCB. Her management role also included managing the SVE treatment system and below grade piping design work, installation of the SVE wells, construction oversight of the treatment systems and below grade piping network, and treatment system operation and maintenance.

Due Diligence and Remediation Support, Former Glass Plants, Southern California: Managed and conducted two projects in Southern California related to the closure and remediation of two former glass manufacturing plants up to 10 acres in size. The work was conducted to support the sale of the properties, and included various tasks from conducting Phase I and II ESAs to gather a detailed understanding of the history of the properties, overseeing hazardous building materials surveys (including PCB-containing electrical equipment), coordinating and negotiating with the local agencies, assisting with facility demolition scoping, developing sampling plans and soil removal actions plans, overseeing soil removal actions, and preparing closure reports.

Phase I and II ESAs, Throughout California and Other States: Project manager. Managed, coordinated and conducted a number of Phase I and Phase II ESAs for the acquisition or divestiture of real property for developers and other private clients in southern California and other states. The Phase I ESA's were conducted in general conformance with ASTM Standard to determine current and historical environmental impacts and to evaluate potential environmental risks. These projects included various manufacturing, industrial, commercial, and oil field type properties up to 27 acres in size in Anaheim, Brea, Buena Park, Carson, City of Industry, Costa Mesa, El Monte, El Segundo, Fullerton, Irvine, Hawthorne, Los Angeles, Mojave, Moorpark, Ontario, Palmdale, Placentia, Santa Ana, Santa Fe Springs, Santa Monica, Seal Beach, Sunnyvale, Tustin, Universal City, Van Nuys, Vernon, and Vandenberg Air Force Base. Other properties are located in Utah and Florida. The Phase II ESA's covered a broad range of services that included an assessment of hazardous building materials (including PCB-containing electrical equipment, PCB-impacted concrete and crushed concrete); assessing soil conditions related to recognized environmental conditions; evaluating potential vapor intrusion issues, potential health risks related to impacted soil and groundwater, and potential remedial measures; and developing remedial cost estimates. One of the properties included an industrial park, with one of the tenant occupied properties undergoing soil and groundwater remediation for chlorinated VOCs. As part of the Phase II evaluation for one of the properties, potential health risks related to impacted soil and groundwater were evaluated for potential redevelopment considerations.

Phase I and II Environmental Baseline Survey, Confidential Aerospace Client, Florida: Managed and coordinated several large Phase I and II Environmental Baseline Surveys (EBS) at an Air Force Installation in Florida. Each of the Phase I surveys included more than 40 buildings and structures,

and were performed in accordance with Air Force Instruction 32-7066 for Environmental Baseline Surveys in Real Estate Transactions and the ASTM Standards1527. Tasks for this project also included developing presentation packages, providing recommendations for Phase II sampling (soil, groundwater, lead based paints, asbestos, and other media), developing sampling and analysis plans, and presenting findings and recommendations to the client and client's senior management. In addition, Ms. Conlan provided pre-construction technical support for environmental issues at a future launch complex, including preparing pre-construction subsurface sampling and analysis plans, remedial options for PCB-impacted soils, groundwater dewatering estimates and treatment options for chlorinated VOCs in groundwater.

RCRA Facility Investigation (RFI) and Corrective Measures Implementation, Inglewood, CA
Project Manager. Responsible for overseeing the RFI for a former property owner of a solvent recycling facility. Work at the site is being conducted under a DTSC Consent Agreement. The RCRA site occupies approximately 1.1 acres and access is limited by current operations. In addition to soil vapor investigations, groundwater monitoring and DNAPL evaluations have been conducted. An off-site shallow soil vapor survey was conducted to assess potential indoor air impacts related to soil vapor intrusion to nearby residential properties. An off-site assessment of the Gage Aquifer was conducted using sonic step-casing drilling methods and a microcosm bench-scale study was performed to assess the potential for in situ bioremediation of VOC impacted groundwater. The current phase of work includes the implementation of an on site SVE interim measure using GEO's proprietary "C3" technology, evaluation of the off site extent of soil vapor and water table groundwater impacts, and conducting an in situ bioremediation pilot study for impacted groundwater. Her role in this project includes managing and overseeing the technical aspects of the work along with a team of technical experts, evaluating the nature and extent of impacts, assisting DTSC with community outreach activities, and providing regulatory interaction and negotiations with the DTSC.

Remedial Investigation/Feasibility Study (RI/FS), Rancho Cordova, California: Former program manager for the RI/FS of the 4,000-acre former rocket testing facility in northern California: The RI/FS activities were conducted pursuant to a Sacramento DTSC Consent Order and Central Valley RWQCB Cleanup and Abatement Order. RI/FS activities included soil vapor assessment for chlorinated VOCs (TCE and Freon), and soil and groundwater assessment for chlorinated VOCs and perchlorate. Subsequent work included evaluating the feasibility of SVE and dual-phase extraction for the vadose zone. As the program manager, Ms. Conlan was responsible for overall project management, sampling strategies, agency interaction, project schedule, technical staff, and budget coordination, and other onsite activities. She also provided project cost savings by development, agency approval, and implementation of a new soil vapor sampling technology using sonic drilling methods to characterize large and deep soil vapor plumes, perched groundwater, and the underlying deeper water-bearing unit (140 feet). The data were later used to evaluate the placement of groundwater monitoring wells at several areas across the site.

Site Assessment/Remediation, Naval Base, Ventura County, California: Former project geologist overseeing three sites at a Naval Base where underground storage tanks (USTs) and an aboveground storage tank (AST) containing gasoline and diesel fuel have leaked. Addressed petroleum and aromatic hydrocarbon impacted soil and groundwater and evaluated remedial strategies for closure through the Los Angeles RWQCB. One project included an active gas station where soil and shallow groundwater remediation was conducted with horizontal and vertical extraction wells using a high vacuum dual-phase extraction system. A catalytic oxidation system was used to treat the vapor phase and activated carbon was used to treat the groundwater phase. At the second location, diesel fuel recovery from shallow groundwater was conducted with a low vacuum bio-slurping and manual bailing method. At the third location, also an active gas station, the assessment phase for soil and groundwater impacts were completed and enhance in situ biodegradation using sulfate was proposed and developed for petroleum hydrocarbon impacted groundwater (including MTBE and TBA).

Linda Hall, PhD

Senior Associate Toxicologist and Risk Assessor - Environmental

Professional summary

Dr. Hall is a Senior Associate Toxicologist and Risk Assessor with more than 25 years of experience in environmental toxicology, human health effects assessment, environmental forensics, risk communication, and litigation support. Dr. Hall has led and conducted human health risk assessments under U.S., state, and international regulatory requirements for sites involving the evaluation of human health risks from exposure to contaminants detected in soil, sediment, air, groundwater, and surface water. She recently led the human health risk assessment for a metal smelter in Jamaica, and as a Qualified Person for Risk Assessment (QPRA) in Ontario, Canada, she led risk assessments for multiple Brownfield sites and established health effects-based cleanup criteria for numerous contaminants and exposure pathways.

Dr. Hall has prepared risk communication materials for numerous clients; these materials have been used to communicate and interpret the results of human health risk assessments to the public, to client corporate and internal staff, and to public relation firms. She has prepared Fact Sheets, risk communication white papers, briefing papers, risk-related presentation materials for public meetings, and extensive written responses to public comments on health risk assessments.

Dr. Hall has evaluated health effects associated with exposure to dioxins and dioxin-like compounds, PCBs, metals, petroleum hydrocarbons, and volatile organic compounds (VOCs), and has developed health-effects based ingestion and inhalation guidelines for these substances. Dr. Hall led pesticide health risk assessments for state- and county-wide insect eradication programs that evaluated both conventional and atypical pesticides. Dr. Hall has conducted, managed, and peer-reviewed health risk assessments for California maritime ports, rail yards, and intermodal facilities, focusing on health impacts from the combustion of diesel and other fuels. She has assessed premature mortality and morbidity impacts on community health from diesel particulate matter. Dr. Hall has derived and/or provided peer-review of maximum allowable dose level (MADL) derivations for phthalates and proprietary chemicals under California's Proposition 65. She has evaluated the potential health impacts to consumers and workers exposed to mercury from the combustion of natural gas.

Dr. Hall is actively working in the emerging field of health impact assessment (HIA), and has reviewed, evaluated, and prepared white papers on HIA, and has supported HIA efforts for resource extraction projects in Malaysia. She has followed and evaluated the development of a Cumulative Health Impacts model developed by the State of California which utilizes various chemical, public health, and socioeconomic indicators to identify disproportionately impacted communities within the State.

Education

Ph.D., Ecology (Ecological Toxicology), University of California, Davis, CA, 2002
M.A., Biology (Toxicology), San Jose State University, San Jose, CA, 1987

Memberships/Affiliations

Member, Society of Toxicology
Member, American Association for the Advancement of Science
Member, East Bay Leadership Council, Environmental and Manufacturing Task Force
Committee Member, Lawrence Livermore National Laboratory, Office of Science and Technology, Laboratory Directed Research and Development Exploratory Research Committee (2005, 2006)
Subject Matter Expert Reviewer (Toxicology), U.S. Environmental Protection Agency (U.S. EPA).

Employment history

AMEC Environment & Infrastructure, Inc., Senior Associate Toxicologist/Risk Assessor – Environmental, Oakland, CA, 2013 to present

ENVIRON, Senior Manager, Emeryville, CA, 2006 to 2013

Lawrence Livermore National Laboratory, Environmental Scientist, Livermore, CA, 1989 to 2006

Representative projects

Litigation Technical Support

Environmental Forensic Evaluation, Confidential Client
Prior Firm Experience. Conducted an environmental forensic evaluation of a chemical manufacturing process suspected to have contributed dioxins, dioxin-like compounds, PCBs, metals, and other contaminants to river sediments at a Superfund site. To support cleanup cost allocation efforts, evaluated chemical and physical properties of products and product synthesis contaminants, patent processes held by the manufacturer, feedstock chemicals, waste streams and other records to identify environmentally-persistent marker chemicals unique to the chemical manufacturing process. Identified multiple potential chemical indicators (markers) in river sediments based on an analysis of their chemical and physical properties. Prepared multiple presentations for the client and their counsel, including presentations to the U.S. EPA and to the cost allocation mediator. Co-led development of sediment sampling work plan.

Litigation Support for Dioxin Contamination, Confidential Client
Prior Firm Experience. Provided technical expertise for a litigation case involving a Superfund site where opposing parties alleged the other was responsible for dioxin contamination in soils and sediments. Analyzed historic operations at the site, critiqued opposing expert report and depositions, and advised the client on the origin, nature, and extent of contamination. Identified a chemical indicator suitable for use in differentiating the dioxin source.

Analysis of Dioxin in Manufacturing and Purification Process, Confidential Client
Prior Firm Experience. Analyzed acetylene manufacturing and purification processes, associated patent processes, and waste stream chemistry to characterize the extent of overall dioxin formation and dioxin congener formation in each step of the manufacturing and purification process of acetylene manufacturing. Prepared written analyses and presentations for the client and their counsel.

Litigation Support for Benzene Exposure, Confidential Client
Prior Firm Experience. Provided technical support for a litigation case involving alleged worker exposure to benzene. Utilized employment records to reconstruct benzene exposure from multiple fuel combustion sources.

Litigation Support for Soil Contaminant Exposure, Confidential Client
Prior Firm Experience. Litigation support for a case that involved alleged exposure to polycyclic aromatic hydrocarbons (PAHs), VOCs, and fuel hydrocarbons in soil at a former rail yard. Provided analysis and critique of opposing expert's health risk assessment that resulted in a favorable settlement for the client.

Risk Assessment and Environmental Toxicology

Health Risk Assessment, California Department of Toxic Substances Control, West Covina, CA
Prior Firm Experience. Conducted a human health risk assessment of VOCs and methane present in soil gas in residential areas surrounding a large southern California landfill under State of California

oversight. On behalf of the State, prepared public communication materials, including a Fact Sheet, that described the potential public health concerns related to landfill contaminants, soil gas sampling and its purpose, and the nature of the suspected contaminants and their toxic properties.

Human Health Risk Assessment, Metals Recycling Facility, Confidential Client, California
Prior Firm Experience. Prepared a white paper on risk assessment to inform and educate the client's corporate headquarters staff on the purpose, methods, and interpretation of human health risk assessments. Prepared public communication materials that explained the results of the facility risk assessment to community members and stakeholder groups.

Human Health Risk Assessment, Port of Los Angeles, Los Angeles, CA
Prior Firm Experience. Led the human health effects assessment of diesel exhaust emissions for an intermodal rail project, including the assessment of premature mortality and morbidity impacts on community health from particulate matter emitted from port operations; and developed strategies to assess non-traditional public health endpoints associated with port operations. Prepared risk communication materials for internal use by the client; interpreted the human health risk assessment results for the public, and prepared extensive responses to public comments received on the human health risk assessment. Those responses to comments described what risk assessment is, how one is conducted, the assumptions used, and the uncertainties inherent in the results. Public concerns focused on morbidity and mortality impacts associated with exposure to particulate matter (PM) released from the project.

Human Health Risk Assessment, Ports of Los Angeles and Long Beach, Los Angeles and Long Beach, CA
Prior Firm Experience. For the Ports of Los Angeles and Long Beach, evaluated health effects of diesel exhaust emissions from the combined ports to the surrounding communities as part of the implementation of the San Pedro Bay Ports Clean Air Action Plan (CAAP). Developed presentation materials and participated in a two-day training seminar on human health risk assessment for Ports staff. Developed risk communication materials for internal use by Ports staff, as well as risk communication materials that conveyed and interpreted the potential risks of exposure to diesel exhaust to community members and stakeholder groups.

Human Health Risk Assessment, Alcoa, Pittsburgh, PA
Prior Firm Experience. Lead human health risk assessor for a metal smelter in Jamaica. The risk assessment examined the potential impacts of air emissions of metals, dioxins, phthalates, and other contaminants on residents, workers, schoolchildren, and other sensitive populations. Presented and interpreted risk assessment results to corporate and facility staff.

Human Health Assessment of Proposed Pesticide Use, State of California, Department of Food and Agriculture, Sacramento, CA
Prior Firm Experience. Led the exposure and human health effects assessment for the proposed use of traditional and non-traditional pesticides for the State-wide Light Brown Apple Moth and the county-level Gypsy Moth Eradication Programs. The analyses included developing representative exposure scenarios and exposure parameters for different regions and populations throughout the State; developing non-cancer reference exposure concentrations and reference doses for the conventional pesticides chlorpyrifos, lambda-cyhalothrin, permethrin, spinosad, as well as the biological pesticide *Bacillus thuringiensis*; and assessing health effects for children, workers, and residents. Prepared communication materials for the client to present at public meetings; interpreted the human health risk assessment results for the public, and prepared extensive responses to public comments received on the human health risk assessment.

Multipathway Baseline Risk Assessment, Lawrence Livermore National Laboratory, Livermore, CA
Prior Firm Experience. Performed and managed a multipathway baseline risk assessment of a U.S. Department of Energy Superfund site with air, surface and groundwater, and surface and subsurface soil contamination. Contaminants included PCBs, uranium^{238}, high explosives, VOCs, tritium, and metals. The project included the development and application of criteria to select contaminants of concern; the development of site-specific exposure parameters; acquisition and statistical analyses of data to discriminate between background and anthropogenic levels of metals and certain radionuclides in soil and groundwater.

Peer Review of Sediment Remediation Strategies, Confidential Client, Portland, OR
Prior Firm Experience. Served as peer reviewer of sediment remediation strategies at the Port of Portland superfund site. Sediment contaminants included dioxins, PCBs, metals, and fuel hydrocarbons.

Human Health Risk Assessment for Brownfield Sites, Private Clients, Multiple Locations, Ontario, Canada
Prior Firm Experience. Qualified Person for Risk Assessment (QPRA) for multiple contaminated ('Brownfield') sites evaluated under Ontario Regulation 153/04. Lead human health risk assessor for a former ceramics facility; for an actively-used industrial property; and for a "pass-through" site with VOC-contaminated groundwater within a Wider Area of Abatement. These Brownfield sites were contaminated with metals, VOCs, total petroleum hydrocarbons (TPH), and polyaromatic hydrocarbons (PAHs) in soil, soil gas, groundwater and indoor air. Risk assessments have included developing site contaminant screening strategies, and the evaluation of potential risk and non-cancer hazard to multiple receptor populations. The health risk assessments have quantified exposure via numerous pathways, including the inhalation of VOCs and PHCs that have volatilized to outdoor and indoor air from soil and groundwater. Prepared Risk Assessment reports to support a record of site condition (RSC).

Human Health Risk Assessment (HRA) of Mercury Exposure, Confidential Client, Jurong Island, Singapore
Prior Firm Experience. Conducted a HRA of industrial and consumer exposures to mercury present in natural gas. Evaluated exposures to natural gas workers from volatilization and direct contact with mercury-contaminated filtration sludge, inhalation exposures of workers and the public from incineration of filtration sludge, and worker and consumer exposure from the use of natural gas as a cooking and industrial heating fuel.

Human Health Risk Assessment (HRA), Private Client, Ontario, Canada
Prior Firm Experience. Led the human health risk assessment for a commercial site adjacent to a former gas station with free total petroleum hydrocarbons (TPH) in shallow groundwater and soil underneath a building. Evaluated multiple lines of evidence from groundwater, soil, soil gas, and indoor air concentrations to assess potential exposures to workers. Methane and oxygen data were used to establish that the TPH was undergoing significant attenuation in the subsurface from biologically-mediated aerobic degradation, and that as a result of this degradation, workers were not exposed to unacceptable levels of TPH vapor.

Proposition 65 Exposure Evaluation, Private Client, Los Angeles, CA
Prior Firm Experience. Under Proposition 65, evaluated exposures to diesel particulate matter. This work included extensive interactions with client's legal counsel to describe the approach, interpret results, and evaluate the significance of the results for client operations. Derived maximum allowable dose levels for various phthalates and for proprietary chemicals.

Air Quality and Health Risk Assessment Peer-Reviewer for EIRs, Port of Long Beach, Long Beach, CA
Prior Firm Experience. Expert peer-reviewer for Air Quality and Health Risk Assessment Chapters for EIRs conducted under California Environmental Quality Act (CEQA).

Health Risk Assessment, Israeli Ministry of the Environment, Multiple Locations, Israel
Prior Firm Experience. Provided technical support to the Israeli government in comparing draft Israeli and U.S. EPA risk assessment guidance and the supporting methodologies. Conducted a health risk assessment of a multistory commercial building in Israel. Successfully demonstrated to regulators that volatile organic compounds and fuel contamination in shallow soil and groundwater were not a concern for garage operators or users, or to workers in the commercial building.

Vapor Intrusion Human Health Assessment, Private Clients, Southern California
Prior Firm Experience. At multiple privately-held industrial sites, assessed the potential health effects from vapor intrusion of volatile organic compounds from soil to indoor air.

Human Health Risk Assessment Review, BNSF Railway Company, Multiple Locations, CA
Prior Firm Experience. Peer-reviewer of health risk assessments of select rail yards in California conducted by the California Air Resources Board (ARB) as part of a Memorandum of Understanding (MOU) agreement between the railroad and ARB.

Expert Peer Review, Private Client, Georgetown, Ontario, Canada
Prior Firm Experience. Provided expert peer review of the Georgetown South Corridor Service Expansion and Union Pearson Rail Link (Toronto, Ontario); of a human health risk assessment of air emissions from a proposed biosolids incinerator, City of Hamilton, Ontario; and of Modified Generic Risk Assessment Reports for industrial properties being converted to park land.

Health Impact Assessment (HIA) and Community Impact Assessment

Descriptive Project Name, Private Client, Kuala Lumpur, Malaysia
Prior Firm Experience. Co-lead of a recently-awarded Health Impact Assessment in Malaysia for a 2000-MW coal-fired power plant.

Health Impact Assessment (HIA) Analyses, Confidential Client, Los Angeles, CA
Prior Firm Experience. Conducted a range of analyses related to HIA, including the evaluation of a confidential goods movement client's expansion projects, their proposed mitigation programs and how these mitigation programs address components of HIAs, preparation of a 'white paper on HIA' (i.e., what HIAs are, how to conduct one, why one would conduct one, data needs to conduct an HIA). Reviewed and evaluated 80 HIAs in-progress in the U.S.; participated in multiple HIA training courses, including ones offered by University of California, Los Angeles, and the San Francisco Department of Public Health. Provided peer review of a natural resource extraction HIA in Colorado.

Evaluation of Cumulative Impacts Model, City of Richmond, Richmond, CA
Prior Firm Experience. Followed the development and finalization of a cumulative impacts model developed by the State of California (2012/2013). The model utilizes chemical, public health, and socioeconomic indicators to identify disproportionately impacted communities within the State. Prepared written analyses and presentations on the model which evaluated its implications for CEQA baseline data requirements, and assessed the accuracy of select indicator and cumulative scores.

Other Representative Projects

Emerging Contaminants Research Project, Lawrence Livermore National Laboratory, Livermore, CA
Prior Firm Experience. Principal Investigator on the research project "Emerging Contaminants:

Application of Microarray Technology to the Detection of Mixtures of Endocrine-Active Agents."

Chemical Warfare (CW) Exposure Project, Lawrence Livermore National Laboratory, Livermore, CA
Prior Firm Experience. Team Member, Chemical Warfare (CW) Agent Exposure Guidelines Team, Chemical Restoration Operational Technology Demonstration, a Department of Homeland Security-funded project in which the team developed and/or selected human exposure guidelines for CW exposure scenarios.

Hexavalent Chromium and Endocrine Disrupting Chemicals Project, University of California, Davis, CA
Prior Firm Experience. Co-Principal Investigator of the California State Water Resources Control Board-funded project, "Hexavalent Chromium and Endocrine Disrupting Chemicals (EDCs)," a project that used microarray signatures to identify exposure to EDCs.

Sensitive Medaka Fish Model Project, University of California, Davis, CA
Prior Firm Experience. Co-Principal Investigator on the research project "Using a Sensitive Medaka (Oryzias latipes) Fish Model for Endocrine Disruptor Screening," a study funded by the U.S. EPA to develop a microarray-based methodology to screen for endocrine active chemicals.

Biological and Chemical Water Contaminants Database Tool, Lawrence Livermore National Laboratory, Livermore, CA
Prior Firm Experience. Scientific Lead for Toxicology/Public Health and Project Manager of a multidisciplinary team that developed a database/information tool on biological and chemical water contaminants (of human concern) for the U.S. EPA. Identified and selected toxicity parameters for acute, sub-chronic, and chronic exposure; identified distinguishing symptoms of exposure for each exposure period; identified time-to-onset of symptoms; identified public health considerations; and proposed guidelines to limit human exposure. Interacted with U.S. EPA Project Lead to develop the structure and content of the database, which covered chemical, organoleptic, and physical properties; analytical methods and sensitivity; automated calculations of critical quantities; and waste treatment techniques, effectiveness, and by-product formation.

Multipathway Risk Assessment, Lawrence Livermore National Laboratory, Livermore, CA
Prior Firm Experience. Performed and managed a multipathway risk assessment of a U.S. Department of Energy mixed waste treatment facility being built to use innovative technologies to treat complex and unique mixtures of chemical and radiological waste.

Drinking Water Criteria Development, Lawrence Livermore National Laboratory, Livermore, CA
Prior Firm Experience. Participated in the development of drinking water criteria for the State of California for a series of chlorinated solvents commonly found as contaminants in groundwater.

Publications and presentations

Hall, L., and Daugherty, D. (2013). Are Current Strategies Sufficient to Determine Funding Allocation for California's Cap and Trade Proceeds? Presentation and publication in Meeting Symposia, Air and Waste Management Association. Climate Change Impacts, Policy, and Regulation. September 10 - 11, Herndon, VA.

Miesner, E., Hall, L., Harris, A., and Kaden, D. (2013). Hydraulic Fracturing and Community Health. AEHS. 23rd Annual International Conference on Soil, Water, Energy, and Air. March 18-21.

Miesner, E., Hall, L. (2012). The Intersection of Health Impact Assessment and Human Health Risk Assessment Society for Risk Analysis, World Congress on Risk 2012. July 18 - 20, 2012, Sydney, Australia.

Watson, A., Hall, L., Raber, E., Hauschchild, V., and Dolislager, F. (2011). Developing Health-Based Clearance Guidelines for Airport Terminal Remediation Following a Chemical Terrorist Attack:

Introduction and Key Assessment Considerations. Human and Ecological Risk Assessment. 17 (1): 2 - 56.

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Salisbury, N., Hall, L., and Radford, A. (2009). The influence of fluoride guidelines on human health risk assessments. Paper and presentation prepared for Clean Air Society of Australia and New Zealand, Perth, Western Australia, September 2009.

Hall, L., Salazar, E., Kane, S., and Liu, N. (2008). Effects of thyroid hormones on human breast cancer cell proliferation. J Steroid Biochem Mol Biol. 2008 Mar;109(1-2): 57-66

León, A., Wu, P.S., Hall, L.C., Johnson, M.L., and Teh, S.J. (2008). Global gene expression profiling of androgen disruption in Qurt strain medaka. Environ Sci Technol. 2008 Feb 1;42(3): 962-9.

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Watson, A., Hall, L., Sorensen, J., Ross, R., and Raber, E. (2006). Identifying Health-Based Exposure Criteria (Section 3.2) in Chemical Restoration Plan for Major International Airports. Lawrence Livermore National Laboratory.

Hall, L., and Watson, A. (2006). Exposure Estimates for Cyanogen Chloride (Agent CK) and Phosgene (Agent CG). App. G. in Chemical Restoration Plan for Major International Airports. Lawrence Livermore National Laboratory.

Hall, L.C., Okihiro, M.S., and Johnson, M.J. (2006). Surflan and Oryzalin Impair Reproduction in the Teleost Medaka (Oryzias latipes). Mar Environ Res. 2007 Mar;63(2):115-31.

Hall, L.C., Rogers, J.M., Denison, M.S., and Johnson, M.L. (2005). The Herbicide Surflan and its Active Ingredient Oryzalin, a Dinitrosulfonamide, are Estrogenic. Arch. Environ. Cont. Toxicol. 48(2):201-208.

Smith, K., Horne, J., Hall, L., and Montgomery, C. (2005). Feasibility of Contamination. CD-2005-0197 (Classified document. Subject matter; potential human exposure to chemical warfare agents).

Daniels, J.I., and Hall, L.C. (2005), Estimating Mass of Chemical-Warfare (CW), Organophosphorus (OP) Nerve Agents (GA, GB, GD, and VX) Needed to Kill or Incapacitate Populations of 1,000 to 10,000 Using a Potable-Water Distribution System or Bottled Beverage and Comparing Results to Similar Estimates for Two Toxic Biological Substances (Botulinum Toxin and Ricin), Lawrence Livermore National Laboratory, May 2005. UCRL-TR-205165 (Official Use Only).

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Stoker, C., Hall, L., Rosenberg, N. et al. (2003). Water Contaminant Information Tool (WCIT) beta version 2. Lawrence Livermore National Laboratory, Livermore, CA. UCRL-TR-200520.

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Woodward, R., Dooher, B., Rosenberg, N., and Hall. L. (2003). Vulnerability Assessment for the San Francisco Public Utilities Commission San Francisco Water System (No. 3810011) and San Francisco Regional Water System (No. 3810001) Lawrence Livermore National Laboratory, March 2003. UCRL-ID-152396.

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Calvin H. Hardcastle

Principal Engineer

Professional summary

Mr. Hardcastle has more than 32 years of process and environmental engineering experience. He has worked in environmental consulting for the past 26 years. His expertise includes investigation and remediation of contaminated soil vapor, soil, and groundwater as well as developing site closure strategies.

Mr. Hardcastle has provided principal oversight and technical review on a wide variety of environmental projects including regulatory compliance audits, due diligence evaluations, site investigations, and site mitigation. He has also served as the lead design or reviewer on various engineering projects including design and construction of multi-media remediation systems, water conveyance pipelines, and groundwater extraction and treatment facilities.

Professional qualifications/registration(s)

Civil Engineer, California No. 44751, 1989
Civil Engineer, Nevada No. 9637, 1992
Sanitary Engineer, Arizona No. 26935, 1993
Certified Environmental Manager, Nevada No. 1070, 1992 (inactive)
California Licensed Contractor (AMEC Responsible Employee) A-HAZ No. 697810

Education

University of Arizona: M.S., Civil Engineering, 1987
University of Arizona: B.S., Metallurgical Engineering

Representative projects

LITIGATION SUPPORT

Expert Witness: Provided deposition testimony on behalf of defendants regarding environmental remediation methods and costs conducted during redevelopment of a property located adjacent to a former gasoline service station in San Diego, California. The complaint was based on a separate case between the developer and their contractor who had claimed financial and delay damages due to the environmental impacts; and the developer's attempt to transfer the costs to our client.

Expert Witness: Provided deposition testimony on behalf of defendants regarding water quality issues at a mobile home park located in northern California. Opinions were based on water quality analyses, manganese effects in water supply, and water treatment facilities used for wellhead treatment.

Expert Witness. Named as an expert witness to evaluate costs to remediate chlorinated solvent releases at a former aerospace facility. Service included reviewing costs prepared by third party consultants, evaluating appropriateness of remedial approach, and providing technical assistance to legal team.

Expert Witness. Named as an expert witness to evaluate appropriateness of using biopiles to remediate diesel fuel impacted soil. Service included assessing whether appropriate technology was used, determining standard of care related to implementation of technology, and providing deposition testimony.

Litigation Support. Provided third-party review of plaintiff's remediation approach and developed a more-economical remediation approach with supporting cost estimates at site impacted by chlorinated solvents on behalf of defendant. The alternative approach reduced remediation costs by more than $3,000,000 in mediated settlement.

Litigation Support. Named as expert witness to evaluate remedial alternatives and cost at two petroleum hydrocarbon affected sites located in Los Angeles County. In one case, he assisted client in receiving favorable settlement from the MTA regarding MTA's acquisition of client's property during construction of the MTA system. In second case, Mr. Hardcastle provided assistance in evaluating remediation effectiveness during negotiation with major oil company regarding property values.

Tax Assessor Appeal. Provided expert testimony to the County of Los Angeles tax assessor's appeal board on behalf of client seeking to reduce property value based on extent and cost of remediation of soil and groundwater contamination at the property

REMEDIATION

Former Aluminum Casting Facility, Vernon, California: Mr. Hardcastle is the engineer of record and construction manager for the demolition of underground facilities at a former aluminum casting plant. Work includes the removal of PCB-contaminated concrete, soil, and other materials that were used to construction underground structural foundations and features to support process equipment. PCB remediation is occurring under the regulatory oversight of USEPA Region IX and the California Department of Toxic Substances Control. Remediation objectives are based on human health risk criteria as well as TSCA criteria. Prior work conducted during the demolition of above ground facilities included abatement of asbestos containing materials, dust containing metals, and PCB-containing universal wastes.

Superfund Site Investigation and Remediation, Southgate, California: Mr. Hardcastle is the principal reviewer for implementing remediation programs at a former drum reconditioning facility with soil vapor, soil, and groundwater impacted by 1,4-dioxane and chlorinated volatile organic compounds (VOCs). The remediation strategy for shallow media consists of implementing dual-phase extraction (DPE) to dewater saturated soil and remediate using soil vapor extraction (SVE). The remediation strategy for the deeper groundwater now varies from the USEPA-approved Record of Decision (ROD) approach of using in situ chemical oxidation at a targeted on-site area, groundwater extraction in a non-focused, offsite area, and construction of an offsite in situ bio-barrier underlying a nearby residential area. Mr. Hardcastle was a key member of the technical team that negotiated with USEPA to postpone or eliminate implementation of in situ chemical oxidation on the basis that previous pilot testing did not demonstrate effectiveness of the technology at the site and that the bio-barrier was not needed. Instead, the current deeper groundwater remediation strategy consists of targeted on-site and off-site groundwater extraction to contain and mitigate concentration hot-spots and to reduce overall extraction rates. The proposed program is expected to decrease remediation times by 10 to 15 years at a substantial cost reduction to the group of cooperating responsible parties.

Westlake Hotel and Wellbeing Center, Westlake Village, California: Mr. Hardcastle is the project manager for this redevelopment site. Contaminated with volatile organic compounds in the soil and groundwater, this site began with a Phase I Environmental Site Assessment (ESA). Site grading and soil excavation activities were monitored during site development. During construction, additional, unknown impacts were encountered. Mr. Hardcastle worked with the developer, contractor, and former owner to address these impacts to the meet the needs of the project and regulatory agencies. A vapor barrier system was designed for the resort to mitigate potential concerns related to indoor air intrusion by VOC-impacted soil vapor. The vapor barrier design also

included preparing vapor barrier performance monitoring protocols and submitting plans, specifications, and permit applications to the County of Los Angeles and Regional Water Quality Control Board (RWQCB) for approval.

A groundwater treatment system was designed to remove VOCs including 1,4-dioxane from groundwater collected by a structural foundation dewatering system to meet the requirements of a NPDES permit issued by the RWQCB. The NPDES permit also contains limits for inorganic constituents including total dissolved solids and selenium which the discharge must meet. The treatment system consists of an advanced oxidation system, followed by granular activated carbon polishing and blending to meet the discharge limits.

RCRA TSD Facility, Inglewood, California: Mr. Hardcastle is overseeing interim removal activities including the removal of 26 USTs and remediation of soil affected by halogenated and non-halogenated solvents from an active solvent recycling facility. Ongoing work includes design and construction of a soil vapor extraction system using C3 technology, and implementation of a pilot study to evaluate the feasibility of in situ bioremediation to remediate groundwater at the site. The project also entails characterization of off-site groundwater and evaluation of potential off-site impacts. He also assisted client's legal team to negotiate clean-up and abatement order with the Department of Toxic Substances Control agency.

Revelopment of Former Oil Field Property, Santa Fe Springs, California: Mr. Hardcastle was the lead designer of a sub-slab venting system to mitigate methane gas risks under a warehouse construction project. The project featured design of the venting system to meet City of Santa Fe Springs requirements.

Mission Canyon 8 Landfill, Los Angeles, CA: Mr. Hardcastle is performing post-closure consulting services to the property owner following closure of a former County of Los Angeles Sanitation District landfill. Services include landfill gas monitoring, cap monitoring, cap repair recommendations, seep monitoring, storm water monitoring and reporting, surface water run-off management study recommendations, and other compliance needs. Additionally, Mr. Hardcastle was a member of the redevelopment project team securing approvals from the City of Los Angeles for construction of homes near the boundary of the Mission Canyon 8, focusing on mitigation of methane gas risks.

AMTRAK Maintenance Facility, Los Angeles, California: Mr. Hardcastle was the lead engineer evaluating and implementing methane mitigation measures at the AMTRAK Maintenance Facility.

Former Plating Shop, Inglewood, California: Mr. Hardcastle is the principal reviewer of remediation system pilot testing, design, and construction at a site impacted by chlorinated solvents including perchloroethene (PCE). Ongoing work includes completing the investigation to evaluate on-site conditions requiring remediation and conducting a soil vapor extraction pilot study to obtain design criteria for the full-scale remediation system.

Defense Fuel Supply Point, Norwalk, California: Mr. Hardcastle was the technical reviewer of the remediation program being implemented at the Defense Fuel Supply Point by a commercial pipeline operator. The remediation program was developed to target multiple releases of petroleum fuel products and their associated constituents such as benzene and xylenes and their fuel additives including MTBE and 1,2-dichloroethane (1,2-DCA). Remediation strategies included an extensive product removal system, soil vapor extraction, dual-phase extraction, bioventing, and groundwater extraction and treatment. Phyto-remediation using poplar trees was also implemented to help control 1,2-DCA-impacted groundwater movement.

VOC-Affected Soil and Groundwater Remediation, Fullerton, CA: Mr. Hardcastle was the project manager responsible for preparing plans, specifications, construction, and operation of two 300 scfm, high vacuum SVE systems. The high vacuum systems were used to dewater the shallow groundwater zone and then extract soil vapor containing chlorinated solvents. Extracted groundwater and soil vapor were treated using GAC. In conjunction with this project, a pilot study to evaluate injection of Fenton's Reagent into the vadose and saturated zones was conducted as to assess the feasibility of implementing this remedial option. While some VOC removal was experienced, the level of removal was not sufficient to warrant further application at this site. As the final polishing step in the site remediation, in situ biological treatment of the residual VOC mass was stimulated using a proprietary substrate solution to catalyze the reductive dechlorination of PCE and TCE.

On-Call Hazardous Waste Investigation Services, Caltrans District 7, California: Mr. Hardcastle is the principal-in-charge for a Caltrans District 7 on-call environmental engineering services contract supporting Caltrans with due-diligence, design, and construction of capital improvement and maintenance projects. Representative projects include due diligence of properties acquired by purchase in fee or easement for widening of Interstate 5 from the Orange County boundary to the 605 freeway, aerially-deposited lead studies, and monitoring of groundwater quality and performing remediation services at existing Caltrans facilities.

On-Call Hazardous Waste Investigation Services, Caltrans District 12, California: Mr. Hardcastle was the principal-in-charge for a Caltrans District 12 on-call environmental engineering services contract. He is responsible for working directly with Caltrans task order managers and the Geomatrix project manager and task order managers to assess project needs and prepare a scope of work and cost estimate for each project. He was responsible for reviewing all project reports and other documents.

Farm Fueling Facility, Ventura County, California: Mr. Hardcastle is overseeing implementation of remediation measures consisting of high vacuum extraction to remove gasoline constituents and MTBE for soil and groundwater at a farm. Activities include implementing remediation system operations consisting of dual-phase extraction, groundwater extraction and treatment, and bioventing, developing groundwater characterization work plans, and negotiations on behalf of the client with the Ventura County Environmental Health Division.

Remediation System, Newspaper Printing Facility, Los Angeles Times, Costa Mesa, California: A design/build project was implemented to install a dual-phase extraction system to remediate LNAPL, soil vapor, and groundwater. Mr. Hardcastle was responsible for the design and installation of the treatment system and continuing operations, maintenance and reporting. The site assessment and remediation activities also encompass two offsite properties and a groundwater plume extending about 1000 feet offsite. Mr. Hardcastle was also responsible for all budget issues and negotiations with regulatory agencies.

Denitrification Water Treatment Plant Retrofit, California Institution for Men in Chino, California: Mr. Hardcastle was the engineer-of-record responsible for designing the water system facilities for implementation of the PCE remediation project at the. The project included design of two new potable water supply wells and appurtenant piping, access road, electrical and telemetry systems to tie in the new wells to the existing water supply facilities. The preliminary evaluation consisted of compiling and reviewing design documents, record drawings, and vendor submittals for the plant. The on-site evaluation consisted of inventorying instruments, testing instruments measurements and calibration testing of the facility's control program line-by-line to control facility operation and function, and evaluating the facility components, design, and layout for reliability and capability to

meet requirements established by the California Department of Health Services. The results of the on-site evaluation were used to prepare recommendations required to provide reliable operation of the WTS. The recommendations were prioritized with "Category 1" recommendations identified for immediate implementation and Category 2, 3, and 4 recommendations for implementation as funding became available.

Remedial Investigation/Feasibility Study and Risk Assessment, Bell Gardens, California: Principal-in-charge for an investigation at a former metals plating facility. Mr. Hardcastle prepared a remedial investigation (RI) work plan to characterize soil, soil gas, and groundwater conditions at the site. Chemicals of Potential Concern (COPCs) included metals, hexavalent chromium, and VOCs. The investigation consisted of cone penetration testing (CPT) to assess off-site extent of groundwater plume. Groundwater monitoring wells were installed in shallow and deeper depth aquifers beneath the site. The RI results were used in a human health risk assessment to determine site cleanup values.

Assessment and Remediation, Former Refinery Site, Kern County, California: Mr. Hardcastle was the project manager for assessment and remediation of an MTBE and hydrocarbon release at a former refinery site. The project entails soil vapor extraction and removal of floating product and assessment of offsite hydrogeologic conditions to characterize the lateral and horizontal extent of MTBE in groundwater.

State Garage Assessment and Remediation, California Institution for Men, Chino, California: Mr. Hardcastle is the project manager responsible for assessing the presence of gasoline, MTBE, and free product in soil and groundwater at a former UST installation. Assessment activities focus on evaluating potential impacts of MTBE on the regional groundwater aquifer system and protecting a potable water supply well located approximately 800 feet from the source area. Remedial efforts include soil vapor extraction to remediate the vadose zone soil and free product.

UST Assessment/Remediation, Riverside County, California: Mr. Hardcastle is managing a project investigating the presence of petroleum hydrocarbons from three USTs located at an industrial facility. Three UST case files were closed using risk-based criteria. A fourth site is currently being investigated and a similar risk-based closure strategy has been adopted for a diesel fuel release from an above ground storage tank.

Groundwater Remediation Project, Irvine, CA: Mr. Hardcastle is the engineer overseeing implementation of an interim remedial measure to contain shallow groundwater impacted with perchlorate at a former industrial facility. The IRM consists of extracting groundwater for off-site disposal. Longer-term treatment alternatives including ion-exchange and biological processes are also being evaluated.

Groundwater Contamination, Huntington Beach, CA: Mr. Hardcastle was the project manager responsible for overseeing start-up and treatment optimization studies of a steam stripper distillation column to remediate groundwater contaminated with acetone, isopropyl alcohol, CFC-113, and methylene chloride.

Site Remediation, Throughout California: Mr. Hardcastle has managed a variety of site remediation projects for petroleum hydrocarbons. Remediation approaches have included risk-based closure, dual-phase extraction, soil vapor extraction, oxygen-release compound, bioventing, free-product removal, groundwater extraction, and soil excavation.

VOC-Affected Soil Remediation Pilot Study, Newbury Park, CA: Mr. Hardcastle was project manager responsible for conducting a four-month-long pilot study to evaluate an innovative

regenerative, bead-activated carbon system to treat soil vapor containing PCE, TCE, CFC-113 and other chlorinated solvents. The results of the pilot study were used to conduct a feasibility cost analysis using the BAC system versus traditional GAC adsorption and thermal oxidation technologies.

Soil Remediation, Oakland, CA: As project manager, Mr. Hardcastle was responsible for remediating ~40,000 cubic yards of soil containing gasoline, diesel fuel, non-halogenated and chlorinated solvents. The project also included the design, construction, and start-up of a 150 gpm groundwater extraction and treatment system to remove chlorinated solvents.

PEER REVIEW

Peer Review, Gasoline LUFT Site, San Luis Obispo County, California: Mr. Hardcastle provided peer review for evaluating soil and groundwater remedial alternatives at a gasoline release site. The remedial strategy is focused on protecting beneficial uses of groundwater from BTEX and MTBE compounds.

Peer Review, Solvent Site, Los Angeles, CA: Mr. Hardcastle provded peer review of a remediation program developed to remove chlorinated solvents from soil and to excavate PCB-impacted soil at a former solvent recycling facility. Other tasks included review of expert reports related to former operations at the site.

WATER RESOURCES

Well Design, San Bernardino Valley Municipal Water District, San Bernardino, California: Mr. Hardcastle was the engineer of record responsible for the design of wells, piping, and appurtenant facilities to implement a groundwater dewatering project. The project entailed two new dewatering wells with a combined capacity of about 3200 gpm and 2000 lineal feel of pipeline.

Potable Water Supply Restoration, California Institution for Men, Chino, California: Mr. Hardcastle conducted a feasibility study to restore a source of drinking water at this facility. The study included selection of extraction well pumping and management options to blend a water source containing nitrate with other sources to meet the MCL for nitrate, and treat a portion of the extracted groundwater to remove PCE and TCE to meet MCLs for those constituents. Mr. Hardcastle was responsible for all phases of the project, including budgeting, project management, and meeting with the client and regulatory agencies. Mr. Hardcastle also conducted the regulatory negotiations with the California Department of Health Services to permit operation of the public water well.

Dewatering Well and Facilities Design, Riverside County, California: Mr. Hardcastle is the engineer-of-record supervising the design of two shallow groundwater dewatering wells, each with a pumping capacity of 1600 gpm, installed for the purpose of stabilizing soil conditions at a potable water purveyors facilities. The project entails design of the two wells, electrical supply systems, and 2800 linear feet of piping to connect the wells to the Rice-Thorne pipeline in Riverside County.

Water Pipeline, Maricopa County, Arizona: Mr. Hardcastle is the engineer-of-record for a project installing an alternative potable water supply to a trailer park located in west Maricopa County, Arizona. The water supply will be used to replace a water supply contaminated with perchlorate.

ENVIRONMENTAL ASSESSMENT

Geoenvironmental Services, John Wayne Airport, Orange County, California: Mr. Hardcastle is the principal-in-charge overseeing environmental assessment, investigation, and compliance services to the John Wayne Airport staff. Projects include obtaining site closure for a chlorinated solvent project from a former airport tenant's operation, conducting remedial activities at an underground storage

tank fuel farm to remove LNAPL and monitor groundwater quality, conducting assessment activities in conjunction with several fuel and solvent releases at airport and tenant facilities, and conducting storm water monitoring and reporting services.

Chemical Distribution Facility, Pacoima, California: Mr. Hardcastle was the project manager conducting the investigation and implementing interim removal actions (IRA) at an active chemical distribution facility. The IRA focused on remediation of soil affected by non-halogenated and halogenated solvents and recovery of LNAPL. The investigation focuses on groundwater characterization and identifying other upgradient and downgradient sources contributing to a regional problem.

Site Assessment, Holtville, CA: Mr. Hardcastle conducted Phase I and Phase II investigations at three geothermal power plants to assess potential remediation costs associated with facility closure. He then prepared and negotiated the closure plan with the local RWQCB and BLM.

Commercial Development, Riverside County: Mr. Hardcastle oversaw the fast-track investigation of a former clay-pipe manufacturing facility and then excavation and remediation of petroleum product-impacted soil using biopiles and in some cases offsite soil disposal. The activities were performed in close support with the site redevelopment into a commercial center and involved working with the earthwork contractors at the site, as well as close coordination with the regulatory authorities.

Liability Assessment, Huntington Park, California: Project manager performing study to identify regulatory concerns and potential environmental liabilities associated with closure of plating shop.

Hydrocarbon Contamination Investigation, Cerritos, CA: At a leaking UST site, Mr. Hardcastle conducted a soil and groundwater investigation in conjunction with an in situ treatability study to assess the feasibility of using biosparging to remediate soil contaminated with petroleum hydrocarbons and groundwater contaminated with benzene.

TREATMENT STUDIES/SYSTEMS

SR-261 Groundwater Treatment Facility, State of California, Department of Transportation, Sacramento, California. Mr. Hardcastle provided oversight consulting services related to a groundwater treatment facility GTF constructed by a toll road contractor. The GTF removes nitrogen from groundwater using a biological discharge prior to discharge of treated groundwater to the Upper Newport Bay watershed. Services included review of facility design including third party regulatory agency inspections, monitoring operations for regulatory compliance, developing punch-list to mitigate deficiencies in plant design, assisting with regulatory negotiations with the Irvine Ranch Water District, Orange County Sanitation Districts, and California Regional Water Quality Control Board, preparing short-term feasibility study report for temporary discharge to sanitary sewer to divert selenium mass from the Upper Newport Bay watershed, preparing long-term compliance plan for selenium discharge from the groundwater treatment facility, evaluated treatment technologies to remove selenium and selected technologies for treatability testing, and prepared cost estimates for implementation of selenium treatment and operation of the GTF.

Treatment System Design, Wholesale Facility, Santa Clara, CA: Mr. Hardcastle implemented remedial measures consisting of biologically active GAC units for treatment of MTBE and TBA in groundwater at a gasoline retail station. His activities include developing and review of design and startup of the treatment system.

Treatability Studies, Ventura County, California and Elko County, Nevada: As project manager, Mr. Hardcastle conducted treatability studies of soils to evaluate in situ oxygen enhanced bioremediation of hydrocarbon-impacted soil and groundwater at an asphalt plant located in Ventura County, and a gold mining operation in Elko County, Nevada.

Groundwater Study and Treatment System, Newbury Park, CA: As project manager, Mr. Hardcastle conducted a feasibility study to evaluate alternatives to treat groundwater affected with the chlorinated solvents PCE, TCE, and CFC-113. He then managed the design, permitting, and construction of the 20 gpm GAC treatment system.

MTBE Feasibility Study, Anaheim, CA: Mr. Hardcastle conducted a feasibility study to evaluate treatment alternatives to remove MTBE from groundwater. The project was conducted to assist a bottled water purveyor with contingency planning in the event MTBE was detected in the groundwater supply.

POU/POE Treatment System Evaluation, Douglas County, Nevada: Mr. Hardcastle conducted a survey of Point-of-Use/Point-of-Entry treatment systems to assist the County in evaluating alternatives to meet Surface Water Treatment Rule requirements at the Uppaway Water System in Lake Tahoe, Nevada. The survey included a technical evaluation of commercially available systems, evaluation of maintenance and monitoring requirements, and preliminary regulatory discussions with the Nevada State Division of Health.

Master Planning Study, Virginia City, Nevada: Mr. Hardcastle conducted a master water system planning study and preliminary water treatment system design project. The study included estimation of future water demands and evaluation of treatment alternatives to meet the Surface Water Treatment Rule requirements. Subsequently, he performed the preliminary treatment plant design for a 1 mgd, slow sand filtration facility and assisted the municipality in receiving project funding.

Water Treatment Pilot Study, Rio Vista, California: This project involved employing ozone oxidation, contact clarifications, and high-rate deep bed filtration for the 90 mgd Rio Vista Water Treatment Plant. The study included unit process sequencing to evaluate disinfection by-product formation, disinfection, and turbidity control to meet Surface Water Treatment Rule requirements. 2823

Water Treatment Plant Design, Virginia City, Nevada: Mr. Hardcastle was involved with a preliminary design of a 1 mgd slow sand filtration and hypochlorate disinfection water treatment plant to meet the Surface Water Treatment Rule.

Disinfection Pilot Study, Incline Village, CA. As project manager, Mr. Hardcastle conducted a water disinfection pilot study using ozone. The investigation included an evaluation of disinfection by-product formation and ozone transfer efficiencies using an ozone diffuser and ozone eduction systems.

DUE DILIGENCE/AUDITS

Due Diligence and Compliance Audits: Project manager conducting regulatory compliance audits at a variety of industrial facilities including an aluminum smelter in Montana; silver mine located in Nevada; two galvanized spun wire plants in California; lumber and wood products facilities in California; geothermal power and natural gas co-generation electrical plants in California, Utah, Nevada, and Arizona; printed circuit board manufacturer in Nevada; and a carpet adhesives facility in Industry, California. Typical audits include hazardous waste management, permit compliance, RCRA, Worker-Right-to-Know, CWA, CAA, NPDES compliance, and UST Management.

Due Diligence for a Capital Investment Firm: Project engineer conducting due diligence, pre-acquisition audits at a coal-fired power plant located in Trona, California; various airport fueling facilities located through-out the United States.; and seven geothermal power plant facilities located in Imperial County, California. Focus of audits was to identify potential future liabilities associated with compliance with environmental regulations and corrective actions.

Pre-Acquisition Audits Throughout California and Nevada: Project engineer conducting pre-acquisition audits for four building supply manufacturing and distribution facilities located in California and Nevada. The facilities included a paint formulation plant, specialty supply manufacturing facilities, specialty instrument facility, and a distribution facility. Focus of audits was to identify environmental compliance and corrective action liabilities.

Phase I Audit, Tijuana, Mexico: Performed Phase I audit as part of a property lease located in Tijuana, Mexico. Focus of audit was to identify current and historical property leases and potential liabilities, based on United States customs, associated with leasing the property for use as an international training facility.

Due Diligence, Nevada: Mr. Hardcastle managed an acquisition due diligence project for a financial institution consisting of 64 Phase I Assessments and 40 asbestos surveys in a 90-day period.

Regulatory Compliance Assistance, Minden, Nevada: Performed regulatory compliance audit, supplemented in-house staff, and provided regulatory guidance to major printed circuit board manufacture. Regulatory assistance included storm water management planning, hazardous waste management, and audits of their hazardous waste disposal facilities. .

MISCELLANEOUS

Environmental Management Systems, Cal Energy, China Lake, CA: As project manager, Mr. Hardcastle assisted with the formation of an environmental management system to comply with the State of California and federal hazardous waste, waste discharge, and other regulatory programs. He conducted annual compliance audits at each of their domestic facilities and prepared reports for submittal to the Corporate Board of Directors. Mr. Hardcastle provided these services for over five years to the client.

Hazardous Work Minimization Planning, Orange County, California: Prepared and certified an updated SB-14 Hazardous Waste Minimization Plan for major entertainment park.

Permitting Experience: Regulatory experience includes Safe Drinking Water Act, NPDES permitting, Air District Authority to Construct permitting, Tiered Permitting, SPCC Plans, and RCRA waste storage facility closure plans.

Air Permitting, Storey County, Nevada: Project manager for air emission permitting, emission modeling, and air monitoring and operating plan development for commercial bioremediation facility.

Resident Engineer, Fresno, California: Mr. Hardcastle was the resident engineer at a Superfund site. He conducted daily coordination and monitoring activities to assess contractor's conformance with project specifications and plans. The site was a former agricultural chemical formulation and distribution facility.

Geothermal Brine Pond Closure, Imperial County, California: Mr. Hardcastle was the project manager for closure of 14 brine ponds at a geothermal power generating facility. The project involved conducting a hydrogeologic assessment and modeling, evaluating remedial and closure alternatives, construction monitoring, and extensive regulatory liaison to attain pond closure.

Landfill Compliance, Reno, Nevada: RCRA Subtitle D landfill regulatory compliance assistance to landfill owner.

Facility Closures, Pacioma, CA: Project manager conducting cost analysis associated with closure of plumbing fixture foundry and potential long-term environmental issues for use by client in business management decisions.

PUBLICATIONS

"Chlorinated Solvent and DNAPL Remediation: An Overview of Physical, Chemical, and Biological Processes." C. Hardcastle, S.M. Henry, and S.D. Warner. Chlorinated Solvent and DNAPL Remediation, American Chemical Society Symposium Series 837, 2002.

"Cost, Quality and Risk Management: Contaminated Groundwater Treatment and Reuse for Potable Water Supply." B. Kent, N. Colby, and C. Hardcastle. Fourth USA/CIS Joint Conference on Environmental Hydrogeology and Hydrogeology-Hydrogeologic Issues for the 21st Century, San Francisco, California. November 7-10, 1999.

"Performance of the Padre® A3100 Unit to Control Vapor Emissions from a Soil Vapor Extraction System." C. Queiroz, B. Kent, and C. Hardcastle. Air & Waste Management Association's 92nd Annual Meeting & Exhibition, St. Louis, Missouri. June 20-24, 1999.

"Challenges of Perchlorate Treatment." C. Hardcastle. E-MAT, Long Beach, California. November 1998.

"Design Consideration for Optimizing Ozone Disinfection Using Educators to Transfer Ozone and Pipelines as the Contactor for Two Lake Tahoe Water Suppliers." R. Ryder, C. Thompson, and C. Hardcastle. 11th Ozone World Congress, 110A-Pan American Group, San Francisco, California. September 1993.

"Meeting the Surface Water Treatment Rule Using Ozone on a Lake Tahoe Water Study." C. Thompson, R. Ryder, C. Hardcastle, and D. St. John. 10th Ozone World Congress, International Ozone Association, Pasadena, California. March 10-13, 1992.

"Pilot Testing of Ozone with a High Rate Water Treatment Process." J.A. Drago, R.S. Chrobak, and C.H. Hardcastle. 8th Ozone World Congress, International Ozone Association, Shreveport, Louisiana. 1990 "Title of Paper."

Michelle L. Peterson, RG, LG

Project Manager / Geologist / Risk Assessor

Professional summary

Ms. Peterson has more than 19 years of environmental consulting experience that includes investigation and evaluation of sites potentially impacted by PCBs. She has designed and implemented sampling programs to evaluate PCBs in soil, groundwater, and sediment. She has also conducted risk assessments to evaluate the potential for PCBs to contribute to unacceptable risk for human and ecological receptors from exposures to soil, groundwater, surface water, sediment, fish tissue, and through consumption of human breast milk. Ms. Peterson is responsible for negotiating investigation and risk assessment approaches with regulating agencies, and performing or managing the work, including data review and interpretation, tabulation of results, and presenting verbal and written conclusions to the appropriate stakeholders.

Professional qualifications/registration(s)

Registered Geologist, OR No. G1656
Licensed Geologist, WA No. 655
Qualified Person per 18 AAC 78.995 (118), AK Department of Environmental Conservation

Education

M.S., Geology, Portland State University, OR, 1995
B.S., Geology, University of Wisconsin, Eau Claire, 1992

Risk Assessment Training

EPA's Unified Guidance: Statistical Analysis of Groundwater Data, 2011
Establishing Model Toxics Control Act (MTCA) Cleanup Levels Workshop, 2007
Principles of Toxicology and Risk Assessment, OR Graduate Institute, 2000

Memberships/Affiliations

Society of American Military Engineers
Women in Environment

Employment history

AMEC Environment & Infrastructure, Inc., Portland, OR, 1994 to present
Oregon Department of Geology & Mineral Industries, 1993
Portland State University, 1992 to 1994

Representative projects

Sundial Marine & Construction Repair Facility, Portland OR

Ms. Peterson developed and implemented a remedial investigation at this former shipyard facility that includes testing for PCBs in upland soil and groundwater, and in sediments of two adjacent water bodies. An initial screening level risk evaluation of PCBs, and other compounds of potential concern, was completed and submitted to the regulating agency for its review in fall 2013.

Former Herbicide/Pesticide Manufacturing Facility, Confidential Client, Portland OR

Ms. Peterson conducted or participated in three separate risk assessments for this project. The first risk assessment evaluated potential risks to human receptors from a wide variety of compounds, including PCBs, found in soil and groundwater in four separate exposure units and at the site as a whole. Complete exposure pathways included direct contact, ingestion, and inhalation for multiple receptors, including the infant of an occupational worker that is exposed to bioaccumulative site-

related compounds through consumption of breast milk. Exposure point concentrations were developed using ProUCL. A combination of standard exposure assumptions and site-specific exposure assumptions were used to estimate doses. Risk estimates were tabulated and discussed in a written report following the rules and guidance set forth by the Oregon Department of Environmental Quality (DEQ) and the negotiated process for completing the risk assessment. Risk conclusions identified potential risks from multiple compounds primarily to occupational receptors from direct contact with or ingestion of soil, and from direct contact with groundwater in an excavation. The report was submitted to the DEQ in 2012 and is under review.

The second risk assessment evaluated potential risks to human receptors from a wide variety of compounds, including PCBs, in sediment, surface water and fish tissue at a nearby surface water body. Complete exposure pathways included direct contact, ingestion, and consumption of fish tissue by trespassers. The maximum concentration was used as the exposure point concentration due to the small size of the data set. Site-specific exposure assumptions were used to estimate doses. The risks from dioxin-like PCB congeners were evaluated separately from those of the non-dioxin like PCBs to determine which mode(s) of action are contributing to potential risks. Estimated risks were tabulated and discussed in a written report following the rules and guidance set forth by DEQ and in accordance with the DEQ-approved work plan. Risk conclusions identified potential risks to trespassers primarily from dioxins/furans and PCBs in fish tissue. DEQ conditionally-approved the conclusions of the risk assessment in 2011.

The third risk assessment evaluated potential risks to aquatic ecological receptors at a nearby surface water body from a wide variety of compounds, including PCBs, in sediment, surface water, stormwater, pore water, and fish tissue. Multiple receptors were evaluated including threatened and endangered species (i.e. bald eagle) and their offspring (i.e. bird eggs). Standard but conservative screening level values were compared to maximum detected concentrations (again due to small data set size) to evaluate the potential for unacceptable risk. The risks from dioxin-like PCB congeners were evaluated separately from those of the non-dioxin like PCBs to determine which mode(s) of action are contributing to potential risks. Point-by-point comparisons for some media were also performed to evaluated exposures at specific locations throughout the water body. DEQ also required that method detection limits for some compounds be evaluated against risk-based screening level values and considered in the conclusions of the risk assessment. Risk conclusions identified PCBs, dioxins/furans, and organochlorine insecticides as the primary risk drivers. The results were tabulated and discussed in a written report that was provided to DEQ in 2011; tabulated results were revised to address DEQ comments and re-submitted in 2012 and are still under review.

Westwood Development Corporation Headquarters Facility, Portland, OR
Ms. Peterson conducted the site investigation and supported the risk screening of the detected constituents, which included evaluation of PCBs. The risk screening conclusions suggested there was risk to receptors from PAHs, lead and arsenic. Through the use of land and beneficial groundwater use information, Ms. Peterson completed a streamlined feasibility study (FS) that adequately demonstrated the ability of the existing pavement, landscaping, and building, to act as an effective cap for the constituents presenting risk to human health. DEQ approved closure of the site with existing features as a cap, in conjunction with annual inspection of the cap features and a deed restriction.

Donald A. Kubik, CIH, PG

Senior Scientist

Professional summary

Mr. Kubik has diverse experience in the environmental and industrial hygiene/health and safety fields. His background includes performing and managing numerous Phase I environmental site assessments (ESAs) for public and private organizations. Mr. Kubik also has extensive experience in conducting and managing most aspects of Phase II ESAs, including geophysical surveys; monitoring well design and installation; soil sampling; groundwater sampling; building materials sampling; and aquifer testing. Phase II ESAs usually result in the development and implementation of remedial plans, including building demolition and soil and groundwater remediation.

Mr. Kubik has also managed and performed industrial hygiene/health and safety-related projects including health and safety audits, indoor air quality monitoring, mold testing, health and safety plan preparation/implementation, health and safety training, respiratory protection programs, hearing protection programs, and construction site monitoring. In addition to client-related consulting services, Mr. Kubik has also managed, implemented, and designed corporate health and safety/risk management programs and currently administers the Corporate Health and Safety Program, Injury and Illness Prevention Program, and Hazard Communication Program for AMEC.

Professional qualifications/registration(s)

Professional Geologist, CA No. 7148, 2001
Certified Industrial Hygienist, CA No. CP 8721, 2003
Water Treatment Operator, Grade 2, CA No. 21973, 1997

Education

B.S., Geology, University of California, Davis, 1986
Graduate Work, Environmental Management, University of San Francisco, San Francisco, CA, 1993

Memberships/Affiliations

American Society of Safety Engineers

Employment history

AMEC Environment & Infrastructure, Inc. (formerly Geomatrix Consultants, Inc.), Oakland, CA, Senior Scientist, 2002 to present
Kleinfelder, Inc., Pleasanton, CA, Phase I & II Group Leader/Health & Safety Officer, 2000 to 2002
Kubik Associates, Brentwood, CA, Principal, 1993 to present
National Training Institute, Inc., Stockton, CA, Instructor, 1996 to 1997
Growth Environmental Services, Inc., Suisun, CA, Project Manager, 1994 to 1996
SCA Environmental, Inc., Berkeley, CA, Senior Project Manager, 1993
International Technology Corp., Martinez, CA, Program Manager/Hydrogeologist, 1987 to 1992
U.S. Geological Survey, Water Resources Division, Trenton, NJ, Hydrologic Technician, 1985

Representative projects

Health and Safety

Former NAS Moffett Field, Hangar One HAZWOPER Demolition, Mountain View, CA
Mr. Kubik provided corporate health, safety, and environment oversight for the removal of the Hangar One siding containing PCB's, lead and asbestos. Hazards controlled at this HAZWOPER site included Level C protection, working at heights, chemical exposure, and structure demolition.

Confidential Client Site Characterization, Demolition and Remediation, Southern California
Mr. Kubik provided health, safety, and environment oversight for the above and below grade demolition and remediation of a former manufacturing facility in southern California. Chemical hazards included PCBs, VOCs, Stoddard solvents and metals.

City of Riverside Remedial Investigation (RI) and Potential Responsible party (PRP), Riverside CA
Mr. Kubik provided health, safety and environmental services for the remedial investigation at a PCBs impacted City-owned a City-owned parcel called the Agricultural Park.

Leona Quarry Storm Water Management, The De Silva Group, Oakland, CA
Performed health and safety support for storm water management activities for a road-base materials quarry located in an urbanized section of Oakland. AMEC was hired after the failure of storm water best management practices (BMPs) at the facility resulted in the flooding of California Highway 580 and in sediment discharges to the adjacent waterway. AMEC developed a revised storm water pollution prevention plan (SWPPP), advised in the implementation of extensive BMPs, provided routine storm water sampling required by the California Industrial Facilities National Pollutant Discharge Elimination System (NPDES) General Permit; and provided regulatory interaction services with the Regional Water Quality Control Board (RWQCB) and City of Oakland staff. Since the site collected upstream urban runoff from an uphill subdivision and because of the past history of BMP failure, BMPs were closely monitored during the seven years that AMEC consulted on the project.

Storm Water Quality Monitoring and Reporting Services, Central Valley, CA
Performed health and safety support for this project, which involved characterization of storm water runoff quality at Lake Tahoe using alternate deicing agent salts.

Statewide Storm Water Monitoring Program, Caltrans, California
Performed health and safety support for storm water sampling programs along roadways and highways in central and southern California. Support included preparation and review of health and safety plans as well as inspection of work sites and procedures.

Storm Water General Permit Compliance, Various Locations, CA
Performed health and safety support for ongoing NPDES compliance for 11 monitoring groups throughout California, including developing compliance document templates and guidance materials, reviewing NPDES compliance documents and reports, developing and providing NPDES training seminars throughout California, and providing on-call NPDES technical assistance to hundreds of facilities.

Health and Safety Program Management, City of Oakland, CA
Managed on-site health and safety program for a major soil remediation project in a residential area where soil was contaminated by arsenic and lead. The project included personal monitoring, area monitoring, respiratory program implementation (Level C), and site auditing. The project also included implementation of engineering controls to prevent any contaminated materials from impacting the neighboring residences and school.

Health and Safety Construction Oversight, Pacific Bell, Oakland, CA
Managed the oversight of health and safety activities of a construction project to remove tanks from the basement of a high-rise building. The work included confined space protocols as well as procedures for dealing with contaminated soil within the confined space.

Environmental, Health and Safety Regulatory Compliance Consultation, Various Clients, California
Provided consultation in areas of environmental and health and safety regulatory compliance for various industrial, commercial, and public entities across the state.

San Leandro High School PEA, San Leandro, CA
Prior Firm Experience. Managed a PEA for San Mateo High School and adjacent acquisition property, which included preparation of a work plan, site-specific health and safety plan, and quality assurance/quality control plan; implementation of a work plan; and preparation of a final report, including a human health hazard evaluation.

San Mateo Unified School District, San Mateo County, CA
Prior Firm Experience. Managed the School Evaluation Process for proposed upgrades to Aragon High School Burlingame High School, Capuchino High School, Hillsdale High School, Mills High School, and San Mateo High School. The process included the initial Phase I ESA, the subsequent investigations for hydrocarbons and lead per the guidelines of the emerging Department of Toxic Substances Control (DTSC) requirements and the human health hazard evaluations.

Teaching

Health and Safety Training Program Instructor, Various Clients, California
Prepared and presented health and safety training programs for a wide spectrum of businesses throughout California. The training programs have included 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER), 8-hour HAZWOPER supervisor training, 8-hour HAZWOPER refresher, hearing conservation, excavation, and other topics.

Environmental Program Course Instructor, Northern California
As a California State-certified instructor, taught college-level courses of an environmental technology program at several campuses of a northern California vocational school. The program was an intensive 11-week course to train operators in the fields of water treatment, wastewater treatment, industrial waste treatment, water collection systems, and wastewater water collection systems. Also taught the 40-hour HAZWOPER.

Other Related Projects

Remedial Assessment/Treatability Study, Sacramento, CA
Performed health & Safety support for design and implementation of a focused, detailed characterization of hydrogeologic and chemical conditions for designing an in situ groundwater treatment system.

Hazardous Material Audit for Major Corporate Facilities, San Francisco, CA
Performed a comprehensive review of hazardous material storage, usage, and documentation at a multi-site facility (manufacturing, research and development, and office space). Audit results included preparation of a report and disclosure documents, as well as negotiating with city officials.

Emergency Response, Nevada County Health Department, Nevada County, CA
Managed investigation related to the discovery of an illicit drug laboratory in the Sierra Nevada mountains. The project included pre-entry assessment and atmosphere testing, building material testing, and soil testing for various solvents. Also worked with the local health agency to develop a plan for cleanup of the property.

Preliminary Endangerment Assessment (PEA)
Managed a PEA for a school site, which included preparation of a work plan, site-specific health and safety plan, and quality assurance/quality control plan; implementation of a work plan; and preparation of a final report, including a human health hazard evaluation.

Underground Storage Tank (UST) Removals, Various Clients, Western United States
Oversaw removal of USTs at various industrial and commercial sites. Responsibilities included coordination with contractor and regulatory agencies, sample collection, analytical data interpretation, field oversight, soil disposal coordination, and reporting.

Environmental Site Assessments, Various Clients, Western United States
Managed hundreds of environmental site assessments for real estate transactions. Activities conducted included review of historical aerial photographs, maps, and environmental impact statements; reconnaissance of sites and surrounding areas to identify potential environmental concerns; and review of regulatory agency files. Also compiled data collected during the site assessment and prepared reports documenting the work, assessing risks, and presenting recommendations.

Publications and presentations

"The Evolving Phase I Environmental Site Assessment." D. Kubik and N. Siler. Presented at Kleinfelder, Inc. 15th Annual Technical Training Seminar, March 3, 2001.

Phase I Environmental Site Assessment Handbook, D. Kubik. Stadler Burgess Publishing. 2000.

"Waste Minimization in Underground Storage Tank Projects." D. Kubik. Presented at the State of California Water Resources Control Board 1994 Underground Storage Tank Conference, San Diego, CA. March 22-24, 1994.

"Use of the Powercore Soil Sampling Device in UST Investigations." *Proceedings of the NGWA/API Conference on Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection, and Restoration, Houston, TX.* 1992.

"Cone Penetrometer Testing and Hydropunch II Applications for Environmental Investigations." D. Kubik, B. Manchon and C. Bean. *Proceedings of the IT Corporation Technology Exchange Symposium, Phoenix, AZ,* v. II. April 1991.

Ann Bernhardt, CMQ/OE

Environmental Scientist

Professional summary

Ms. Bernhardt is a Quality Control Program Manager with 22 years of experience. Her efforts focus on large-scale environmental programs with an emphasis in information management and data quality. Ms. Bernhardt prepares Quality Assurance Project Plans and analytical Statements of Work; selects analytical methodology; evaluates laboratory proposals; establishes QA/QC parameters; and coordinates deliverables and turnaround times. Ms. Bernhardt provides auditing services to assess analytical laboratory procedures, documentation, defensibility of data packages and electronic deliverables. Ms. Bernhardt has supported multiple PCB projects in sampling plan development, data use and validation, laboratory coordination, data interpretation, and overall quality role for AMEC deliverables. As a former laboratory analytical chemist, she is very familiar with U.S. Environmental Protection Agency (USEPA) analytical protocols, data assessments, laboratory procedures, and laboratory quality assurance.

Education

B.S., Environmental Science, University of Wisconsin, Madison, 1991

Representative projects

Chemistry Support and Quality Systems Services

Moffett Field Hangar One, PCB Removal Action
AMEC completed a removal action of PCB and lead containing roofing materials on Hangar One at Moffett Field in California. After the removal of the roofing material, the beams were coated with epoxy material, and all surfaces cleaned to demonstrate that the removal action was complete. This large-scale removal action required ongoing worker safety air monitoring and ambient air monitoring to control airborne PCB and lead particulates. Soil sampling was also performed before and after the removal action. Ms. Bernhardt assisted in the preparation of the sampling and analysis plan following TSCA requirements for evaluation of lead and PCBs in soil and remaining surfaces of the building structure. Sampling was also conducted in drainage areas around the perimeter of the building with all storm drains flushed and contents containing hazardous levels were removed from the property. AMEC's work on this high profile project was rated "OUTSTANDING" by the Navy.

Former Prescolite Facility, PCB Data Evaluation and Validation
AMEC completed a removal action of PCB contaminated soils. Ms. Bernhardt provided data validation and data management support to over 1000 samples collected for PCB Analysis. AMEC used automated data validation tools to facilitate the data review process, and conducted a partial manual review of the data to assess data quality and determine data usability.

Hydro One Networks, Inc.,Polychlorinated Biphenyl Program, Laboratory Audit
AMEC provided expert, third party review and audit of the polychlorinated biphenyl (PCB) analytical methodologies and statements of measurement uncertainty associated with the analysis of PCBs. AMEC reviewed quality system documentation, verified measurement uncertainty calculations, and verified methods used in analysis. The purpose of the work was to evaluate uncertainty in the reported data versus compliance requirements. Ms. Bernhardt was the Project Manager and provided led the review of quality systems.

APPENDIX C

Health, Security, Safety, and Environment "HSSE" Pre-qualifications and Statistics

Requesting Company:	
Health, Security, Safety, and Environmental "HSSE" Pre-qualification	
Legal Company Name: AMEC Environment & Infrastructure, Inc.	**Industry Classification Code(s):**
Company Address: 121 Innovation Dr., Ste 200	**City:** Irvine
State/Province: CA	**Zip/Postal Code:** 92617
Country: US	
HSSE Contact Person: Don Kubik	**Phone No(s):** 949-642-0245 **Fax Number:** 949-642-4474
Internet Access? (Y/N): Yes	**Company website:** www.amec.com
If Yes, e-mail address:	
Please list any previous Company names used in the last 3 years: AMEC Geomatrix, MACTEC	

Work References

1) If your company has performed work for the Santa Monica-Malibu School District in the past:

Approximate completion date of work last performed: _____

Business Unit and Location where work was performed: _____

Requesting Company Representative who was responsible for the project: _____

please see information on next page.

2) If your company has never performed work for the District, please provide two references who may be contacted to provide information regarding past performance.

Company_____ Contact Person_____ Phone_____

Name of Project and Value: _____

Company_____ Contact Person_____ Phone _____

Name of Project and Value: _____

Geotechnical Investigation and Inspection Services

Proposed Science and Technology Building
Santa Monica High School
601 Pico Boulevard
Santa Monica, California

Mr. David Freedman
Senior Project Manager
Parsons – SMMUSD
12100 Wilshire Boulevard, Suite 1950
Los Angeles, California 90025

Phone: 310-399-5865
Email: dfreedman@smmusd.org

Investigation
Start Date: 8/20/2008
Complete Date 12/18/2008

Total Fee: $9,528 (investigation)
$180,000 (inspection)
Project Cost: not provided

The Santa Monica-Malibu Unified School District (SMMUSD) hired AMEC to perform a geotechnical investigation for a new science and technology building to be constructed on the campus of Santa Monica High School. The project consists of the construction of a science and technology building, a temporary softball field, and a temporary parking lot.

AMEC already had prior work on this campus going back to several decades, and was able to leverage its prior experience at the site to help reduce the cost of the field investigation program.

AMEC's services consisted of:

- Field explorations
- Geologic-seismic hazards evaluation
- Ground motion study
- Infilitration testing
- Recommendations for shoring, floor slab support, excavation and shoring, retaining walls, design of asphalt concrete and portland cement concrete paving, and earthwork and grading

AMEC is currently providing geotechnical inspection services for the site.

CLIENT BENEFITS: Because SMMUSD had a limited amount of time in which to evaluate surface conditions. AMEC mobilized staff and subcontractors to expedite field operations and was able to provide our geotechnical recommendations in less time than originally proposed.

HSSE Statistics

Provide the following HSSE statistics for all your company's operations. Refer to the HSSE statistic instructions on page 3.

(A) Reporting year	2013	2012	2011	2010
(B) Average Number of Employees	2106	2016	1991	1866
(C) Total annual man hours worked for this reporting entity (for all customers, not just Requesting Company)	2959976	3955080	4009826	3460226
(D) Number of Recordable Cases	7	6	15	16
(E) Incident Rate of Recordable Cases		0.30	0.75	0.92
(F) Number of Days-Away-From-Work Cases	1	1	0	0
(G) Incident Rate of Days-Away-From-Work Cases		0.05	0	0
(H) Number of Days Away from work	15	34	0	0
(I) Severity Rate		1.72	0	0
(J) Number of Fatalities	0	0	0	0
(K) Vehicle Accident Rate		(*)	(*)	(*)
(L) Total number of Vehicle Accidents	(*)	(*)	(*)	(*)
(M) Total miles driven		(*)	(*)	(*)
(N) Worker's Compensation Experience Modification Rate	0.48	0.53	0.55	0.57

Please provide a copy of your company's OSHA 300 logs. Please provide a letter from your insurance carrier indicating your worker's compensation experience modification rate.

Comments and/or clarifications on above data (if any):

(*) AMEC only recently started to collect company-wide vehicle information so these data are not currently available.

HSSE STATISTICS INSTRUCTIONS

(A) YEAR: As shown.

(B) Average # of Employees: List the average # of employees who worked during the year. An employee shall be defined as any person engaged in activities for an employer from whom direct payment for services is received. Include working owners and officers.

(C) Employee Hours: List the total number of hours worked during the year by all employees, including those in operating, production, maintenance, transportation, clerical, administrative, sales and all other activities.

(D) Number of Recordable Cases: List the total number of Recordable cases that occurred in that year. Recordable Cases include: Fatalities, Days Away From Work Cases, Restricted Work Cases and Medical Treatment cases as defined by OSHA Part 1904 Recording and Reporting Occupational Injuries and Illnesses: http://www.osha-slc.gov/recordkeeping/1904_record_report.pdf

(E) Incidence Rate of Recordable Cases: $\frac{\textit{Number of Recordable Cases X 200,000}}{\textit{Employee Hours}}$

(F) Number of Days-Away-From-Work Cases: List the total number of Days-Away-From-Work cases that occurred during the year. A Days-Away-From-Work case will be defined as any Recordable Case that results in death or lost workdays with days away from work.
For the purpose of this questionnaire, Recordable cases that result in days with restricted activity should not be added in this column. Only Recordable cases that result in one or more days away from work should be counted.

(G) Incidence rate of Days-Away-From-Work cases: $\frac{\textit{No. of Days-Away-From-Work cases X 200,000}}{\textit{Employee hours}}$

(H) Number of Days Away from work:
List the total number of Days-Away-From-Work experienced by all employees during the year. For the purposes of this questionnaire, lost workdays with restricted activity should not be added in this column. Only Recordable cases that result in one or more days away from work should be counted.

(I) Severity Rate $\frac{\textit{Total number of Days Away from work X 200,000}}{\textit{Employee Hours}}$

(J) Number of Fatalities: List the total number of fatalities that result from occupational injuries or illnesses. Deaths that occur in the workplace but are not the result of occupational injuries or illness should not be included.

(K) Vehicle Accident Rate: $\frac{\textit{Total Vehicle Accidents X 1,000,000}}{\textit{Total Miles Driven}}$

(L) Total number of vehicle accidents: List the total number of vehicles accidents that occurred during the year for all vehicles operated by your employees. A vehicle accident is defined as an accident involving a motor vehicle resulting in injury, or loss/damage, or harm to the environment, irrespective of whether the accident was preventable or non-preventable. Excludes circumstances where: 1) vehicle was legally parked, 2) travel is to or from the driver's normal place of work and home (i.e. commuting), 3) Minor wear and tear, 4) vandalism or theft.

(M) Total miles driven: List total miles driven for all vehicles operated by your employees.

(N) Worker's Compensation Experience Modification Rates: Please provide a letter from your insurance carrier.

Regulatory Compliance

1) **Has your company received any HSSE related notice of violations ("NOVs"), or citations within the past 3 years?** *(do not include contested citations later dismissed)* Yes ☐ No ☒

If yes, please provide the following information:

Number of citations or NOVs: _____

Date(s) of above citations or NOVs: _____

Agency issuing citation or NOVs: _____

Nature of citations or NOVs: _____

Have these citations or NOVs been resolved? _____

Comments and/or clarifications on above data (if any): _____

2)	Does your company have a program for determining, which HSSE regulations apply to your company's work activities?	Yes ☒	No ☐
3)	Does your company have a procedure for identifying people who must know about or be trained regarding HSSE regulations?	Yes ☒	No ☐
4)	Does your company have a process for managing subcontractor HSSE compliance with regulations?	Yes ☒	No ☐

HSSE Programs

1)	Has your company developed and implemented a formal HSSE Program? Please provide a PDF electronic copy of the program.	Yes ☒	No ☐
2)	Does your company have a clearly written safety policy endorsed by upper management?	Yes ☒	No ☐
3)	Does your company have a formalized observation or other type of behavioral safety program? If yes, name of program First Step	Yes ☒	No ☐
4)	Does your company have a written procedure in place for communicating and assuring that all personnel and subcontractors understand their obligations to stop work that is unsafe?	Yes ☒	No ☐
5)	Does your company develop site specific HSSE plans for projects?	Yes ☒	No ☐
6)	Does your company have scheduled, documented employee safety meetings?	Yes ☒	No ☐
7)	Does your company's management actively communicate HSSE expectations, monitor HSSE performance, and develop plans for continuous improvement?	Yes ☒	No ☐
8)	Does your company hold on-site (tailgate/toolbox/pre-tour) safety meetings?	Yes ☒	No ☐
9)	Does your company perform detailed JSA's?	Yes ☒	No ☐
10)	Does your company have a written incident investigation system in place to investigate and document incidents, injuries, spills, and near misses?	Yes ☒	No ☐
11)	Does your company have a case management program?	Yes ☒	No ☐
12)	Does your company verify that subcontractors meet or exceed your HSSE and training requirements?	Yes ☒	No ☐

13)	Does your company have an Emergency Response Plan to address an emergency event?	Yes ☒	No ☐
14)	Does your company have a process to effectively manage preventive maintenance for equipment?	Yes ☒	No ☐
15)	Does your company conduct and document workplace and equipment inspections?	Yes ☒	No ☐
16)	Does your company have a written environmental program with a clearly written environmental policy endorsed by upper management?	Yes ☒	No ☐
17)	Does your environmental program include written procedures and assigned responsibilities to control:		
	Environmental Incident Reporting?	Yes ☒	No ☐
	Work related Environmental Impacts?	Yes ☒	No ☐
	Spill Prevention?	Yes ☒	No ☐
	Handling & Waste Disposal?	Yes ☒	No ☐
18)	Does your company have a HSSE records retention program?	Yes ☒	No ☐
19)	Does your company have a management of change process?	Yes ☒	No ☐
20)	Does your company have a documented New Employee Orientation?	Yes ☒	No ☐
21)	How does your company overcome inherent challenges to HSSE protection with respect to language barriers? AMEC prepares documents in the languages need.		

22)	What percentage of your work force falls under the following criteria for experience within your specific industry? Less than 6 months _____% 6 months to 1 year _____% 1 year to 5 years _____% More than 5 years _____%		
23)	Does your company provide a (behind the wheel driving the vehicle) driving instruction course? Only as required by clients.	Yes ☐	No ☒
24)	Does your company have a written fitness-for-duty program, which includes assessment of the physical capabilities of personnel to perform specific tasks?	Yes ☒	No ☐

HSSE Training

Please respond to **ALL** items with "Yes, No

Do not leave any items unanswered. **(Estimated Percentage of Employees should reflect the percentage of employees who will perform services for Remediation Management and are required by your company to have the training -- not the percentage of the total number of employees in your organization.):**

1) Does your company provide HSSE Training — Yes ☒ No ☐

Safety and Environmental Programs and Training	Type of instruction (School-certified, on-site instructor, safety meeting, video, on the job, etc.)	Estimated Percentage of Employees Receiving Training	Frequency of Training for Individual Employees (I-Initial, A-Annual, B-bi-annual, P-periodic)	Individual Employee Training Documented Yes / No
Defensive Driving/Vehicle safety	online/school certified	80	I, P	Yes
Hazard Recognition Training	on site instructor	80	I, A	Yes
Drug Awareness	online	100	I	Yes
Emergency Response	online instructor	80	A	Yes
Fire Extinguisher Training	online instructor	90	A, B	Yes
First Aid/CPR	online instructor	80	A, B	Yes
Hazard Communication (Employee Right to Know)	online instructor	100	I, A	Yes
New Employee Orientation	online instructor	100	I	Yes
Personal Protective Equipment	online instructor	100	I, A	Yes
Incident Reporting and Investigation	online instructor	90	P	Yes

2) Does your company maintain documentation that includes all HSSE regulatory required training and other HSSE training required by your company? Yes ☒ No ☐

3) Does your company maintain a training matrix that defines who will receive specific training courses and the intervals at which re-training is required? Yes ☒ No ☐

4) Does your company have a process to identify, which personnel are not current in their training? Yes ☒ No ☐

5) Does your company have a written plan for training personnel and subcontractors in required project specific requirements prior to commencing work on the project? Yes ☒ No ☐

Drug and Alcohol Program

1) Does your company have a written policy statement regarding drug/alcohol screening or testing of your employees? If, so, please provide a PDF electronic copy of the policy statement.

Yes ☒ No ☐

2) Does your company's drug/alcohol testing program conform to DOT requirements? If Yes, which DOT regulation is your testing program designed to satisfy?

Yes ☒ No ☐

Federal Aviation Administration ____

Federal Railroad Administration ____

Federal Highway Administration ____

United States Coast Guard X

Research and Special Projects Administration/Pipeline ____

3) Check the circumstances in which your company's employees may be subject to drug/alcohol screening.

Employment (pre-hire) ☒ Probable Cause ☒ Periodic ☒

Random ☒ Post Accident ☒ Other ☐

4) Check the frequency of random drug testing that is performed of employees per year.

None ☐ 10% ☒ 25% ☐ 50% ☐ 100% ☐ Other: ☐

5) Circle the frequency of random alcohol testing that is performed of employees per year.

None ☐ (10% ☒) 25% ☐ 50% ☐ 100% ☐ Other: ☐

6) Does your company conduct medical physicals for:

Pre-employment ☒ Pulmonary Function ☒ Respiratory Protection ☒

V

CERTIFICATION OF DATA
BY CONTRACTOR MANAGEMENT

The questionnaire was completed by: Donald A Kubik Jr. PG, CIH and the facts as stated are true and correct.
(please print)

Position with Company Health, Safety, Environment Manager

Phone # 5103686433

Signature: _____ Date: 12/20/13

602139071v1

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2010

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name: AMEC Earth & Environmental, Inc.

City: Summary Log State: US

Identify the person				Describe the case		Classify the case											
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
						Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
AZ									2			2					
CA									2			2					
KY									1			1					
PA									1			1					
TX							1			14	174	1					
UT							1	1		4	120	2					
WA									1			1					
					Page totals	*0*	*2*	*1*	*7*	*18*	*294*	*10*	*0*	*0*	*0*	*0*	*0*

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Injury | Skin Disorder | Respiratory Condition | Poisoning | Hearing Loss | All other illnesses

(1) (2) (3) (4) (5) (6)

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2010

U.S. Department of Labor
Occupational Safety and Health Administration
Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	2	1	7
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
18	294
(K)	(L)

Injury and Illness Types

Total number of...	(M)		(M)
(1) Injury	10	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Establishment information

Your establishment name AMEC Earth & Environmental, Inc.

Street 11810 North Creek Parkway North

City Bothell State WA Zip 98011

Industry description (e.g., Manufacture of motor truck trailers)
Environmental Engineering Consultants

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
8 7 1 1

OR North American Industrial Classification (NAICS), if known (e.g., 336212)
___ ___ ___ ___ ___ ___

Employment information

Annual average number of employees 2079

Total hours worked by all employees last year 3,788,811

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

Director, Health & Safety
Title

610-828-8100
Phone

January 13, 2011
Date

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

OSHA's Form 300A (Rev. 01/2004)

Summary of Work-Related Injuries and Illnesses

Year 2012

U.S. Department of Labor
Occupational Safety and Health Administration
Form approved OMB no. 1218-0176

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	3	4	8
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
190	256
(K)	(L)

Injury and Illness Types

Total number of... (M)			
(1) Injury	15	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Establishment information

Your establishment name AMEC Environment & Infrastructure

Street 1105 Lakewood Parkway, Suite 300

City Alpharetta State GA Zip 30009

Industry description (e.g., Manufacture of motor truck trailers)
Environmental Engineering Consultants

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
8 7 1 1

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

Employment information

Annual average number of employees 4043

Total hours worked by all employees last year 7,105,822

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

VP, Health & Safety
Title

610-828-8100
Phone

January 18, 2013
Date

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2012

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name: AMEC Environment & Infrastructure, Inc.

City: Summary Log - 2012 State: US

Identify the person			Describe the case			Classify the case												
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
						Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
WA-1		Senior Geologist	1-31-12	Project Field Site	Employee slipped off a ladder while entering an excavation, sustaining pulled muscles in back.		1			6	12	1					
NV-1		Materials Technician	3-12-12	Project Field Site	Left shoulder strain caused by overexertion.				1			1					
AZ-1		Materials Technician	4-4-12	Laboratory	Right knee strain, twisted while walking on uneven terrain.				1			1					
FL-1		Engineer Technician	4-10-12	Laboratory	Laceration to hand required stitches, cut by box cutter.				1			1					
CA-1		Staff Engineer	4-17-12	Office Parking lot	Employee slipped and fell from bed of truck, fractured bone in right hand.			1			82	1					
FL-2		Senior Driller	4-19-12	Project Field Site	Employee struck in both knees by pipe wrench connected to drill. Stitches to left knee. Hematoma to right knee.		1			4	75	1					
NM-1		Materials Technician	5-21-12	Office Parking lot	Back strain from lifting an air meter pot. Restricted Duty.			1			14	1					
NC-1		Sr. Maintenance Tech	6-9-12	Project site	Employee struck head on ventilation system. Mild concussion. Prescription Medication				1			1					
CO-1		Engineer	6-18-12	Project Site	Eye irritation from bug repellant. Prescription medication.				1			1					
AZ-2		Materials Technician	7-7-12	Project site	Employee slipped down slope, straining left hand. Restricted duty.			1			60	1					
SC-1		Environmental Technician	7-30-12	Project site	Employee stung by a bee. Reaction to sting required prescription medication.				1			1					
GA-1		Engineering Technician	9-6-12	Project site	Employee strained back while / after bending to clean equipment.			1			12	1					
FL-3		Sr. Env Tech	9-12-12	Project site	Employee dislocated knee. Placed off work.		1			180	1	1					
NM-2		Materials Technician	10-4-12	Laboratory	Employee strained shoulder while pulling a soil sample bag. Prescription Medication required.				1			1					
GA-2		Environmental Technician	10-10-12	Project Field Site	Employee sustained a sting to the right thumb from a stingray. Prescription medication required.				1			1					
					Page totals	*0*	*3*	*4*	*8*	*190*	*256*	*15*	*0*	*0*	*0*	*0*	*0*

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Injury | Skin Disorder | Respiratory Condition | Poisoning | Hearing Loss | All other illnesses

(1) (2) (3) (4) (5) (6)

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

OSHA's Form 300 (Rev. 01/2004)

Log of Work-Related Injuries and Illnesses

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2011

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name: AMEC Environment & Infrastructure, Inc.

City: Summary Log - 2011 State: US

Identify the person			Describe the case			Classify the case											
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	CHECK ONLY ONE box for each case based on the most serious outcome for that case:				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:					
						Death	Days away from work	Remained at work		Away From Work (days)	On job transfer or restriction (days)	(M) Injury	Skin Disorder	Respiratory Condition	Poisoning	Hearing Loss	All other illnesses
								Job transfer or restriction	Other record-able cases								
						(G)	(H)	(I)	(J)	(K)	(L)	(1)	(2)	(3)	(4)	(5)	(6)
CA-1		Sr. Field Technician	1-4-11	Work Trailer on project site	EE stepped down from trailer, stepping on a hose, rolling EE's ankle causing sprain.				1			1					
IN		Environmental Scientist	4-4-11	Water Sampling project site	EE was exposed to poison ivy. Reaction to exposure required medical attention.				1			1					
ME		Principal Engineer	5-3-11	Town Hall Meeting	EE fell down small flight of stairs, breaking elbow.				1			1					
KY-1		Archaeology Technician	6-6-11	Field project site	EE was exposed to poison ivy. Reaction to exposure required medical attention.				1			1					
KY-2		Sr. Environmental Technician	6-23-11	Field project site	EE was collecting roof shingle samples and was stung by a wasp while on the ladder. Reaction to sting required medical attention.				1			1					
AZ-1		Radiography Tech Helper	6-27-11	Motor vehicle	EE had a tire blow on truck causing a collision with guardrail, injuring shoulder and back.			1			15	1					
TX-1		Materials Technician	6-30-11	Office Lab	EE's left finger caught between hammer and mode while using proctor hammer.				1			1					
NM		QA Consultant	7-11-11	Motor vehicle	EE involved in two car accident causing fractures to right foot.		1			5		1					
FL-1		Sr. Engineering Technician	7-25-11	Field project site	EE slipped down a slight slope of about three feet, and fell to the ground landing with his front torso on some 2x4's. This caused a rib fracture.			1			7	1					
FL-2		Survey Party Chief	8-3-11	Field project site	While cutting brush on site a twig struck EE in the ear drum resulting in medical treatment.				1			1					
NC-1		Senior Geologist	8-10-11	Motor vehicle	EE was involved in a work related auto accident. Ongoing pain and soreness required medical treatment.				1			1					
TX-2		Lab Supervisor	8-16-11	Office Lab	EE caught thumb in proctor hammer resulting in laceration requiring sutures.			1			9	1					
KY-3		Technician	8-19-11	Field project site	EE exposure to poison ivy resulted in allergic reaction to medication requiring lost-time.		1			109	60	1					
NC-2		Lab Technician	9-29-11	Office Lab	EE caught thumb in proctor hammer resulting in laceration requiring sutures.				1			1					
NJ		Staff Scientist	10-17-11	Field project site	EE strained knee while stepping down an embankment requiring surgery and physical therapy treatment.			1			30	1					
WA		CADD Operator	10-17-11	Field project site	EE slipped and fell on same level, injuring shoulder while bracing fall. Physical Therapy required.				1			1					
AZ-2		Lab Technician	11-11-11	Office Lab	Crushing injury to right index finger from a loaded wheel testing machine.				1			1					
CA-1		Materials Technician	12-19-11	Los Angeles, CA	EE right middle finger smashed under a 10 lb manual hammer resulting in fracture.			1			14	1					
					Page totals	*0*	*2*	*5*	*11*	*114*	*135*	*18*	*0*	*0*	*0*	*0*	*0*

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Injury | Skin Disorder | Respiratory Condition | Poisoning | Hearing Loss | All other illnesses

(1) (2) (3) (4) (5) (6)

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OSHA's Form 300A (Rev. 01/2004)
Summary of Work-Related Injuries and Illnesses

Year 2011

U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

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Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
0	2	5	11
(G)	(H)	(I)	(J)

Number of Days

Total number of days away from work	Total number of days of job transfer or restriction
114	135
(K)	(L)

Injury and Illness Types

Total number of...	(M)		
(1) Injury	18	(4) Poisoning	0
(2) Skin Disorder	0	(5) Hearing Loss	0
(3) Respiratory Condition	0	(6) All Other Illnesses	0

Establishment information

Your establishment name AMEC Environment & Infrastructure

Street 1105 Lakewood Parkway, Suite 300

City Alpharetta State GA Zip 30009

Industry description (e.g., Manufacture of motor truck trailers)
Environmental Engineering Consultants

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
8 7 1 1

OR North American Industrial Classification (NAICS), if known (e.g., 336212)

Employment information

Annual average number of employees 4469

Total hours worked by all employees last year 5,879,701

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Company executive

VP, Health & Safety
Title

610-828-8100
Phone

January 9, 2012
Date

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

AON

April 30, 2013

Gabe Sandholm
AMEC Environment & Infrastructure, Inc.
800 Marquette Ave, Suite 1200
Minneapolis, MN 55402

RE: NCCI Workers Compensation Experience Modification Factor
Workers Compensation Policy #: WC3504866-12

Please find below the current and historic NCCI WC Experience Modification Factors for AMEC:

Policy Period	Factor
5/1/13 - 5/1/14	.48
5/1/12 - 5/1/13	.53
5/1/11 - 5/1/12	.55
5/1/10 - 5/1/11	.57

Please feel free to contact me with any questions.

Sincerely,

Matthew Selander
Account Specialist

Aon Risk Solutions | Construction Services Group
44 Whippany Road, Suite 220 | Morristown, NJ 07960
www.aon.com

AMEC ENVIRONMENT & INFRASTRUCTURE AMERICAS

INTEGRATED HEALTH, SAFETY AND ENVIRONMENT PROGRAM MANUAL

SCOPE OF APPLICATION

REGION:	**AMERICAS**	DIVISION:	**AMEC ENVIRONMENT & INFRASTRUCTURE AMERICAS**
BUSINESS UNITS:	**ALL**	OFFICE:	**ALL**
DISCIPLINE/ FUNCTION:	**HEALTH, SAFETY, and ENVIRONMENT**	PROJECT NO:	**GENERIC**

APPROVAL STATUS			
PREPARED BY	**DATE**	**APPROVED BY**	**DATE**
Corporate HSE Department, Vlad Ivensky	**July 2009**	**Executive Committee**	**July 2009**

REV	DESCRIPTION	REVISED BY	CHECKED BY	ISSUED BY	DATE
A	Modified Section **2.1.2**, added Sections **1.3.5; 2.4.2.2; 2.10.7**	Vlad Ivensky		Vlad Ivensky	Jan 8, 2010
B	Added section **2.10.5** – Hiring a Local Workforce (moved to 2.3.5)	Vlad Ivensky		Vlad Ivensky	Jan 12, 2010
C	Modified Sections **2.3.3, 2.3.4, 2.3.5** – Safety in Contracts & Subcontracts	Vlad Ivensky		Vlad Ivensky	Jan 21, 2010
D	Various editing. Added section 2.4.12.3 – AMEC HSSE Execution Plan (Volume 6)	Vlad Ivensky		Vlad Ivensky	Oct 22, 2010
E	Changes to Sections **1.5.19** SSHO Responsibilities, **1.5.20.2** Employee Responsibilities, and **2.4.8.7** Activity Hazard Analysis, specifying that no work outside the scope of work is permitted (no assistance to subcontractors permitted)	Vlad Ivensky		Vlad Ivensky	Nov 30, 2010
F	Changes to section 1.1.1 – HSE Policy Statement 2012	Vlad Ivensky		Vlad Ivensky	Jan, 2012
G	Changes to section 1.1.1 – HSE Policy Statement 2013	Vlad Ivensky		Vlad Ivensky	Jan, 2013

H	Various Changes pertaining to re-organization to Americas operation	Cindy Sundquist Vlad Ivensky		Vlad Ivensky	May 15, 2013

INTEGRATED HEALTH, SAFETY AND ENVIRONMENT PROGRAM MANUAL -

Table of Contents

Doc No: HR 3-07

Owner: Jayne Dinan, Vice President, Human Resources (N.A.)

Author: Jayne Dinan, Vice President, Human Resources (N.A.)

Function: Human Resources

DRUG & ALCOHOL-FREE WORKPLACE - DOT

Recent amendment history

	Policy level	Region
Policy applies to:	**AMEC E&I, Inc.**	**United States**

Revision no.	Date adopted	Nature of change	Approved by:
	01/01/2012	Revision due to mergers in 2011	President, E&I

Purpose

To establish Company policies and procedures in compliance with the U.S. Department of Transportation's and the Federal Motor Carrier Safety's drug and alcohol regulations and testing requirements for Commercial Motor Vehicle Drivers in all States where AMEC E & I operate.

1.0 GENERAL PURPOSE

1.1 AMEC E & I ("Company") is firmly committed to ensuring a safe, healthy, productive and efficient work environment for our employees, customers and the public in general. The Company has a vital interest in ensuring a safe, healthy and efficient working environment and the prevention of accidents and injuries which can result from the misuse of alcohol or drugs by drivers of the Company's commercial motor vehicles ("CMV"). For these reasons, and as required by the drug and alcohol testing regulations of the Federal Motor Carrier Safety Administration ("FMCSA"), the Company has established this substance abuse policy for the drivers of its commercial motor vehicles. Drug and alcohol testing is an integral part of our policy and program. Compliance with this policy is required by applicants as a condition of employment and by drivers as a condition of continued employment.

1.2 This policy applies to any "driver" (as defined in Section 2.5 of this policy) who operates a "commercial motor vehicle" (as defined in Section 2.3 of this policy) for or on behalf of the Company and who is required to have a commercial driver's license ("CDL") in order to operate that vehicle. The policy also applies to all applicants who seek employment for such driver positions. Additionally, this policy applies to any Company supervisor and other managerial personnel who drive or may be required to drive a commercial motor vehicle from time-to-time on the Company's behalf.

1.3 This policy explains the FMCSA's drug and alcohol regulations and the Company's own policies with respect to the use of drugs or the misuse of alcohol. Provisions of this policy which are included under the Company's independent authority are specifically noted by text which has been underlined.

1.4 This policy is not a contract of employment. All Company employees are employees at will, except as provided below. This means that employment can be terminated at any time either by the employee or Company with or without cause and with or without notice. Where any provision of this policy issued under the Company's own authority conflicts with the provisions of a collective bargaining agreement between the Company and a union representing its employees, the provisions of the collective bargaining agreement will control. However, failure to comply with this policy as so interpreted shall constitute just cause for discipline, up to and including discharge. If an applicant fails to comply with this policy, the applicant will be ineligible for employment with the Company.

1.5 The Company maintains a policy of non-discrimination and will endeavor to make reasonable accommodations to assist recovering addicts or alcoholics and those having a medical history reflecting treatment for substance abuse conditions. We encourage employees to seek assistance before drug and alcohol use renders them unable to perform their essential job functions or jeopardizes the health and safety of themselves or others.

1.6 Any questions regarding the meaning or application of this policy should be directed to the Program Administrator, Vice President of Human Resources, 1105 Lakewood Parkway, Su. 300, Alpharetta, GA 30009; 770-360-0600.

2.0 DEFINITIONS

2.1 "Alcohol" means the intoxicating agent in beverage alcohol, ethyl alcohol or other low molecular weight alcohols, including methyl or isopropyl alcohol.

2.2 "Alcohol Use" means the drinking or swallowing of any beverage, liquid mixture or preparation (including any medication), containing alcohol.

2.3 "Commercial Motor Vehicle" ("CMV"), for purposes of this policy, means a motor vehicle or combination of motor vehicles used in commerce to transport passengers or property if the motor vehicle:

a. has a gross combination weight rating of 11,794 or more kilograms (26,001) or more pounds) including a towed unit with a gross vehicle weight of more than 4,536 kilograms (10,000 pounds);

b. has a gross vehicle weight rating of 11,794 or more kilograms (26,001 or more pounds);

c. is designed to transport 16 or more passengers, including the driver; or,

d. is of any size and is used in the transportation of materials found to be hazardous for the purposes of the Hazardous Materials Transportation Act and which require the motor vehicle to be placarded under the Hazardous Materials Regulations (49 CFR part 172, subpart F).

2.4 "Disabling Damage" means damage which prevents a motor vehicle from being driven from the scene of the accident in its usual manner in daylight after simple repairs, including damage to motor vehicles that could have been driven, but would have been further damaged if driven. This terms does not include damage which can be remedied temporarily at the scene of the accident without special tools or parts; tire disablement without other damage even if no spare tire is available; headlight or taillight damage; or damage to turn signals, horn or windshield wipers which make them inoperative.

2.5 "Driver" means any person who operates a "commercial motor vehicle" (as defined in Section 2.3). Under FMCSA regulations, this includes, but is not limited to: full time, regularly employed drivers; casual, intermittent or occasional drivers.

2.6 "Drugs" means marijuana, cocaine, opiates, amphetamines, phencyclidine (PCP), or their metabolites, and, for purposes other than testing, any other substance included in Schedules I through V, as defined by the Controlled Substances Act, 21 U.S.C. §812, as they may be revised from time to time. The term "drugs" include legal substances obtained illegally or used in an unauthorized manner, but does not refer to the proper use of drugs authorized by law which do not affect job safety or performance.

2.7 "Medical Review Officer" ("MRO") means a licensed physician (medical doctor or doctor of osteopathy) responsible for receiving and reviewing laboratory results generated by an employer's drug testing program and evaluating medical explanations for certain drug test results.

2.8 "Performing A Safety-Sensitive Function" means any period in which a driver is actually performing, ready to perform, or immediately available to perform any safety-sensitive functions.

2.9 "Safety-Sensitive Function" means the following activities and includes the time a driver begins to work or is required to be in readiness to work until the time he/she is relieved from work and all responsibility for performing work:

a. All time at a Company or shipper plant, terminal, Company, or other property, or on any public property, waiting to be dispatched, unless the driver has been relieved from duty by the Company;
b. All time inspecting equipment as required by the FMCSA's regulations, 49 C.F.R. §§392.7 and 392.8, or otherwise inspecting, servicing, or conditioning any commercial motor vehicle at any time;
c. All time spent at the driving controls of a commercial motor vehicle in operation;
d. All time, other than driving time, in or upon any commercial motor vehicle, except time spent resting in a sleeper berth (a berth conforming to the requirements of the FMCSA's regulation 49 C.F.R. §393.76);
e. All time loading or unloading a vehicle, supervising, or assisting in the loading or unloading, attending a vehicle being loaded or unloaded, remaining in readiness to operate the vehicle, or in giving or receiving receipts for shipments loaded or unloaded; and
f. All time repairing, obtaining assistance, or remaining in attendance upon a disabled vehicle.

2.10 "Split Specimen" means, in drug testing, a part of the urine specimen that is sent to a first laboratory and retained unopened, and which is transported to a second laboratory in the event that the employee requests that it be tested following a verified positive test of the primary specimen or a verified adulterated or substituted test result.

2.11 "Substance Abuse Professional" ("SAP") means a person who evaluates employees who have violated a Department of Transportation ("DOT") drug and alcohol regulation and makes recommendations concerning education, treatment, follow-up testing, and aftercare. A SAP may be: (1) a licensed physician (medical doctor or doctor of osteopathy), or (2) a licensed or certified psychologist, or (3) a licensed or certified social worker, or (4) a licensed or certified employee assistance professional, or (5) a drug and alcohol addiction counselor certified by the National Association of Alcoholism and Drug Abuse Counselors Certification Commission or by the International Certification Reciprocity Consortium/Alcohol and Other Drug Abuse. All SAPs must have knowledge or and clinical experience in the diagnosis and treatment of alcohol and drug-related disorders.

3.0 PROHIBITED CONDUCT

3.1 Prohibited Conduct Concerning Drivers' Use of Drugs and Alcohol:

a. Drivers are prohibited from reporting for duty or remaining on duty when using drugs (as defined in Section 2.6), except when the use is pursuant to the instructions of a medical doctor

who has advised the driver that the substance will not adversely affect the driver's ability to safely operate a commercial motor vehicle. (For details concerning the lawful use of prescription drugs, refer to Section 3.5).

b. Drivers are prohibited from reporting for duty or remaining on duty with an alcohol concentration of 0.04 or greater. Drivers found to have an alcohol concentration of 0.02 or greater, but less than 0.04, are prohibited from performing any safety-sensitive functions for at least 24 hours from the test.

c. Drivers are prohibited from using alcohol in any form (including medications containing alcohol) while performing safety-sensitive functions (refer to Section 2.8 of this policy for the definition of performing safety-sensitive functions).

d. Drivers are prohibited from performing safety-sensitive functions within four (4) hours after using alcohol. On-call employees who are not at work, but could be called to drive or perform other safety-sensitive functions, are subject to this pre-duty alcohol prohibition. This means a driver who is on-call must decline a call to work if his or her acceptance would require the employee to drive or perform other safety-sensitive functions within four (4) hours after consuming alcohol. An on-call driver who is required to decline work because of his/her use of alcohol in violation of the four-hour rule is subject to discipline up to and including termination.

e. Drivers are prohibited from using alcohol for eight (8) hours following an accident or until the driver takes a post-accident alcohol test (and tests negative), whichever occurs first.

f. Drivers may not "refuse to submit" to any drug or alcohol test required under the FMCSA's drug and alcohol rules and/or this policy. (For further details concerning what actions will be considered as a "refusal," refer to section 3.2 of the policy.)

g. Drivers are prohibited from performing or continuing to perform a safety-sensitive function if they have tested positive for drugs or alcohol.

h. Drivers may not refuse to submit to any inspection required under section 11.0 of this policy.

i. During a driver's workday, a driver is prohibited from engaging in the unlawful or unauthorized manufacture, distribution, dispensation, sale, purchase, solicitation, transfer, possession, use or transport of drugs or alcohol. These prohibitions do not include the authorized distribution, dispensation, sale, purchase, solicitation, transfer, possession, use or transport of alcoholic beverages in connection with Company-sponsored functions or events.

j. Drivers are prohibited from failing to stay in contact with the Company or its medical review officer ("MRO") while awaiting the results of a drug test.

3.2 Refusal to Submit: For purposes of this policy, the following employee conduct will be considered a refusal to submit to a test:

a. failing to appear for any test (except a pre-employment test) within a reasonable time, as determined by the Company, after being directed to do so by the Company, its consortium or third-party administrator (as applicable);

b. failing to remain at the testing site until the testing process is complete; however,

an applicant who leaves the testing site before the pre-employment testing process commences is not deemed to have refused to test;

c. failing to provide a urine specimen, or breath or saliva specimen for testing;

d. failing to attempt to provide a breath or saliva specimen for testing;

e. failing to provide a sufficient amount of urine when directed, unless it has been determined, through a required medical evaluation, that there was an adequate medical explanation for the failure;

f. failing or declining to take a second drug or alcohol test that the Company or collector has directed to be taken, including failing to take a second test that the employer has directed following a negative dilute test result, when the Company so elects;

g. failing to undergo a medical examination or evaluation, as directed by the MRO as part of the verification process, or as directed by the Program Administrator or other designated employer representative as part of the "shy bladder" procedures, or the insufficient breath procedures;

h. failing to provide a sufficient breath specimen when directed, and the physician has determined, through a required medical evaluation, that there was no adequate medical explanation for the failure;
i. failing to sign the certification at Step 2 of the Alcohol Testing Form;

j. adulterating or substituting a urine sample (which has been verified by the MRO);

k. failing to cooperate with any part of the testing process, such as by failing to permit the observation or monitoring of the provision of a specimen in the case of directly observed or monitored collection in a drug test, delaying the collection, testing or verification process or otherwise engaging in conduct that clearly obstructs or manipulates, or attempts to obstruct or manipulate, the testing process (e.g., leaving the test site before the collection process is completed, or refusing to empty pockets); or,

l. failing to promptly notify the Company that the driver was in an accident or not being readily available for testing after an accident (except as necessary to obtain assistance or medical care).

3.3 Consumption of Food or Food-Products Containing Hemp: The consumption of food and food-products containing hemp (for example, hemp oil) may cause a driver to test positive for marijuana. A test result that is positive as a result of a driver's consumption of food or food-products containing hemp will be reported as a positive test. (Refer to Section 7.3 regarding the consequences of a positive test result.)

3.4 Prohibition On Supervisor Or Manager Permitting A Driver To Work: No supervisor or manager who has actual knowledge that an employee has engaged in or is engaging in

conduct prohibited under this policy shall permit the employee to work or continue working under such circumstances. Any employee who has been directed not to work or directed to stop working under such circumstances must immediately comply.

3.5 Prohibition Against Working While Using Any Drug Medications Which Affect Safety Or Performance:

a. Except as otherwise provided in this section, the lawful use of any medication (therapeutic drugs) while performing a safety-sensitive function is prohibited to the extent such use may affect the driver's ability to perform his/her job duties safely.

b. A driver who will use, or who is using, any medication that contains a drug has an obligation to inquire and determine whether the medication could affect the driver's ability to perform his/her job duties safely.

c. If the driver is or will be using any such drug medication, the driver is required to obtain from the driver's licensed medical practitioner a written statement which provides that the medication will not interfere with the driver's ability to safely and efficiently perform the driver's job duties. The Company's "Certification of Driver's Authorized Use of Medication(s) Containing Drugs" form is to be used for this purpose.

d. In the event a driver is using or will be using drug medication which will interfere with or adversely affect the driver's ability to perform his or her job duties, such information must be reported to the driver's immediate supervisor prior to commencing any safety-sensitive functions, without disclosing the identity of the substance. The driver must also have the medication available for review by the Company's MRO in its original container, which must identify the medication dosage and other pertinent information about the medication.

e. A driver may continue to work, if the Company's MRO and the licensed medical practitioner have determined that the medication will not adversely affect the driver's ability to safely and efficiently perform the driver's safety-sensitive functions, or the Company has determined, based on their discussion, that a reasonable accommodation can be made concerning the driver's medication. A driver will not be permitted to perform his or her safety-sensitive functions unless such a determination or reasonable accommodation has been made.

4.0 REQUIRED TESTS AND PAST TEST RESULTS INFORMATION

As required by DOT's and FMCSA's regulations, the Company will conduct drug and alcohol tests under the conditions and circumstances described below.

4.1 Pre-Employment Drug Testing and Past Test Results Information:

a. All applicants who have received a conditional offer of employment in a commercial motor vehicle ("CMV") driver position, and all existing employees whose transfer to a CMV driver position has been conditionally approved, are

required to submit to a pre-employment drug test and must receive a negative test result as a condition of employment. Such tests will be conducted prior to the time the applicant is hired or transferred.

b. In addition to a pre-employment drug test, DOT's regulations require the Company to obtain the following specific information concerning an applicant's past DOT-regulated drug and alcohol tests from an applicant's former employers during the previous two years: (i) confirmed alcohol tests with results of 0.04 or greater; (ii) drug tests whose results were verified positive; (iii) all instances in which the applicant refused to be drug or alcohol tested (including verified adulterated or substituted drug test results); (iv) other violations of DOT drug and alcohol testing regulations, including the regulations of all DOT operating administrations; and (v) documentation that the employee successfully completed DOT return-to-duty requirements (including follow-up testing), where applicable. All such information will be obtained in a confidential manner and the Company will maintain a written confidential record with respect to each former carrier contacted. The information obtained from a previous employer who employed the applicant in a CMV driver or other DOT-regulated safety-sensitive position may contain alcohol and drug information which that employer obtained from other previous employers regarding the DOT-required drug and alcohol testing of the applicant during the past two years.

c. If the Company learns from the driver's previous employers that the driver had an alcohol test result of 0.04 or greater, a verified positive drug test, or refused to be tested, on a DOT-required drug or alcohol test, or, as of August 1, 2001, learns that the driver violated any other DOT agency drug and alcohol regulation, the driver either will be ineligible to drive for the Company, or if hired, the driver will be terminated, unless the Company obtains evidence that the driver has complied with the return-to-duty requirements, including follow-up tests, set forth in Subpart O of 49 C.F.R. Part 40.

d. An applicant must inform the Company whether he or she has tested positive, or refused to test, on any pre-employment drug or alcohol test administered by an employer to which the applicant applied for, but did not obtain, safety-sensitive transportation work covered by any DOT operating administration's drug and alcohol testing rules during the past two years.

4.2 Post-Accident Drug And Alcohol Testing:

a. A driver who is performing safety-sensitive functions (as defined in Section 2.8 of this policy) involving a commercial motor vehicle is required to submit to a post-accident drug and alcohol test as soon as practicable following the accident, under the following circumstances:

1. Fatal accidents: A driver who is involved in an accident which results in a death to another human being must always submit to a drug and alcohol test.

2. Non-fatal accidents: A driver who is involved in a non-fatal accident,

must submit to a post-accident drug and alcohol test if:
(a) the driver was given a citation for a moving traffic violation involving the accident and

(b) the accident also results in one of the following:
(1) bodily injury to the driver or another individual, requiring immediate medical treatment away from the scene of accident; or
(2) one or more of the vehicles involved in the accident incurs disabling damage (as defined in Section 2.4 of the policy), requiring the vehicle(s) to be transported away from the scene by a tow truck or other vehicle.

(c) even if a citation is not issued to the driver for a moving traffic violation arising from the accident within 8 hours after the accident (or within 32 hours after the accident, for drugs only),
the driver still will be tested within 8 hours after the accident (or within 32 hours after the accident, for drugs only), if the accident results in one or more of the following:
(1) bodily injury to the driver or another individual, requiring immediate medical treatment away from the scene of accident; or
(2) one or more of the vehicles involved in the accident incurs disabling damage (as defined in Section 2.4 of the policy), requiring the vehicle(s) to be transported away from the scene by a tow truck or other vehicle.

b. Drivers involved in any accident involving their vehicle must notify the Program Administrator as soon as possible to obtain information on how to proceed with the required testing. Drivers are obligated to follow the Program Administrator's instructions and, if directed, submit to post-accident drug and alcohol tests as soon as possible.

c. A driver who is subject to post-accident testing must remain readily available for such testing or else will be deemed to have refused to submit to such testing. However, this "readily available" requirement does not require the delay of necessary medical attention for injured people, or prohibit a driver from leaving the scene of the accident for the period necessary to obtain assistance in responding to the accident or to obtain necessary emergency medical care.

d. A driver who is required to submit to a post-accident test will be suspended after completion of the drug and/or alcohol tests. The Company also reserves the right to evaluate the conduct of the driver which may have caused or contributed to the accident, to determine if this conduct in and of itself should warrant discipline, up to and including termination.

e. The results of a breath or blood test for the use of alcohol, or the results of a urine test for the use of drugs, conducted by Federal, State, or local officials having independent authority for the test, shall be considered to meet the requirements of this section, provided such tests conform to the applicable Federal, State or local

alcohol testing requirements, and that the results of the tests are obtained by the employer.

4.3 Random Drug And Alcohol Testing:

a. Each year the Company will administer random alcohol and drug tests. Random drug tests may be conducted at any time. Random alcohol tests will only be conducted while a driver is performing safety-sensitive functions, just before the driver performs safety-sensitive functions, or just after the driver has ceased performing safety-sensitive functions.

b. The Company shall select drivers for testing using a random number table or a computer-based random number generator that is matched with the drivers' social security numbers, or other comparable identification numbers which will ensure that each driver has an equal chance of being tested each time selections are made.

c. All random tests will be unannounced and the dates for administering the tests will be spread reasonably throughout the calendar year. The dates of random testing, locations and names of those to be tested are kept in the strictest confidence by the Program Administrator and the specimen collector.

d. Each driver who is notified of selection for random drug or alcohol testing must proceed to the test site immediately. If the driver is performing a safety-sensitive function (refer to section 2.9) at the time of notification, the driver must cease performing the safety-sensitive function and proceed to the test site as soon as possible, but not longer than two hours from the time of notification. Drivers who do not proceed to the test site immediately upon notification of the test may be considered to have refused to submit to the test.

4.4 Reasonable Suspicion Drug and/or Alcohol Testing:

a. A driver must submit to a reasonable suspicion drug and/or alcohol test whenever a manager or supervisor has reasonable suspicion to believe that the driver has violated the drug or alcohol prohibitions contained in this policy. Reasonable suspicion drug tests may be conducted at any time. Reasonable suspicion alcohol tests may be conducted only while the driver is performing safety-sensitive functions, just before the driver performs safety-sensitive functions, or just after the driver has ceased performing safety-sensitive functions.

b. Reasonable suspicion determinations will be based on specific, contemporaneous, articulable observations concerning the appearance, behavior, speech, or body odors of the driver. For drug testing, the observations may also include indications of the chronic and withdrawal effects of drugs.

c. Documentation of the observations leading to a reasonable suspicion test will be prepared and signed by the supervisor or manager who made the observations. The supervisors and managers who will make reasonable suspicion determinations must have received training on alcohol misuse and drug use in accordance with the FMCSA's regulations.

The particular supervisor or manager who makes a reasonable suspicion determination will not conduct the drug or alcohol test.

d. A driver who is directed to take reasonable suspicion drug and/or alcohol test must submit to the test as directed. The Company shall transport or ensure transport of the driver both to and from the collection site.

e. A driver who is requested to submit to a reasonable suspicion drug and/or alcohol test will be suspended after the completion of the tests. The Company also reserves the right to evaluate the conduct of the driver which warranted the reasonable suspicion drug or alcohol tests to determine if the conduct in and of itself should warrant discipline, up to and including termination.

5.0 VOLUNTARY SELF-IDENTIFICATION OF SUBSTANCE ABUSE PROBLEM

5.1 Consistent with and subject to the Company's policies concerning medical and personal leaves and vacations, a driver who voluntarily self-identifies himself or herself as having a drug or alcohol problem and requests assistance for such a problem will be referred to a substance abuse professional ("SAP") for an evaluation and, if recommended, an appropriate counseling, treatment or rehabilitation program. The cost of the counseling, treatment or rehabilitation is the driver's responsibility. (For further details concerning the employee's payment obligations, employees should refer to their medical insurance plan.)

5.2 This request must be made before the driver is directed or otherwise required to submit to a drug or alcohol test required by DOT or this policy, or before the driver has been found to have violated a prohibition contained in this policy. Such timely request shall not constitute a basis for reasonable suspicion testing.

5.3 Once leave commences, periodic certification that the employee is actively continuing to participate in the program, together with progress reports, shall also be required. As a further condition of taking such leave, the employee will be required to authorize the attending SAP to communicate directly with the Company, including to release the employee's relevant treatment records to the Company, except as federal or state law may otherwise require. All such oral and written communications between the substance abuse professional and Company shall be treated as confidential.

5.4 Except where the federal or state law prohibits, all leave time taken for the evaluation, counseling, treatment or rehabilitation will be counted against the leave to which the employee may be entitled under the federal or state Family and Medical Leave laws.

5.5 Prior to the time such leave begins, the driver will be required to execute the Company's "Agreement for Voluntary Treatment and Conditions for Continued Employment." This agreement provides, among other things, that before a driver will be permitted to return to his/her driving duties or perform other safety-sensitive functions for the Company, the driver will be required to submit to post-voluntary rehabilitation return-to-duty drug test and/or post-voluntary rehabilitation return-to-duty alcohol test and must receive a negative result. The agreement also provides that the driver may be required to submit to post-voluntary rehabilitation follow-up drug tests and/or post-voluntary rehabilitation follow-up

alcohol tests after returning to work, if directed by the treating substance abuse professional. Any return-to-duty and follow-up drug and/or alcohol tests performed under this section of the policy will be conducted as permitted by and in accordance with the applicable state or local law, if any. Where there is no applicable state or local law, or where such laws do not provide specific detailed procedures governing such testing, the Company will follow the Federal Procedures for Transportation Workplace Drug and Alcohol Testing Programs, 49 C.F.R. Part 40, as amended.

5.6 If a driver voluntarily self-identifies that he or she has a substance abuse problem and requests assistance for such problem, but fails or refuses to comply with the requirements of this Section, the driver will not be permitted to perform safety-sensitive functions and will be required to comply instead with DOT's referral, evaluation and treatment requirements for drivers who have violated FMCSA regulations.

6.0 DRUG AND ALCOHOL TESTING PROCEDURES

As required by the FMCSA's rules, the Company's drug and alcohol testing procedures comply with the Federal Procedures For Transportation workplace Drug and Alcohol Testing Programs, 49 C.F.R. Part 40, as amended. (A copy is available for inspection in the office of the Program Administrator). These procedures ensure the integrity, confidentiality and reliability of the testing processes, safeguard the validity of the test results and ensure that these results are attributed to the correct driver. Further, these procedures minimize the impact upon the privacy and dignity of persons undergoing such tests. The following provides a summary of the federal procedures.

6.1 Drug Testing Procedures:

a. Drugs being tested for: The drugs specifically being tested for include: marijuana, opiates, amphetamines, cocaine, and phencyclidine (PCP) and their metabolites.

b. Laboratory, Chain-of-custody and Split-Sample Collection Method: Drug testing is conducted by analyzing an employee's urine specimen. The specimen collection procedures and chain of custody are intended to ensure that the specimen's security, proper identification and integrity are not compromised. All drug tests conducted pursuant to this policy shall be performed by laboratories which are certified by the Department of Health and Human Services ("DHHS"). The Agency has established a chain-of-custody procedure for the collection and analysis of urine samples that will verify the identity of each sample and test result. The collector of the specimen will seal and label the urine specimen, complete a required chain of custody form (Federal Drug Testing Custody and Control Form), and prepare the specimen and accompanying paperwork for shipment to a DHHS-certified laboratory. Only official DOT-authorized Federal Custody and Control forms shall be used in connection with this procedure. A split-sample collection method will be used for drug tests. This means that a urine sample is subdivided into two bottles labeled as a "primary" and a "split" specimen. Both bottles are sent to a laboratory. Only the "primary" specimen is opened and used for the urinalysis. The "split" specimen bottle remains sealed and is stored at the laboratory. Under certain circumstances, the applicant or driver may request a test of the "split" specimen by another DHHS-certified laboratory. (See Section 6.1(c)(6) below). This split specimen procedure

provides the applicant or driver with an opportunity for a "second opinion."

c. Confirmation, review and verification of drug test results:

1. All positive drug screening test results will be confirmed by gas chromatography and mass spectrometry (GC/MS). All confirmed positive drug test results will be reviewed by a medical review officer ("MRO") to determine whether there is any legitimate explanation for the positive test result. This review may include a medical interview, review of the applicant's or driver's medical history, or review of any other relevant biomedical factors and all medical records made available by the tested individuals.

2. Individuals with confirmed positive results will be given the opportunity to discuss with the MRO any legitimate explanation for the positive test result. If, after speaking with the driver, the MRO determines that there is a legitimate medical explanation for the confirmed positive test result, the MRO will report the test result as "negative" to the Program Administrator or a designated representative. If the MRO determines that there is no legitimate explanation for the confirmed positive test result, the result will be verified as a "verified positive test result" by the MRO.

3. Under the circumstances set forth in 49 C.F.R. Part 40, the MRO is permitted to verify a test result as positive without having first communicated directly with the driver. In the event that serious illness, injury or other unavoidable circumstances prevented the driver from being contacted by the MRO or a designated Company representative, however, the MRO may reopen the verification process to permit the driver to provide information concerning a legitimate explanation for the positive test. (Refer to Section 3.1.j. of the policy concerning the driver's duty to remain in contact with the Company and MRO.)

4. All confirmed adulterated or substituted test results will be reviewed by the MRO to determine whether there is any legitimate medical explanation for the laboratory findings. It is the applicant's or driver's burden of proof to show that there is a legitimate medical explanation. If the MRO determines that the applicant's or driver's explanation does not present a reasonable basis for concluding that there is a legitimate medical explanation, the MRO will report the test to the Program Administrator or other designated employer representative and the individual tested as a verified refusal to submit to a test because of adulteration or substitution, as set forth in Section 3.2.g. (Refer to Section 7.2 for the consequences of a refusal to submit to a test). If, however, the MRO believes that the applicant's or driver's explanation may present a reasonable basis for concluding that there is a legitimate medical explanation, the MRO shall direct the applicant or driver to obtain, within five days of the MRO's verification interview of the applicant or driver, a further medical evaluation. This evaluation will be

performed by a licensed physician, acceptable to the MRO, with expertise in the issues raised by the applicant's or driver's explanation. The driver or applicant is responsible for finding and paying for a referral physician. However, on request of the applicant or driver, the Company or MRO will provide reasonable assistance to the applicant's or driver's efforts to find such a physician. If, after conferring with the referral physician, the MRO concludes that there is a legitimate medical explanation, the MRO shall cancel the test and report the cancellation and the reasons for it to the Program Administrator or other designated employer representative and the tested individual. If, after conferring with the referral physician, the MRO concludes that there is no legitimate medical explanation, the MRO will notify the Program Administrator or other designated employer representative and the tested individual of a verified refusal to submit to a test because of adulteration or substitution, as set forth in Section 3.2.g. (Refer to Section 7.2 for the consequences of a refusal to submit to a test).

5. If the MRO reports to the Company that a negative drug test was dilute, the applicant or driver will be directed to take another test immediately. If the applicant or driver refuses to take a second test, this constitutes a refusal to test. (Refer to Section 7.2 for the consequences of a refusal to submit to a test).

6. Right to have split-sample analyzed:
(a) Verified Positive Tests: All applicants and drivers whose primary urine sample results in a verified positive test result have the right to request that their split-sample be analyzed in a different DHHS certified laboratory, selected by the Company, for the presence of the drug(s) for which a positive result was obtained. The request must be made to the MRO within 72 hours of being notified by the MRO of a verified positive test result. If the split-sample fails to reconfirm the presence of the drug(s) found in the primary sample, or if the split-sample is unavailable, inadequate for testing or untestable, the MRO shall cancel the test and report the cancellation and the reasons for it to the Program Administrator or a designated representative, the tested individual and the DOT. However, if the split-sample reconfirms the presence of the drug(s) or drug metabolite(s), the MRO will notify the Program Administrator or other designated employer representative and the tested individual of the test results.

(b) Verified Adulterated or Substituted Tests: All applicants and drivers whose primary urine sample is verified adulterated or substituted have the right to request that their split-sample be analyzed in a different DHHS certified laboratory, selected by the Company, to reconfirm the adulterated or substituted result. The request must be made to the MRO within 72 hours of being

notified by the MRO of a verified adulterated or substituted test result. If the split-sample fails to reconfirm adulteration or substitution of the primary sample, the MRO shall cancel the test and report the cancellation and the reasons for it to the Program Administrator or other designated employer representative, the tested individual and the DOT. Additionally, if the split-sample is unavailable, inadequate for testing or untestable, the MRO shall cancel the test and report the cancellation and the reasons for it to the Program Administrator or other designated employer representative, and the tested individual. The Program Administrator or other designated employer representative shall ensure the immediate collection of another specimen from the applicant or driver under direct observation (see Section 6.1.c.8), with no notice given to the applicant or driver until immediately prior to the collection. However, if the split-sample reconfirms adulteration or substitution, the MRO will notify the Program Administrator or other designated employer representative and the tested individual of the test results. Reconfirmation of adulteration or substitution constitutes a refusal to submit to a test, as set forth in Section 3.2.g. (Refer to Section 7.2 for the consequences of a refusal to submit to a test).

7. Inability to provide an adequate amount of urine sample: Applicants and drivers must provide a urine sample of at least 45 milliliters of urine for a drug test. If the tested individual is unable to provide such a quantity of urine, then the tested individual will be instructed to drink a set amount of fluids and after a set period of time, again attempt to provide a complete sample. If the applicant or driver refuses to attempt to provide a new urine specimen, this will constitute a refusal to submit to a test, and the driver will be terminated and an applicant will be ineligible for employment with the Company. If the applicant or driver has not provided a sufficient specimen within three hours of the first unsuccessful attempt to provide the specimen, the collection will be discontinued. The Program Administrator, after consulting with the MRO, will then direct the applicant or driver to obtain, within five working days, a medical evaluation. Failure to undergo such an evaluation constitutes a refusal to test. The purpose of the evaluation is to determine whether the applicant or driver has a medical condition that has, or with a high degree of probability could have, precluded the applicant or driver from providing a sufficient amount of urine.

8. Privacy; Limitations: Procedures for collecting urine samples allow an individual privacy unless there is a reason to believe that a particular individual has adulterated or substituted, or attempted to adulterate or substitute, the sample, as defined in the Federal Procedures For Transportation Workplace Drug Testing Programs, 49 C.F.R. Part 40. In such cases, a sample may be obtained under the direct observation of a specimen collector of the same gender as the individual being tested. In

addition, the Company will direct an immediate collection under direct observation with no advance notice to the applicant or driver, if:
(a) the laboratory reported to the MRO that a specimen is invalid, and the MRO reported to the Company that there was not an adequate medical explanation for the result; or
(b) the MRO reported to the Company that the original positive, adulterated, or substituted test result had to be canceled because the test of the split specimen could be not performed.
The Company also may direct a collection under direct observation of a driver if the drug test is a return-to-duty test or a follow-up test.

6.2 Alcohol Testing Procedures:

a. How test will be performed: Alcohol screening tests will be performed by a screening test technician ("STT") using a non-evidential screening device, or by a breath alcohol technician ("BAT") using an evidential breath testing device ("EBT"). The Company ensures that the STTs are proficient in the operation of non-evidential screening devices and that the BATs are proficient in the operation of EBTs. In addition, the Company will use only non-evidential alcohol screening devices and EBTs which are listed on the conforming products list issued by the National Highway Traffic Safety Administration.

b. Confirmation of alcohol test results: If the result of the screening test is an alcohol concentration of 0.02 or greater, a confirmation test will be performed using an EBT. The confirmation test will be conducted within 30 minutes from the end of the screening test. The confirmation test result is the final result upon which any discipline or other action taken under the Company's policy shall be based.

c. Inability to provide adequate amount of specimen for alcohol testing:

1. If the driver is unable to provide sufficient saliva to complete a test on a non-evidential saliva screening device, the STT shall conduct a new test, using a new device. If the driver refuses to complete the new test, this will constitute a refusal submit to a test and the driver will be terminated. If the new test is completed, but there is an insufficient amount of saliva to activate the device, the driver shall immediately take an alcohol test using an EBT. If the driver declines, or otherwise interferes with the testing, this will constitute a refusal to submit to the test, and the driver will be terminated.

2. If a driver fails to provide or claims that he or she is unable to provide a sufficient amount of breath to permit a valid breath test, the Company will direct the driver to obtain, within five days, an evaluation from a licensed physician who is acceptable to the Company and who has expertise in the medical issues raised by the driver's failure to provide a sufficient specimen. Failure to undergo such an evaluation constitutes a refusal to test. If the physician concludes that a medical condition has, or with a high degree of probability could have, precluded the driver from providing a sufficient amount of breath, the driver's test will be canceled.

If the physician concludes that there is not an adequate basis for determining that a medical condition has, or with a high degree of probability could have, precluded the driver from providing a sufficient amount of breath, the driver will be considered to have refused to test.

7.0 CONSEQUENCES FOR POLICY VIOLATIONS

The consequences discussed below apply to applicants and drivers who are found to have violated this policy. Regardless of any personnel actions which may be taken, however, FMCSA's regulations require drivers who engage in any prohibited conduct under this policy to be advised of available resources for evaluating and resolving problems associated with drug use and alcohol misuse, including the names, addresses and telephone numbers of substance abuse professionals and counseling and treatment programs. This information will be provided through the Company's Human Resources Department.

7.1 Automatic Removal From Safety-Sensitive Functions: DOT's and FMCSA's regulations require drivers who violate this policy in any way to be immediately removed from their safety-sensitive functions. Such drivers are prohibited from performing, or being permitted to perform, a safety-sensitive function, including driving Company trucks and motor vehicles with gross vehicle weight ratings over 10,001 pounds, as well as other Company motor vehicles.

7.2 Refusal To Submit: Any driver who refuses to submit to a test will be terminated. Applicants who refuse to submit to a test will be ineligible for employment with the Company. Refer to Section 3.2 concerning what actions will constitute a driver's "refusal to submit."

7.3 Positive Test Results:

a. Applicants: All applicants who receive a verified positive drug test result will be ineligible for employment with the Company.

b. Drivers:

1. Temporary suspension: Any driver who is required to submit to a reasonable suspicion or post-accident drug or alcohol test pursuant to this policy will be temporarily suspended.

2. Verified confirmed positive drug test and confirmed alcohol test results of 0.04 or greater: If a driver receives a verified confirmed positive drug test or a confirmed alcohol test result of 0.04 or greater, the driver will be terminated from employment, unless the driver is located in Maine or Puerto Rico. For drivers located in Maine or Puerto Rico, see Addendum A for the consequences of testing positive.

3. Positive alcohol test results of 0.02 or greater but less than 0.04: A driver who receives a confirmed alcohol test result of 0.02 or greater, but less than 0.04, for the first time, will be suspended for at least 24 hours. A driver who receives a confirmed positive alcohol test result of 0.02 or

greater for a second time will be terminated.

4. Fitness-for-duty evaluation in the event of driver's legal and authorized use of a drug: Whenever an employee is required to submit to a reasonable suspicion drug test and receives a positive test result caused by the employee's legal and authorized use of a drug, the Company will require the employee to submit to a fitness-for-duty evaluation. An employee who tests negative may also be required to submit to a fitness-for-duty evaluation. The evaluation may include a review of the employee's medical records, a medical examination, or both. The purpose of the evaluation is to determine whether the employee poses a significant risk of substantial harm to the health and safety of the employee or others in the workplace, including customers and visitors. Employees will be required to provide the necessary authorizations for obtaining the medical records and conducting the examination. Depending upon the results of the evaluation, the Company will consider whether the safety or health risk can be eliminated or sufficiently reduced by a reasonable accommodation, if applicable.

5. In accordance with DOT regulations, the Company will provide each applicant and driver who violates a DOT regulation (as set forth in this policy) with a list of substance abuse professionals (SAPs) who are readily available to the employee and acceptable to the Company.

7.4 Other Policy Violations: Drivers who commit policy violations other than those addressed in Sections 7.2 and 7.3 above will be subject to discipline, up to and including, immediate termination. Applicants who violate this policy will be ineligible for employment with the Company.

7.5 Potential Denial of Workers' Compensation and/or Unemployment Compensation Benefits: For purposes of this policy, violations of DOT's and FMCSA's regulations and/or the requirements of this policy constitute gross and willful misconduct. In addition to the discipline and other consequences imposed by DOT, FMCSA and the Company under this policy, such gross and willful misconduct may also result in the denial of unemployment compensation under applicable state law. In addition, drivers who are injured as a result of a violation of DOT's or FMCSA's regulations and/or the Company's safety rules (including but not limited to the conduct prohibited under this policy) may also be denied workers' compensation benefits under applicable state law.

8.0 NOTIFICATION OF TEST RESULTS

Applicants will be notified of the results of a pre-employment drug test, if the applicant requests his/her test results within 60 days of being notified of the disposition of the employment application. Drivers will be advised of drug test results which are verified positive and the drug or drug(s) for which a positive result was verified. Drivers will be notified of the results of their alcohol tests immediately after the administration of the screening test and, if necessary, the confirmatory test.

9.0 TESTING EXPENSES AND COMPENSATION FOR TESTS

The Company will pay for drug and alcohol tests and related expenses as follows:

9.1. All drug and alcohol tests required to be taken by drivers or applicants under this policy, including confirmation tests, will be paid for by the Company. Any test taken at a driver's or applicant's request will be at the driver's or applicant's expense, unless the result of the test is negative. However, compliance with an applicant's or driver's request for a split-sample test may not be conditioned on the driver's or applicant's direct payment to the MRO or laboratory or the driver's or applicant's agreement to reimburse the Company for the costs of testing. The Company will also pay for the cost of the driver's transportation to the test site, if the test is conducted at a place other than the driver's normal work site.

9.2 All time spent by drivers providing a specimen required under this policy, including travel time to and from the collection site, will be considered as on-duty time. The driver will receive his or her regular compensation, including overtime if applicable, for such time.

10.0 RECORDKEEPING, ACCESS TO RECORDS AND CONFIDENTIALITY OF TEST RESULTS

10.1 The Company will maintain records related to its drug and alcohol testing program as required by the DOT's and FMCSA's regulations. These records will be maintained in a secure location with controlled access and will not be released to any person except as required by law or expressly authorized by the driver.

10.2 The laboratory may disclose drug test results only to the MRO. The MRO, STT and BATT may disclose test results only to the individual tested, designated Company representatives, a treatment program, or a court of law or administrative tribunal to the extent required by law. Beyond that, a driver's test results shall not be released to any person without the individual's written consent.

11.0 INSPECTIONS

11.1 Inspections Of Company Property: The Company may conduct unannounced random inspections for drugs and alcohol on Company facilities and property such as, but not limited to, Company vehicles, desks, file cabinets, and Company-issued employee lockers. Drivers are expected to cooperate in the conduct of such inspections. Inspections of Company facilities and property may be conducted at any time and need not be based on reasonable suspicion.

11.2 Inspections Of Driver Property: Inspections of drivers and their personal property such as, but not limited to, vehicles, clothing, packages, purses, brief cases, lunch boxes, or other containers brought onto or being taken off of Company premises may be conducted when there is reasonable suspicion to believe that the driver may have or has violated the drug or alcohol prohibitions contained in this policy.

12.0 EMPLOYEE ASSISTANCE

As part of the Company's commitment to provide a safe, healthy and efficient working

environment for our employees, the Company maintains an Employee Assistance Program ("EAP"). The EAP provides information concerning the effects and consequences of alcohol and drug use on an individual's health, work, and personal life and the signs and symptoms of an alcohol or drug problem. In addition, the EAP provides referral services to drivers and their families seeking help with problems resulting from alcohol misuse and drug use. Participation in this program is voluntary and confidential. The EAP can discuss available counseling, treatment and rehabilitation programs, fiscal responsibilities, and can help the employee decide what program might be best for his or her situation. For further information or to arrange an appointment, call the Human Resources Department.

ADDENDUM A
For Drivers Located in Maine and Puerto Rico

7.3 Positive Test Results:
Drivers:
1. Verified confirmed positive drug test and confirmed alcohol test results of 0.04 or greater: If a driver receives a verified positive drug test or a confirmed alcohol test result of 0.04 or greater, for the first time, the driver will be suspended and may be subject to discipline. A driver may not return to performing safety-sensitive functions unless the driver: (1) is evaluated by a substance abuse professional; (2) successfully complies with the SAP's recommendations; and (3) takes a return-to-duty drug test and receives a negative result, and/or a return-to-duty alcohol test and receives a result of less than .02 BAC.

a. However, an employee who tests positive for the first time will be terminated, if the employee: (i) refuses or fails to be evaluated by a substance abuse professional; (ii) refuses to participate in the counseling, treatment or rehabilitation program recommended by the substance abuse professional, or (iii) fails to successfully complete the program, as evidenced by, for example, the employee's withdrawal from the program before its completion, or by a positive test result during or after completion of the program.

INSTRUCTIONS: The Federal Motor Carrier Safety Administration (FMCSA)'s regulations restrict when a driver is legally permitted to use medications containing drugs (as defined in 49 C.F.R. §40.85). In accordance with FMCSA's regulations (49 C.F.R. §382.213), a driver is legally permitted to use such medications under the instructions of a licensed medical practitioner, *only* if the licensed medical practitioner has advised the driver that his/her use of the medications prescribed or dispensed *will not* adversely affect the driver's ability to operate the vehicle safely or to perform his/her other safety-sensitive functions safely. This form can be used for documenting a driver's compliance with this FMCSA requirement. Part I should be completed by the driver, before it is given to the licensed medical practitioner for execution. The completed form should be retained by the driver for later submission to the medical review officer (MRO) in the event the driver tests positive for use of the medication. A copy of the completed form should be retained by the licensed medical practitioner for verification purposes.

PART I. DRIVER'S CERTIFICATION:

The undersigned driver acknowledges that: (i) I am fully aware of and understand FMCSA's regulation (49 C.F.R. §382.213) governing the use of medications containing drugs (defined in 49 C.F.R. §40.85 to include marijuana metabolites, cocaine metabolites, amphetamines, opiate metabolites and phencyclidine); (ii) I have been instructed by the Company to use this form to evidence compliance; (iii) my failure to use this form for that purpose can result in discipline up to and including my termination.
Driver's signature:

PART II. MEDICAL CERTIFICATION:

The undersigned hereby certifies that on , 200 , I prescribed or otherwise dispensed the medication(s), listed below, which contain drugs (defined in 49 C.F.R. §40.85 to include marijuana metabolites, cocaine metabolites, amphetamines, opiate metabolites and phencyclidine), to:

.

(print driver's name)

List medication(s): .

I further certify that, at the time of prescribing or otherwise dispensing the medications listed above, I was fully aware that the patient is a truck driver and that he/she performs driving and other safety-sensitive duties. I also certify that, at the time of prescribing or otherwise dispensing the medications listed above, I advised the driver that his/her taking of such medications in the amounts and frequencies prescribed in conjunction with performing driving and other safety-sensitive duties would not affect the safe performance of his/her duties.

ADDITIONAL COMMENTS:

SIGNATURE OF LICENSED PRACTITIONER: LICENSE#_____

PRINT NAME: _____DATE

[NOTE: CONFIDENTIAL MEDICAL DOCUMENT. COMPLETED FORMS SHOULD BE RETAINED IN DRIVER'S CONFIDENTIAL PERSONAL MEDICAL FILE]

APPENDIX D

Rate Schedule (Provided Under Separate Cover)