# APPENDIX G

# QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS


| NAME | PROJECT TITLE | PAGE WITHIN APPENDIX G |
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| Alec Macbeth | Environmental Professional; Project Manager | 2 |
| Stuart Rixman | Senior Technical Advisor | 5 |
| Jerry Murphy | Environmental Scientist | 16 |

**Alexander Paul Macbeth, PG**
**Project Manager and Geologist**

**Education**

MS, Geology, University of Vermont, Burlington, 1989
BS, Geology, Florida State University, Tallahassee, 1986

**Professional Licenses**

Professional Geologist, Florida, #1933, 1996
Professional Geologist, Tennessee, #2559, 1992
Professional Geologist, Georgia, #1027, 1993

**Experience Summary**

Mr. Macbeth's primary role from 2000 to middle 2005 has been the chief project manager for the Total Environmental Restoration Contract (TERC) 3 and ERSC work at Eglin Air Force Base, Florida. He has been working at Eglin since March 1995. Most of the work has been with the Eglin Installation Restoration Program (IRP) and has consisted of assessments and remediation of impacted media (soils, groundwater, sediment, and surface water). Over the past five years, this work has entailed more than 150 sites. Mr. Macbeth joined the Eglin team as the field manager, then managed several projects within specific delivery orders, before being assigned chief project manager in October 1999. Currently, Mr. Macbeth has just finished taking a few months off to teach middle school science. He is supporting several of the DOD and FDEP projects in Florida.

**Project Experience**

**US Army Corps of Engineers - Omaha District, ERSC - Phase I Environmental Site Assessment (LPV 105-111), New Orleans, Louisiana.** Project manager for a Phase I ESA to investigate the potential presence of hazardous, toxic, or radioactive waste (HTRW) in the vicinity of the proposed construction to ensure that suitable and safe fill materials are used for levee rehabilitation and improvement to the flood protection system. [11/2006 - 03/2007]

**US Army Corps of Engineers - Omaha District, TERC 3 Active Delivery Order Nos. 12, 15, 18, 20, 23, 26, 10, 11 Eglin AFB, Florida.** Chief project manager for a greater than $20 million contract for preliminary assessments and site investigations, risk assessments, interim corrective measures, corrective measures studies, and remediation at more than 150 sites on Eglin Main Base and Reservation. Manages work at oil/water separators, former surface and/or subsurface disposal areas, test ranges, fuel or solvent spill locations, cattle dipping vats, and water towers. Supervises assessments of oil and groundwater quality, as well as sediment and surface water in several drainages on Eglin Main Base. Contaminants addressed include petroleum products, chlorinated solvents, metals (particularly lead and arsenic), dioxin, and depleted uranium. Coordinates with Eglin EOD to clear sites of UXO. Direct excavating and disposing soil off site (soil impacted with arsenic, lead, PAHs, pesticides, or uranium), capping with a soil cover, and improving site habitat by installing erosion control and planting vegetation. Involved with all phases of the work, including the preliminary assessment and investigative field work, remediation field work, data management and interpretation. Senior author on all Eglin reports and work plans. Interacts closely with Eglin, USACE, regulators (EPA, FDEP, FDOH, and NRC), and subcontractors, including Bhate Environmental.

**Florida Department of Environmental Protection, St. Marks Refinery Site Assessment, St. Marks, Florida.** Lead field geologist in performing large-scale site assessment of 80 acre former oil refinery. The investigative work included soil sampling, monitoring well installation, wetland (surface water and sediment) sampling. Played large role in evaluating data and developing report. [07/2004 - present]

**Confidential Client, Ordnance Explosive (OE) Scrap Removal, Camden, Arkansas.** Project Manager for a $350,000 characterization and removal of UXO/OE scrap at a 10-acre site within the former Shumaker Naval Ammunition Depot (NAD). Directed a visual reconnaissance to determine explosive hazards associated with the site, a characterization of the extent of buried OE Scrap using surface geophysical techniques, and

excavation and off-site disposal of approximately 600 cubic yards of OE scrap, and associated solid waste and construction debris. Also collected soil and groundwater samples to evaluate the presence of residual contamination caused by the OE scrap and solid waste.

**Confidential Client, Phase I and II Investigation, Pensacola, Florida.** Project manager for a Phase I and large Phase II investigation at an electrical generator manufacturing facility that was being sold to a new operator. Phase II was a $175,000 project and included extensive soil, sediment, surface water, and groundwater sampling. Project included very rapid response times to meet client's needs.

**US Army Corps of Engineers, Site Inspection, Fort Gillem Army Depot, Atlanta, Georgia.** Site manager for a site inspection of unsaturated soil and groundwater contamination near an abandoned sewage treatment plant. Managed field activities, which included a passive soil gas survey, auger and air rotary/air hammer drilling, installation of soil and bedrock monitoring wells, and soil and groundwater sampling. Evaluated, interpreted, and presented hydrogeologic and chemical data for report. Author of work plan and report for project.

**Confidential Client, Groundwater Remediation, Spartanburg, South Carolina.** Site manager for the design and installation of the second phase of a groundwater extraction system at an active fiber-producing plant. Managed design, construction, and installation of overburden and bedrock extraction wells to effectively capture and contain contaminated ground water from migrating off-site. Directed design and installation of observation and monitoring wells to monitor system performance. Author of report for project.

**US Army Corps of Engineers, Supplemental Remedial Investigation/Baseline Risk Assessment, Redstone Arsenal, Huntsville, Alabama.** Site geologist for part of a study conducted at three sites on Redstone Arsenal. Supervised the advancement of soil test boring to collect soil and groundwater samples for laboratory and geotechnical analyses.

**Confidential Client, Groundwater Assessment, Greenville, South Carolina.** Site manager for a groundwater quality assessment as part of a RI/FS at a closed fiber-producing plant. Supervised rock coring and reverse packer tests, groundwater sampling and installing monitoring and extraction wells using auger and coring drill methods. Contributed significantly to interpreting hydrogeological and analytical data and writing the RI/FS report.

**Earth Tech Health & Safety Training**

01 - Safety Orientation 02/01/2006
02 - Hazard Communication (US) /WHMIS (Canada) 12/19/2005
03 - Defensive Driving Awareness Training 12/16/2005
04 - Defensive Driving 4-Hour Course 12/22/2004
14 - Office Ergonomics Training 02/08/2006
15 - First Aid 08/09/2006
16 - CPR 08/09/2006
17 - DOT Level 1 Shipper/(TGD) Canada 02/01/2006
20 - HAZWOPER 40-Hour 02/02/1990
21 - HAZWOPER Refresher 8-Hour 01/26/2006
22 - HAZWOPER Supervisor 8-Hour 02/12/1993
23 - OSHA 10-Hour Construction Safety 06/01/2006
30 - Respiratory Protection Training 01/26/2006
31 - Hearing Protection Training 01/26/2006
34 - General Excavation Safety Training 01/27/2006
35 - Trench/Excavation Safety Training 01/27/2006
36 - Fire Extinguisher Training 01/25/2006
C1 Fire Protection 12/23/2004
C2 Bloodborne Pathogens 12/22/2004
C2 Trenching and Excavation 01/27/2006
ETUSA Southeast District Safety Metrics 11/01/2006
Medical Monitoring 05/10/2006

**Training and Certifications**

Environmental Management Coursework, University of Maryland, 2003
Short Course Introduction to Geochemistry, National Groundwater Association, 1991
How to Manage Projects, Daniel Management Center, 1994
Drilling and Boring Fluids Workshop, Baroid Industrial Drilling Products, 1996
Site Remediation Course, Interactive Remote Instructional System (IRIS), Wright State University, 1996
Implementing the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Approach for the Design and Conduct of Radiological Surveys, Oak Ridge Institute for Science and Education, 1999

**Professional Memberships**

Florida Association of Environmental Professionals
Society of American Military Engineers, Emerald Coast

**Conference Presentations**

DU Program at Eglin AFB, poster presentation, Battelle Range Sustainment Conference, January 2004, New Orleans, Louisiana.

**Publications**

Macbeth, A. and J. Hannah, "Magmatic History of the East Tintic Mountains, Utah," *U.S. Geological Survey* open file report 90-0095, 1990.

**Employment History**

1990 - present, Earth Tech
1987 - 1989, University of Vermont
1987 - 1988, US Geological Survey

**Stuart I. Rixman, CHMM, CPEA, REA**
**Manager, EHS Services**

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**Education**

MBA, Business Administration, University of Delaware, 1972
BS, Chemical Engineering, Lehigh University, 1968

**Professional Registrations**

Certified Professional Environmental Auditor, #399821, 1999
Certified Hazardous Materials Manager, #1514, 1988
Registered Environmental Assessor, California, #REA-00117, 1987

**Experience Summary**

Mr. Rixman manages and conducts EHS compliance audits, EHS management system assessments, and environmental site/due diligence assessments; helps clients design, improve, and implement EHS management systems; develops compliance, waste reduction, and emergency response plans; prepares environmental reports and permit applications; and recommends cost-effective enhancements. For several years, he was a part-time ISO 14001 and OHSAS 18001 Lead Auditor for a Registrar. He has completed more than 500 EHS compliance audits and EMS assessments, and conducted and managed hundreds of site/due diligence assessments of a wide variety of facilities. A member of ASTM Committee E50 on Environmental Assessment since it was founded, he helped write Standard Practice E1527 for Phase I Environmental Site Assessments, and has provided expert testimony about it. Before becoming a consultant, he worked for 19 years for Fortune 200 chemical companies in plant, laboratory, and TSDF auditing, manufacturing management, engineering, and plant operations. His chemical plant experience includes specialty and agricultural chemicals, chlorine and caustic soda, and soda ash.

**Project Experience**

***Environmental Site/Due Diligence Assessments***

**Confidential Client, Ten States.** Managed environmental due diligence assessments of eight heavy industrial manufacturing plants and four other facilities. [2005]

**Cascades, New York.** Completed Phase I environmental site assessments of six hydroelectric power plants, an office building, and a boxboard manufacturing plant, and a limited-scope Phase II assessment, in support of proposed acquisitions. [2003]

**Schenectady International, Michigan, Pennsylvania, and Tennessee.** Completed environmental due diligence assessments of three chemical manufacturing plants in support of proposed acquisitions. [2003]

**American Securities, United States, Australia, France, Germany, and United Kingdom.** Managed and partially conducted third-party reviews of environmental site assessments and compliance evaluations of 13 manufacturing plants. [2003]

**Beta Capital, Arizona, Arkansas, Georgia, Florida, Montana, Tennessee, Utah, Wisconsin.** Managed environmental site assessment updates of eight motel properties. [2003]

**Mitsubishi Investment Corporation, Due Diligence Assessment, West Virginia.** Conducted an environmental due diligence assessment (Phase I ESA and limited-scope compliance evaluation) of a chemical company, and provided an opinion as to the general suitability of the facility for its intended purpose. Other employees completed a limited Phase II assessment. Based upon the results, advised the client of significant potential concerns regarding the facility.

**GE Capital, Due Diligence Assessments, North Carolina, Oregon and Washington.** Completed environmental due diligence assessments of a large bleached paper mill and associated landfill, an unbleached Kraft paper mill, a recycled corrugated cardboard processing facility, log-chipping operations, and a paper conversion and printing facility.

**Wilsonart, Due Diligence Assessment, Quebec.** Completed a Phase I environmental site assessment, limited-scope Phase II assessment, and compliance evaluation of a 500,000 square foot wallboard manufacturing facility located near Montreal that had been in operation for about 50 years.

**Wright, Robinson, Ostimer & Tatum, ESA Expert Testimony, Virginia.** Provided expert testimony in federal court regarding the meanings of various sections of ASTM Standard E1527 for Phase I Environmental Site Assessments, in conjunction with a lawsuit alleging failure by a consultant to detect a recognized environmental condition.

**GE Capital, Third-Party Due Diligence Assessment Reviews, Multiple States.** Completed third-party reviews of Phase I and II environmental site assessments and compliance evaluations of 25 scrap metal recycling facilities, 30 correctional facilities, 20 motor coach building and repair facilities, and four metal alloys manufacturing plants. Identified errors in, and omissions from, those reports, and estimated the costs to address many of the issues via corrective actions.

**Motels of America, Phase I Environmental Site Assessments, 34 States.** Under the direction of counsel to the client and to financial underwriters and a major bank, managed the completion of environmental site assessments and building inspections at more than 140 locations by coordinating the efforts of more than three dozen assessment personnel from two dozen offices.

**ERGON, Due Diligence Assessments, Pennsylvania and West Virginia.** For a potential purchaser, conducted Phase I environmental due diligence assessments of two crude oil collection terminals, a small oil refinery, and a lubricants blending, packaging, and distribution facility. Identified target areas for subsequent Phase II intrusive investigations that resulted in the identification of significant impacts to subsurface soil and ground water.

**Fleet Bank, Third-Party Due Diligence Assessment Reviews, Four States and England.** Reviewed due diligence assessments of six chemical plants in conjunction with a leveraged buyout of a division of a Fortune 100 corporation. The bank was concerned that the initial studies had not adequately addressed all relevant environmental concerns. All issues identified during the review were resolved in a manner satisfactory to the bank, and the transaction proceeded.

**SC International Services, Site Assessments, Multiple States.** Under the direction of the client's legal counsel, managed environmental due diligence assessments of 17 airline food preparation and distribution facilities serving major airports located in California, Hawaii, Nevada, New Jersey, New York, and Virginia, and 17 other food preparation and distribution facilities located in Connecticut, Georgia, Kentucky, Michigan, Minnesota, New Jersey, New York, and Ohio.

**Maytag Corporation, Due Diligence Assessments, New Hampshire, Pennsylvania, Vermont, and Texas.** Conducted environmental due diligence assessments of five appliances manufacturing facilities, and managed the assessments of two other facilities, in conjunction with proposed acquisitions.

**Coopers & Lybrand, Due Diligence Assessments, Indiana, New Jersey, North Carolina, Pennsylvania.** Evaluated the compliance status and environmental condition of seven current and former glass manufacturing plants. Identified existing and potential impacts to soil and groundwater, the status of permits, and air emissions and wastewater discharge compliance issues.

**GE Supply Company, Phase I & II Site Assessments and Environmental Remediation, Connecticut.** Completed Phase I and II assessments at a facility in which ammunition was manufactured from 1916 through 1937, and managed assessments for mercury, lead-based paint, and asbestos, and a cleanup of soil impacted by a historical release of PCBs.

**OCI Chemical Company, Phase I & II Due Diligence Assessment and Ore Reserves Evaluation, Wyoming.** Under the direction of legal counsel for a prospective purchaser, conducted a comprehensive environmental due diligence assessment and an ore reserves estimate and valuation of a mine and ore refinery in support of a proposed transaction valued at an estimated $150 million. Also confirmed the availability of recoverable ore reserves, and defined the existing environmental conditions as well as the expected future situation regarding the disposal of tailings from the refinery.

**Mitsubishi Investment Corporation, Due Diligence Assessments, Labrador and Quebec.** Assessed environmental conditions of iron ore mines and ore concentrators, a 300+ kilometer railroad, and a port on the St. Lawrence Seaway. Identified an estimated $10 million in potential future pollution control, compliance, and remediation costs. Subsequently, the client acquired an ownership interest for $10 million less than the original asking price.

**Chemical Bank, Due Diligence Assessments, California, Mexico, Spain, and France.** Evaluated the environmental status of diatomaceous earth mines in conjunction with a buy-out transaction valued at more than $70 million.

**Chemical Bank, Due Diligence Assessment, Michigan.** Evaluated the environmental status of a copper mine and smelter whose owner was seeking a $10+ million loan. A new compliant smelter was estimated to cost $150+ million.

**First Boston Corporation, Due Diligence Assessments, Louisiana and Canada.** Evaluated the environmental status of five salt mines in conjunction with a proposed acquisition valued at approximately $125 million.

**Pyramid Companies, Environmental Assessment and Remediation, New York.** Managed soil and ground water investigations at a 55-acre former scrap yard that became the site of a $200 million mall. Developed a site history; installed test pits, soil borings, and monitoring wells; obtained and interpreted soil and groundwater analyses and a soil gas survey; developed profiles of fill placed on the site many years earlier and groundwater isopleths; and drafted portions of an Environmental Impact Statement.

***Compliance Evaluations***

**Confidential Client, Environmental Audits, Entire United States.** Managed a program to complete environmental audits of more than 300 commercial and light industrial facilities located throughout the United States, and conducted about ten percent of them. Recommended actions to address the findings. [2006]

**Confidential Client, EHS Audits, Nationwide, United States.** Managed a program to provide a client with experienced EHS auditors to assist the client in completing comprehensive environmental, health, safety, and DOT compliance audits of more than 50 large and medium-sized manufacturing facilities located throughout the United States. Have participated in audits of almost half of them, and served as audit team leader for several of them. Each audit lasted three to five days, covered all applicable EHS and DOT regulations, and involved a team of four or more experienced auditors. Provided recommended actions to guide the facilities in addressing the identified issues. [2005 - 2006]

**Connecticut Department of Mental Health and Addiction Services, Environmental Audit, Middletown, Connecticut.** Part of a team that conducted an environmental audit of a state-owned psychiatric hospital and its supporting operations, including a maximum-security facility, and made recommendations to address the identified concerns. [2006]

**Confidential Client, Environmental Audits, Alabama and Louisiana.** Conducted environmental audits of two railroad yards using a client-provided protocol, and made recommendations to address the issues that were identified. [2006]

**New York State Office of General Services, New York.** Audited a State-owned hospital and clinical research facility for environmental compliance and good environmental management practices. Areas of inquiry included air emissions permitting and monitoring; asbestos management; water supply and treatment; wastewater collection, discharge and permitting; storm water collection and permitting; hazardous waste status; management of biohazardous, hazardous, universal, and solid wastes; hazardous substances management, including PCBs, mercury-containing equipment, and lead-based paint; aboveground and underground storage tank permitting, monitoring and management; Oil SPCC Plan completeness and compliance; toxic substances release reporting; and pesticide use. Have also provided follow-up compliance assistance and audits. [2003-2006]

**Dormitory Authority of New York / New York State Office of Mental Health, Environmental Audits, New York.** Conducted environmental audits of five State-owned psychiatric hospitals and research facilities, and their supporting operations, including three maximum-security facilities. Defined the applicable requirements, evaluated each facility, recommended actions to address potential concerns, and as necessary educated facility personnel as to the meanings of the various requirements and effective means of assuring compliance. Also conducted limited compliance evaluations at several other State-owned psychiatric hospitals. [2002-2006]

**Surpass Chemical Company, Environmental Compliance Assistance, New York.** Helped this chemical formulator and distributor comply with an Order on Consent by conducting an environmental compliance audit and developing a recommended Best Management Practices plan. Emphasis was on compliance with the Chemical Bulk Storage Regulations. Also helped the facility have its tanks inspected and upgrade its Spill Prevention Report, and with ongoing EHS compliance needs. [1999-2006]

**AVOX/Scott Aviation, Environmental Compliance Assistance, Lancaster, New York.** Provided a compliance audit and form submission assistance related to applicable New York State and federal air emissions, hazardous waste management, and SARA Title III regulations at this manufacturing facility. [2002-2006]

**Confidential Client, Environmental Compliance Reviews, Connecticut, Iowa, New Jersey, and New York.** Conducted environmental compliance reviews of 33 facilities in Connecticut and the New York City metropolitan area ranging in size to more than 2.4 million square feet, to ascertain their status relative to applicable federal, state, and local environmental laws and regulations, and client environmental policies. Also conducted reviews of three facilities in Iowa. [2003-2006]

**Maytag Corporation, Environmental Audits, Multiple States and Mexico.** Trained a team of Maytag environmental compliance employees in environmental auditing techniques, then lead/guided that team in conducting compliance audits of appliance manufacturing plants and distribution facilities in California, Illinois, Iowa, Missouri, New Hampshire, Ohio, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, and Juarez, Mexico. After the initial round of compliance audits, trained the team to audit the environmental management systems of facilities, as a means to sustained compliance. [1999-2005]

**Confidential Client, TSDF Compliance Audits, Multiple States.** Evaluated the compliance of the following hazardous waste facilities, and developed opinions regarding the risk to which the client might be exposed by virtue of sending its wastes to each: US Filter, Wilmington, Delaware; Lorco Petroleum Services, Elizabeth, New Jersey; and USA Lamp & Ballast Recycling, Milton, New York. [2005]

**Confidential Client, Environmental Compliance Reviews, Nine States.** Managed compliance reviews of nine manufacturing plants and associated facilities, and conducted one of those reviews. [2004]

**Confidential Client, EHS Audits, New England and New York.** Member of a two-person team that completed comprehensive EHS compliance audits of a 1,000-employee medical device R&D complex, a product distribution center, and a medical device manufacturing facility. [2003]

**GE Supply Company, Comprehensive EHS Compliance Assistance, Entire United States and Puerto Rico.** Wrote a concise EHS compliance manual focused on the client's business, created a model injury/illness prevention program, developed a compliance self-assessment program for use by 150+ locations, prepared SARA Title III Tier II reports for some locations, conducted more than 80 health and safety audits, and assisted with a broad range of environmental, health, and safety issues. [1988-2002]

**Mercy College, Environmental Audit, New York.** Evaluated the environmental compliance status of this college with respect to federal and state environmental laws and regulations, and made recommendations for altered practices. Topics included air, water, wastewater, solid and hazardous wastes, and hazardous materials. This audit was conducted in anticipation of a possible audit by USEPA Region II as part of its enforcement initiative that focuses on colleges and universities. [2000]

**New York State Department of Correctional Services, Environmental Audits, New York.** Completed environmental audits of a medium-security correctional facility and a maximum-security correctional facility, one of which contains a health care facility, for compliance with selected environmental regulations, including the "Rules and Regulations for the Protection from Contamination, Degradation and Pollution of the New York City Water Supply and Its Sources".

**Confidential Client, Environmental Audits, Seven States.** Conducted environmental and hazard communication audits of 65 utility company facilities over a five-year period. Major issues included fuel tanks, backup power supplies, solvent usage and disposal, SARA Title III reporting, PCB management, emergency preparedness, and written hazard communication programs.

**Lower Colorado River Authority, Health and Safety Audit, Texas.** Part of a team that conducted a comprehensive health and safety evaluation of this regional electric utility and made recommendations to reduce employee risk exposures.

**Twin Rivers Textile, EHS and OSHA Audit, New York.** Conducted environmental and OSHA audits of a facility that formulates water-based print pastes and does custom color printing on polyester for the garment manufacturing industry.

**Confidential Client, EHS Audit, New York.** Managed a comprehensive environmental, health, safety, and hazardous materials transportation (DOT) audit of this client's 1.25 million square foot corporate research and development facility, and conducted the environmental and DOT portions of the audit. Also directed the activities of a CIH/CSP who conducted the health and safety portions and completed an assessment of the facility's status relative to qualifying for acceptance into OSHA's Voluntary Protection Program. Performed a root-cause analysis of all identified concerns, and developed a recommended approach to address each concern.

**Confidential Client, Environmental and Hazard Communication Audit, New York.** Conducted an environmental and hazard communication assessment of a 250-megawatt cogeneration facility that has gas turbines, a heat recovery steam generator, and a steam turbine. Concerns included NOx and other air emissions, wastewater and storm water discharges, hazardous waste management, and hazardous materials storage and handling.

**Stauffer Chemical Company, EHS Audits, Facilities in 18 States, Japan, and Australia.** Evaluated more than 60 agricultural, specialty, and inorganic chemical manufacturing plants, and research laboratories and pilot plants for compliance with environmental, OSHA, and DOT regulations. Developed cost-effective recommendations to address the identified concerns. Also evaluated an underground Trona mine and the associated soda ash refinery, five chemical plants in Japan and Australia, and five commercial hazardous waste incinerators and landfills (TSDFs).

**McNamee, Lochner, Titus & Williams, EHS Audits, Connecticut and New York.** Evaluated the compliance of this law firm's client, a chemical manufacturer, with applicable environmental and OSHA regulations, and for the use of good management practices to reduce the risk of an uncontrolled release.

**Confidential Client, TSDF Compliance Audits, Multiple States.** Evaluated the compliance of the following hazardous waste facilities, and developed opinions regarding the risk to which the client might be exposed by virtue of sending its wastes to each: Rineco Chemical Industries, Benton, AR; Evergreen Environmental Services, Carson & Newark, California; Romic Environmental Technologies, East Palo Alto, California; Metalworking Lubricants, Indianapolis, Indiana; Heartland Cement, Independence, Kansas; CWM Chemical Services, Model City, New York; and Safety-Kleen in Reedley, California, East Chicago, Indiana, Dolton, Illinois, New Castle, Kentucky, Buffalo, New York, and Denton, Texas.

**J. M. Huber Corporation, Environmental Audits, Colorado, Georgia, and Tennessee.** Conducted comprehensive environmental compliance evaluations of two electronics assembly plants, a printing ink formulation and distribution facility, and a large chipboard manufacturing and distribution facility.

**Confidential Client, TSDF Compliance Audits, California, Connecticut, and Nebraska.** Lead teams of the client's employees in conducting evaluations of hazardous waste management facilities in Richmond, California, Bristol, Connecticut, and Kimball, Nebraska. Also developed a training program in the techniques of auditing commercial TSDR facilities and presented it to the client's personnel.

**Inland Container, Waste Management Audits, Connecticut, Delaware, and Massachusetts.** Evaluated boxboard plants that perform offset lithographic printing, and a recycled paper mill, for compliance with applicable solid and hazardous waste and hazardous materials management regulations.

**The Noteworthy Company, Air Emissions and RCRA Audit, New York.** Assessed the air emissions permitting and hazardous waste compliance status of a facility that makes blow-molded polyethylene film, custom-prints it using offset lithography, and then converts the printed film into plastic bags.

**LeBoeuf, Lamb, Greene & MacRae, Environmental Audit, New York.** Evaluated this law firm's client, an electronics plant, for compliance with applicable air emissions, wastewater discharge, hazardous waste, and PCB management regulations.

**Chesebrough-Ponds Corporation, EHS Audits, Connecticut and Alabama.** Evaluated three cosmetics manufacturing plants for compliance with applicable environmental, health, and safety regulations, and recommended corrective actions.

**Stauffer Wacker Silicones, TSCA Audit, Michigan.** Evaluated a silicone products facility that contains a research and development lab, pilot plant, and manufacturing plant, for compliance with TSCA rules on pre-manufacture notifications, test market exemptions, and notices of commencement of manufacturing.

**Confidential Clients, TSDF Audits, Illinois and South Carolina.** For Potentially Responsible Party (PRP) committees, audited the Peoria Disposal Company facility in Illinois and the Omni/Southeastern facility in South Carolina to determine their acceptability to receive and manage specific types of wastes from mandated environmental remediation activities.

***Environmental Management Systems***

**Atlas Copco Comptec, EMS Implementation and Support, New York.** Assisted this centrifugal compressor manufacturer with the process of developing and implementing an improved environmental management system (EMS). Also conducted EMS training for employees and internal assessor training for selected employees, developed a register of applicable legal and other requirements, assisted in the selection of a Registrar, and have periodically evaluated the facility's environmental compliance status. The facility was registered to ISO 14001 with no nonconformities identified during its registration audit. [2001-2006]

**DaimlerChrysler, EMS Implementation, Michigan and Ohio.** Over the course of three years, guided and assisted three automotive stamping plants (sequentially) in creating and implementing an EMS that conformed to the requirements of both the ISO 14001 standard and the corporation's own enhanced EMS requirements. This included integrating environmental conformance and improvement into daily operations at all levels, and merging the EMS with the existing ISO 9001 quality management system. Then assisted two parts distribution centers in creating and implementing EMSs so that they also could achieve ISO 14001 registration. Major program components included helping each facility to identify its environmental aspects and impacts, define applicable environmental requirements and means of assuring that they are consistently met, set objectives and targets for environmental improvements, create or enhance existing procedures and forms, and define and conduct training. Toward the end of the process at each location, conducted an assessment to confirm that the facility's EMS was suitable, adequate, and effective. All five facilities were registered to ISO 14001. Separately, conducted pre-assessments at eight other plants to determine their readiness for ISO 14001 registration audits. The EMS project at the first stamping plant was the U.S. pilot of DaimlerChrysler's EMS program. Lessons learned and tools developed during it made EMS implementation more efficient and cost-effective during the subsequent EMS implementation at all DaimlerChrysler locations in the Western Hemisphere. [1999-2005]

**NSF-ISR, ISO 14001 and OHSAS 18001 Registration and Surveillance Audits, Multiple States.** The client, NSF International Strategic Registrations, Inc. (NSF-ISR) is an RAB-accredited ISO 14001 (and ISO 9000) Registrar. On a contract/as-needed basis, conducted a total of 46 ISO 14001 Registration, Surveillance, and Re-Registration audits over a period of seven years. Also conducted 5 OHSAS 18001 Registration and Surveillance audits over a period of 1.5 years. The facilities audited covered a broad range of industries and activities, including manufacturing plants for metal products, chemicals, pharmaceuticals, plastic packaging, and automobile components; a brewery; non-metal mining and ore refining facilities; a chemical products corporate headquarters and R & D center; a large pharmaceutical products R & D center; and four construction companies. Served as the Lead Auditor for a majority of the audits. Responsibilities included planning and scheduling the audits and preparing reports and recommendations, in addition to the on-site activities. [1998-2005]

**Dataram Corporation, Pennsylvania.** Assisted this small assembler of electronic components in developing and implementing an EMS so that it could become registered to ISO 14001. [2004-2005]

**Lafarge Corporation, EMS Assistance, New York.** Assisted a large cement manufacturing plant and quarry with designing and implementing an enhanced environmental management system that meets the requirements of the EPA's National Environmental Achievement Track and the requirements of ISO 14001. Lead the processes of creating an EMS Manual and associated EMS procedures and forms, identifying and ranking hundreds of environmental aspect/impact pairs, and creating general EMS awareness training tools. Then created a Visio drawing for each major process that shows environmental as well as process inputs, flows and outputs, and identifies associated environmental Standard Operating Procedures. [2001-2003]

**Confidential Client, EMS Implementation, New York.** Assisted a manufacturer of explosives with the process of strengthening its EMS, and assuring that it conforms to the requirements of ISO 14001 and the EPA's National Environmental Achievement Track. [2001-2003]

**General Motors, EMS Guidance and Training, Ohio and Wisconsin.** Provided guidance and assistance to an automotive components manufacturing plant during its ISO 14001 registration audit. Also conducted training for internal EMS auditors at another plant, and assisted it in enhancing its procedures to conform to the requirements of ISO 14001. [2001]

**Confidential Client, EMS Enhancement, Virginia.** Assisted a semiconductor fabrication facility in the implementation of an improved environmental management system that conformed to the requirements of ISO 14001. The facility subsequently passed its registration audit with no nonconformances. Also conducted an assessment of part of the facility's EMS in preparation for its initial surveillance audit, and trained internal auditors. [1999 - 2000]

**WMX Technologies/Bio-Gro Division, EMS Gap Analysis, Maryland.** Conducted a baseline assessment of the environmental management system of this operation, which involves applying sludge from 35 municipal wastewater treatment plants to more than 1,000 farm fields, for conformance to the requirements of the GEMI and ISO 14001 standards.

**WMX Technologies, EMS Gap Analysis, Oregon.** Evaluated the environmental management system of a RCRA-permitted hazardous waste treatment and storage facility and Subtitle C landfill for conformance to the requirements of the ISO 14001 standard.

**Confidential Clients, EMS Baseline Assessments, Indiana and Texas.** Completed baseline assessments of the environmental management systems of a non-ferrous metal parts manufacturing plant and a pharmaceuticals manufacturing plant for conformance to the requirements of ISO 14001. The pharmaceuticals plant then addressed the identified gaps promptly, so that it was able to pass a registration audit the following month.

***Compliance Assistance and Risk Reduction***

**Confidential Client, New York.** Assisted a manufacturing facility in complying with the New Source Performance Standards under the Clean Air Act. Also prepared an oil SPCC Plan. [2006]

**US Postal Service, New York City Community Right-to-Know Reporting, New York.** Managed a project to conduct onsite chemical inventories and prepare forms related to the New York City Department of Environmental Protection Community Right-to-Know Law for 32 facilities. [2005]

**ARTCO Chemical, Chemical Bulk Storage Assistance, New York.** Evaluated the environmental compliance status of this chemical distributor and assisted it in complying with New York's Chemical Bulk Storage regulations. [2002]

**American National Can Company, SARA Title III Reporting, Multiple States.** Directed the preparation of more than 300 SARA Title III Form R reports for approximately 50 plants throughout the United States, and provided quality assurance for the completed reports.

**IBM Federal Systems, SARA Title III Reporting, New York.** Prepared a hazardous waste reduction plan (HWRP) for this large aerospace electronics manufacturing facility, prepared the first annual update to the HWRP, and prepared its SARA Title III Tier II and Form R reports for two years.

**Confidential Client, Hazard Risk Assessment, New York.** Evaluated the design and layout of a proposed large cogeneration unit and used dispersion modeling to predict potential impacts to off-site receptors from worst-case vapor release events. As a result, certain aspects of the process and layout were redesigned, and additional safeguards were incorporated.

**New York State Office of General Services, Environmental Compliance, New York.** Evaluated the state prisons located within the New York City watershed for compliance with the City's watershed protection regulations, and identified needed changes and facility upgrades. Prepared a guidance manual to assist them in evaluating the environmental requirements that could become applicable if changes to a facility are planned.

**Confidential Client, PCB and SARA Title III Reporting, New York.** Directed the preparation of PCB annual document logs for three years for a facility with hundreds of PCB-containing transformers and capacitors. The project team gathered all relevant information, entered it into a database, and then created spreadsheets that were cross-linked to the database so the Logs could be produced accurately and in a cost-effective manner. Also directed the preparation of SARA Title III Form R reports for one year.

**NGK Metals, PCB Compliance Audit and Assistance, Pennsylvania.** Evaluated the compliance of a beryllium copper plant with the TSCA PCB regulations, compiled an inventory of its PCB-containing transformers and capacitors, and prepared a comprehensive PCB compliance manual targeted to the rules applicable to the plant.

**Rohm & Haas, RCRA Compliance Assistance, Pennsylvania.** Created detailed, comprehensive Hazardous Waste Procedures Manuals for two chemical manufacturing operations.

***Environmental Permitting***

**Multiple Clients, Air Emissions Permitting, New York.** Prepared air permit applications for 50+ sources of emissions from operations such as power houses flexographic printing; paint spraying and curing; textile printing and processing; stone crushing, screening, storage, and shipping; cement storage and handling; concrete batch mixing; and metal parts cleaning. Assisted some facilities in "capping out" as synthetic minor emission sources under Title V. [1995 - 2004]

**Confidential Client, Title V Permitting, New York.** Managed the preparation of an air emissions inventory and then a Title V permit application for a large R&D facility. Also helped define and implement Reasonably Available Control Technology (RACT) for affected sources of emissions of NOx and VOCs, and evaluated the facility's status relative to compliance with the applicable regulations promulgated by the EPA and the state. [1997 - 2002]

**Training**

ISO 14001 Environmental Management Systems Lead Auditor, 1997
OSHA 10-hour Construction Safety Training
OSHA 40-hour Hazardous Waste Operations Training, 1987
OSHA 8-hour Hazardous Waste Operations Annual Refresher Training
OSHA 8-hour Hazardous Waste Operations Site Supervisor Training, 1990

**Professional Memberships**

The Auditing Roundtable
ASTM Committee E50 on Environmental Assessment (founding/voting member)
Academy of Certified Hazardous Materials Managers
American Institute of Chemical Engineers

**Conference Presentations**

"All Appropriate Inquiries – What's New and different?," The Auditing Roundtable, Phoenix, Arizona, 2006.

"How an Environmental Management System (EMS) Can Improve Compliance (and Reduce Your Costs)," Risk Management Workshop, New York Construction Materials Association, 2004.

"Audits of Healthcare Facilities - Why, What & How," The Hospital Association of New York State, Albany, New York, 2003.

"Complying With Hazardous Waste Regulations," 1999 Annual Industry-Environment Conference, The Business Council of New York State, Albany, New York, 1999.

"ISO 14001," Sheboygan County Chamber of Commerce, Sheboygan, Wisconsin, 1997.

"Environmental Audits and Confidentiality: An Overview," 1995 Legislative Forum hosted by the Environmental Law Section of the New York State Bar Association, Albany, New York, 1995.

"Balancing Audit Programs and Liability Exposures," 1993 Penn Expo, Hershey, Pennsylvania, 1993.

**Employment History**

1987 - present, Earth Tech
1974 - 1987, Stauffer Chemical Company
1968 - 1974, Diamond Shamrock Corporation

**Jerry D. Murphy, CHMM**
**Project Scientist**

**Education**

MS, Microbiology and Immunology, University of Louisville, 1989
BA, Biology, University of Louisville, 1985
AA, General Science, Lindsey Wilson Jr. College, 1969

**Professional Licenses**

Certified Hazardous Materials Manager, #4135, 1993
Asbestos Management Planner, South Carolina, #21725, 1995

**Experience Summary**

Mr. Murphy's responsibilities include implementation of ISO 14000 environmental management systems, asbestos inspections, asbestos management plans, environmental site assessments, compliance audits, hazardous waste and solid waste management plans, health and safety plans and employee safety management. Mr. Murphy is fluent in Spanish and has experience in the Caribbean and Latin America. He also lived in Spain for one year while in the US Navy working as a foreign language interpreter.

**Project Experience**

**Applied Marine Technology, Inc., Safety and Environmental Audit, Hanahan, South Carolina.** Project manager for an audit of safety and environmental management performed by a third party to ensure compliance with all relevant safety and environmental regulations and to ensure a safe work environment for employees. [08/2006 - 08/2007]

**MASISA, Airborne Nuisance Dust Sampling, Wando, South Carolina.** Project manager for industrial hygiene sampling on medium density fiberboard (MDF) total dust to ensure adequate management of safety, industrial hygiene, and environmental activities. Managing assessment of the listed contaminant and environments. [02/2007-present]

**MASISA, Environmental Management Services, Wando, South Carolina.** Project manager for nuisance dust testing to ensure adequate management of safety, industrial hygiene, and environmental activities. Managing collection of air samples in breathing zones of five employees for analysis for nuisance dust. [0/2006-present]

**MASISA, Special Waste Sampling and Analysis, Wando, South Carolina.** Project manager for sampling of two waste streams of special waste to ensure adequate management of safety, industrial hygiene, and environmental activities. Managing collection of one composite sample of each waste stream and sent to a certified laboratory for analysis. [10/2006-present]

**Tyco International, Inc., Various Manufacturing Facilities, Eastern United States.** Safety and environmental auditor for 12 Tyco manufacturing facilities in the eastern US. Member of 4- to 6-member teams conducting comprehensive environmental, health & safety (EH&S) audits using Dakota Auditor software. Generating audit findings and corrective actions, which are uploaded into Tracer web-based database for future monitoring. [07/2005-12/2005]

**Best Supply, Phase I Environmental Site Assessment, North Charleston, South Carolina.** Project manager for a Phase I ESA of accessible portions of the property and portions of adjacent parcels that are visible from the property and public roads for obvious and apparent causes for concern such as improper storage or use of petroleum products, chemicals or wastes, and the presence of tanks, oil-filled electrical equipment, stains, unusual odors, stressed vegetation, filled areas, and other indications of hazardous substances. [08/2005 - present]

**Force Protection Inc., Safety, Industrial Hygiene, and Environmental Management Services, Ladson, South Carolina.** Project manager for a site visit to assess elements to be addressed in the stormwater pollution prevention plan (SWPPP) to ensure adequate management of safety, industrial hygiene, and environmental activities at the manufacturing facility for blast-protected vehicles. Managing air sampling and analysis in the welding areas, paint booths, and abrasive blasting booth. Also managing personal monitoring to determine exposure to airborne hazardous chemicals. [08/2005 - present]

**MASISA (Formerly Terranova Forest Products), Environmental Regulatory Compliance Audit, Wando, South Carolina.** Project manager for an environmental regulatory compliance audit including monitoring air emission and wastewater discharge points, management of hazardous substances and wastes, and characterization of any noted compliance concerns. [07/2005 - present]

**Atlantic & Pacific Management, Inc., Visible Mold Inspection and Radon Survey, Mount Pleasant, Beaufort, and Bluffton, North Carolina, and Savannah, Georgia.** Project manager for a visual inspection for the presence of mold and conditions that might support mold growth or lead to mold growth in 10% to 20% of the units in each of three condominium properties. Managing a survey for the presence of radon gas in a representative sampling of the condominium units. [07/2005 - present]

**Water & Power Technologies, Inc., EH&S Baseline Assessment, Columbia, South Carolina.** Project manager for an audit of all aspects of safety and environmental regulatory compliance at the facility. Managing permit review, industrial hygiene assessment, visual inspections for mold, asbestos, and lead, sound levels and indoor air quality studies, and an evaluation of the protocols for discharge water sampling and waste controls. [03/2005 - present]

**Behr Heat Transfer Systems, Safety and Environmental Audit, North Charleston, South Carolina.** Project manager for an audit of the safety and environmental management performed at this manufacturer of engine cooling systems to ensure compliance with all relevant safety and environmental regulations and to ensure a safe work environment for its 300 employees. [02/2005 - present]

**Synteen Technologies, Air Sampling, Lancaster, South Carolina.** Project manager for collection and analysis of air samples over a full work shift to identify worker exposure to vinyl chloride/polyvinyl chloride fumes at the workstation where PVC plastisol is heated and applied. [02/2005 - present]

**Rushmark Properties, Five Phase I Environmental Site Assessments, North Charleston, South Carolina.** Project manager for five Phase I ESAs, one for each parcel, in accordance with ASTM E 1527-00 at an 8-acre site occupied by a convenience/gasoline store and multiple office buildings identified as Aviation Business Park. Managing site visits and inspections, property history reviews, and general desktop studies to identify potential environmental liabilities. [09/2006 - 09/2007]

**Rushmark Properties, Phase I Environmental Site Assessment, North Charleston, South Carolina.** Project manager for a Phase I ESA at an 8-acre site that includes a small restaurant. Managed a site visit and inspection, property history review, and a general desk-top study to identify potential environmental liabilities in accordance with ASTM E1527-00. [02/2006-03/2006]

**Rushmark Properties, Charleston Travel Plaza Asbestos Inspection, North Charleston, South Carolina.** Project manager for a comprehensive inspection of five hotel buildings and one restaurant, which involves collecting samples of suspect materials, and submitting the samples to a laboratory for analysis. [01/2005 - present]

**Eaton Aerospace Charleston Machining Center, Environmental Consulting Services, North Charleston, South Carolina.** Project manager for an update the existing stormwater pollution prevention plan (SWPPP) and oil spill prevention, control, and countermeasure (SPCC) plan for the machining center that manufactures metal parts. [01/2005 - present]

**Parsons Evergreene LLC, Air Investigation, Charleston AFB, South Carolina.** Collected personal air samples for two construction site employees over a period of three days. Samples were analyzed by a laboratory for sulfur dioxide. Provided a letter report to the client.

**Technical Solutions Group, PCB Investigation, Ladson, South Carolina.** Collected wipe samples on exteriors of transformers and sent to a laboratory for analysis for polychlorinated biphenyls. Provided a letter report to the client.

**Charleston Air Force Base, Health and Safety Plan, North Charleston, South Carolina.** Produced a health and safety plan (HASP) providing a general description of the levels of personal protection and safe operating guidelines expected of each employee associated with the investigation, examination, and evaluation of the existing base-wide stormwater flows and their potential changes conducted at Charleston AFB. Site-specific HASP supplements addressing mobilization/demobilization, air monitoring, and Permit Required Confined Space Entry (Sewers) were included.

**Charleston Air Force Base, Health and Safety Plan, North Charleston, South Carolina.** Produced a health and safety plan (HASP) providing a general description of the levels of personal protection and safe operating guidelines expected of each employee associated with the installation of monitoring wells, and soil and groundwater sampling at the Naval Annex property (owned by Charleston AFB) adjacent to Remount Road in North Charleston. Site-specific HASP supplements addressing mobilization and demobilization, air monitoring, site assessment/surveying, utility clearance, sampling activities, drilling/direct push/Geoprobe, clearing/grubbing, hand auguring, drum handling, transport and disposal, and decontamination were included.

**Cherokee Management, LLC, Health and Safety Plan, Travelers Rest, South Carolina.** Produced a health and safety plan (HASP) providing a general description of the levels of personal protection and safe operating guidelines expected of each employee associated with the installation of monitoring wells, and soil and groundwater sampling at an industrial site. Site-specific HASP supplements addressing mobilization/demobilization, utility clearance, sampling activities, drilling, transport and disposal, and decontamination were included.

**RM Engineered Products, Environmental Health and Safety Management, North Charleston, South Carolina.** Served as outsourced environmental health and safety manager for a manufacturer of rubber and Teflon gaskets and seals. Hosted safety committee meetings, provided safety training, investigated and recorded safety incidents, inspected hazardous waste satellite accumulation areas and 90-day hazardous waste storage area.

**Briteline, Inc., Safety Consulting, Safety Training, Summerville, South Carolina.** Provided safety management consulting and lockout/tagout training to employees of a manufacturer of extruded aluminum products.

**Lauscha Fibers, Inc., Safety and Industrial Hygiene Consulting, Summerville, South Carolina.** Provided safety management consulting and noise sampling for a manufacturer of nonwoven fibers used for the manufacture of filters.

**Wheelabrator, Inc., Safety Audit, Walterboro, South Carolina.** Conducted a safety audit of a metals foundry facility. Inspected the entire facility, reviewed regulatory compliance records and interviewed employees. Provided a report detailing findings with regulatory citations.

**Global Manufacturing, Inc., Safety Consulting, Ladson, South Carolina.** Provided safety management consulting services to a company that tests stationary diesel-powered electric generators and manufactures trailers used for mounting generators.

**South Carolina Department of Health and Environmental Control, Remedial Investigation and Feasibility Study, Columbia, South Carolina.** Performed remedial investigations and feasibility studies at various hazardous waste sites. Included performance of RIs and groundwater monitoring at state Superfund sites, preparation of work plans for RI/FS and emergency cleanups, and collection of technical data to substantiate criminal investigation cases.

**AFCEE, South Military Family Housing Area - Lead-Based Paint Inspection, Patrick AFB, Florida.** Served as co-field manager and site safety officer of a team conducting a LBP physical conditions survey of the interior and exterior of a total of 738 MHF units. Visually inspected all interior and exterior surfaces of each MFH unit to assess the painted surfaces' physical condition. Produced a report consisting of floor plan

drawings indicating potential hazardous areas.

**US Postal Service, Asbestos and Lead-based Paint Surveys, Various Locations, South Carolina.** Participated in operation and maintenance plans and training for asbestos and lead-based paint surveys in Summerton, Union, Manning, Laurens, and Newberry.

**Naval Facilities Engineering Command, Marine Corps Recruit Depot Parris Island, Building Inspections for Asbestos Building Materials, Parris Island, South Carolina.** Conducted comprehensive inspections of 11 buildings, collected samples of suspect materials, and submitted them to a laboratory for analysis. Also produced a base-wide operation and maintenance plan and assisted in development of a database of asbestos containing materials in inspected buildings.

**Naval Facilities Engineering Command, Marine Corps Recruit Depot Parris Island, Parris Island, Building Inspections for Asbestos Building Materials, Parris Island, South Carolina.** Conducted comprehensive inspections of 25 buildings, collected samples of suspect materials, and submitted them to a laboratory for analysis. Updated an existing database of asbestos containing materials in inspected buildings.

**Marine Corps Recruit Depot Parris Island, Building Inspections for Asbestos Building Materials, Parris Island, South Carolina.** Conducted comprehensive inspections of 36 buildings, collected samples of suspect materials, and submitted them to a laboratory for analysis. Updated a database of asbestos containing materials in inspected buildings.

**Marine Corps Recruit Depot Parris Island, Building Inspections for Asbestos Building Materials, Parris Island, South Carolina.** Conducted comprehensive inspections of 32 buildings, collected samples of suspect materials, and submitted them to a laboratory for analysis. Updated an existing database of asbestos containing materials in inspected buildings.

**Volvo, USA, LB Smith Facilities, Phase I & II Environmental Site Assessments, 33 Sites in 10 Eastern States.** Assisted project manager and conducted Phase I ESA of an earth moving equipment sales/service facility in a project involving 33 such sites including for each: a site visit and inspection, property history review, and a general desktop study of the site to identify potential environmental liabilities. Phase II ESA including monitor well installation, soil and groundwater sampling and analysis were conducted at 6 sites.

**US Postal Service, Sullivan's Island Main Post Office, Phase I Environmental Site Assessment, Sullivan's Island, South Carolina.** Conducted a Phase I ESA of a post office, including a visual inspection of subject and adjacent properties, interviews with knowledgeable individuals, site photographs, and review of environmental regulatory files.

**Confidential Client, Phase I Environmental Site Assessment, Hilton Head and Dafuski Islands, South Carolina.** Participated in a limited Phase I ESA for barge-loading and unloading facilities, which involved a visual inspection of properties and adjacent properties to identify any environmental concerns associated with the lease of the facility by the client.

**Republic Services, Spring Grove Landfill, Phase I & II Environmental Site Assessments & Wetlands Survey, North Charleston, South Carolina.** Managed a project involving a site visit and inspection, property history review, regulatory file review, monitor well installation, sampling and analysis, wetlands survey, and a general desktop study of the site to identify potential environmental liabilities that may be associated with a landfill property.

**Destination Wild Dunes, Phase I Environmental Site Assessments, McClellanville and Isle of Palms, South Carolina.** Managed a Phase I ESA involving a site visit and inspection, property history review, and a general desktop study of the site to identify potential environmental liabilities that may be associated with the site.

**Raytheon Engineers & Constructors, Wastewater Upgrade, Hampton, South Carolina.** Prepared a health and safety plan for contaminated soil removal and provided training for contractor. Observed soil excavation and documented implementation of the plan.

**Destination Wild Dunes, Wetlands Action Search, Charleston, South Carolina.** Managed a search for pending environmental regulatory actions and an investigation of regulatory files maintained by South Carolina DHEC, USACE, and the Office of Ocean and Coastal Resource Management to search for evidence of any past or pending wetlands or Beachfront Management Act regulatory actions by these agencies in connection with the Harbor and Links Golf Course.

**Destination Wild Dunes, Phase I Environmental Site Assessment, Isle of Palms, South Carolina.** Managed a Phase I ESA of the future site of the Grand Pavilion Hotel and associated boardwalk, swimming pools, and snack bar.

**Destination Wild Dunes, Phase I Environmental Site Assessment, Isle of Palms, South Carolina.** Managed a Phase I ESA of the Links and Harbor golf courses, which involved a visual inspection of the golf courses as well as the Harbor Golf Shop and Deli, Links Clubhouse, and cart storage and maintenance facilities for both courses.

**Kramer, Levin, Naftalis, Nessen, Kamin & Frankel, Environmental Site Assessments, Several Sites, New York.** Conducted Phase I ESAs for 20 box plants in accordance with ASTM standards.

**Douglas Crawford & Hollyford, Inc., Phase I Environmental Site Assessment, Hollywood, South Carolina.** Managed a Phase I ESA of a convenience store, self-service car wash, and surrounding property. Involved a visual inspection of properties, interviews with knowledgeable individuals, and review of environmental regulatory files.

**GE Capital Corporation, Phase I Environmental Site Assessment/Regulatory Compliance Audit, Mooresville, North Carolina.** Project manager and responsible for field work and report writing regarding identified environmental concerns associated with a manufacturer of nonwoven fabrics. The site was evaluated with respect to underground and aboveground storage tanks; chemical use and storage; presence of stained soil, stressed vegetation, or unusual odors; petroleum usage; and adjacent property. Prepared a report outlining findings and rendered an opinion on compliance status and potential contamination of the property and facility.

**Waste Management Inc., Solid Waste Management Plan, Barnwell, South Carolina.** Documented recent history and current status of solid waste management within Barnwell County including projections of changes in population, waste management costs, and anticipated needs of residents and industries. Provided guidance for policymakers to assist in addressing those needs and complying with regulatory mandates such as source reduction and recycling goals. The plan identified the most pressing issues affecting the county population and made recommendations how these issues should be addressed.

**GE Capital Corporation, Phase I Environmental Site Assessment/Regulatory Compliance Audit, Walterboro, South Carolina.** Project manager responsible for field work and report writing for identified environmental concerns associated with a manufacturer of nonwoven fabrics consisting of a single parcel approximately 25 acres with two structures and an on-site wastewater treatment plant. The site was evaluated with respect to underground and aboveground storage tanks; chemical use and storage; presence of stained soil, stressed vegetation, or unusual odors; petroleum usage; and adjacent property. Prepared a report outlining findings and rendered an opinion on compliance status and potential contamination of the property and facility.

**Marks and Marks, LLC, Phase I Environmental Site Assessment, Loris, South Carolina.** Conducted a Phase I ESA of a lot in the Loris Commerce Center, a 17-acre parcel with no structures. Conducted a site visit and inspection, property history review, and a general desktop study to identify potential environmental liabilities associated with the site that may have occurred since a previous Phase I ESA was conducted in 1994.

**Confidential Client, Environmental Services/Regulatory Compliance, Ridgeville, South Carolina.** Oversaw health and safety compliance for a regulatory compliance audit, preliminary ISO 14001 gap analysis, preparation of EPCRA TIER II, and Form R reports.

**New Colony Holdings Corporation, Phase I Environmental Site Assessment, Hilton Head, South Carolina.** Investigated a 20,000-square-foot office building to identify any environmental concerns associated with the site including underground and aboveground storage tanks, chemical use and storage, presence of stained soil, stressed vegetation, or unusual odors, petroleum usage, and adjacent property.

**Columbia Metropolitan Airport, Risk Evaluation, Columbia, South Carolina.** Provided regulatory compliance assistance for a comprehensive site investigation feasibility study and remediation of an abandoned pesticide bag disposal area.

**Nelson Mullins Riley & Scarborough, LLP, Phase I Environmental Site Assessment, Myrtle Beach, South Carolina.** Conducted a Phase I ESA of a shopping mall, which occupies about 5.33 acres and contains two buildings, which have an estimated total floor area of about 75,000 square feet.

**Chapman Waste Disposal Company, Inc., Phase I Environmental Site Assessment, Brunswick, Georgia.** Provided environmental site assessment services, including a thorough visual inspection of the entire property, plus access points and boundaries.

**Waste Management, Inc., Environmental Site Assessment, Florence, South Carolina.** Conducted an ESA, which included an environmental, regulatory, and compliance review of the landfill and appurtenant assets; reviewed permitted landfill plans and state files; commented on design and groundwater quality; and reviewed hydrogeological information and compared to WMNA SAM standards.

**Westinghouse Savannah River Company, K-Area Coal Pile Runoff, Aiken, South Carolina.** Participated in preparing RCRA facility investigation, remedial investigation, and baseline risk assessment reports at the K-Area coal pile runoff basin.

**Destination Wild Dunes, Environmental Audit Assistance, Pompano Beach, Florida.** Participated in review of environmental reports and other documents relating to properties including a spa, hotel, and five golf courses.

**South Carolina National Bank, Phase I Environmental Site Assessments, Various Sites, South Carolina.** Participated in Phase I environmental audits and audit reports prepared for several commercial properties.

**Westvaco Corporation - Forest Resources Division, Phase I Environmental Site Assessment, Charleston, South Carolina.** Managed a Phase I ESA of a single parcel of approximately 70 acres to identify any environmental concerns associated with the site related to underground and aboveground storage tanks, chemical use and storage, presence of stained soil, stressed vegetation, or unusual odors, petroleum usage, and the adjacent property.

**CDS Painting, Inc., Phase I Environmental Site Assessment, Charleston, South Carolina.** Managed an investigation of environmental concerns associated with the site including underground and aboveground storage tanks, chemical use and storage, presence of stained soil, stressed vegetation, unusual odors, petroleum use, and adjacent property.

**GE Capital Corporation, Phase I Environmental Site Assessment/Regulatory Compliance Audit, North Carolina and South Carolina.** Conducted site inspections and prepared reports for multiple properties.

**Regulatory Strategies, Phase I Environmental Site Assessment, Charleston, South Carolina.** Managed a Phase I ESA for a former industrial location involved in the routine use of chemicals as a pulverizing facility.

**TISPP South, Dowty O'Rings, Regulatory Compliance Audit, Charleston, South Carolina.** Conducted and managed an audit, which evaluated compliance with respect to solid and hazardous waste, air emissions, hazardous materials, water and wastewater, and stormwater. No sampling or testing was conducted.

**Showa Denko Carbon, Regulatory Compliance Audit, Ridgeville, South Carolina.** Participated as a team member in an audit of a manufacturer of large carbon electrodes for use in metal manufacturing. Evaluated compliance with respect to solid and hazardous waste, air emissions, hazardous materials, water and wastewater, and stormwater.

**Oneita, Inc., Regulatory Compliance Audit, Fingerville, South Carolina.** Participated as a team member in an audit of a textile manufacturer. Evaluated compliance with respect to solid and hazardous waste, air emissions, hazardous materials, water and wastewater, and stormwater. Inspection for presence of lead-based

paint was also conducted.

**Pacific Division, Naval Facilities Engineering Command CLEAN II CTO 0103 Naval Activities Compliance With the Emergency Planning and Community Right-to-Know Act (EPCRA) for Six Facilities, Hawaii.** Collected field data and assisted with EPCRA Section 313 support for Reporting Year 2001 to Pearl Harbor Naval Complex (PHNC), Naval Communications and Telecommunications, Pacific (NCTAMS PAC); Naval Magazine (NAVMAG) Lualualei and Waikele; Radio Transmitting Facility Lualualei, Pacific Missile Range Facility (PACMISRANFAC); and Naval Air Station (NAS) Barbers Point. Major CTO work included collecting and reviewing Navy data by creating databases, conducting field surveys, processing data, conducting threshold determinations for EPCRA 313 listed toxic chemicals, preparing required EPCRA Form Rs, and preparing reports and notifications to document each Naval Activity's compliance.

**Nucor Steel, EPCRA Reporting, Huger, South Carolina.** Participated in updating the computer database consisting of products and raw materials used at the facility including chemical constituents and their concentrations obtained from MSDSs of these products and raw materials.

**Mar Mar Realty Trust, Phase I Environmental Site Assessments, Multiple Locations.** Conducted field work for Phase I ESAs completed for numerous sites throughout the southeast and central United States.

**Naval Facilities Engineering Command - Southern Division, PCB Testing, Beaufort, South Carolina.** Managed testing of dielectric fluid at MCAS Beaufort and the Laurel Bay Housing Area for polychlorinated biphenyls to comply with the Toxic Substances Control Act.

**Naval Facilities Engineering Command - Southern Division, PCB Testing, Dallas, Texas.** Managed sampling of the dielectric oils in all pole-mounted and pad-mounted electric transformers at the base, and laboratory analysis for polychlorinated biphenyls.

**Naval Facilities Engineering Command - Southern Division, Hazardous Waste Management Plan, Naval Air Station Fort Worth - Joint Reserve Base, Texas.** Managed preparation of a Hazardous Waste Management Plan which included a base instruction, personnel responsibilities, inventory of hazardous waste with storage sites located on maps and diagrams, specific requirements for the various hazardous waste generating units, standard operating procedures, training, reporting, and pollution prevention as well as several other topics.

**Naval Facilities Engineering Command - Southern Division, Hazardous Waste Management Plan, NAS Pensacola, Florida.** Provided information gathering and site investigation to develop a plan to create a functional hazardous waste management system for the entire military facility, to ensure the identification of all hazardous wastes generated and to facilitate the proper management of those wastes. Provided primary client contact and report preparation.

**Naval Facilities Engineering Command - Southern Division, Pollution Prevention Plan, Jacksonville, Florida.** Participated in a comprehensive waste minimization audit and a pollution prevention plan developed in response to the Navy's CAPP program and the state of Florida's requirement for a program with measurable goals and documentation.

**Naval Facilities Engineering Command - Southern Division, PCB Testing, Niagara Falls, New York.** Managed sampling of dielectric oils in electric transformers at DOD Housing Area Niagara Falls and laboratory analysis for polychlorinated biphenyls. Provided extensive documentation including detailed sampling and analysis plan, work schedule, and computer spreadsheets documenting details about the equipment sampled, and analytical results.

**Naval Facilities Engineering Command - Southern Division, Recycling Facility Study, NAS New Orleans, Louisiana.** Managed a study to identify requirements of a proposed consolidated Central Distribution Center to combine hazardous material and hazardous waste management activities and related support functions, as well as a hazardous waste recycling area, at a centralized location to reduce quantity and inventory of hazardous materials needed and amount of hazardous waste generated on base.

**Naval Facilities Engineering Command - Parris Island, PCB Inventory, Parris Island, South Carolina.** Participated in an extensive inventory identifying and labeling over 550 PCB and non-PCB containing oil filled transformers and switches.

**Naval Facilities Engineering Command - Parris Island, EPCRA Reporting, MCRD Parris Island, South Carolina.** Participated in updating the computer database consisting of products and raw materials stored and used at MCRD Parris Island identifying reportable chemical constituents and concentrations obtained from MSDSs of these products and raw materials.

**Robins AFB, EPCRA Reporting, Warner Robins, Georgia.** Updated a database of products and raw materials stored and used at Robins AFB, identified the reportable chemical constituents and concentrations obtained from MSDSs of products and raw materials, and lab analyses of wastes. Required extensive management of waste generation and disposal data. Subsequent EPCRA 313 reporting was completed based on the database summary. Emission and hazardous waste stream tracking were also accomplished from the resulting database and EPCRA Form R report.

**Naval Construction Battalion Command, EPCRA Reporting, Gulfport, Mississippi.** Visited each work center and completed detailed questionnaires. MSDSs were collected for each available product to identify chemical constituents. Reportable products were entered into the Navy's EPCRA software including chemical constituents and associated percentage, quantity stored, and amount consumed. Various exemptions and exclusions available from EPA and Navy policy were identified and discussed with the Navy and EPA prior to application to ensure proper data management. Resulting database compiled reports on products and chemical constituents. Tier II forms were prepared for reportable chemicals and submitted to the activity with instructions for filing reports with local, state, and federal agencies. Form R documentation was prepared, although no chemicals exceeded reporting thresholds.

**South Carolina National Bank, Phase I Environmental Site Assessments, Various Sites, South Carolina.** Participated in Phase I environmental audits and audit reports for several commercial properties.

**Regulatory Strategies, Phase I Environmental Site Assessment, Charleston, South Carolina.** Managed a Phase I ESA for a former industrial location involved in routine use of chemicals as a pulverizing facility.

***International***

**US Army Corps of Engineers, CK45 POL Repair, Soto Cano AB, Honduras.** Served as project safety manager for inspection and repair of three large underground fuel storage tanks. Produced a health and safety plan (HASP) providing a general description of the levels of personal protection and safe operating guidelines expected of each employee associated with the project. Project included confined space entry, sand blasting, welding, and painting interiors of tanks. Fluency in Spanish was required for instructing the Honduran subcontractor's workers, who did not speak English.

**Tyco International, Inc., Phase I Environmental Site Assessment/Regulatory Compliance Audits, Ponce, Puerto Rico; La Vega, Dominican Republic; and Los Alcarrizos (Santo Domingo), Dominican Republic.** Conducted field work and report writing for identification of environmental concerns associated with a manufacturer of electronic circuitry and related devices used to prevent theft of clothing and other retail items. Three sites were evaluated with respect to underground and aboveground storage tanks; chemical use and storage; presence of stained soil, stressed vegetation, or unusual odors; petroleum usage; and adjacent property. Prepared reports outlining findings and rendered opinions on compliance status and potential contamination of the properties and facilities.

**GE Capital Corporation, Phase I Environmental Site Assessment and Regulatory Compliance Audits, Mexicali, Mexico.** Participated as a team member conducting site inspections and preparing reports for two industrial properties in Mexicali. Sites were evaluated with respect to underground and aboveground storage tanks; chemical use and storage; presence of stained soil, stressed vegetation, or unusual odors; petroleum use; adjacent property; and regulatory compliance status.

**DaimlerChrysler Corporation, Enhanced Environmental Management System Implementations, Toluca, Mexico.** Provided training and consulting services to four manufacturing plants (engine, transmission,

stamping, and assembly plants) seeking certification of enhanced environmental management systems based on ISO 14001 and integrated with existing manufacturing quality assurance systems based on ISO 9000.

**Government of Venezuela, Business Development Presentation for Remediation of the Port of La Guaira, Venezuela.** Participated as a speaker in a formal presentation in Caracas, Venezuela. Delivered in Spanish for the vice minister of environment – El Ministerio del Medio Ambiente y Recursos Naturales (MARN), managers of the Fire and Rescue organization, Petroleos de Venezuela (the government-owned oil company) and other Venezuelan government officials.

**Confidential Multi-national Client, Phase I and II Environmental Site Assessment, Maracai, Venezuela.** Conducted a combination Phase I and II ESA at a manufacturing facility near Lake Valencia. Included a site inspection, historical records review, interviews with persons familiar with the site, and interviews with representatives of El Ministerio del Medio Ambiente y Recursos Naturales (MARN). Also included a visual inspection for asbestos-containing materials and collection of subsurface soil samples for laboratory analysis.

**British Petroleum, Business Development Meetings, Bogotá and Yopal, Colombia.** Met with representatives of BP Exploraciones de Colombia. Was provided with an escorted helicopter and walking tour of oil exploration and production facilities.

**Olin Chemicals, Business Development Meeting, Maracaibo, Venezuela.** Met with representatives of Olin Chemicals at the Etoxyl Chemical Plant in Maracaibo to discuss environmental and industrial safety needs of plant personnel.

**General Electric, Sampling of Groundwater Monitoring Wells, GE Caribe, Patillas, Puerto Rico.** Conducted sampling of nine groundwater monitoring wells at a contaminated industrial site in southern Puerto Rico.

**GE Capital Corporation, Phase I Environmental Site Assessment/Regulatory Compliance Audit, Guánica, Puerto Rico.** Identified environmental concerns associated with manufacturing fertilizer, which consisted of two parcels approximately 5 acres with one structure. Site was evaluated with respect to underground and aboveground storage tanks; chemical use and storage; presence of stained soil, stressed vegetation, or unusual odors; petroleum usage; and adjacent property. Buildings were also inspected for structural integrity. Prepared a report outlining findings and rendered an opinion on the compliance status and potential contamination of the property and facility as well as building condition. Translated Spanish language environmental permits into English. Conducted field work, report writing, and translation.

**GE Capital Corporation, Phase I Environmental Site Assessment/Regulatory Compliance Audit, Kingston, Jamaica West Indies.** Identified environmental concerns associated with a fertilizer manufacturer, which consisted of one parcel approximately 12 acres with seven structures. Site was evaluated with respect to underground and aboveground storage tanks; chemical use and storage; presence of stained soil, stressed vegetation, or unusual odors; petroleum usage; and adjacent property. Prepared a report outlining the findings and rendered an opinion on the compliance status and potential contamination of the property and facility. Conducted field work and report writing.

**Earth Tech Health & Safety Training**

01 - Safety Orientation 01/17/2006
02 - Hazard Communication (US) /WHMIS (Canada) 02/13/2006
03 - Defensive Driving Awareness Training 01/03/2005
14 - Office Ergonomics Training 01/06/2006
15 - First Aid 03/31/2005
16 - CPR 04/11/2006
20 - HAZWOPER 40-Hour 03/13/1992
21 - HAZWOPER Refresher 8-Hour 01/11/2006
22 - HAZWOPER Supervisor 8-Hour 10/22/1992
30 - Respiratory Protection Training 01/11/2006
31 - Hearing Protection Training 01/11/2006
36 - Fire Extinguisher Training 08/04/2006

37 - Asbestos Inspector 01/26/2006
38 - Asbestos Planner 01/26/2006
ETUSA Southeast District Safety Metrics 10/02/2006
Medical Monitoring 08/11/2005
Respirator Fit Test 01/19/2006

**Training and Certifications**

Mold Assessment and Remediation in Buildings, 2001
ISO 14001 Environmental Management Systems Lead Auditing
Advanced Topics in Risk Assessment, Environmental Education Enterprises, St. Louis, MO, 1995
Inspection for Asbestos Containing Materials in Buildings, Medical University of SC, Charleston, 1995
Inspection for Asbestos Containing Materials in Buildings Refresher, Annual
Management Planning for Asbestos Containing Materials in Buildings, Medical University of SC, 1995
Management Planning for Asbestos Containing Materials in Buildings Refresher, Annual
Blood Borne Pathogens, Annual
Respirator Use, Annual
Immunoassay Field Methods, EnSys Environmental Products, Charleston, SC, 1994
DOT HM-126 Training for Shipment of Hazardous Materials, 1994
First Aid/CPR, Red Cross, 1992, 1994
Hazardous Materials/Waste Manager, University of Alabama College of Continuing Studies, Birmingham 1993
South Carolina Environmental Law, US Department of Justice, Charleston, SC, 1992
Environmental Site Assessment, Trident Technical College, Charleston, SC, 1992
Universal Precautions, Jewish Hospital, Louisville, KY, 1988

**Professional Memberships**

American Society of Safety Engineers

**Publications**

**Employment History**

02/1992 - present, Earth Tech, Environmental Scientist
06/1990 - 02/1992, Medical University of South Carolina, Instructor
02/1989 - 05/1990, New Business Resources-16, Laboratory Manager
07/1988 - 02/1989, Jewish Hospital, Phlebotomist
10/1982 - 06/1985, Industrial Sales, Sales Representative
05/1976 - 08/1982, Olin, Chemical Plant Operator
02/1970 - 04/1976, US Navy, Communications Technician