

**ALTERNATIVE ENVIRONMENTAL SOLUTIONS, INC. (AES)  
STATEMENT OF QUALIFICATIONS**

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## I. Corporate Mission

*Providing quality, client-centered environmental solutions.*

What does our corporate mission mean to you? What makes our mission unique? How will AES help you effectively solve your environmental challenges?

As we enter the 9<sup>th</sup> year of the 21<sup>st</sup> century, you no doubt have faced or will face environmental issues in the course of operating your business. Whether this is a compliance matter, an environmental due diligence concern surrounding a real estate transaction, a Brownfields remediation, or a need for energy conservation measures, we exist to serve you – and we are pleased to do so! We always strive to add value to your business - by offering *alternatives* that provide *solutions* for your unique 21<sup>st</sup> century environmental challenges.

How can you measure this value? By enjoying *client-centered* service. This can best be described as a results-oriented partnership that ensures your business goals are met, your liability is reduced, and strategies to meet your specific needs are developed and implemented – *on time* and *within budget*.

Our customers have approached us with problems, we've understood what needed to be done and we've provided appropriate solutions. Our mission statement, indeed our company as a whole, is centered on meeting this objective. May we put our *quality, client-centered environmental solutions* to work for you too?

On behalf of the staff of Alternative Environmental Solutions, Inc., I invite you to experience the value we add to your business.

A handwritten signature in black ink that reads "Brian J. Beahan" followed by a period. The signature is written in a cursive, flowing style.

Brian J. Beahan, P.G.  
Founder and President

## **II. Professional Services**

The following sections describe the main types of services that AES provides to our clients. While these are presented as individual and distinct services, it is important to note that many of the services are inter-related. In keeping with our client-centered philosophy, we strive to provide a seamless transition from one stage of a project to another. This approach is a departure from traditional task-oriented methods. It tends to minimize the affect on our clients' resources, and ultimately, it leads to *quality, client-centered environmental solutions*.

### **A. Certified Tank Services**

AES provides a comprehensive range of tank services. We are a Pennsylvania and New Jersey certified company with individuals who are certified to oversee all underground storage tank (UST) removal and handling activities. In addition, we provide:

- UST closure support services to our clients and other certified contractors
- Certified individuals and field scientists who are trained in appropriate sample collection protocol and are experts in performing all site characterization activities associated with UST closure and corrective action projects.

AES coordinates and manages the proper disposal or recycling of all wastes generated during UST closure activities. We can also coordinate the testing and modification of UST systems, and prepare and submit all necessary notification, amended registration and modification forms associated with the management of UST systems.

In addition to UST closure services, we also support our clientele with full oversight, coordination and management of new UST upgrades and installations, as well as design services and permitting for UST and aboveground storage tank (AST) systems and facilities.

### **B. ASTM-standard Phase I Environmental Site Assessments**

The AES staff has performed numerous ASTM-Standard Phase I Environmental Site Assessments (Phase I ESA) throughout the mid-Atlantic region. We offer competitive pricing and rapid turnaround, while maintaining high-quality services conducted by experienced staff members. AES' staff has conducted hundreds of file reviews for site assessments and has successfully conducted multi-site Phase I ESAs - i.e. completion of eleven (11) sites in six weeks for a Central PA commercial business. AES can also perform ASTM-standard site assessment transaction screens, to meet your site inspection needs.

AES' Phase I ESAs typically provide information as required by the ASTM standard, including that collected from a site walkover and interview(s) with current and past site owners or operators, physical setting information (i.e. geology, topography, soils), and information on storage tanks, hazardous substances, and site history. In conjunction with the collection of this information, AES arranges for a complete environmental database search, and, if warranted based on this search, will conduct regulatory file reviews and recover site-specific information from necessary agencies. AES' staff is well versed in

the latest ASTM methods and requirements relative to Phase I ESAs. Recent changes in the definitions of recognized environmental condition (REC), material threat and business environmental risk have been incorporated in AES' standard operating procedures. These changes have clarified issues enabling property buyers to make important decisions when acquiring commercial or industrial properties. Our team of environmental professionals stays abreast of all revisions to the ASTM standard in order to provide our clients the highest level of liability protection when purchasing real estate. In addition, if requested, AES can provide information not normally required by the ASTM standard, including asbestos and lead-based paint surveys.

### **C. Site Characterization**

AES views site characterization as a critical step in the process of identifying environmental problems and providing clear solutions to these problems. **Our team of project leaders combined experience in conducting site characterizations approaches 70 years of service.** This vast experience provides us with the fundamental skills and knowledge necessary to evaluate a site using sound scientific principles.

AES typically performs site characterizations in accordance with American Society for Testing and Materials (ASTM) *Standards Relating to Environmental Site Characterization* and, where appropriate, in accordance with state and/or federal regulations.

AES first researches and gathers background information to provide a thorough knowledge of site conditions to design an effective work plan for the site. A phased, media-specific approach is used to characterize environmental areas of concern at a site. This approach enables a cost-effective evaluation of subsurface media with respect to potential areas of concern. In this approach, soil quality is initially characterized to determine if the chemicals of concern pose a threat to groundwater and necessitate groundwater characterization.

If groundwater characterization becomes necessary, research and review of available geologic and hydrogeologic site-area information is conducted and based on findings, recommendations for appropriate action are made and, if approved by the client, implemented. Overall objectives of AES' site characterizations are geared toward first determining whether risk-based remedial approaches can be taken. This is conducted by gathering chemical-specific environmental quality data, along with site-specific hydrogeologic information. We typically include testing for the presence, or lack thereof, of parameters indicative of natural attenuation processes to help determine the relative tendency for fugitive chemicals to degrade in the site environment. Review of the site-specific data, in combination with our wealth of experience with conventional remedial technologies and our knowledge and resources for new and innovative technologies, allows us to determine the most cost-effective alternative(s) to address any groundwater impact.

AES uses many tools to accomplish the stated goals of site characterization. Among the technologies employed by our firm and selected subcontractors are soil-gas surveys, geophysical surveys, Geoprobe<sup>®</sup> direct-push sampling technology as well as conventional drilling techniques such as hollow-stem, mud- and air-rotary drilling for monitoring and remedial well installation(s).

Our field staff consists of experienced, quality-oriented and OSHA-trained scientists who understand the importance and critical value of sample collection under strict quality assurance and quality control protocol. Each staff professional is trained in-house and in the field, through direct supervisory oversight on proper environmental media sampling and sample handling, sample identification and labeling and chain-of-custody documentation. Our protocols in Pennsylvania are tailored after the PADEP Groundwater Monitoring Guidance Manual. This strict adherence to sample QA/QC helps to ensure that the environmental data collected and reported on by AES is defensible and reliable – an absolute necessity in our business.

#### **D. Site Remediation and PA Land Recycling Consulting**

The Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2) provides standards for conducting all environmental cleanups within Pennsylvania. AES staff has conducted, or are conducting cleanups regulated under this act at numerous sites. We have helped clients receive releases of liability with respect to various impacted media and have received closure for sites based on systematic random sampling, fate and transport modeling and risk-based assessments.

***AES has either closed and/or is in the process of working toward closure of over 50 commercial and industrial sites under the Act 2 program.***

We are well versed with PADEP procedures associated with the Act 2 cleanup standards and various means by which liability protection afforded under the act can be obtained. Our senior staff of PA Registered Professional Geologists has attended formal Act 2 training seminars, and is recognized with the PADEP as having received this formal training.

The AES staff has significant experience with UST corrective action regulations and a full knowledge of procedures necessary to ensure that our clients are in compliance with the regulations. We have assisted numerous clients with obtaining low-interest and no-interest funding through state agencies and state-sponsored funding programs, including:

- “pump and plug” grants,
- Department of Community and Economic Development (DCED) loans, and
- the PA Underground Storage Tank Indemnification Fund (USTIF).

In many instances, our assistance to our clientele with these funding programs has allowed corrective action to proceed where otherwise it may have been impossible due to limited financial resources. This has also helped our clients to avoid receiving notices of violation or fines associated with non-compliance.

AES has experience with numerous soil and groundwater remediation techniques, including soil vapor extraction, air-sparging, dual-phase vacuum extraction, thermal incineration, bioventing, and pump and treat. In addition, we have completed pilot testing and remediation with a cutting edge technology that utilizes ozone injection to increase dissolved oxygen concentrations and the rate of metabolism of MTBE at remediation sites where this residual nemesis exists.

AES evaluates sites using Act 2 guidance from characterization through site-specific feasibility testing to determine the most appropriate remedial technique for the site, with a client-centered approach. AES makes every effort to keep clients informed throughout the entire process of evaluating and selecting the appropriate remedial technique(s) for a site.

One unique attribute of our service is the “turn-key” solutions we offer. For “active” remediation sites, we design, manufacture and install the remediation systems and then develop and implement operation and maintenance plans. Our intimate knowledge of the regulations, experience with and knowledge of remediation techniques and state of the art remediation equipment, and our ability to blend these ingredients together into custom remedial approaches for each site, helps to ensure that you receive the solutions you want.

In addition to Pennsylvania, AES and its staff are certified for and/or have experience in subsurface evaluation/site characterization and remediation in various states throughout the Mid-Atlantic region and stand ready to serve you in these locations as well.

#### **E. Waste Management and Minimization**

AES staff members have attended state-sponsored training workshops on waste management and performance of pollution prevention and energy efficiency (P<sup>2</sup>E<sup>2</sup>) assessments. The knowledge and skills gained from this training enable us to effectively assist our clients with application for funds under various grant programs, while showing them how to minimize wastes and energy usage. Businesses that implement the skills that we have been trained in can lower their business operating expenses – sometimes dramatically.

AES characterizes and evaluates our client’s waste streams and develop recommendations for minimizing the quantity of wastes (hazardous and residual) generated. Following initial characterization, during which we review facility operations and processes, AES meets with our client to discuss any recommendations, which often results in adjustments that can reduce the amount of wastes generated, thereby reducing our clients’ operating costs.

AES addresses client waste management and minimization practices from start to finish. We review production stock inventories, manufacturing processes and current waste strategies to get an accurate assessment of our client’s overall operations. Waste reduction and minimization techniques available can include the following: production stock changes from hazardous to non-hazardous, recycling of both residual and hazardous wastes, and reuse of resources that had previously been discarded.

#### **F. Environmental Compliance**

AES conducts compliance audits/assessments of facilities to identify non-compliant conditions, and to develop programs that should be implemented to meet the regulatory requirements associated with the operation of industrial or commercial facilities. AES can develop, and help implement a plan of action whereby our client’s operations are brought into compliance with relevant state and/or federal environmental programs. Depending upon preference(s), these plans can be designed to incorporate the involvement of our client’s facility staff in work activities, programs and waste

management practices to ensure that they remain compliant. We can also prepare any necessary correspondence and provide representation for our clients at meetings with those regulatory officials involved with the oversight of any waste streams generated.

Based on our experience, we have developed a comprehensive approach to assist our clients in their compliance efforts. We review chemical substance and waste inventories and material safety data sheets (MSDSs), and prepare reports for appropriate agencies. These include residual and hazardous waste reports, as well as air quality emission and monitoring reports. We will develop emergency response plans, Spill Prevention Control and Countermeasure plans (SPCC Plans), preparedness, prevention and contingency plans (PPC Plans) risk management programs (RMPs) and complete evaluations of operations and procedures for total environmental quality management of our client's facilities.

### **G. Asbestos and Indoor Air Quality**

AES provides a range of asbestos and indoor air quality services. We have a team of highly experienced asbestos building inspector associates certified in various states. Depending on the nature of the project, AES can perform both asbestos inspections and/or bulk sampling surveys. In addition, AES develops Operation and Maintenance Plans for all materials presumed or known to be asbestos-containing, to ensure the proper care and maintenance of the materials. AES also develops Asbestos Building Demolition Surveys, which are required prior to demolition of affected buildings.

AES offers turn-key oversight and management for the inspection and abatement of all asbestos building materials warranting removal. This includes the provision of third-party air quality monitoring and clearance sampling, as requested and/or required to meet various state and federal regulatory requirements. We manage the entire project and our team interfaces with all regulatory agencies to oversee the entire process and ensure the proper and careful removal of the asbestos, thereby removing your liability.

Indoor air quality is the #1 environmental health concern by the U.S. EPA, the U.S. House of Representatives and the World Health Organization. According to studies conducted by Harvard University, the American Cancer Society and the U.S. EPA, indoor air pollution is now considered one of the top causes of adverse health effects - even mortality. There are over 900 indoor air pollutants known to man, many of which can cause serious ill-health effects and degenerative diseases. With the advent of airtight buildings and the increasing use of chemical-based building and insulation products, "sick building syndrome" has become a reality that can cause sickness, even debilitating disease. This can also result in financial burdens to employers in the form of lost work time and increasing medical insurance costs.

Chemical releases to both indoor and outdoor environments through spills and industrial and commercial processes can increase concentrations of indoor air pollutants to unsafe levels. Moisture problems in buildings – both new and old, can result in development of mold and toxic airborne mold spores. Today's employment force is often subjected to low quality indoor air caused by emissions from machinery, mass production equipment, even new carpet and other flooring products. All these sources of airborne chemicals and microbes can create unsafe work conditions.

AES has been called upon and has successfully conducted indoor air quality investigations and surveys for suspected and unknown air contaminants. We have determined levels of mold in properties where this common and sometimes dangerous fungus was suspected and, following these investigations we have recommended and implemented appropriate remedial measures. We have also sampled for and located the sources of volatile organic compounds (VOC) and sewer gases and have assisted our clients in the mitigation of these inhalation hazards. In addition, we have been called upon and contracted to identify and mitigate unknown indoor air contaminants. Our indoor air quality services have been successfully employed in residential, commercial and industrial settings. In many cases these types of investigations are initiated by complaints of respiratory distress from building occupants. Therefore, rapid response, turnaround of analytical data and remedial action are critical to restoring the comfort and health of our clients and/or their tenants.

Having conducted indoor air quality investigations and successfully deployed proprietary air purification devices. The air purification devices that we sometimes recommend and supply oxidize and ionize hundreds of common pollutants. These devices reduce, and in some cases eliminate harmful indoor air pollutants.

#### **H. Litigation Support and Expert Witness Testimony**

The AES professional staff has extensive experience with evaluating geologic, hydrogeologic, and environmental site characteristics for litigation support and preparation of professional opinion papers. We are available for these services and for testimony as expert witnesses in these areas. Our management team's education and many years of combined experience in these disciplines make us highly qualified for these services.

#### **I. Geologic and Hydrogeologic, Consulting Services**

AES performs and is highly experienced and skilled in geologic and hydrogeologic investigations for our clients in a wide variety of applications. We have performed numerous evaluations of sites located in carbonate geologic settings to assess potential risks associated with existing karst features such as sinkholes. These Carbonate Hazard Assessments are typically performed for clients who are developing properties, which will result in a modification of surface water or stormwater runoff flow patterns. This type of geologic investigation also evaluates the potential for the creation of karst features as a direct result of the proposed site development. Many municipalities and County planning agencies require that registered Professional Geologists perform these assessments, and that they be performed in the early stages of the land development process.

AES also regularly provides Preliminary Hydrogeology and Groundwater Availability Studies for assessment of groundwater availability and possible impact from site development in rural areas.

AES also assists our clients in the development of groundwater resources. We provide hydrogeologic expertise to clients who wish to develop new sources of groundwater for land development projects and new subdivisions, irrigation, industrial process water supply, and for bottled drinking water. Our team of experienced professionals carefully

assesses the present and future water needs of each client, and then designs a project approach that is best suited for their unique needs and goals. Our services range from initial site evaluation and water “prospecting” to water quality testing and source permitting.

We also are experienced with coordinating water supply development with the various regulatory agencies involved, including the PA DEP, local municipalities, and interstate authorities such as the Susquehanna River Basin Commission (SRBC) and the Delaware River Basin Commission (DRBC). Our familiarity in dealing with these agencies can reduce the time involved with project reviews and groundwater withdrawal permitting.

### **J. Geophysical and Geotechnical Services**

To complement our geologic and hydrogeologic services, AES owns and operates various geophysical equipment for non-intrusive, preliminary property surveys to enable evaluation of potential subsurface structural and physical features that may have an impact on site development plans. Whether it is an electro-magnetic survey, ground penetrating radar investigation, electrical resistivity survey or other geophysical investigation, AES has both the hands-on trained field personnel and highly experienced senior staff members to provide this value-added service for you.

AES and its highly experienced associates also offer geotechnical investigations for surface and subsurface structural stability, weight-bearing and other concerns. Our team of professionals can listen to your project needs and then design and implement field services to provide you with the critical data necessary to aid in proper design for your building/development needs while preventing costly late-stage alteration to previously engineered plans.

### **K. Bottled Spring Water Consulting**

In addition to our extensive experience with groundwater resource evaluation, protection, and planning, AES staff members are also adept at consulting for bottled spring water and processed drinking water. Specifically, our staff has extensive experience in identifying and developing the water source(s) through facilitating layout, modification, permitting, and installation of bottled water plants. Our clients include respected area (Pennsylvania) and internationally renowned bottled water companies. Although we do business with several bottled water companies, confidentiality and discretion ensure that all of our clients are professionally represented.

Some of the water resource issues that our staff has addressed include:

- Out-of-state permitting
- New source development and existing source redevelopment
- Spring and borehole water relationship studies
- Wellhead protection
- Water labeling

- Water resource education and source management for drought conditions
- Sanitary surveys and mitigation
- Aquifer drawdown impacts
- Computer modeling
- Business/source acquisition assessment
- Plant layout and operations consulting
- Plant location and water transportation

#### **L. GSA Federal Supply Contract**

Alternative Environmental Solutions has been awarded a contract that allows us to perform specific services under the Federal Supply Schedule established by the U.S. General Services Administration. This ten-year contract lends credence to our capabilities and work quality and positions us to offer our specialized environmental solutions to many arms of the federal government. The Supply Schedule is broken down into various sections, or SINs (Special Item Numbers). We are contracted to provide services within the following Special Item Numbers:

##### **899 - 1 Environmental Planning Services & Documentation**

Services include but are not limited to: Environmental Assessments and Environmental Impact Statements under the National Environmental Policy Act (NEPA); Endangered Species, Wetlands, Watersheds and other Natural Resource Management Plans; Archeological and/or Cultural Resource Management Plans; Environmental Program Management and Environmental Regulation Development; Economic, Technical and/or Risk Analysis, and other environmentally related studies and/or consultations; Homeland Security issues including vulnerability assessments, biochemical protection, identification of threats and protective measures to mitigate the threats, and Crime Prevention Through Environmental Design (CPTED) surveys.

##### **899 - 2 Environmental Compliance Services**

Services include but are not limited to: Environmental Compliance Audits; Compliance Management and/or Contingency Planning; Permitting; Spill Prevention/Control and Countermeasure Plans; Pollution Prevention Surveys; ISO 14000/Environmental Management Systems (EMS); and Community Right to-Know Act reporting.

##### **899 - 8 Remediation Services**

Provide the full range of methods and technologies supporting activities necessary for Remediation Services to the extent allowed by the Service Contract Act under FAR 37.3 in accordance with host nation, federal, state, and/or local statutes and regulations. Remediation Services include, but are not limited to, excavation, removal, remediation related laboratory testing, transportation, storage, treatment and/or disposal of hazardous waste in. Also, preparation, characterization, field investigation, conservation and site closures; wetland restoration, emergency response, UST/AST removal, air monitoring,

soil vapor extraction, stabilization/solidification, bio-venting, carbon absorption, reactive walls, containment, monitoring and /or reduction of hazardous waste sites as well as ordnance removal and support. Remediation contractors shall conform to environmental permits, decision document requirements or other legal requirements. Examples include but are not limited to: Excavation, removal, manifesting, transportation, storage, treatment (on-site and off-site) and/or disposal of hazardous waste.

Although these are the main services we provide through our GSA Federal Supply Contract, we are also branching out to include new alternative energy solutions.

#### M. Energy Conservation and Cost Reduction Strategies

Because our focus is on our client's needs, as well as their desire to protect our environment, AES is pleased to provide Energy Conservation and Cost Reduction strategies tailored to fit each client's specific needs.

We perform a thorough energy audit at our client's place of business. After we collect the necessary data, we are able to provide our clients with a report and/or strategy outlining a typically phased approach and the benefits of implementing our suggested solutions – including projected Return on Investment (ROI) and energy savings. What differentiates our service from that of others is that we don't just hand you a manual of data about energy usage and "the numbers"; rather, we evaluate your energy consumption and immediately offer phased-solutions. These solutions are typically geared to provide rapid return on investment within a schedule of progressively more significant projects. Employing these strategies enables our clients to lower energy costs with progressive projects - the savings of which can be used to help fund more significant projects which generate progressively more significant savings to fund higher capital projects. As with all services we offer, AES is involved in all facets of our recommended solution, from audit through implementation.

As part of our energy conservation solutions, we are affiliated with a fractional carbon exchange which enables our clients to register resulting carbon footprint reductions from the energy conservation measures employed. Our services include showing you how publicizing the savings and reduction of greenhouse gas (GHG) emissions can set your company apart from the competition as a "Green" company. This often enhances your businesses position in the marketplace and can obviously improve your bottom line.

### **III. Representative Projects**

The following is a sampling of representative projects that AES staff members have performed or are currently performing for our clients within several of the disciplines that we specialize.

#### **A. Storage Tank Projects**

- Removal of seven (7) USTs from a central Pennsylvania business that provides heating oil, heating and air conditioning system sales and service, and retail gasoline and diesel fuel sales. Products stored in the removed USTs included gasoline, diesel fuel and kerosene. AES completed UST removal oversight, field monitoring and sampling, and prepared the report and amended registration forms for this project. Additionally, we are currently conducting a site remediation at this facility stemming from an unleaded gasoline release discovered prior to the removal project. We have completed aggressive contaminant source remediation and are currently in the process of groundwater monitoring and sampling to demonstrate attainment of the selected cleanup standard for site closure under Act 2.
- Removal of two (2) USTs with re-certification and re-installation of one of the USTs - a STIP 3 tank. Additional services conducted at this commercial electrical contractor's facility in Lancaster County, PA included piping modifications and installation of spill and overfill prevention devices, along with an in-tank inventory monitoring and release detection system. AES provided oversight of the project, completed the closure report and amended registration forms and assisted with the re-certification process.
- AES prepared a 30-day Notification for Closure form, along with a PADEP Pollution Prevention Reimbursement Grant ("Pump & Plug Program" - Act 13 of 1998, Section 711) for closure of two (2) gasoline USTs at a former retail gasoline fueling/convenience business in Bucks County, PA. The grant application resulted in a significant cost savings for our client.
- AES provided evaluation for compliance and client consultative services for an aboveground bulk petroleum storage (AST) facility in Maryland where system re-piping and secondary containment measures in one main area of the facility was needed. AES provided concept and engineering design specifications for this AST facility upgrade and produced bid documents and drawings for the client to hire the right mechanical contractor(s) and ensure all facility-specific plans were implemented and constructed, while ensuring compliance with federal and state spill prevention control and countermeasure requirements.

#### **B. Phase I Environmental Site Assessment (ESA) Projects**

- ASTM-standard Phase I ESA of eleven (11) central-PA car wash facilities, some of which were historically used for retail gasoline storage and dispensing. AES discovered recognized and potential recognized environmental conditions at four of these sites and completed Phase II investigations to resolve whether such risks

caused environmental impacts. The Phase I work was completed in six (6) weeks, followed by the Phase II work, which was completed in two (2) weeks. This project, which was completed on time and within budget, allowed settlement on a multi-million dollar refinancing loan for property improvements.

- ASTM-standard Phase I ESA of a Lancaster, PA business office complex prior to completion of property refinancing. The ESA was completed within the time and budgetary constraints and no further action was needed.
- ASTM-standard Phase I ESA of Southern Tier, New York automobile dealership under expedited conditions. Our client was planning to close on this new property and needed our expert assessment and opinion of site environmental conditions. AES responded and completed all necessary work, including presentation of the complete report, which contained information identifying potential environmental risks, which were discussed among all parties involved in the transaction and assigned responsibility for in time to allow completion of the property settlement as requested by our client.

### **C. Site Characterization Projects**

- During closure by removal of four gasoline USTs and one diesel fuel UST at this Bucks County, PA commercial facility, significant soil and groundwater impact by petroleum hydrocarbons was discovered. AES performed over-excavation of the tank excavation and developed and implemented a PADEP-approved statistically based sampling program (75%/10X rule) to attempt to demonstrate attainment of the statewide health-based standard for the soil. AES subsequently characterized the site, in accordance with the requirements of Pennsylvania's Land Recycling Act (Act 2), via Geoprobe<sup>®</sup> and drilling and installation of groundwater monitoring wells. Additional aspects of the characterization included groundwater sampling and analysis of the constituents of concern and natural attenuation compounds to enable an assessment of the viability of selecting a site-specific remediation standard and conducting a risk-based closure under Act 2. AES was instrumental in obtaining necessary funding to assist our client in performing the work.
- During completion of a Phase I ESA, which included a soil-gas survey and limited soil-boring program at this automobile dealership, chlorinated hydrocarbon compounds were discovered in the subsurface. AES personnel designed and implemented a groundwater monitoring program, which included installation of several groundwater monitoring wells into a fractured carbonate bedrock formation, followed by quarterly groundwater monitoring and sampling. Well purging and sampling was conducted to allow both shallow and deep aquifer sampling because of the discovery of chlorinated hydrocarbon compounds. These compounds were the result of long-term discharge of fluids via floor drains into an on-site dry well. Preliminary results of contaminant fate and transport modeling and risk assessment indicated that this site was a good candidate for a risk-based corrective action leading to a statewide health and site-specific Act 2 closure. Additionally, sufficient groundwater quality data was collected to support this approach through statistical means. Following negotiation of a very

reasonable settlement with a downgradient property owner, through which a deed restriction was agreed upon and obtained, the Act 2 Final Report for this site was submitted to the PADEP and a release of liability was received.

- Prior to the sale of a business office complex situated at a busy intersection in a Lancaster County community, the owner retained AES to locate and remove two (2) USTs formerly used to store petroleum products. The USTs were located through a non-intrusive geophysical investigation, utilizing electromagnetic and ground-penetrating radar instruments and were properly closed; however, leaded gasoline impact to the subsurface soil was encountered. AES subsequently performed a Geoprobe<sup>®</sup> Investigation and delineated a volume of gasoline-impacted soil extending to the elevation of weathered bedrock. A work plan was prepared and has been submitted to perform a groundwater characterization in an attempt to determine the extent of impact to groundwater, if any, prior to development of an appropriate Act 2 remedial action plan.
- Following the discovery through inventory records of a significant release of unleaded gasoline to the subsurface, this central-Pennsylvania convenience store operator hired AES to conduct a site characterization. Local potential receptors were identified and several local groundwater supply wells, including two at the site, were sampled. Because of impact to the local groundwater reserves, granular-activated carbon treatment systems were installed on two water supplies and a third was replaced with a new drilled well. A program designed after the USEPA's March 1997 *Expedited Site Assessment Tools for Underground Storage Tank Sites* was developed to define the extent of site soil and groundwater impact by gasoline. The assessment included the use of Geoprobe<sup>®</sup>, passive soil-gas, and drilling technologies to delineate the areas of soil and groundwater impact. Lastly, a geophysical survey utilizing Electrical Imaging (EI) was conducted across two (2) traverses at the site to verify the presence of preferential fracture-based groundwater flow through the site area. Subsequent drilling of remediation wells, located based on the results of the EI survey, confirmed the presence of these fractures. These wells served as integral components for an aggressive remedial action at the site.

#### **D. Remediation Projects**

- A release of several thousand gallons of unleaded gasoline from a fitting beneath a dispenser at this retail gasoline facility threatened the groundwater supply serving the local community. AES personnel interviewed the property owner, discovered gasoline compounds in samples obtained from the local municipal sewer system, advanced soil borings, and installed, developed and sampled a network of groundwater monitoring wells to define the extent of environmental impact. This work was done in an expedited fashion due to the sewer impact and threat of impact to the municipal supply well.

Subsequent to the site characterization, aquifer testing was conducted to determine the relative potential for the nearby municipal supply well to capture gasoline compounds, chiefly MTBE and BTEX. Groundwater pumping tests were conducted from proposed recovery wells at the site to obtain critical design parameters for a multi-well groundwater pump and treat operation. Though

recognized as simply a plume capture and control mechanism, the operation that was quickly designed, permitted, and installed resulted in successfully containing both liquid- and dissolved-phase plumes on the site and allowed for recovery of hundreds of gallons of liquid-phase hydrocarbons from the site subsurface.

After review of available remedial alternatives for the remaining source soils and execution of in-situ feasibility testing, soil remediation was completed by excavation and on-site thermal destruction. AES remediated 4,000-tons of soil by this means and met the statewide health standard for an Act 2 release of liability with respect to the soil. As a result of the aggressive soil remediation, AES documented groundwater quality improvement of three to four orders of magnitude. AES subsequently used a proprietary ozone-generating unit to inject ozone into the aquifer to increase dissolved oxygen content and enhance metabolism of residual MTBE. AES is currently performing quarterly groundwater quality monitoring and a chemical fate and transport analysis with risk assessment to develop a site-specific remedial standard for the groundwater in accordance with Act 2 regulations. This approach will result in site closure sooner than would normally be expected if cleanup to statewide, health-based standards was required.

- AES has received approval from the Pennsylvania Department of Environmental Protection on multiple projects in multiple regions to inject ozone gas to remediate petroleum hydrocarbon impacted groundwater, specifically MTBE, through chemical oxidation. At one example site, laboratory results indicate that after only 3 months of in situ ozone sparging, groundwater MTBE levels were reduced by at least 67-percent and subsequent attainment monitoring data demonstrate that MTBE concentrations remain below State health standards. The radius of influence of the in situ ozone sparging system onsite was approximately 60-feet.

At all sites where we have utilized this technology, results have been very favorable. Design remedial action results in all projects, where the ozone gas makes contact with the chemicals of concern, have been achieved within nine months or less.

- A significant extent of impact to soil was discovered during removal of gasoline USTs at this country store. Nearly 100 cubic yards of gasoline-tainted soil was excavated, and subsequently loaded and hauled to a thermal soil recycling facility. Since the gasoline impact extended to the level of bedrock, a tank-field groundwater monitoring well was installed and follow-up drilling of micro-wells using Geoprobe<sup>®</sup> direct-push technology and conventional drilling was conducted. A limited amount of residual soil impact was discovered through soil sampling and analysis, while a dissolved-phase gasoline plume, consisting of BTEX, MTBE and naphthalene above state standards was detected in the groundwater. This plume extended off-site and impacted groundwater at two (2) domestic supply wells. Point of entry treatment systems consisting of granular activated carbon (GAC) filtration were installed for the homeowners and are regularly monitored and maintained by AES.

Due to the site characteristics, which included both dense, silty clay and fractured bedrock in the saturated zone at the site, AES deployed a dual-phase vacuum extraction system along with vapor and aqueous phase GAC treatment vessels. Temporary discharge authorization was secured from the regulatory agency and the system was activated. Following nine months of operation, the site groundwater quality has been restored to nearly pristine conditions. The remedial system was disconnected and removed from the site, while follow-up groundwater quality monitoring and systematic random soil sampling was conducted to demonstrate attainment of the selected remediation standard under Act 2.

- Prior to the sale of a former commercial flower business, two (2) underground storage tanks (UST) were exhumed and environmental samples collected. AES completed the sampling and UST closure report. Samples obtained from the bottom of a small quantity gasoline UST excavation, revealed high levels of petroleum hydrocarbon compounds. This UST was positioned adjacent to a historic storage barn with a stone basement wall and foundation. Sale of the property was delayed due to the environmental impact and AES was retained to conduct a site characterization. This was accomplished by advancing soil borings both manually within the basement of the barn and by Geoprobe<sup>®</sup> direct-push technology outside the barn around the former UST pit. Results of the characterization revealed a defined volume of gasoline-impacted soil beneath and adjacent to the barn.

AES was retained to perform an expedited remediation of the environment and gain closure and release of liability with respect to soil under the Act 2 program. A work plan involving supporting of the barn, excavating and thermal recycling of the contaminated soil followed by development and implementation of a PADEP-approved statistically based (75%/10X rule) sampling program was conducted. The work was completed within three weeks and costs less than two-thirds of the budgeted amount. An Act 2 release of liability with respect to the soil was received from the state regulatory agency and the sale of the property was finalized. Both the former and new property owners no longer have any liability associated with the release.

#### **E. Waste Management/Minimization & Environmental Compliance Projects**

- A south-central Pennsylvania heavy equipment manufacturer contacted AES for compliance services following a surprise PADEP audit. AES consulted with our client and implemented a Preparedness, Prevention and Contingency (PPC) Plan and Source Reduction Strategy (Form 25R) for residual and paint booth wastes. AES also helped open a dialog between our client and PADEP to create open lines of communication. In addition, AES coordinated, with the client's approval, a Pollution Prevention/Energy Efficiency (P<sup>2</sup>E<sup>2</sup>) site visit by the PADEP Office of Pollution Prevention and Compliance Assistance (OPPCA). This non-regulatory review of our client's facility was to assist our team in better meeting source reduction and energy efficiency compliance issues.

As a result of the overall strategy for this site and the team effort, our client became an applicant for a Governor's Award for the Source Reduction Strategy that we helped to develop and implement. This plan has resulted in the reduction of residual wastes per unit of production by 38-percent from 1996 through 1998. In addition, paint booth volatile organic compound (VOC) usage per unit of production has been reduced 74-percent during the same time period. Both measures are helping to increase the efficiency of our client's operation and saving valuable financial resources.

- A large south-central Pennsylvania propane distributor solicited AES for Risk Management Plan (RMP) preparation and implementation. AES reviewed pertinent United States Environmental Protection Agency (USEPA) documents for complying with the Clean Air Act (CAA) Section 112[r] and submitted a work plan to develop and submit the RMP to the EPA prior to the deadline.
- A south-central Pennsylvania manufacturer of truck utility bodies retained AES to perform a comprehensive assessment of their facility's environmental compliance with respect to air quality, hazardous and residual waste, and emergency response planning regulations. AES worked on behalf of our client with the local field office of DEP to determine if the facility was subject to permitting and VOC limitations for two paint spray booths used in the manufacturing process. AES also developed a PPC plan for the facility, and coordinated the proper labeling, shipping and disposal of numerous drums of hazardous and non-hazardous wastes. By working closely with the DEP, AES demonstrated that our client is committed to achieving environmental compliance, thereby avoiding significant penalties.
- AES was retained by a large Pennsylvania lithographic printing company to perform an environmental audit of the facility prior to the sale of the company. AES identified that air emissions inventory reporting was required for the facility. By working with the plant management and engineering personnel AES compiled a complete inventory of all VOC-containing printing inks and cleaning solutions and calculated the annual VOC emissions for the facility as required by the PADEP. AES also identified deficiencies in the facility's residual waste reporting (Form 26R) which were subsequently corrected, thereby preventing the facility operators from being cited for non-compliance with waste reporting requirements.
- A national-chain discount store contacted AES to assess the wastewater discharge from their Ephrata Pennsylvania store. The facility contained a bakery, a food processing area and an automotive maintenance facility. All of these operations contributed to the wastewater effluent quality, however, the food processing and bakery departments were the primary sources of elevated biological oxygen demand (BOD) in the discharge. Working with the Borough sewer authority and the store management AES assisted in identifying ways to reuse waste food products in the local agricultural community. The changes in waste food handling were implemented at minimal cost. The resultant decrease in the wastewater BOD concentrations significantly decreased the surcharges imposed on our client by the sewer authority. AES continues to monitor and sample the effluent on a quarterly basis as required by the Borough.

## **F. Asbestos Projects**

- A commercial property management company contacted AES to generate a cost efficient plan for the abatement and/or encapsulation of asbestos containing materials (ACMs) within a circa 1920 senior housing apartment building in the City of Philadelphia. During a site walkover, AES reviewed existing documentation and located all of the known ACMs and discovered several suspect ACMs previously not identified. AES coordinated the collection of samples from the newly identified suspect ACMs. Upon receipt of the laboratory analytical results of collected samples, AES prepared a detailed proposal identifying the costs to abate and/or encapsulate all of the ACMs throughout the building. AES coordinated all site inspections and cost estimate preparation with a Philadelphia-certified asbestos abatement contractor. Our cost estimate provided the client with a cost-efficient means, either through encapsulation or abatement, to reduce their liability prior to sale of the building. In addition, AES was able to delineate ACM previously not identified, therefore, reducing the client's future liability.
- An aviation support company contracted AES to perform asbestos building inspections for several airplane hangars located at two Airports in New Jersey. The buildings were slated for demolition at various intervals, but the demolition contractor was under a tight deadline to clear the areas for new construction. AES performed a detailed site walkover of each building and identified all suspect ACMs in each of the buildings, including the roofs. Several hundred samples were collected and were submitted to a certified laboratory for rapid turnaround of polarized light microscopy analysis. AES completed an Asbestos Building Demolition Report for each of the eight buildings on time and within budget, thereby allowing the demolition and construction to proceed as scheduled.
- A building owner, planning to demolish a mixed commercial and residential building, contracted AES to manage all asbestos related issues prior to demolition. AES identified asbestos-containing floor tile in the building that was not friable and therefore, was not required to be removed prior to demolition of the building. However, if in the process of demolishing the building the asbestos would become friable then all of the waste generated from the project would have to be disposed of as ACM. AES designed a cost-effective strategy to remove the flooring with the floor tiles intact prior to demolition and thereby saved our client significant disposal fees.

## **G. Geologic/Hydrogeologic Projects**

- A central Pennsylvania engineering consulting firm preparing a land development plan for a new retail facility retained AES to perform a Carbonate Hazard Assessment (CHA). The site is situated in a carbonate geologic setting, which is prone to the development of sinkholes. Since karst features, including sinkholes, present both environmental and public safety concerns, the municipal planning agency required that a CHA be performed to assess the likelihood that the proposed construction would enhance existing karst features or create new ones. Our investigation included examination of historical aerial photography and

published maps of known karst features in the area of the site. This data, coupled with our knowledge of the geologic formation beneath the site, allowed our client to fully address the requirements of the municipal planning agency, and allowed them to design a stormwater management system, which is protective of the environment and public safety. Furthermore, our findings precluded the need to line the facility's stormwater detention basin, resulting in several thousands of dollars saved in design and construction costs.

- A central Pennsylvania church congregation retained AES to perform a CHA for a 10-acre tract of land on which a new church building, multi-purpose building and parking lots will be constructed. The property is located in the Lebanon Valley, which is noted for sinkhole activity and karst geologic features. Although there were no open sinkholes on the property, several visible depressions were observed on the site, which warranted additional investigation. AES performed standard penetration testing (SPT) at numerous locations across the site to determine if the observed depressions were past sinkholes, which had been filled in, or if they were simply topographic depressions. The results of the SPT program did not indicate the presence of past sinkhole collapses, nor did it identify any subsurface voids which would be anticipated to develop into sinkholes. Furthermore, our investigation provided data on subsurface soil and bedrock characteristics, which will assist in the design and construction of building foundations on the site.
- A benevolent organization based in Philadelphia retained AES to perform a water resources inventory of several properties in central Pennsylvania, which total approximately 10,000-acres. The purpose of our investigation was to identify sources of spring water on these sites and assist our client in marketing the sale of water to bottled water purveyors. The proceeds of the water sales will be reinvested in the organization, which provides education and community outreach services to needy children throughout central and eastern Pennsylvania. The results of our work to date identified several properties with substantial water reserves accessible from major market centers. Based on this, AES was contracted for and completed the identification process of potential purchasers of the spring water and the follow-up testing of the source. Ultimately, our services may allow these otherwise idle properties to generate significant dollars to be invested in educational programs for the organization.
- AES completed a preliminary groundwater assessment study for a proposed wastewater drip irrigation system for a site in Lancaster County, Pennsylvania. Our client is planning to subdivide the site into a total of 104 lots for development as a residential subdivision. Water sewer service will be provided by two onsite community water wells, while a proposed community wastewater irrigation system will provide sewage treatment and disposal. AES performed the appropriate nitrate loading calculations and associated stream dilution calculations and assessment. We worked with a Pennsylvania-certified soil scientist to oversee the installation of approximately 10 to 12 backhoe excavations on and in the vicinity of the proposed drip irrigation system to evaluate the depth of perched seasonal high water table, depth to bedrock, slope, soil series, and onsite septic suitability.

- AES performed a well siting study on an approximately 40-acre athletic property located in Manheim Township, Lancaster County, Pennsylvania. The purpose was to identify at least two potential well sites on our client's property in order to supply water for a proposed drip irrigation system. In an effort to contain costs, we opted for and developed an approach that minimized costs yet represented a good blend of science and practicality that will enable several potential well sites to be selected. AES coordinated the work with local planning agencies and the Susquehanna River Basin Commission (SRBC). As part of the study AES also completed fracture trace analysis, geologic mapping, and considered onsite development plans when selecting the well locations.

#### **H. GSA Federal Supply Projects**

- A dramatic rain event caused elevated groundwater conditions in the area of a high-volume underground storage tank (UST) battery used to fire boilers for this Veterans Administration Hospital. Appearance of petroleum impact in the groundwater which was observed discharging off-site resulted in the state agency requiring an assessment and remediation of the groundwater. AES was engaged under their GSA Federal Supply contract to sample and evaluate soil and groundwater conditions in the vicinity of the USTs and to develop and implement a remedial strategy that would not impact the necessary storage and use of petroleum inventory for this facility. AES' efforts resulted in a release of liability for soil impact and a risk-based closure approach for groundwater impacted by related petroleum hydrocarbon compounds – without the need for design or implementation of intrusive remedial approaches which would have dramatically impacted the facility operation, created a need for local, state and federal permitting, driven costs up significantly and created a myriad of logistical challenges. We are currently in the groundwater monitoring phase of this project and anticipate remedial project completion within the year.
- A major federal facility used for U.S. Army training, logistics, equipment storage and deployment required an underground storage tank (UST) system compliance audit prior to a U.S. Environmental Protection Agency inspection. AES' UST inspector and Principal Scientist conducted the audit and discovered a non-compliant situation having to do with a faulty and unsafe wiring that had the potential to allow a UST system leak that could go undetected. AES assessed the situation, filed a comprehensive report to the contracting officer and recommended and handled the UST system upgrade. The upgrade involved changing various wiring and installation of a specialized, direct burial sensor wire to enable real-time UST system monitoring and leak detection with immediate shut-down in the event of a leak. All work was completed within time and budget and was completed prior to the U.S. EPA audit which prevented likely fines which would have occurred under the aforementioned non-compliant situation encountered during our initial audit.

## **I. Energy Conservation Projects**

- AES and an affiliate energy conservation firm conducted a preliminary-scale energy audit of this health-care complex in central Pennsylvania, which included overview of boilers, heating ventilation and air conditioning (HVAC), elevators, kitchen and outdoor lighting. Our efforts yielded the framework for a full-scale Energy Master Plan to address various rapid return on investment strategies that will save the establishment significant capital – first for a relatively low-investment project involving change-out of metal halide and high-pressure sodium outdoor lights to specialized lower wattage, long-lasting induction lighting, leading to progressively more aggressive measures to build more energy independence for this business. Future plans include the following: A stack economizer, green degassing water, heating oil treatment, boiler control solutions, green solutions for chillers and an on-site cooling tower, energy reduction for over 1,200 personal computers and more. Added value to these measures is the quantified greenhouse gas emission reductions and stockpiled carbon credits on a fractional carbon exchange with which AES is affiliated.
- AES has conducted numerous audits of facility outdoor lighting and has evaluated types and numbers of lights, usage, electric utility rates, related light maintenance and change-out costs and run models using a proprietary in-house energy calculator to provide better lighting solutions. We are currently proposing lighting solutions that utilize both lighting energy controllers and replacement induction lamps and ballasts for our clients. Typical energy savings with these solutions have ranged from 25- to 60-percent while enhancing the quality of light for our customers safety and security. Return on investment (ROI) calculations typically show one-and-one half to three years on capital expenditures when including installation costs and factoring in typical maintenance savings from our solutions. Added value to these measures is the quantified greenhouse gas emission reductions and stockpiled carbon credits on a fractional carbon exchange with which AES is affiliated.

## **IV. Insurance**

AES maintains industry standard (or better) business, professional, and pollution liability insurances. Insurances possessed by AES include:

- Professional Liability \$7,000,000/claim; \$7,000,000 aggregate
- General Liability \$7,000,000/claim; \$7,000,000 aggregate
- Automobile Liability \$1,000,000/claim
- Excess/Umbrella Liability \$5,000,000/claim
- Worker's Compensation \$100,000/accident/employee

Copies of Certificates of Insurance are available upon request.

## **V. AES Staff and Associates**

AES' staff and associates consist of environmental scientists, geologists, engineers, sampling and remedial systems technicians, and energy conservation consultants. We have two Pennsylvania registered professional geologists on staff. One of our staff is also a certified tank handler for Pennsylvania and New Jersey, as well as a Subsurface Evaluator in New Jersey. Each of our field staff professionals is 40-hour trained and updated annually under the OSHA Hazardous Waste Operations and Emergency Response regulations U.S. Code, Title 29, Section 1910.120. In addition, our field staff attends annual first aid/CPR training.

In addition to our in-house professionals, AES also works closely with degreed associates including professional engineers (in various Mid-Atlantic States), health and safety professionals, certified industrial hygienists and biological and microbiological science experts. Our team of environmental scientists and engineers consists only of experienced and highly skilled professionals in their fields of expertise.

Resumes of key staff members and selected associates follow.

**Brian J. Beahan, P.G., C.H.M.M.**  
**President/Corporate Relationship Manager**

**Education**

*Millersville University, B.S., Geology Major; Meteorology Minor, 1983*

**Training and Continued Education**

Numerous courses and training seminars since 1985 on site safety, hazardous waste, underground storage tank, geology/hydrogeology, contaminant site investigation, remediation, risk-based corrective action, OSHA, real estate, land development and business relationship issues (selected coursework follows):

- OSHA HAZWOPER Training, 40-hour (1988) and annual 8-hour refresher training
- OSHA HAZWOPER 8-Hr Supervisor Training Course (1990)
- API/US EPA, “*Assessment, Control and Remediation of LNAPL Contaminated Sites*”, October 1994.
- Environmental Restoration Systems, Inc. (formerly of Science Applications International Corporation – SAIC), “*Practical Considerations for Remediation Systems*”, September 1995.
- ASTM, “*Risk-Based Corrective Action and RBCA Tool Kit*”, March 1998.
- PADEP, “*Land Recycling Program, A Client Workshop*”, October 1998.
- American Management Association, “*The Complete Course on OSHA Record-keeping*”, February 1999.
- Lorman Education Services, “*Real Estate Development from Beginning to End*”, June 2007
- Preparatory Review Course for the National Certified Hazardous Materials Management Exam (2009)

**Memberships**

Member, National Groundwater Association, Association of Groundwater Scientists and Engineers Division

Institute of Hazardous Materials Management (IHMM)

Board Member - Lancaster County Association of Realtors, Commercial and Industrial Division

Active Member/Associate Member representing AES in the following Organizations:

- Pa Petroleum Marketers and Convenience Store Association
- Washington D.C., MD & DE Service Station & Automotive Repair Association
- CCIM Institute – Commercial Investment Real Estate; PA/NJ/DE CCIM Chapter
- Tri-State Real Estate Association
- Associated Builders and Contractors – Keystone Division
- Rotary Club of Lancaster

**Professional Registrations/Certifications/Awards**

- Registered Professional Geologist, Pennsylvania (#553)
- Pennsylvania Certified Tank Installer (UM R category - #4144)
- New Jersey Licensed Tank Handler (Closure category - #0022862)
- New Jersey Licensed Subsurface Evaluator
- Certified Hazardous Materials Manager (CHMM)
- 1999 “Forty Under 40” Recipient (Award for professional success and community involvement: Central PA Business Journal)
- 2001 “Top Fifty Fastest Growing Companies” Recipient (Award for business success and growth: Central PA Business Journal)

**Professional History**

1997 – 2009 President/Principal Scientist, *Alternative Environmental Solutions, Inc.*  
1991 – 1997 Senior Geologist/Project Manager, *GCI Environmental Services*  
1986 – 1991 Senior Hydrogeologist/Project Manager, *Groundwater and Environmental Services, Inc.*  
1984 – 1986 Geologist/Waste Disposal Coordinator, *New England Pollution Control Company, Inc.*

## **Professional Summary**

As President of AES, Mr. Beahan is responsible for the management and long-term development of AES. Mr. Beahan leads the development of company standards for many areas of service including, but not necessarily limited to underground storage tank (UST) management; contaminated site investigation/characterization and remediation; ASTM-standard Phase I and II Environmental Site Assessments; Pennsylvania Land Recycling Program (Act 2) consulting and contracting; geologic/hydrogeologic consulting; and, waste minimization, management and disposal. In addition, Mr. Beahan leads our energy conservation services group and is tasked with development, marketing and implementation of this environmental business solution for our existing and future clients.

Mr. Beahan also supports project management staff in the supervision, mentoring, and coordination of AES' professional staff to effect the successful completion of varied environmental consulting projects. Moreover, Mr. Beahan assures that all staff executes their responsibilities in a manner consistent with our Corporate Mission—*providing quality client-centered environmental solutions*. Mr. Beahan also provides input into project strategy development and offers technical consulting in areas of expertise when called upon.

As Corporate Relationship Manager of AES, Mr. Beahan's primary functions include review and development of new markets; client development and retention; new lead handling and development; marketing and interaction between our professional staff and prospects/clients to effectively listen to client needs and accurately portray this to our staff for solutions-driven strategy development and issuance.

As Owner/Chairman of the Board, Mr. Beahan steers strategic planning, teaching and education of the company mission/culture, leadership, corporate business and business development.

Mr. Beahan has experience working in numerous hydrogeologic settings including glacial till, coastal plain, karst environments, limestone/dolomite formations and other fractured bedrock environments. His educational and work experience stretches across several states, including Pennsylvania, New Jersey, Delaware, Maryland, Ohio, West Virginia, New York and Florida. He has worked on numerous environmental investigations and remediation projects related to petroleum hydrocarbons, PCBs, chlorinated organic solvents, acids, pesticides and herbicides. He has also conducted investigations and/or reviewed cases related with PA NPDES Phase II stormwater infiltration testing, groundwater availability/supply projects, and nitrate and bacteriological investigations associated with Preliminary Hydrogeology Studies. He has significant experience with waste management and disposal projects, including drummed waste, hazardous and non-

hazardous waste cleanup packaging and disposal, and chemical lab pack disposal projects. The broad list of clients he has served includes real estate, banking and legal professionals, major oil companies, small and large industrial companies, health-care, education, small business and residential homeowners.

Mr. Beahan has conducted facility energy and lighting audits in the automobile, health-care, and higher education and petroleum industries, among others. He has evaluated energy usage and lighting solutions for numerous clients and inputted data into a proprietary energy calculator resulting in return on investment projections for our various solutions. Lastly, Beahan has developed, authored and reviewed various technical project strategies in the energy conservation markets within which we provide solutions.

Perhaps Mr. Beahan's most unique value to the AES organization and its clientele is his ongoing education in the development and maintenance of healthy relationships. Mr. Beahan has served on the steering committee for a local ministry whose sole purpose is to educate people about the value and basic human need of healthy, respectful relationships. He has served as a teacher and facilitator for training classes offered through this ministry. Mr. Beahan's passion for healthy human relationships is a critical part of AES business philosophies of excellent listening and the delivery of "client-centered" solutions. He has sponsored employee training through both in-house and outside sources to teach these philosophies to AES employees and to help ensure the delivery of "AES-style" services.

### **Presentations & Publications**

*Environmental Cleanup and the Law*; Invited Speaker, Lancaster Bar Association, Bench/Bar Conference, Sheraton Inn Fredericksburg Conference Center, Fredericksburg, VA - October 18, 1996.

*Underground Storage Tank Regulatory Update*; Invited Speaker, Agriculture and the Environment – Implications for Ag Lending, Lancaster Farm and Home Center, Lancaster, PA - February 19, 1997.

*Impact of New Environmental Regulations (PA Act 2) on Real Estate Development*; Invited Speaker, Lancaster County Association of Realtors, Commercial & Industrial Real Estate Council Meeting, Lancaster, PA - April 9, 1998.

*Chemical Oxidation of Dissolved-Phase Gasoline Constituents (including MTBE) through the Injection of Ozone Gas*; Invited Speaker, Engineers Society of Western Pennsylvania, "Business of Brownfields" seminar/conference, Pittsburgh, PA - November 2003.

*Environmental Due Diligence Before and During Site Construction... to Protect Your Liability After*; Invited Speaker, Keystone Chapter Associated Builders and Contractors, Inc. 2005 Annual Construction EXPO, York, PA March 2005.

*Environmental Site Assessment Standards for Commercial Real Estate – ASTM E 1527-05 and “All Appropriate Inquiry”*, Invited Speaker, Lancaster County Association of Realtors, Commercial & Industrial Real Estate Council Meeting, Lancaster, PA – August 10, 2005.

*Numerous invitations for presentations to bankers, realtors, attorneys and civil engineers and landscape architects involved in land development on various environmental, due-diligence, remediation and geologic/hydrogeologic consulting issues – 2005 through 2009.*

**Philip M. Donmoyer, P.G.**  
**Operations Manager**

**Education**

*University of Maryland, B.S., Geology, 1989*

**Training and Continued Education**

- OSHA HAZWOPER Training, 40-hour
- OSHA Process Safety Management Training
- OSHA Supervisor Training in Field Applications of Health and Safety
- OSHA Confined Space Entry Training (1992)
- NGWA – Theory and Application of Surface Geophysics to Groundwater Investigations
- GeoProbe<sup>®</sup>, Inc. Direct Push Operator Training
- ASTM International Phase I and Phase II Environmental Site Assessments for Commercial Real Estate
- Pennsylvania Department of Environmental Protection Act 2 seminar – November 2007

**Professional Registrations/Certifications**

Registered Professional Geologist, Pennsylvania (#2053-G)

**Professional History**

2009 – Present Operations Manager, *Alternative Environmental Solutions, Inc.*  
2007 – 2009 Senior Project Manager, *Alternative Environmental Solutions, Inc.*  
2004 – 2007 Senior Manager Earth Science Team, *Lake Roeder Hillard Associates*  
2001 – 2004 Geologist/Project Manager, *Alternative Environmental Solutions, Inc.*  
1999 – 2001 Geophysics Project Manager, *Enviroscan, Inc.*  
1990 – 1999 Staff/Project Geologist/Geophysicist, *SAIC (formerly R.E. Wright Associates, Inc.)*  
1989 – 1990 Geologist I, *PSC Engineers and Consultants, Inc. (formerly Huth Engineers)*

## **Professional Summary**

Mr. Donmoyer has a broad range of project experience including underground storage tank (UST) investigations, site characterization and remediation projects, geotechnical subsurface investigations, Superfund site investigations, ASTM-standard Phase I and II Environmental Site Assessments (ESAs), geophysical investigations, water supply investigations, and Pennsylvania Land Recycling Program (Act 2) consulting.

Mr. Donmoyer has extensive experience managing a large variety of environmental projects. His management responsibilities include work plan development, cost estimating, supervision of subcontractors and field staff, and client contact and technical report completion.

Mr. Donmoyer also has extensive experience conducting and managing a large variety of geophysical projects including depth to bedrock investigations (Karst and non-karst environments), sinkhole investigations, UST system locating, subsurface utility locating and tracing, borehole camera and borehole logging.

As a senior project manager, Mr. Donmoyer has been involved in numerous site characterization and remediation projects at sites impacted by petroleum and chlorinated hydrocarbons. He has assisted in the design and implementation of pilot studies for assessing remedial options at these sites. Some of his remedial feasibility testing experience includes two-phase vacuum extraction and soil vapor extraction. In addition, he has performed soil boring investigations, soil and rock drilling/well installation, soil and rock coring, soil, groundwater and air sampling, and soil and groundwater remedial activities. Mr. Donmoyer has also provided technical review and analysis of field data, and assisted with remedial system design.

## **Bridget E. Shadler**

### **Project Manager**

#### **Education**

LaSalle University, B.A., Environmental Science, May 2006

#### **Training and Continued Education**

- National Safety Council First Aid/CPR and AED Training
- National Institute For Certification In Engineering Technologies (Soils I/Exploration I)
- OSHA 40-hr. HAZWOPER training (2007) w/ annual 8-hour refresher
- ASTM International Phase I and Phase II Environmental Site Assessments for Commercial Real Estate
- Pennsylvania Department of Environmental Protection Act 2 seminar – November 2007

#### **Professional History**

February 2009 – Present Project Scientist II, *Alternative Environmental Solutions, Inc.*

May 2007-February 2009 Project Scientist I, *Alternative Environmental Solutions, Inc.*

July 2006-May 2007 Engineering Technician, *Geo-technology Associates, Inc.*

#### **Professional Summary**

Ms. Shadler has valuable field experience that includes the installation of field data loggers; groundwater sampling using EPA low-flow purge and sampling techniques; and biological and chemical sampling of surface waters. In addition to water sampling, she has also sampled soil. Ms. Shadler's work experience also includes geophysical equipment such as: ground penetrating radar, EM-31, electrical resistivity imaging, and magnetometer. She also has logged data for boring holes using spilt spoon sampling, air rotary, and Geoprobe methods. Ms. Shadler has also overseen the removal of aboveground and underground storage tanks. She has authored related reports for all field services.

In addition to her field experience, Ms. Shadler has conducted Phase I and Phase II Environmental Site Assessments under the direction of our senior staff. She has also authored related reports.

Ms. Shadler's computer skills include Excel, Word, Power Point, AutoCad 2000, and Surfer.

**Elizabeth M. Cushman**  
**Scientist I**

**Education**

Juniata College, B.S., Environmental Science, May 2008

**Professional History**

September 2008-Present      Project Scientist I, *Alternative Environmental Solutions, Inc.*

July 2008- August 2008      OSM/VISTA Summer Associate, *Plateau Action Network*

**Professional Summary**

Ms. Cushman is experienced with groundwater sampling using EPA low-flow purge and sampling techniques; soil sampling, including soil-gas investigations; surface water sampling; and the installation of groundwater monitoring wells. Ms. Cushman's additional field experience includes performing stormwater infiltration tests; GPS data collection; and she has also logged data for boring holes using Geoprobe methods. She has authored related reports for those and other field services.

In addition to her field experience, Ms. Cushman has conducted Phase I Environmental Site Assessments under the direction of senior staff and has also authored related reports, as well as remedial action and site closure reports, particularly under Pennsylvania's Act 2 requirements.

Ms. Cushman's other skills include statistical analysis and data processing, as well as Excel, Word, Access, Power Point, ArcView, HEC-RAS, AutoCad 2007, and Surfer.

## **Peter Voci**

### **Scientist I**

#### **Education**

Millersville University, B.S., Biology, May 1996

Millersville University, Post-Baccalaureate, May, 2005

#### **Professional History**

October 2008-Present Project Scientist I, *Alternative Environmental Solutions, Inc.*

August 2005-August 2008 Science Teacher, School District of Lancaster.

#### **Professional Summary**

Mr. Voci is experienced with groundwater sampling using EPA low-flow purge and sampling techniques, soil, soil gas, and surface water sampling. He has performed percolation testing for stormwater analyses. Mr. Voci has overseen the installation and development of groundwater monitoring wells. He also has logged data for boring holes using air rotary, and Geoprobe methods. Mr. Voci has prepared and supervised strategies for asbestos containing building material pre-demolition surveys and abatement projects. Lastly, Mr. Voci has provided integral research and support in a property devaluation project relative to bacteriological waste pollution related with fowl. He has authored related reports for those and other field services.

In addition to his field experience, Mr. Voci has completed Environmental site assessment Training and conducted Phase I Environmental Site Assessments under the direction of senior staff and has also authored related reports.

Mr. Voci's computer skills include Excel, Word, Power Point, and AutoCad 2000.

***AES, Inc. ASSOCIATE***  
**Nathan Guedalia**

**Associate Electrical Engineer**

**Education**

BSEE, University of Tennessee, 1974-1976  
MSEE, University of Illinois, 1977-1978  
Engineer EE, Northeastern University, 1980-1983

**Professional History**

2005 to Present	Equidex Energy / Global Emissions Exchange, CTO and COO
2001 - 2005	Olive Tree Advisors, cofounder
1999 – 2001	ARIEL Corporation
1998 – 1999	Trendium, Inc.
1997 – 1998	RACAL Data Group
1994 – 1996	NCC Ltd.

**Publications**

- Author of an X.400 book published by Bezeq Press
- Author of “Bezeq Strategy in Telematics”, Bezeq Press
- Author of ITU Recommendation T.52

**Professional Summary**

Since the beginning of the decade, Mr. Guedalia has been involved in environmental endeavors. As a cofounder and partner in Olive Tree Advisors, he was involved with the market development for an Adsorbed natural Gas foreign venture developed novel natural gas storage solution. As CTO and COO of the Global Emissions Exchange, Mr. Guedalia is responsible for all aspects of platform development as well as all protocol developments on the Global Emissions Exchange. Mr. Guedalia is also a cofounder and partner in Equidex Energy, where in his duties as CTO and COO, he is responsible for the integration of new products and technologies.

Mr. Guedalia has extensive experience in the technical field. He has provided support for Internet Service Providers and an internationally known manufacturer of data communications equipment. As Chief Scientist / CTO of NCC, he was responsible for the areas of telecommunications, data communications, and security.

***AES, Inc. ASSOCIATE***  
**Lauressa J. McNemar, P.E.**

**Associate Environmental Engineer**

**Education**

Pennsylvania State University, B. S. in Environmental Engineering, 1984

*Training and Continued Education*

- Registered Professional Engineer in Pennsylvania
- Registered Professional Engineer in New York (inactive status)
- OSHA 29 CFR 1910.120 40-Hour Safety Training and Annual Refreshers
- OSHA 29 CFR 1910.332(b)(2) and 1926.416 Electrical Safety Training – Level 1
- Remediation Specialist Training, Zero Accidents, and CPR/First Aid Training Programs all previously completed

**Professional History**

1998 to Present	Tri-C Corporation
1997 - 1998	Waterford Compliance Group, Ltd.
1993 - 1997	Groundwater Technology, Inc./Fluor Daniel GTI
1985 - 1993	Walter B. Satterthwaite Associates, Inc.
1984 – 1985	F.X. Browne Associates, Inc.

**Professional Summary**

Ms. McNemar has extensive experience in applied Environmental Engineering relative to land and water resources and waste management. Career experience includes project management, design engineering, office management, sales and marketing, new products development, and professional and technical staff development. Project management experience has ranged from small individual projects, to large multi-state extended contracts involving the coordination of over twenty offices across the U.S. including multi-subcontractor coordination. Maintains long term client relations with municipal government providing landfill over-sight reviews, and with industry for annual environmental compliance services.

Currently serves on Planning Commission and as a Supervisor in home Township.

Participated in numerous work groups to provide professional reviews and opinions to state and federal law-makers on proposed environmental legislation, on behalf of affected industries. Examples include the Storm Water NPDES regulations, and the Integrated Contingency Plan Guidance, associated with Clean Water Act compliance. Developed and implemented client pilot studies, funded by the PADEP, for waste reduction projects under the state Municipal Waste Planning, Recycling and Waste Reduction Act.

Prepared and delivered presentations and seminars on regulatory updates, compliance strategies, and conducted required regulatory training to both in-house staff, industrial clients and associations across the U.S.

### **Pertinent Project Experience**

The project experience presented below represents a variety of project experience. Ms. McNemar has performed work for the manufacturing, pharmaceutical, chemical, petroleum, solid waste, utilities, and transportation industries, municipal governments and authorities, and land developers.

**Landfills and Waste Management** Managed a residual waste lagoon closure for a Pennsylvania manufacturer; currently providing services as a special landfill consultant to Lower Saucon Township; previous consultant project manager for the Southeastern Chester County Refuse Authority; project engineer for a landfill re-permitting design and application for an unreclaimed quarry site; prepared closure plans for two municipal solid waste facilities, and; project engineer for an independent environmental assessment conducted for Bushkill Township relative to a proposed trash-to-energy plant.

**Water Resources Engineering** Designed a wastewater treatment system for a metal tubing manufacturer; designed leachate recirculation system and a subsequent evaporation system for a landfill owner; designed several storm water management and flood control systems for individual small lots and large commercial, residential and county development projects; assessed water quality and evaluated restoration options for several degraded lakes, and; managed the preparation of watershed studies under the National Dam Safety Act and the Pennsylvania Watershed Storm Water Management Program (Act 167).

**Construction Management** Construction management experience includes oversight of numerous subcontractors, materials, tracking, invoice approvals, change order controls, scheduling of work, equipment procurement, regulatory agency liaison, and project completion certifications. Projects included landfill construction, earthwork and grading at residential and commercial developments, regional and private stormwater and flood control facilities.

**Regulatory Compliance** Managed the preparation of integrated environmental prevention and response plans for over 120 sites; under NPDES regulations, managed projects involving individual and general permit applications, storm water pollution prevention plans and wastewater/storm water sampling and analysis plans for over 100 sites; conducted waste tracking audits, Developed and managed annual regulatory compliance programs for numerous clients, and; prepared federal, state and local permit applications related to land development and industrial facilities construction and processes.

### **Publications and Presentations**

- “How to Deal with the New EPA Storm Water Discharge Rules” DELAWARE BUSINESS REVIEW, 1991
- “The Heat is On!” PENNSYLVANIAN – SOLID WASTE ISSUE, 1990
- “Wetlands and Storm Water Pollution Management” NATIONAL WETLAND SYMPOSIUM FOR WETLAND HYDROLOGY, 1987
- Attended NIAGARA ‘98, a multi-agency (USCG, EPA, FBI, National Guard, US Army, ACOE, police, fire department, among 30 agencies), table top Emergency Response exercise. The all-day exercise included the Canadian Agencies’ involvement related to disaster, terrorist, and environmental incidents at the Peace Bridge in Buffalo, NY.
- Presentations of the NPDES storm water regulations for the National Slag Association, Manufacturer’s Association of the Delaware Valley, the Pennsylvania Chamber of Business and Industry, and several corporate industry groups.
- Provided critique and comments on proposed environmental legislation through various Association memberships and committee work groups. Examples include the One Plan Work Group under the Federal Common Sense Initiative and the Pennsylvania Chamber of Business and Industry.
- Prepared and provided testimony in support of various projects, including public hearings and private project law suits.

***AES, Inc. ASSOCIATE***  
**Michael D. Lee, Ph.D.**  
**Bioremediation Consultant**

**Education**

Northeast Louisiana University, B.S., Biology with Chemistry Minor, 1980  
Rice University, M.S., Environmental Science and Engineering, 1983  
Rice University, Ph.D., Environmental Science and Engineering, 1986

**Training and Continued Education**

- OSHA HAZWOPER Training, 40-hour and Annual Refreshers

**Professional Affiliations**

American Chemical Society  
American Society for Microbiology  
Society for Industrial Microbiology and Biotechnology

**Professional History**

1998 to Present	Vice-President, <i>Terra Systems, Inc.</i>
1996 – 1998	Senior Research Biologist, <i>DuPont</i>
1989 – 1996	Senior Microbiologist, <i>DuPont</i>
1988 – 1989	Project Microbiologist, <i>DuPont</i>
1986 – 1988	Microbiologist, <i>DuPont</i>
1986	Post-Doctoral Fellowship, <i>Rice University</i>

**Professional Summary**

Mr. Lee has over 11 years of experience in the field of bioremediation. Mr. Lee's expertise is in applying in situ anaerobic bioremediation of chlorinated solvents, implementing in situ aerobic bioremediation of hydrocarbons and other contaminants in groundwater and waste impoundments, conducting biodegradation treatability studies, and assessing natural attenuation of organic contaminants. Mr. Lee has worked with the Remediation Technology Development Forum for Bioremediation of Chlorinated Solvents, a consortium of industry and governmental agencies collaborating to understand and pilot intrinsic bioremediation, accelerated anaerobic bioremediation, and cometabolic bioventing projects.

***AES, Inc. ASSOCIATE***  
**Wilfredo C. Gomez, P.E., C.E.M., C.C.P.**

**Chemical/Environmental Engineering, Energy Conservation/Optimization  
Consultant**

**Education**

- B.S. Chemical Engineering - University of San Agustin, Philippines (1965)
- Graduate Studies - Wastewater Treatment - Villanova University
- Air Pollution Control - Brooklyn Polytechnic Institute
- Post Graduate Course Work - Boiler Efficiency Improvement/Energy Management

**Training and Continued Education**

- Registered Professional Engineer - Pennsylvania, New Jersey, Maryland, Delaware, Ohio, Illinois and Virginia
- Licensed Chemical Engineer – Philippines
- Instructor - Energy Conservation & Management Seminar

**Professional Summary**

Mr. Gomez has over 40 years experience in pollution control/waste treatment, energy conservation/optimization, process design, water and wastewater treatment design, and environmental engineering design and construction management in the United States, Caribbean, Mexico, Latin America and the Orient. Mr. Gomez has broad range expertise in feasibility analyses, conceptual design, detailed design, equipment specifications and selection, cost estimating and construction phase supervision. His extensive experience includes plant engineering for fertilizer, graphite electrode, incineration, waste treatment, cement, power plant, pulp and paper, tannery, food, petrochemical and pharmaceutical facilities; and municipal, military and government agencies.

*Mr. Gomez's accomplishments include the following:*

**Contaminated Soils and Groundwater Collection & Treatment Design:**

- Oil Storage Terminal in New Jersey - Design of collection system and dissolved air flotation system to recover oil from groundwater.

- (3) Sanitary Landfill Sites in Pennsylvania & Maryland - Design of leachate collection and treatment systems, including sludge dewatering.
- Oil Refinery in New Jersey - Evaluation and design of disposal alternatives for oily sludge in separator ponds, and control alternatives for oil migration to a creek, including physical/chemical treatment, combustion in boilers, off-site and on-site disposal, etc.
- Coast Guard - Philadelphia, Pennsylvania - Evaluation and design of alternatives for control of PCB contaminated oil released to the Delaware River, including subsurface water removal, treatment and disposal.
- Remedial Design for Eight Sites, Eaker AFB, Arkansas - Engineering analysis, and detailed specification of piping, pumps and peripheral components for soil and groundwater remediation using air sparging, soil vapor extraction (SVE), and bioventing systems.
- Concept engineering, specifications, and detailed system design engineering for a 250-gpm groundwater with organic contaminants using air stripper, air sparging and soil vapor extraction systems for a company in Waverly, Ohio. This project also included design of the groundwater treatment system building and support for the system/building
- Concept engineering specification and detailed system design engineering for a 150 gpm air stripper and well water treatment system for TCE and other organic contaminants in Audubon, Pennsylvania. This project also included design of the groundwater treatment system building and layout, and construction management support for the system/building installation/construction.
- Chemical Industry in New Jersey - Design of 105,000 cfm ventilation air collection and pollution control systems for remedial bio-treatment of contaminated soils using biofilters and activated carbon and aeration and sprinkler systems for the biopiles. Design included several pre-engineered processing buildings ranging in size from 800 - 45,000 square feet.

**Solid Wastes and Hazardous Waste Incineration Systems:**

- Feasibility studies, cost benefit analyses, conceptual designs and reports on synergistic solid waste-to-energy projects and resource recovery facilities to convert mixed municipal refuse into products useable by industries for several municipalities and three NASA facilities. Study included the evaluation of conventional and innovative domestic and foreign waste disposal techniques.

- Project engineering and design of refuse/pathological incinerator for a hospital in Philadelphia, PA.
- Project engineering, feasibility study, analysis and conceptual design for co-disposal of municipal sewage sludge by incineration with municipal refuse or fossil fuel and flue gas waste heat recovery.
- Design of shredding and composting facility for processing 200 tpd mixed municipal refuse for a county in Florida. Design of baling facility for landfilling mixed municipal refuse for the same county.
- Evaluation of disposal alternatives for a tannery in Maine for high chromium bearing sludge, including chromium recovery, incineration and/or disposal in secured landfill.
- Design of solid waste incinerators for municipalities and the Army Corps of Engineers, including construction management on some of the projects.
- Design of secondary combustion chambers for complete combustion of volatiles for graphite electrode plants.
- Design of air pollution control for incinerators using scrubbers and electrostatic precipitators.
- Conceptual design and evaluation of technologies for disposal of infected 1000-lb whole animal carcasses using incineration and hydrolysis for a USDA facility in New York.
- Engineering evaluation and design modification of three hazardous waste incinerators for transport to and operation in Mexico, including design of building for the holding, staging areas and feed system for contaminated soils and drummed hazardous wastes.
- Design of resource recovery facility employing a pyrolysis system to produce heavy and light oils and char from autofluff generated by a car shredding facility, for a client in Taiwan. Managed construction and installation of pyrolysis system components and storage and processing building

**Wastewater Treatment Plant Design:**

- (12) community and industrial wastewater treatment systems ranging in capacity from 10,000 to 60,000 gpd

- Paper Company, Maine - 18-mgd wastewater treatment plant, including filter presses and chemical facilities.
- De Kalb County, Georgia – 18-mgd and 36-mgd advanced wastewater treatment plants, yard piping, sludge handling and chemical facilities.
- Municipal Plant, New Jersey - 250,000 gpd wastewater treatment plant addition, including phosphate removal using a tertiary reactor/clarifier with a 1.25 mgd capacity to handle the total plant flow.
- Town of La Plata, Maryland – 1-mgd municipal plant upgrade with filter press sludge dewatering and chemical feed facilities.
- Design of leachate collection and treatment systems for several solid waste landfills in Pennsylvania and Maryland.
- Design of more than ten transfer pump stations, as part of the sanitary sewer system, including stand-by emergency generators for the Air National Guard, various municipalities and communities.
- Wastewater design work included design of treatment plant headworks and upgrade of collection and transfer systems.

**Water Treatment Plant Design:**

- Communities & Residential Developments - design of water treatment and distribution systems.
- Electric Company & Pharmaceutical Company - treatment systems for potable water to meet drinking water standards.
- (4) Electric Power Plants - water treatment systems producing deionized water for high pressure steam/electric generating systems.

**Energy Conservation & Management:**

- Boiler analysis and feasibility study for upgrading and/or replacement of existing boilers, and investigations into fuel conversion and flue gas waste heat recovery for

several federal agencies.

- Energy conservation study for various chemical industries such as phosphoric acid plant, galvanizing plant, starch manufacturing plant, ore processing plant, three graphite electrode plants and a tomato processing plant, in various locations in the U.S. and the Caribbean.
- Field and classroom training of teams of government and industry energy engineers on energy conservation, including data collection, analyses, evaluations and recommendations for various industrial plants in Costa Rica including a brewery, petroleum refinery, rice mill, sugar mill and refinery, polymer plant, textile plant, candy factory, paper mill, food processing plant and a complex fertilizer plant. Instructor for the five day course work and seminar given to government and industry engineers on energy management.
- Energy conservation study for three major cement plants in Ecuador, including detailed evaluation of the burner systems, kilns and related unit operations and processes.
- Design of over 50 small scale cogeneration systems for institutional facilities, YMCA's, nursing homes and high rise condominiums; 40 systems were installed.
- Feasibility study and conceptual engineering for energy recovery by generating steam and/or electricity from waste heat by means of indirectly heated gas turbine, waste heat boiler, steam turbine and Organic Rankine bottoming cycle, for industrial/municipal clients.
- Energy conservation study for an adhesive manufacturing plant in the Philippines.

**HVAC Design:**

- Design upgrades of HVAC systems for several buildings at a university:
  - Replacement of existing 100-ton chiller unit with new 125-ton gas engine driven chiller and new cooling tower
  - New 100-ton chiller unit and new cooling tower for a campus dormitory.
  - Upgrade of the existing system for the Science Building using three (3) new units with combined capacity of 150 tons.
  - Two (2) new 100-ton cooling and dehumidification system using DX units with air cooled condensers for the Natatorium
  - Four new 20-ton DX systems for the gymnasium
  - Upgrade of associated air distribution systems with zone controls
  - Design of associated pumping and piping systems

- Design upgrades of HVAC systems for several buildings for a research facility of a major pharmaceutical company:
  - Upgrades of three (3) existing systems with a combined capacity of 215 tons using chilled water for the Laboratory Building
  - Evaluation of the existing chilled water, condenser water systems and air distribution system for the offices and laboratory areas; upgrades of three (3) existing systems with a combined capacity of 1000 tons
  - Upgrade of associated air distribution systems with zone controls for space positive or negative pressures, especially in laboratories, clean rooms and ante-rooms.
  - Design of associated pumping and piping systems
- 
- Design of HVAC and ventilation systems for several buildings and other projects for the Delaware Army National Guard:
  - Two (2) new 5-ton DX units for each of the six (6) buildings
  - Vehicle exhaust systems for four (4) FMS's (vehicle maintenance shops)
  - Construction surveillance and oversee commissioning of HVAC systems for the Smyrna Armory
  - Oil-water separator systems for four (4) facilities
  - Spill pad and fuel containment systems for five (5) facilities

Design of the facilities include materials handling equipment, conveying equipment, air handling equipment, heating, ventilating and air conditioning of processing buildings, offices, laboratories; process and building piping, plumbing and other related support services.

Construction management for design projects that are constructed includes shop drawings review, field supervision and inspection, project meetings, liaison with clients and contractors.

**Overseas Experience:**

- Adaptable to working and travelling overseas, spending 6 months in the Costa Rica project, one month in Ecuador, several weeks in the Caribbean projects, and Mexico. Travels to several countries in Europe, Baltic region, Eastern bloc nations, Australia and the Orient.
- Commuted to Taiwan for 2 years during the design and construction management of the resource recovery facility. Familiarity with working with the local engineers and labor force.
- Helped a company in the mainline to find a manufacturer in Taiwan to mass produce the Autolock device (car anti-theft device like the Club now also being sold at Pep Boys). Traveled to Mexico and the Philippines for the same assignment.

- Provided technical and engineering support for a company in Macau who is trying to sell municipal and industrial solid waste and wastewater treatment systems to local cities in Mainland China.
- Experienced with traveling to China having made at least half a dozen trips to Hong Kong, Macau, Xian, Beijing and other provinces in the Mainland; familiar with Oriental (Chinese and Philippine) cultures. Fluent in Filipino and three other dialects in the Philippines; I do not speak Mandarin.



## **Professional Summary**

Mr. Oransky possesses more than twenty years experience in chemical and environmental engineering, industrial hygiene, safety, and technical training, with strong skills in chemical process development and design, assessments, evaluations, field and plant testing, program upgrade and development, and verbal and written presentations.

Mr. Oransky's accomplishments include the following:

Expert witness work involving design review of process flow and piping and instrumentation diagrams to determine if specialty chemical process could meet quantity and purity requirements.

Technical training including hazard communication, confined space, hazardous waste management, hearing conservation, lockout/tagout, chemical safety, permit to work, hazwoper, and contractor safety.

Engineering investigation and assessment of metals and specialty chemicals manufacturing operations to improve product purity, increase recovery, and address health and safety concerns through equipment modification and design improvements.

Engineering assistance and underground and aboveground storage tank assessment and certification services for tank systems storing flammable, combustible, corrosive, and reactive materials.

Field testing of wet scrubbers at various process conditions to determine compliance with air permit requirements and document equipment efficiency and limitations.

Industrial hygiene monitoring to quantify employee exposures to metals, solvents, oil mist, ozone, total and respirable particulate, formaldehyde, acids, alkalies, isocyanates, noise, and asbestos.

Completion of safety inspections, audits, and hazard assessments. Preparation of specific lockout/tagout procedures, job safety analyses, and written programs for hazard communication and lockout/tagout.

Performance of ventilation studies to evaluate system design and operation and complete conceptual design engineering for system improvements as needed. has conducted wetland delineations using the Federal Manual for Identifying and Delineating Jurisdictional Wetlands and analysis of soils, vegetation, and hydrology to determine the extent of regulatory jurisdiction. He has compiled and prepared numerous state and federal permit applications for a variety of residential commercial and industrial projects.

## **Pertinent Project Experience**

The following represent a small sample of Mr. Oransky's project experiences:

Air Products and Chemicals, Carpenter Technology Corporation, Taylor-Wharton, The Glidden Company - Reviewed and certified modified Consolidated Emergency Response, Preparedness, Prevention and Emergency Operations, Spill Prevention and Response, and Spill Prevention Control and Contingency Plans

ICI Explosives USA, ICI Americas, Brush Wellman, Continental Wire, Dana Corporation, AT&T, Axel Johnson Metals - performed technical review, evaluation, upgrade, and certification of Pollution Prevention and Contingency, Spill Prevention and Response, and Spill Prevention Control and Countermeasure Plans

Fort Indiantown Gap - Supervised preparation of updated Spill Prevention Control and Countermeasure and Installation Spill Contingency Plans

U.S. Navy - Supervised industrial hygiene projects including performance of AHERA type asbestos assessments, and preparation of abatement plans and specifications for various buildings located at naval bases, forts, and reserve centers

Air Products and Chemicals - Provided technical consultation and engineering services to perform evaluation of ventilation systems to determine fan efficiencies, exhaust volumes, air flow patterns, and identify causes of inefficiencies with recommendations for upgrade and optimization. Technical assistance also included quantification of fugitive emissions of fluorine, ammonia, acetonitrile, hydrogen fluoride, and hydrogen chloride from various processing areas, identification and quantification of emissions from new process scrubber, and development and implementation of sampling protocol to quantify hydrogen chloride emissions from cylinder reclaim absorption system

## **Publications**

- Co-inventor U.S. Patent 4,358,111 "Pressurized Non-refillable Recreation Ball Inflated with Sulfur Hexafluoride, 1982
- Chapter 20 "Hydrochloric Acid and Anhydrous Hydrogen Chloride" INDUSTRIAL HYGIENE ASPECTS OF PLANT OPERATIONS, Macmillan Company, 1985
- Co-author "Closure of a Hazardous Waste Surface Impoundment" PROCEEDING OF THE 17<sup>TH</sup> MID ATLANTIC INDUSTRIAL WASTE CONFERENCE, 1985
- Chapter 29 "Hydrochloric Acid and Anhydrous Hydrogen Chloride" IN PLANT PRACTICES FOR JOB RELATED HEALTH HAZARD CONTROL, John Wiley and Sons, 1989
- Co-author "Five Steps To Effective Secondary Containment", POLLUTION ENGINEERING MAGAZINE, July 1992

- Co-author “Compliance With the Asbestos Standard at an Asbestos Building Products Facility” ENVIRONMENTAL CHOICES, TECHNICAL SUPPLEMENT, VOL 2, NO 1, Fall, 1993
- Co-author “Program Development To Identify and Characterize Potential Emergency Situations at a Petroleum Refinery and Determination of Industrial Hygiene Emergency Response” PROCEEDING OF THE 27<sup>TH</sup> MID ATLANTIC INDUSTRIAL AND HAZARDOUS WASTE CONFERENCE, 1995

***AES, Inc. ASSOCIATE***

**Scott A. Reddig P.E.**

**Chemical Engineering, Industrial Hygiene, Safety,  
and Technical Training Consultant**

**Education**

Bucknell University, B. S. in Chemical Engineering, 1993

Pennsylvania State University, Master Level Coursework in Environmental Engineering, 1996

**Training and Continued Education**

- Registered Professional Engineer in Pennsylvania, 2002

**Professional Affiliations**

Air and Waste Management Association

American Institute of Chemical Engineers, Treasurer Susquehanna Section

Tau Beta Pi Engineering Honor Society

**Professional History**

1997 to Present                      Oransky Engineering and Consulting, Engineer

1995 - 1996                          Spotts, Stevens and McCoy, Inc.

1993 - 1994                          Hoechst Celanese Corporation

**Professional Summary**

Mr. Reddig possesses over 10 years experience in chemical and environmental engineering, industrial hygiene, safety, and technical training, with strong skills in chemical process development and design, assessments, evaluations, field and plant testing, program upgrade and development, and verbal and written presentations.

Mr. Reddig's accomplishments include the following:

Expert witness work involving design review of process flow and piping and instrumentation diagrams to determine if specialty chemical process could meet quantity and purity requirements.

Technical training including hazard communication, confined space, hazardous waste management, hearing conservation, lockout/tagout, chemical safety, permit to work, hazwoper, and contractor safety.

Completion of safety inspections, audits, and hazard assessments. Preparation of specific lockout/tagout procedures, job safety analyses, and written programs for hazard communication and lockout/tagout.

### **Pertinent Project Experience**

The following represent a small sample of Mr. Reddig's project experiences:

Tobyhanna Army Depot - Developed Spill Prevention Control and Countermeasure Plan

Fort Indiantown Gap - Supervised preparation of updated Spill Prevention Control and Countermeasure and Installation Spill Contingency Plans

Air Products and Chemicals - Provided ventilation assistance at laboratory area to verify the absence of significant acid and organic emissions, eliminate the need for a hood scrubber system, complete a conceptual design with specifications and cost information, and witness subsequent lab smoke test after exhaust upgrade which minimized exhaust air re-entrainment into fresh air intake.

Consolidated Rail Corporation, PECO Energy, Reading Tube, Reading Hospital, Rockwell, Surgical Specialties - Supervised industrial hygiene projects to determine employee exposures to lead, welding fume, solvents, oil mist, nitrogen oxides, dust, crystalline silica, mercury, and copper fume

***AES, Inc. ASSOCIATE***  
**Russell W. Phifer, CET, CHMM, CEI**  
**Hazardous Waste Manager/Trainer**

**Education**

College of Wooster, B.A., 1974

**Training and Continued Education**

Additional coursework in marketing and computer science at West Chester University.

Numerous courses and training seminars since 1980 on site safety, hazardous waste, and environmental issues.

OSHA HAZWOPER Training, 40-hour

**Professional Registrations/Certifications**

Certified Hazardous Materials Manager (Institute of Hazardous Materials Management), 1985

Certified Environmental Trainer (National Environmental Training Association), 1990

Certified Environmental Inspector (Environmental Assessment Association), 1993

**Professional History**

1998 to Present	Consultant/Trainer, <i>WCC Environmental Services</i>
1990 – 1998	President, <i>Environmental Assets, Inc.</i>
1988 – 1990	Environmental Planner, <i>Compliance Services, Inc.</i>
1980 – 1988	Marketing Manager, <i>Industrial Resource Development Company</i>
1979 – 1980	Safety Manager/Production Coordinator, <i>Philip Morris Industrial</i>
1977 – 1979	Production Manager, <i>Chem Service, Inc.</i>

**Professional Summary**

Mr. Phifer is an expert in hazardous waste management, regulatory compliance, and worker health and safety. As an associate of AES, he provides expertise with cases involving these disciplines, the development of Preparedness, Prevention, and Contingency (PPC) plans, air monitoring, and the preparation of RCRA and air quality permits. In addition, he has extensive knowledge of state requirements and SARA Title III provisions for compliance issues.

### **Presentations & Publications**

“How to Handle the Special Problems of Laboratory Waste Management”, Phifer, R. W., *American Institute of Plant Engineers (AIPE) Journal*, Jan/Feb Issue, 1984.

“Laboratory Waste Disposal”, Phifer, R. W., *CHEMUNITY*, Fall Issue, 1985.

Book Review of “High Tech and Toxics: A Guide for Local Communities”, Phifer, R. W., *Chemical & Engineering News*, Sept 1, 1986 issue.

Handbook of Hazardous Waste Management for Small Quantity Generators, Russell W. Phifer and William McTigue (205 pp). Lewis Publishers, Chelsea, MI, 1988.

“HAZWOPER and Laboratories”, Phifer, R. W., *Chemical Health & Safety Magazine*, December 1994.

Laboratory Waste Management, A Guidebook, American Chemical Society Task Force on Laboratory Waste Management (Phifer, R. W., Chairman), 1994.

Since 1981, Mr. Phifer has been invited to speak and/or has conducted seminars on more than 65 occasions. His presentation topics have included but are not limited to, “Laboratory Safety and Waste Management”, “RCRA and Labs – The First 20 Years, and Beyond”, and “Chemical Safety”. He is the Co-developer and presenter of an American Chemical Society Short Course titled “Laboratory Waste Management”.

***AES, Inc. ASSOCIATE***

**Bradly J. Gochnauer**

**Wetlands Consultant**

**Education**

The Pennsylvania State University, B.S., Environmental Resource Management, 1992.

**Training and Continued Education**

- PAEP, Phase I Bog Turtle Program, 2003, 2004
- SAIC, Freshwater Wetland Construction, 1999
- Environmental Data Resources, Due Diligence at Dawn, 1995
- Pennsylvania State University; Construction of Treatment Wetlands; 1995
- Maryland DNR; Forest Conservation and Stormwater Workshop; 1995
- R.E. Wright and Associates, Inc.; 40-Hours Health/Safety Training, 1995  
Refresher 1996
- Rutgers State University of New Jersey; Stabilization and Restoration of Disturbed Sites, 1995
- Pennsylvania State University; Stormwater Runoff & Water Quality Management Conference, 1994
- Glen Flora Preserve; Carex, Gramineae, and Composite identifications; 1994.
- American Society for Testing Materials (ASTM); Standards for Phase I Site Assessments and Transaction Screens; 1994.
- R.E. Wright and Associates, Inc.; Winter Wetland Ecology; 1994.
- MD Dept. of Natural Resources; Forest Conservation Act Training Seminar; 1994.
- Pocono Environmental Education Center; Wetland Plant Identification Course; 1993.

**Professional Affiliations**

Society of Wetland Scientists

**Professional History**

2003 to Present	Vortex Environmental, President
2002 – 2003	RETTEW Associates, Inc., Senior Biologist
1997 - 2002	Vortex Environmental, Partner
1993 - 1997	Landstudies, Inc., Environmental Scientist

### **Professional Summary**

Mr. Gochnauer has been involved in environmental research and consulting for eleven (11) years. He has conducted environmental studies throughout Pennsylvania, Maryland, Delaware and New Jersey.

Mr. Gochnauer has conducted wetland delineations using the Federal Manual for Identifying and Delineating Jurisdictional Wetlands and analysis of soils, vegetation, and hydrology to determine the extent of regulatory jurisdiction. He has compiled and prepared numerous state and federal permit applications for a variety of residential commercial and industrial projects.

Mr. Gochnauer has prepared many wetland mitigation and wetland restoration plans. He has designed several stream stabilization and stream corridor enhancement projects. He has also been involved in the restoration of dredge spoil areas. Mr. Gochnauer managed the biological control program for Purple Loosestrife in the State of Pennsylvania.

Mr. Gochnauer has been certified by the Maryland Department of Natural Resources as a qualified professional to perform and review Forest Stand Delineations, and Forest Conservation Plans as per the requirements of COMAR 08.19.06.01.

### **Speaking Engagements and Expert Testimony**

- Pennsylvania Lake and Pond Management Workshop, Biological Control of Aquatic Vegetation
- Maryland House Bill 1438, Declare Purple Loosestrife as a noxious weed in Maryland
- Villanova University & Morris Arboretum Conference on Invasive Exotic Plants
- Conference on Restoration of Wildlife & Habitat in Pennsylvania, Biological Control of Purple Loosestrife
- Provided expert wetlands testimony for East Marlborough Township hearings

## **VI. Equipment and Professional Service Fees**

*The following is a cross-section of selected Professional Service (base rate) and Material/Equipment rental rates. It should be noted that AES reserves the right to utilize alternate rates for various projects relative to the type of project, selected contract requirements, requirement for use of prevailing wage rates, the timing of the required work and the anticipated costs incurred in performance of the project, Call 1-888-844-aes1 (2371) for a full price sheet or project-specific quotation.*

### **A. Professional Service Fees**

Principal.....	\$125.00/hour
Operations Manager .....	\$105.00/hour
Senior Project Manager .....	\$100.00/hour
Project Manager.....	\$95.00/hour
Remediation Systems Manager .....	\$80.00/hour
Environmental Specialist .....	\$70.00/hour
Scientist II.....	\$80.00/hour
Scientist I .....	\$63.00/hour
Technician II.....	\$60.00/hour
Technician I.....	\$55.00/hour
Clerical.....	\$40.00/hour

### **B. Equipment Rental Fees**

Pick-up Truck .....	\$0.52/mile
Heavy Duty Pick-up Truck.....	\$0.52/mile
GPS Trimble Sub-meter .....	\$175.00/day
Generator (5,000 Watt).....	\$60.00/day
Groundwater Flow-through cell .....	\$20.00/day
Magnehelic Gauge Kit.....	\$40.00/day

Photoionization Detector (PhotoVac 20/20) .....	\$100.00/day
pH Meter.....	\$25.00/day
Pump – 3-inch Grunfos Submersible .....	\$80.00/day
Pump – Peristaltic.....	\$60.00/day
Pump - Tsunami w/ Control Box .....	\$100.00/day
Slugs for aquifer testing.....	\$20.00/day
Sonic Interface Probe .....	\$60.00/day
Steam Cleaner.....	\$60.00/day
Transit/Auto Level.....	\$50.00/day
Water Level Indicator.....	\$40.00/day
Well Development Tools.....	\$20.00/day
YSI Model 556 Multi Meter .....	\$100.00/day

**C. Material Purchase Fees**

Materials utilized are billed at cost plus a job specific mark-up.

## **VII. References**

### **Site Remediation**

Mr. James Donahue  
*Upper Dublin School District*  
1580 Fort Washington Avenue  
Maple Glen, PA 19002  
(215) 643-8800 , ext. 8817

Mr. Henry Perciballi  
*Perciballi & Williams*  
429 Market Street  
Williamsport PA 17701  
(570) 323-8506

Mr. Robert Nolan  
*Bob Nolan's Auto Service*  
2464 Bristol Pike  
Bensalem, PA 19020  
(215) 639-8320

Mr. Anil Jivani  
*Freedom Consulting*  
103 Nevermore Circle  
North Wales, PA 19454  
(717) 682-4400

Mr. Robert Obetz  
*Worley and Obetz, Inc.*  
P.O. Box 429  
Manheim, PA 17545-0429  
(717) 665-6891

Mr. Richard Abel, Jr.  
*Abel Tire*  
109 East State Street  
Quarryville, PA 17566  
(717) 786-2395

### **Geologic & Hydrogeologic Services**

Mr. James Hillard  
*Lake Roeder Hillard & Associates*  
313 West Liberty Street  
Lancaster, PA 17603  
(717) 397-9037

Mr. Steven Gergely, RLA  
*Harbor Engineering, Inc.*  
41 South Main Street  
Manheim PA 17545  
(717) 665-9000

Mr. David Christian  
*David Christian & Associates*  
15 South Main Street  
Brownstown, PA 17508  
(717) 664-0100

Mr. Rob Gabriel  
*Robert Gabriel & Associates, Inc.*  
3121C Mount Joy Road  
Mount Joy, PA 17508  
(717) 653-0070

### **Site Characterization**

Mr. Charles Conrad  
*Conrad's Service Station*  
1636 Route 100  
Bally, PA 17503  
(610) 845-2938

Ms. Penny Lintner  
*Boose Aluminum Foundry*  
PO Box 261  
Reamstown, PA 17567  
(717) 336-5581

Mr. James Kahn  
*Kahn & Company*  
580 Virginia Dr Ste 100  
Fort Washington, PA 19034-3101  
(215)-654-0500

Mr. Richard Sybesma  
*Crompton & Seitz, Inc.*  
1721 Loretta Ave.  
Feasterville, PA 19053-7312  
(215) 357-3551

Mr. Clyde A. "Bud" Mauger, III  
*Mauger & Co., Inc.*  
P.O. Box 2426  
West Chester, PA 19380  
(610) 644-4000

Mr. David Selfon  
*Samuel Miller & Son, Inc./SRS*  
220 Centerville Road  
Lancaster, PA 17603  
(717) 299-7205

#### **Underground Storage Tank Services**

Mr. Jay Summers  
*Armstrong Environmental Services, Inc.*  
205 Greenfield Road  
Lancaster, PA 17601  
(717) 393-2770

Mr. David W. Johns  
*Environmental Restorations, Inc.*  
191 Courtdale Avenue  
Courtdale, PA 18704  
(800) 341-2701

Mr. Dave Skoczynski  
*Eshenaurs Fuels, Inc.*  
PO Box 2112  
Harrisburg, PA 17105  
(717) 236-5031

Mr. Samuel Irvin  
*Irvin's Citgo*  
919 Bristol Pike  
Bensalem, PA 19020  
(215) 639-4647

Mr. John Furry  
*Meineke Discount Mufflers*  
1366 John Adams Drive  
Lancaster, PA 17601  
(717) 733-4090

#### **Environmental Auditing & Compliance**

Mr. Russell Colton  
*Wal-Mart (Store #2340)*  
890 East Main Street  
Ephrata, PA 17522  
(717) 721-6680

#### **Phase I ESA**

Mr. Steven Spalt  
*Charter Homes*  
114 Foxshire Drive  
Lancaster, PA 17601  
(717) 560-1400

Mr. Frank Dano  
*Susquehanna Bank*  
1570 Manheim Pike  
PO Box 3300  
Lancaster, PA 17604-3300  
(717) 735-8832

Mr. John Reed  
*Barley, Snyder, Seft & Cohen, LLC*  
126 East King Street  
Lancaster, PA 17602-2893  
(717) 299-5201

#### **Asbestos and Indoor Air Quality**

Mr. Cleason Martin  
*Musser's Excavating*  
116 East 28<sup>th</sup> Division Highway  
Lititz, PA 17543  
(717) 821-8948

Mr. Andrew Oak  
*The Drogaris Companies*  
33 North Market Street  
Lancaster, PA 17603  
(717) 299-7080 , ext 16

Mr. Charles Powers  
*First Capital Insulation, Inc.*  
1355 South George Street  
York, PA 17403  
(717) 843-1753

Mr. Christian M. Schneider, CIH  
*I/Source Safety and Health, Inc.*  
140 South Village Ave.  
Suite 130  
Exton, PA 19341  
(610) 524-5525, ext. 14

**Waste Management & Minimization**

Mr. Kurt Deery  
*LWB Refractories*  
320 North Baker Road  
York, PA 17404  
(717) 793-5411

**Bottled Spring Water Services**

Mr. Matt Zehring  
*Sweet Arrow Springs*  
2001 Herr Street  
Harrisburg, PA 17105  
(717) 233-8701

**Vendor & Professional References**

Mr. Larry E. Minnich  
*SAIC/Equipment & Supply*  
493-A Blue Eagle Avenue  
Harrisburg, PA 17112  
(800) 739-7706

Mr. Frederick Wolfson  
*Reilly, Wolfson, Sheffey, Shrum & Lundberg*  
1601 Cornwall Road  
Lebanon, PA 17042  
(717) 273-3733

Mr. Scott Brunk  
*Analytical Laboratory Services, Inc.*  
34 Dogwood Lane  
Middletown, PA 17057  
(717) 944-5541

Mr. William Boben  
*High Associates*  
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PO Box 10008  
Lancaster, PA 17605-0008  
(717) 291-2284