EXPRESSION OF INTEREST

DEP14619
Site Characterization Study, Leachate Management & Closure Cap Design and Quality Assurance/Quality Control

South Charleston Landfill
Kanawha County, West Virginia

TRIAD Proposal 04-09-8102

Presented To:

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Presented By:

TRIAD ENGINEERING, INC.
4980 Teays Valley Road
Scott Depot, WV 25560

May 5, 2009

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Triad Engineering, Inc.

May 5, 2009

Mr. Charles A. Bowman, Jr.
State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

RE: EXPRESSION OF INTEREST – DEP14619
Site Characterization Study, Leachate Management and Closure Cap Design
and Quality Assurance/Quality Control for South Charleston Landfill
Kanawha County, West Virginia
TRIAD Proposal 04-09-8102

Dear Mr. Bowman:

TRIAD ENGINEERING, INC. (TRIAD) is pleased to present this Expression of Interest to provide Landfill Site Characterization, Closure Design, and Construction Inspection services for the South Charleston Landfill. We have prepared this proposal in response to Request for Quotation No. DEP14619 dated April 2, 2009. Herein, we have provided the following information:

- Our experience in landfill site characterization, assessment and design services.
- A description of our project team and how they will be organized to complete the work. Resumes of team members are also provided.
- Our approach to the project including an outline of project phases.
- A description of our internal project quality control and cost control systems.

We are confident that this information meets your needs at this time, and we look forward to a favorable review of our qualifications. If you have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,

TRIAD ENGINEERING, INC.

John M. Meeks, PG, LRS
Vice President

CONTENTS

CORPORATE HISTORY AND EXPERIENCE

TRIAD is a mid-Atlantic regional engineering firm providing services in the areas of civil, environmental and geotechnical engineering, as well as surveying, construction quality control, and other related earth-science disciplines. The firm has provided services on thousands of projects of varying size and complexity since beginning operations. Our clients include governmental agencies, industrial manufacturing companies, contractors, architects, engineers, developers and institutional clients, as well as many others.

Our firm was founded in 1975 in Morgantown, West Virginia by three civil engineers from West Virginia University. A second office was opened in Charleston, West Virginia in 1979. TRIAD expanded into the northern Virginia area in 1988 with offices in Winchester and Harrisonburg, Virginia, and began operations in Pennsylvania in 1990 with an office in Greensburg. Most recently TRIAD has opened offices in Hagerstown, Maryland and Purcellville, Virginia.

Facilities and equipment available to support our staff have grown substantially during the past thirty four years. We have developed a fleet of drill rigs and support vehicles to meet the needs of our field operations. Well-equipped material testing laboratories are maintained to provide support for our geotechnical engineering and construction-related projects. Our laboratories are supplied with testing equipment necessary to perform a wide range of tests on soil, rock, concrete, aggregate, asphalt and other similar construction materials. Each office maintains secure computer networks to support CADD functions, hydrogeologic evaluations, landfill water balance modeling, surface water drainage design, stability analysis, survey data reduction and mapping. These broad in-house capabilities give us better control over project schedule, quality and cost, thereby minimizing problems that can occur when engineering firms are forced to coordinate efforts among a number of subcontractors.

TRIAD was previously selected by WVDEP to complete two, three-year LCAP closure design contracts, and was later selected by Quality Based Selection (QBS) methods for several other stand-alone landfill closure design contracts. Therefore, our staff is completely familiar with the work required under this contract. During our previous contract work with LCAP, TRIAD has successfully completed seven separate landfill projects similar or identical to this project. We are currently completing two additional projects. Because LCAP design projects are geotechnically oriented, our expertise in geotechnical engineering, geology and civil engineering design make us particularly well qualified to provide the requested services.

LANDFILL PROJECT EXPERIENCE

Our experience and capabilities as a geotechnical engineering and earth-science firm brought about our development as a waste management design firm more than twenty years ago. TRIAD was providing a variety of geotechnical engineering and hydrogeologic services related to the construction of synthetic and soil liners for one of our long term clients, Union Carbide Corporation (now Dow Chemical). Based on our performance on previous projects, they requested that we design and permit a new hazardous waste landfill for their Sistersville, West Virginia facility. Utilizing our in-house capabilities and expertise in geotechnical engineering, geology, drilling, material testing and civil engineering, we brought the project to completion on time and within budget. TRIAD completed all phases of the necessary hydrogeologic and borrow-soil investigations, as well as engineering design, permitting and regulatory agency liaison services. From that point forward, our firm continued to grow steadily in the direction of waste management design services.

Since that time, TRIAD has completed a variety of solid waste and hazardous waste landfill designs, upgrades and closures. The majority of this work has been performed for West Virginia landfills, and mandated by the requirements of 33CSR1. Most of our engineering work has also included full-time construction quality control (QC) inspection and final engineering certification of construction.

It is doubtful that any other West Virginia firm can demonstrate the depth and variety of landfill engineering and QC experience that TRIAD can bring to this project. With this extensive experience in design engineering, contract document preparation and QC inspection, we are expertly qualified to provide these services for proper closure and reclamation of the South Charleston Landfill. **Appendix A** contains a listing of numerous landfill closure and other waste management projects completed by our firm.

PROJECT TEAM

TRIAD currently maintains a staff of approximately 250 personnel. This includes civil, environmental, geotechnical and mining engineers, geologists and hydrogeologists, landscape architects, biologists, environmental scientists, and chemists. Our technical support and administrative staff includes designers, CADD technicians, surveyors, engineering technicians, drillers, construction inspectors and clerical personnel. The majority of our professional and technical staff has been with the company for many years. We pride ourselves in a very low turnover rate, which adds to continuity and enhances the level of productivity and experience afforded by our company.

Since our first foray into landfill design more than 25 years ago, TRIAD has developed a waste management design team which possesses a wide range of technical and regulatory expertise related to solid waste. Geologists, engineers, construction inspectors, environmental technicians, surveyors, designers and CADD technicians cooperate in the development of complete landfill project packages. Their work includes:

- Site Characterization Studies
- Design/construction alternatives
- Facility siting
- Soils and geologic investigation
- Leachate Management
- Closure Cap Design
- Surveying and layout
- Quality Assurance/Quality Control
- Construction management
- Engineering certification

Our geologists share a large body of knowledge and experience regarding the soil, rock and groundwater indigenous to West Virginia. They are particularly aware of the impact which geology and groundwater can have on the design, construction and closure of a waste management facility.

Our soils engineers, in cooperation with our materials testing laboratories, routinely assess the suitability of on-site soils for construction of low permeability hydraulic barriers and other closure cap components. Our technical staff cooperates with our clients and several regulatory agencies in the on-going development of new techniques for the design, testing and specification of low permeability barriers. We believe TRIAD is on the cutting edge of technology in this field. We utilize the methods developed by Dr. David Daniel at Drexel University to provide a compaction-moisture-permeability window for construction of the low permeability component layers required for composite liner and cap systems.

Our material testing laboratories are well-equipped to provide the testing needed to develop the "Daniel's window" for low permeability soil components. TRIAD continues to develop new and better laboratory test methods, and improves upon methods already developed by the US EPA and state regulatory agencies. Our laboratories routinely participate in certification programs administered by

the US Army Corps of Engineers, American Society of Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO) and the West Virginia Department of Transportation (WVDOT).

Our firm maintains an experienced, well-trained staff of construction QC inspectors who work with our engineering staff and contractors in the field. They typically are present at landfill construction sites on a full-time basis to ensure that the soil and synthetic liners and closure caps designed by our firm are constructed in accordance with the appropriate specifications.

Our surveying department also provides support to the design team, directing the layout and construction of base grades, checking liner component thicknesses, and checking grades and alignments on leachate collection piping and surface water drainage systems. They routinely perform annual topographic surveys of current landfill progress to determine compliance with required grades, permit limits, and to determine volume of filling.

Our design/drafting team utilizes electronically stored data from our survey crews, or from aerial photography, to generate three-dimensional computer models of our landfill projects. The use of three-dimensional CADD models allows our engineers to easily make changes to our design in response to client needs, regulatory agency comments or previously unknown site constraints. Performing our design in the three-dimensional system allows us to calculate cut and fill quantities, thereby ensuring that materials handling is kept to a minimum. Our CADD systems generate clear, easy-to-read drawings which help to assure more expeditious regulatory agency approval.

TRIAD has assembled a team of individuals with broad waste management experience to provide services under this contract. The majority of the Project Team is assigned to our Charleston area office, located in Scott Depot, West Virginia. The following persons will serve as members of the Project Team for the South Charleston Landfill project:

- **John M. Meeks, PG, LRS - Project Manager** – Mr. Meeks has managed the majority of landfill projects undertaken by our Charleston area office, including five of the LCAP projects we have completed. He brings nearly 30 years of professional experience in geologic and geotechnical projects; including approximately 20 years of experience in technical design, project management and construction oversight of landfill projects. More specifically, he served on the team that performed site characterization at the South Charleston Landfill under the WVDEP Superfund program. Mr. Meeks will provide project management, site characterization, and technical design services on the South Charleston Landfill project.

- **Lee McCoy, PE - Senior Engineering Oversight** – Mr. McCoy will provide overall engineering oversight and certification throughout the project, and will also assist with design of grading and drainage, access roads, stormwater management, and other civil engineering tasks.

- **Parviz Jalali, PE - Geotechnical Engineering** – Mr. Jalali will plan, direct and oversee all geotechnical aspects of the project, including borrow soil investigation and evaluation, slope stability analysis, laboratory soil testing and classification, foundation evaluation for leachate tanks and other structures, and the selection and specification of any geosynthetic materials necessary for construction.

- **Mark Clutter - Civil Engineering** – Mr. Clutter will provide the bulk of all site grading and drainage design and supporting calculations. This will include the design of cut and fill slopes, drainage control structures, leachate collection and management measures, access roads, stormwater management basins, and other general civil engineering tasks.

- **Matthew Wright, LRS - Site Characterization Study** - Mr. Wright will be responsible for field exploration, including test borings, test pits, monitoring wells, evaluation of groundwater characteristics and assessment of groundwater quality as determined from sampling and testing of monitoring wells.

- **Dane Ryan – Civil/Geotechnical Engineering and Quality Control** – Mr. Ryan is a Senior Designer with more than 20 years of experience in the design and construction QC of landfills. He will serve in dual roles as a senior designer for civil and geotechnical engineering and to provide senior oversight for construction QC.

- **Mack McCarty, PS - Surveyor** - Mr. McCarty will direct all surveying necessary for the project, including coordination with the aerial mapping firm and the coordination and direction of on-the-ground surveying. After field surveying is complete, Mr. McCarty will oversee data reduction and coordinate mapping with drafting and engineering functions.

- **John "Jobe" Hope, Laboratory Testing and Construction QA/QC** - Mr. Hope will directly oversee all laboratory materials testing and QC inspection during design and construction. In addition, he will be involved in monitoring and inspection of any geosynthetic liners which are required during closure cap construction.

Please refer to the Personnel Matrix in Appendix B which summarizes team member names, professional registration, specialty(s) or roles under this contract, and years of experience. Resumes which provide detailed information regarding the education and experience of all individuals who will perform services under this contract are also included in **Appendix B**.

PROJECT APPROACH

Based on our current understanding of the work requirements for the South Charleston Landfill and our past experience with several similar projects, we believe that the work can be subdivided into five phases. Work elements associated with each phase are discussed in more detail herein.

Surveying and Mapping

Prior to beginning site assessment and engineering design, it will be necessary to have reliable and accurate mapping over the project area, including any potential borrow areas and areas where leachate storage or treatment may occur. TRIAD will team with our aerial photography subcontractor (Keddal Aerial Mapping) to determine appropriate ground control locations prior to flying the site. TRIAD will then establish aerial mapping targets using GPS survey equipment and personnel from our Charleston, WV area office to minimize travel expenses. Our field crew will also verify the legal boundaries of the property, and these will also be shown on the base map.

After the site is flown, our subcontractor will provide mapping for field review and verification. After all field data is confirmed, final digital and hard copy files will be provided to TRIAD. These files will form the basis for our base mapping.

Site Characterization Study

After accurate mapping is available, TRIAD will conduct a site reconnaissance visit in cooperation with the WVDEP project manager. During our site reconnaissance, we will examine and discuss the following features:

- Interim cap system
- Existing surface water drainage controls
- Potential leachate release areas
- Nearby receiving streams and other sensitive receptors
- Potential borrow areas
- Existing monitoring wells

Following our site visit, TRIAD will discuss our proposed site characterization plan with the WVDEP project manager and subsequently provide a written scope of work for approval.

Upon approval, TRIAD will mobilize drilling equipment from our Charleston, WV area office to conduct any subsurface investigation necessary to characterize waste limits, potential borrow soils, groundwater, and bedrock conditions at the site. Samples of groundwater from existing monitoring wells, samples from surface run-off channels, and samples from potential leachate seeps will be obtained for laboratory analysis. Laboratory testing will be completed by our subcontract analytical laboratory, Pace Analytical Services, Inc., a WVDEP certified laboratory.

Sufficient data will be obtained during the course of our site assessment to generate a report that will describe current conditions at the site and provide a proposed cost effective remedial approach. Our Site Characterization Report will include:

- Overall site map depicting relevant features
- Description of groundwater quality and flow patterns
- Description of site geology and soils
- Evaluation of existing cover soil
- Evaluation of available borrow soils, including quantity and quality
- Description of surface water drainage
- An evaluation of potential impacts to nearby surface water, groundwater, and other potential sensitive receptors
- Our recommended approach to final closure of the landfill

Design Engineering and Permitting

After review and approval of our Site Characterization Report by WVDEP, TRIAD will begin preliminary engineering of a closure solution. We anticipate that submittals will be made to WVDEP at the 30% complete, 90% complete, and 100% complete stage of design. Our design package will generally include the following elements:

- Existing Conditions and Topography
- Survey Layout Plan
- Erosion and Sediment Control
- Base Grading Plan
- Final Grading Plan
- Closure Cap Details
- Surface and Stormwater Management Plan
- Sediment Control Structure Plans and Details
- Leachate Collection/Storage System Plans and Details
- Miscellaneous Details
- Supporting Calculations
- Construction Specifications

Construction Cost Estimate and Bidding

Upon completion of final plans and specifications, the expected cost of the work will be estimated. This cost evaluation will be made using unit cost data from various sources (i.e. previous bids on similar projects, information solicited from material suppliers, Means unit costs, etc.). The final cost estimate will be discussed with the WVDEP project manager and, whenever necessary, revisions to the plans and specifications will be made to bring the estimated costs in line with the project budget.

After an estimated construction budget is established, TRIAD will assist WVDEP in the advertisement and bidding of the work. The TRIAD project manager and project engineer will attend the pre-bid meeting to show the job to prospective contractors, and will assist the WVDEP project manager with the review and analysis of bids.

Construction Quality Control Inspection

TRIAD project team personnel and construction inspectors from the Charleston, WV area office will make regular visits to the project site as appropriate and necessary during construction. TRIAD inspectors will conduct quality control tests at the frequency provided in the specifications and will evaluate the contractor's work for compliance with the specifications. The TRIAD design engineer will be available as necessary to visit the site with the WVDEP project manager to evaluate progress and/or to solve problems which may develop during the course of construction. We typically suggest bi-weekly progress meetings at the site to review work which has been completed to date, outline concerns or deficiencies (if applicable), respond to questions from the Contractor, and receive information regarding submittals and schedule updates.

Upon completion of the construction, our engineer will conduct a final inspection with the WVDEP project manager and the contractor to develop a punch list as necessary to ensure that all elements of the project are completed in accordance with the plans and specifications.

PROJECT QUALITY CONTROL AND COST CONTROL SYSTEM

Our project manager will be responsible for monitoring and controlling project schedule, budget and quality. Prior to beginning the project, Mr. Meeks will coordinate with the WVDEP project manager to prepare a Project Management Plan. The Project Management Plan document guides and records execution of the project from beginning to final completion. As work progresses, the project manager will evaluate progress on a weekly basis to compare actual project progress with the established work schedule. If these reviews indicate that a schedule problem is developing, the project manager will explore options for correcting the situation. If circumstances develop that will make it impossible to maintain the original schedule, the WVDEP project manager will be immediately informed of the situation and a mutually satisfactory schedule adjustment will be made.

Personnel time and expense charges are maintained and allocated to projects on a weekly basis. Using this data, together with knowledge of subcontractor costs, our project manager will also review project budget status on a weekly basis. This information is available at the project manager's desktop via our automated accounting and project management software. The percent of work completed will be compared to the percent of costs incurred in order to quickly identify any budget problems which may develop. If potential budget problems are identified, they will be evaluated by the project manager and the WVDEP project manager will be immediately informed of the problems and causes. If justified, a mutually agreeable budget revision will be prepared or the work scope will be revised to conform to the original budget, based on the nature of the problem.

Project meetings will be held at least weekly between the TRIAD project manager, the senior engineer, and other relevant staff as appropriate to generally review project schedule and budget, and also to review work product for completeness, accuracy, and conformance with the project requirements. TRIAD maintains a two-tiered quality review system. The first tier requires the staff person who generates work to have their work product reviewed by a peer. Any revisions required by the peer review are completed prior to moving to the second tier. In the second tier review, a senior level technical person must review and sign off on the quality of all work. Generally, senior review will be conducted by Lee McCoy, PE, for civil engineering work and John Meeks, PG, LRS, for geotechnical and site assessment work. However, other senior level staff may complete these reviews as necessary to maintain efficient work flow.

SUMMARY

As indicated in this proposal and the accompanying CCQQ, TRIAD maintains the staff, equipment and other resources to complete the South Charleston Landfill project almost completely in-house. Staff from our Charleston area office, located only minutes from the site, will perform the work so that we can minimize travel costs and more efficiently utilize the time allowed for the project. We are located less than 30 minutes from the South Charleston Landfill.

We can also utilize technical strengths and experience housed in other TRIAD office locations to supplement expertise available in the Charleston area office. Technical oversight, including the review and editing of specifications and drawings, will be accomplished via our shared server folders, which provide company wide access to files stored there.

The attached **Appendix A - Landfill Project Experience**, illustrates our experience and ability to complete a wide variety of landfill projects, from initial design to site assessment and closure. We strongly believe that you will conclude TRIAD is one of the most capable and experienced landfill consulting firms in West Virginia.

APPENDIX A

LANDFILL PROJECT EXPERIENCE

TRIAD ENGINEERING, INC.

LANDFILL PROJECT EXPERIENCE

Project Name Location	Contact Phone No.	Services Provided
MARION COUNTY LANDFILL Farmington, WV	Mr. Paul Benedum (304) 368-2000	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
MORGAN COUNTY LANDFILL GREAT CACAPON, WV	Mr. Mark Church (540) 665-5643	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
DONS DISPOSAL Charleston, WV	Mr. Clyde Bennett (304) 872-3800	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
CITY OF BUCKHANNON CLOSURE CAP Buckhannon, WV	Mr. Mark Church (540) 665-5643	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
CITY OF BUCKHANNON LEACHATE COLLECTION Buckhannon, WV	Mr. Mark Church (540) 665-5643	Leachate treatment feasibility study; Borrow soils investigation; Laboratory soils & permeability testing; Leachate sampling and testing; Site design; Leachate lift station design; Sewer design; Construction drawings & specifications; Construction cost estimate; Construction bid preparation and management
MCDOWELL COUNTY LANDFILL Roderfield, WV	Mr. Clyde Bennett (304) 872-3800	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management

Project Name Location	Contact Phone No.	Services Provided
GRANT CO. LANDFILL Petersburg, WV	Mr. Mark Church (304) 872-3800	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
ERO LANDFILL Mason Co., WV	Mr. Clyde Bennett (304) 872-3800	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management; Monitoring well installation; Wetland treatment system design
MINGO CO. LANDFILL Mingo Co., WV	Mr. Clyde Bennett (304) 872-3800	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
NORTH LANDFILL Marietta, OH	Mr. Tim King (304) 747-3763	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
GOFF MOUNTAIN LANDFILL Institute, WV	Mr. Steve Graves (304) 767-6613	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
FREDERICK COUNTY CDD LANDFILL Winchester, VA	Mr. Harvey E. (Ed) Strawsnyder (540) 665-5643	Aerial photography and development of contour mapping; Geotechnical Investigation; Monitoring well installation; Construction drawings & specifications; Permit document preparation; Construction inspection of several cells
LOCAL SANITATION SERVICE Morehead, KY	Mr. Steve Hodges (606) 784-6544	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management

Project Name Location	Contact Phone No.	Services Provided
FREDERICK COUNTY SANITARY LANDFILL Winchester, WV	Mr. Harvey E. (Ed) Strawsnyder (540) 665-5643	Geotechnical and hydrogeologic studies; Laboratory soils & permeability testing; Monitoring plan preparation; Groundwater sampling and testing; Monitoring well installation; Construction monitoring and testing of numerous cells
PRICHARD LANDFILL Prichard, WV	Mr. Rick Maynard (304) 648-5925	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
SYCAMORE LANDFILL Hurricane, WV	Mr. Charles A. Forth (304) 562-2611	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management
NUMBER 1 LANDFILL Sistersville, WV	Ms. Tina Adams (304) 652-3211	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management; Monitoring well installation
HOLTZ IMPOUNDMENT So. Charleston, WV	Mr. Jerome Cibrik (304) 747-2987	Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management; Monitoring well installation
NUMBER 3 LANDFILL Sistersville, WV	Ms. Tina Adams (304) 625-3211	Site feasibility study; Monitoring well installation and hydrogeologic studies; Closure Design; Permit document preparation; Borrow soils investigation; Site characterization and evaluation (groundwater, waste limits); Closure construction inspection; Aerial photography and development of contour mapping; Construction drawings & specifications; Closure construction cost estimate; Construction bid preparation and management Liner compatibility study
NUMBER 2 LANDFILL Sistersville, WV	Ms. Tina Adams (304) 625-3211	Engineering design; Synthetic and soil liner construction inspection; Permit document preparation; Aerial surveying and ground control; Construction cost estimate and construction bid document preparation; Monitoring well installation

Project Name Location	Contact Phone No.	Services Provided
RHONE-POULENC CLOSURES Institute, WV	Mr. George Kennedy (304) 747-6870	Closure design; Site investigation; Borrow material study; Surveying and topographic mapping; Lab testing; Construction inspection; Engineering certification; Annual hydrogeologic analysis
SOIL OPERABLE UNIT 1 Marietta, OH	Mr. Tim King (304) 747-3763	Construction oversight on behalf of owner on two-year construction project for closure of several superfund landfill units
SHENANDOAH COUNTY LANDFILL EXPANSION Woodstock, VA	Mr. Henry Mikus (540) 984-8573	Soil and hydrogeologic studies; Monitoring well installation; Laboratory soils & permeability testing; Permit documents; Subsidence stabilization design
CHARLES PACE TIRE SITE Tunnelton, WV	Mr. Charlie Jordan (304) 558-0844	Review of soils & hydrogeological data; other siting information; and, preliminary plans & specifications
WV TIRE DISPOSAL Summersville, WV	Mr. Charlie Jordan (304) 558-0844	Review of soils & hydrogeological data; other siting information; and, preliminary plans & specifications
PRINCE WILLIAM COUNTY LANDFILL Prince William Co., VA	Mr. David E. Stinson (703) 471-6150	Soils and hydrogeologic studies; Laboratory soils & permeability testing; Monitoring well installation
EAST SETTLING BASIN CLOSURE Sistersville, WV	Mr. Okey Tucker (304) 625-3211	Borrow study; Materials testing; Soils QA/QC; Engineering certification
CHARLES CITY COUNTY REGIONAL LANDFILL Charles City, VA	Mr. John Brunson (404) 438-7770	Soil and hydrogeologic studies; Monitoring well design and installation; Laboratory soils & permeability testing
NORTHWESTERN LANDFILL Parkersburg, WV	Mr. Ron Levine (304) 428-0602	Construction inspection; Borrow study; On-going consultation; Clay liner QA/QC; Certification report; Lab testing
MEADOWFILL LANDFILL Clarksburg, WV	Mr. Dave Gallagher (304) 842-2784	Borrow study; Subsurface investigation; Lab testing; Synthetic and clay liner QA/QC; Certification report; Stability analysis
GALLIA COUNTY LANDFILL Gallapolis, OH	Mr. Tim Laraway (404) 513-2560	Surveying; Borrow study; Drainage structures design; Sediment pond upgrade design; QA/QC inspection
PAGE COUNTY LANDFILL Luray, VA	Mr. Ron Wilson (540) 743-4142	Geotechnical and hydrogeologic feasibility studies; Monitoring well installation; Groundwater sampling and testing

Project Name Location	Contact Phone No.	Services Provided
LOUDOUN COUNTY LANDFILL Leesburg, Virginia	Ms. Sharon Hodges (540) 777-0591	Construction monitoring and testing; Laboratory soils & permeability testing
PRINCE WILLIAM COUNTY CONSTRUCTION DEBRIS LANDFILL Prince William Co., VA	Mr. David E. Stinson (703) 471-6150	Soil investigation; Laboratory soils & permeability testing
SHENANDOAH COUNTY LANDFILL Woodstock, VA	Mr. Richard Chrisman (540) 984-8573	Soil and hydro-geologic studies; Monitoring well installation; Laboratory soils & permeability testing
PANIC POND RETROFIT Sistersville, WV	Mr. Okey Tucker (304) 652-3211	Borrow study; Synthetic liner QA/QC; Soils QA/QC; Field and lab permeability testing
EMERGENCY BASIN RETROFIT Marietta, OH	Mr. Bob Dulaney (614) 374-1146	Borrow study; Synthetic liner QA/QC; Soils QA/QC; Field and lab permeability testing
PRESTON COUNTY LANDFILL Masontown, WV	Mr. Harold Ray (304) 864-6514	Laboratory soils & permeability testing; Permit preparation; QA/QC testing
BUCKHANNON LANDFILL Buckhannon, WV	Mr. Burl Smith (304) 472-1002	Hydrogeologic study; Monitoring well installation; Laboratory soils testing
GARRETT COUNTY LANDFILL Oakland, MD	Mr. Lee Thorne (301) 334-3988	Monitoring well installation; Laboratory soils & permeability testing; Soil & synthetic liner QA/QC
ROMNEY LANDFILL EXPANSION Romney, WV	Mr. Jay Jensen (304) 257-1221	Borrow studies; Laboratory soils & permeability testing; Geologic study

APPENDIX B

PROJECT TEAM RESUMES

TRIAD ENGINEERING, INC.

PERSONNEL MATRIX

RFQ No. DEP14619
South Charleston Landfill

Name	Registration	Specialty or Project Role	Experience
John Meeks	Professional Geologist; Licensed Remediation Specialist	Project Manager; Site Assessment; Hydrogeology; HELP Modeling; Technical Specifications; Senior Level Review	29
Lee McCoy	Professional Engineer	Surface Water Hydrology; Grading and Drainage Design; Senior Level Review	13
Parviz Jalali	Professional Engineer	Soil and Borrow Studies; Field Exploration; Geotechnical Engineering	30
Mark Clutter		Surface Water Hydrology; HELP Modeling; Grading and Drainage Design	10
Matt Wright	Licensed Remediation Specialist	Site Assessment; Hydrogeology; Monitoring Well Installation	19
Mack McCarty	Professional Surveyor	Surveying Services Manager; Base Mapping; Construction Layout	17
Dane Ryan	Level III Engineering Technician (NICET)	Surface Water Hydrology; Grading and Drainage Design Technical Specifications; Construction Inspection	33
John "Jobe" Hope		Quality Control Manager	19

John M. Meeks, PG, LRS

Branch Manager/Senior Geologist

EDUCATION

BS, Geology	West Virginia University, Morgantown, WV, 1980
Graduate Studies	Marshall University Graduate College

REGISTRATIONS AND LICENSES

Professional Geologist	Kentucky (No. 556)
Licensed Remediation Specialist	West Virginia (No. 008)

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering, Inc., St. Albans, WV	Branch Manager/Senior Geologist 2001 - Present
Triad Engineering, Inc., St. Albans, WV	Environmental Services Mgr./Senior Geologist 1990 - 2001
WV Office of Waste Management, Charleston, WV	Assistant Chief 1985 - 1990
UTD Corp., Elkins, WV	Staff Geologist 1982 - 1985
GSI, Inc., Huntington, WV	Staff Geologist 1980 – 1982

PROFESSIONAL ORGANIZATION/ASSOCIATIONS

Air & Waste Management Association, WV Chapter
WV Chamber of Commerce, Environmental Committee – Former Waste Team Chair
WVDEP Waste Roundtable – Founding Member
Putnam County Chamber of Commerce – Education Committee and Ambassador Committee

CURRENT POSITION RESPONSIBILITIES

Mr. Meeks is currently a practicing Senior Geologist and Branch Manager of the St. Albans office of Triad. In this capacity, Mr. Meeks is responsible for technical quality and management control of all projects in the region. His technical work includes environmental assessment of groundwater, surface water, and soil; waste management facility design and permitting; brownfield redevelopment projects; wetland mitigation design and permitting; and remediation system design and implementation. Mr. Meeks also gained a thorough knowledge of environmental regulatory requirements through his experience with WV Division of Environmental Protection, where he supervised statewide enforcement of waste management regulations; including hazardous waste and solid waste regulatory programs, as well as underground storage tank regulations. Prior to his tenure at WV Division of Environmental Protection, Mr. Meeks managed environmental assessment projects throughout West Virginia and the central Appalachian region. Mr. Meeks is an occasional guest lecturer and educator regarding brownfield redevelopment, wetland treatment systems, groundwater assessment and remediation, and other environmental topics at community and business associations, technical conferences, and college courses.

PROJECT EXPERIENCE SUMMARY

ERO Landfill Characterization and Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Project Manager and Senior Geologist, managed and assisted in the characterization and interim closure of the ERO Landfill facility. This included a complete hydrogeologic site evaluation and monitoring well installation, surveying and mapping, waste limit determination, borrow soil investigation, and design of the storm water management system, access road, leachate collection system, and constructed wetland leachate treatment system. Following design and permitting, served as Project Manager for construction Quality Control inspection. Prepared research paper describing the design and operation of the constructed wetland leachate treatment system that was selected for presentation at the national conference of the Solid Waste Association of North America.

Mingo County Landfill Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Project Manager and Senior Geologist, managed and assisted in the interim closure of the Mingo County Landfill facility. This included surveying and mapping, waste limit determination, and design of the storm water management system, leachate collection system, and leachate storage system. Following design and permitting, served as Project Manager for construction Quality Control inspection.

City of Buckhannon Landfill Characterization and Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Project Manager and Senior Geologist, managed and assisted in the characterization and interim closure of the City of Buckhannon Landfill facility. This included a limited hydrogeologic site evaluation based on existing wells, surveying and mapping, waste limit determination, borrow soil investigation, and design of the storm water management system, leachate collection system, and leachate storage system. Following design and permitting, served as Project Manager for construction Quality Control inspection.

City of Buckhannon Landfill Final Closure, *WVDEP-LCAP, Charleston, WV*
As Project Manager and Senior Geologist, managed and assisted in the final closure of the City of Buckhannon Landfill facility. This included design of the final closure cap system, including interfacial friction evaluation and testing of the various cap components. Following design and permitting, served as Project Manager for construction Quality Control inspection.

Don's Disposal Service Landfill Characterization and Closure, *WVDEP-LCAP, Charleston, WV*
As Project Manager and Senior Geologist, managed and assisted in the characterization and final closure of the Don's Disposal Service Landfill facility. This included a limited hydrogeologic site evaluation based on existing wells, surveying and mapping, waste limit determination, borrow soil investigation, and design of the storm water management system, leachate extraction wells, leachate collection system, and leachate storage system.

McDowell County Landfill Closure, *WVDEP-LCAP, Charleston, WV*
As Project Manager and Senior Geologist, managed and assisted in the characterization and final closure of the McDowell County Landfill facility. This included limited surveying and mapping, borrow soil investigation, and design of the storm water management system, leachate collection system, and leachate storage system. Following design and permitting, served as Project Manager for construction Quality Control inspection.

Landfill Closure and Expansion Design, *Private Owner, Prichard, WV*
As Project Manager and Senior Geologist, managed and assisted in the preparation of permitting and design documents for closure of an existing disposal area and development of an adjacent expansion area. This included a complete hydrogeologic site evaluation and monitoring well installation, surveying and mapping, waste limit determination, borrow soil investigation, and design of storm water management system, leachate collection system, and leachate storage system. Following design and permitting, served as Project Manager for construction Quality Control inspection.

Landfill Closure and Expansion Design, *Private Owner, Hurricane, WV*
As Project Manager and Senior Geologist, managed and assisted in the preparation of permitting and design documents for closure of an existing disposal area and development of an adjacent expansion area. This included a complete hydrogeologic site evaluation and monitoring well installation, surveying and mapping, waste limit determination, borrow soil investigation, and design of storm water management system, leachate collection system, and leachate storage system. Following design and permitting, served as Project Manager for construction Quality Control inspection.

Landfill Expansion, *Private Owner, Ashland, KY*
As Project Manager and Senior Geologist, managed and assisted in the preparation of permitting and design of a vertical expansion (VEX) of an existing landfill facility. This included construction of rock/earthen berms along the margins of the existing facility. The VEX application consisted of engineering plans, cross sections, details, and supporting calculations. Two important elements of the application included a demonstration that adequate soils were available, and that the presence of previous underground mining did not compromise the structural soundness of the berms.

Landfill Expansion, *Private Owner, Morehead, KY*
As Project Manager and Senior Geologist, managed and assisted in the preparation of permitting and design documents for closure of an existing disposal area and development of an adjacent expansion area. This included surveying and mapping, waste limit determination, borrow soil investigation, and design of storm water management system, leachate collection system, and leachate storage system. Following design and permitting, served as Project Manager for construction Quality Control inspection.

Union Carbide Corporation (DOW Chemical), *South Charleston, WV*
Provided technical and project management services to plant personnel and the Remediation Technologies Group from 1990 through present as a Project Manager, leading a team of engineers and scientists evaluating and preparing remedial design drawings and construction documents for closure of a Superfund landfill unit located at the former Marietta, OH plant. Project scope included evaluation of alternative cover designs and design of a specialized leachate collection and pumping system. Our firm's responsibilities included Quality Assurance Officer, providing interpretation of plans and specifications, design of elements to optimize cost and performance, and preparation of certification documents for US EPA and state regulatory representatives.

Bayer Crop Science, USA, *Institute, WV*
- As Project Manager, provided engineering design and permitting services for expansion of an existing on-site hazardous waste landfill. A preliminary design concept was prepared for review and approval by facility representatives, followed by preparation of final preliminary design. After acceptance of the preliminary design by facility representatives, Triad prepared a final design package for submission to WVDEP. Finally, an engineering design report, drawings and specifications were prepared for construction of the facility.
- As Project Manager, prepared closure plans, including detailed engineering design and specification, for three hazardous waste impoundments. Project included sludge stabilization studies and mix design, leachate collection system design and closure cap design.

OSi Specialties, *Sistersville, WV*
As Project Manager, oversaw remedial design of a formerly closed hazardous waste landfill where waste dewatering has resulted in excessive closure cap settlement. Project included evaluation of the use of alternate fill, including Styrofoam, ash, and other lightweight materials, and the preparation of construction drawings and specifications.

West Virginia Department of Environmental Protection, *Charleston, WV*
As Program Manager, oversaw implementation of contract services for performing site assessments at potential Superfund sites across West Virginia. Performing various services under CERCLA, including preliminary human health and ecological risk assessments following USEPA and the WV Voluntary Remediation program guidelines.

Landfill Hydraulic Barrier Construction, *Private Owner, Parkersburg, WV*
As Quality Control Manager, oversaw field and laboratory investigations of borrow areas to develop a Daniel's window for proper compaction and moisture control to achieve required permeability. As Quality Control Manager, managed full time construction inspection and testing, as well as ongoing engineering consultation for hydraulic barriers in the landfill and leachate pond portions of the project.

Landfill Hydraulic Barrier Construction, *Private Owner, Clarksburg, WV*
As Quality Control Manager, oversaw subsurface investigation to locate a borrow source for the construction of an asbestos and MSW cell. Managed QC testing and inspection of the synthetic and soil liner. Provided certification report for all field and laboratory testing. Managed conformance testing of the HDPE synthetic liner.

Landfill Hydraulic Barrier Construction, *Private Owner, Gallia, OH*
As Quality Control Manager and Senior Designer, managed borrow study to locate suitable soils for landfill development, as well as design and QC inspection of a leachate collection system and sediment pond for this solid waste landfill.

L. Lee McCoy, Jr., P.E.

Senior Engineer/Project Manager

EDUCATION

B.S. Civil Engineering	West Virginia Institute of Technology, 1996

REGISTRATIONS AND LICENSES

Professional Engineer	No. 14731 West Virginia No. 25932 Kentucky No. 73186 Ohio

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering, Inc., St. Albans, WV	Civil Engineering Group Manager/Senior Engineer 2006 - Present
Buchart Horn, Inc., Charleston, WV	Senior Engineer 2003 - 2006
City of Charleston, Charleston, WV	City Engineer 2001 - 2003
Benatec Associates, Hurricane, WV	Engineer III 1999 - 2001
Chester Engineers, Huntington, WV	Engineer I 1996 - 1999

CURRENT POSITION RESPONSIBILITIES

Mr. McCoy is currently a Senior Engineer/Project Manager for the St. Albans office of TRIAD. In this capacity, he is responsible for technical and management aspects of general civil, waste management, and transportation projects within the office. Mr. McCoy has designed and managed projects in numerous disciplines including civil, structural, and transportation engineering, waste management, site development, planning, and surveying. These projects have included streets/highways, bridges, landfills, retail/commercial site preparation, airports, parking lots, buildings, retaining walls/foundations, sanitary structures, as well as recreational facilities. Duties included field surveying, drawings and specification preparation, design, design drafting, construction inspection, quality control testing, shop drawing review, project management, contract administration and report preparation.

PROFESSIONAL ORGANIZATIONS/ASSOCIATIONS

American Society of Civil Engineers
Society of American Military Engineers

PROJECT EXPERIENCE SUMMARY

City of Charleston Landfill – Charleston, WV
As City Engineer, responsible for the day to day operation of the City of Charleston Landfill. Engineering design duties included grading and drainage, surface water and stormwater runoff control, leachate and gas collection systems, access roads, and other miscellaneous duties as required. Additionally, responsible for administrative functions related to permitting and compliance with WV Solid Waste Management Act.

Landfill Closure, Private Client, Russell, KY
Served as Project Engineer performing various design tasks for the closure and reclamation of an industrial landfill. The landfill consisting of over 80,000 wasted rail ties and other industrial debris associated with commercial freight operations. Following work on the design team, Mr. McCoy also served as a Field Engineer during the construction operation and was responsible for oversight of waste relocation, grading, and final cover portions of the project.

Landfill Closure, CSX Transportation, Jacksonville, FL
Project Engineer during design and closure of an industrial landfill and associated facilities utilized for disposal of various railway wastes. Included in the project was the demolition of several structures, asbestos testing and abatement, removal of petroleum contaminated soils, and relocation of a 48" water main running through the landfill. After design and permitting, served as Field Engineer during construction and remediation operations.

West Virginia Department of Transportation, Division of Highways, *Charleston, WV*

Corridor H, U.S. 48 – Scherr, WV
Project Manager and lead roadway designer for 2.25 miles of 4 lane divided highway in Grant County, WV. This project included managing structural engineers, geotechnical engineers, surveyors, other roadway engineers, and designers. Worked closely with West Virginia Department of Transportation personnel as well as local residents during the highways design through the environmentally sensitive Greenland Gap area.

Dunlow Thru Truss Bridge Replacement, Dunlow, WV
Project Manager and lead roadway designer for the replacement of Dunlow Thru Truss Bridge and related roadway work in Grant County, WV. This project included managing structural engineers, geotechnical engineers, surveyors, other roadway engineers, and designers. Design work for this project included drainage, HEC-RAS analysis, roadway design, and right of way design.

U.S. 460 – I77 Interchange, Princeton, WV
Project Manager and lead roadway designer for replacement of existing bridge over I-77 in Mercer County, WV. This project included managing structural engineers, geotechnical engineers, surveyors, other roadway engineers, and designers. Worked closely with West Virginia Department of Transportation personnel during the Maintenance of Traffic planning stages to maintain traffic flow during construction at this very busy interchange.

Jones Laughlin Overpass Bridge Replacement, Martinsburg, WV
Project Manager and lead roadway designer for bridge replacement and associated roadway on WV Route 45 in Berkeley County, WV. This project included managing structural engineers, geotechnical engineers, surveyors, other roadway engineers, and designers.

Mark A. Clutter

Staff Engineer/Senior Designer

EDUCATION

BSCET, Civil Engineering Technology	Fairmont State College, 1998
AS, Drafting / Design	Fairmont State College, 1998
ASCET, Civil Engineering Technology	Fairmont State College, 1998

REGISTRATIONS AND LICENSES

Certified 40 Hr. HAZWOPER (OSHA 29 CFR 1910.120) OSHA, 2001

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering, Inc., St. Albans, WV	Senior Designer 2006 - Present
Triad Engineering, Inc., St. Albans, WV	Staff Engineer 1999 - 2006
WV Army National Guard, Williamstown, WV	Helicopter Crew Chief 1991 - Present
WV Army National Guard, Persian Gulf (Desert Storm)	Helicopter Crew Chief 1990 - 1991
United States Army, Ft. Stewart, GA	Electronics Technician 1987 - 1990

CURRENT POSITION RESPONSIBILITIES

Mr. Clutter provides technical and management support for civil and surveying projects, including: waste management, transportation, site development, and surveying. These projects have included municipal and industrial landfills, retail/commercial development, correctional facilities, airports, streets/highways, bridges, parking lots, retaining walls, foundations, sanitary structures, as well as boundary and topographic and photogrammetric surveys. Duties have included hydrologic and hydraulic analysis and design, erosion and sediment control plans, storm water management, design of impoundment closures, slope stability analysis, field surveying, drawings and specification preparation, design, design drafting (ACAD and Micro-station), construction inspection, quality control testing, shop drawing review, project management, contract administration, permitting and report preparation. Performs engineering calculations, studies, plans reports and data analysis, all under the supervision of a licensed engineer. Assists in the coordinating of construction projects. Assists in conducting interim and final inspections of construction projects to determine compliance with applicable laws, regulations, and specifications. Assists in performing project analysis of plans and/or contracts for projects; and provides recommendations of alternative construction methods when appropriate. Assists in writing reports detailing conclusion and recommendations, from inspections and reviews.

PROJECT EXPERIENCE SUMMARY

City of Buckhannon Landfill Final Closure, *WVDEP-LCAP, Charleston, WV*
As Staff Engineer, provided technical support for the final closure of the City of Buckhannon Landfill facility. This included design of the final closure cap system, including interfacial friction evaluation and testing of the various cap components. Following design and permitting, provided technical support during construction Quality Control inspection.

Don's Disposal Service Landfill Characterization and Closure, *WVDEP-LCAP, Charleston, WV*
As Staff Engineer, served on the design team providing characterization and final closure of the Don's Disposal Service Landfill facility. This included a limited hydrogeologic site evaluation based on existing wells, surveying and mapping, waste limit determination, borrow soil investigation, and design of the closure cap, storm water management system, leachate extraction wells, leachate collection system, and leachate storage system.

McDowell County Landfill Closure, *WVDEP-LCAP, Charleston, WV*
As Staff Engineer, served on the design team providing characterization and final closure of the McDowell County Landfill facility. This included limited surveying and mapping, borrow soil investigation, and design of the storm water management system, leachate collection system, and leachate storage system. Following design and permitting, assisted in construction Quality Control inspection.

Landfill Expansion, *Private Owner, Ashland, KY*
As Staff Engineer, assisted in the preparation of permitting and design of a vertical expansion (VEX) of an existing landfill facility. This included construction of rock/earthen berms along the margins of the existing facility. The VEX application consisted of engineering plans, cross sections, details, and supporting calculations. Two important elements of the application included a demonstration that adequate soils were available, and that the presence of previous underground mining did not compromise the structural soundness of the berms.

Union Carbide Corporation (DOW Chemical), *South Charleston, WV*
Provided technical services to plant personnel and the Remediation Technologies Group from 1997 through 2000:

- As a Staff Engineer, worked as part of a team of engineers and scientists evaluating and preparing remedial design drawings and construction documents for closure of a Superfund landfill unit located at the former Marietta, OH plant. Project scope included evaluation of alternative cover designs and design of a specialized leachate collection and pumping system. Subsequent work included onsite inspection and certification of the construction.
- As a Staff Engineer, worked as part of a team of engineers providing oversight of closure of three Superfund units at the former Marietta, OH facility. Our firm's responsibilities include Assistant Site Superintendent and Quality Assurance Officer, providing liaison with representatives of surrounding manufacturing facilities as well as state and federal regulatory officials, interpretation of plans and specifications prepared by others, redesign of certain elements to optimize cost and performance, and preparation of certification documents for US EPA and state regulatory representatives.

Bayer Crop Science, USA, *Institute, WV*

- As Staff Engineer, designed closure caps and prepared closure plans, including detailed engineering design and specification, for three hazardous waste impoundments former used as part of the facility waste water treatment system. Project included demolition of existing aerators and mixers, bench scale sludge stabilization studies and stabilization mix design, installation of leachate collection system, and closure cap design and installation.

- As Staff Engineer, provided engineering design and permitting services for expansion of an existing on-site hazardous waste landfill. A preliminary design concept was prepared for review and approval by facility representatives, followed by preparation of final preliminary design. After acceptance of the preliminary design by facility representatives, Triad prepared a final design package for submission to WVDEP. Finally, an engineering design report, drawings and specifications were prepared for construction of the facility.

Abandoned Mine Lands, Statewide Contract, WV
As a Staff Engineering provided services for topographic mapping and civil design for various Abandoned Mine Land (AML) projects throughout West Virginia. Various types of AML projects include landslide correction include and site grading and drainage improvements, acid mine drainage collection and neutralization, water line upgrade and extensions, and various projects requiring site regrading and drainage upgrade. Work on these projects also included establishing horizontal and vertical control surveys for aerial photogrammetry mapping, baseline layout, referencing control points, generating check cross sections and site surveys including all physical and topographic features of each unique site.

Ridge Line, Inc., *South Charleston, WV*
As a Staff Engineer, Mr. Clutter has been involved in hydrologic and hydraulic analyses, preparation of storm water management plans, and site civil designs. Preparation of storm water management plans included design of sewer systems, and procedures for control of erosion and sedimentation. Site civil designs included site grading, preparation of storm water management facilities, and interfacing proposed structures with existing utilities.

Dominion Resources, Inc.
As a Staff Engineer, Mr. Clutter has generated various secondary containment designs for truck loading / unloading facilities and overall sites. The purpose of the secondary containment designs is to meet the requirements of the facility Spill Prevention Controls and Countermeasures (SPCC) Plan. The SPCC plan is required to provide a corrective action plan in the event of a petroleum products spill on Dominion Resource compressor sites. Work on these sites consist of site surveying to generate existing conditions mapping, design of secondary containment facilities, preparation of construction drawings and specifications, and construction cost estimating. These projects required working with a tight budget and accelerated time frame.

Site Development Design, *Various Correctional Facilities in WV*
As a Staff Engineer, Mr. Clutter has been involved in and is responsible for the complete site development design and permitting on various correctional facilities throughout West Virginia including regional jails and juvenile detention centers. In this capacity he is faced with the sometimes difficult task of coordinating with the project architect, local municipalities, the WVDOH and the Regional Jail Authority (Owner) to fulfill the needs of all in generating the final bid and construction drawings. Work on these projects includes building pad positioning and elevation, access road layout including grading design, parking lot layout, utility routing, storm drainage feature layout and design. Permitting work on these projects includes WVDOH encroachment permitting, health department permitting and NPDES permitting for handling surface water during construction. These sites range in size from approximately 3 acres to over 8 acres. Correctional facility projects include: Tiger Morton Juvenile Detention Center – Dunbar, WV, Western Regional Juvenile Detention Center – Barboursville, WV, Tygart Valley Regional Corrections Facility – Randolph County, WV, Mt. Hope Juvenile Detention Center – Fayette County, WV.

Dane H. Ryan

Civil Engineering Services Manager/Senior Designer

EDUCATION

Drafting Technology	Roane/Jackson Technical Center, 1976
Pre-Engineering Classes	West Virginia State College, 1984-1985

CERTIFICATIONS AND REGISTRATIONS

Certified Compaction Technician	WVDOT, 1984
Certified Aggregate Technician	WVDOT, 1987
Grade I Concrete Technician	ACI, 1987
8 Hour Nuclear Safety and Operation Certificate	WVDOH, 1984
Radiation Officer Training Certificate	NRC, 1992
Level III Engineering Technician	NICET, 2000
Instructor for the Annual Certified Technician Compaction Refresher Course	WVDOT

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering, Inc., St. Albans, WV	Civil Engineering Services Manager 2006 - Present
Triad Engineering, Inc., St. Albans, WV	Project Manager/Senior Designer 1997 - 2006
Triad Engineering, Inc., St. Albans, WV	Field Services Manager 1984 - 1997
Triad Engineering, Inc., St. Albans, WV	Engineering/Sr. Engineering Technician and Draftsman 1983 - 1984
Steel Service Company, St. Albans, WV	Assistant Chief Engineer/Detailer 1976 - 1983

CURRENT POSITION RESPONSIBILITIES

Mr. Ryan is currently Civil Engineering Services Manager and Senior Designer for the Civil Engineering Department in the St. Albans office of TRIAD. In this role, he is responsible for the technical quality of all Civil Engineering related projects, as well as the overall financial, business development, and human resources aspects for the group. As Senior Designer, Mr. Ryan works directly under the supervision of a Registered Professional Engineer in performing all facets of civil design. His expertise includes waste management projects as well as traditional site development design on difficult sites including both surface and subsurface constraints. Mr. Ryan also performs parking lot layouts, building sites, infrastructure routing, and grading and drainage design and drainage studies. Other duties include subsurface investigations, landslide repair, and various types of retaining wall design including segmental block walls and drilled pile walls. He also performs project management of various civil, geotechnical, and quality control projects. His project management duties include project scheduling, coordination, budget management, client interaction, and project team coordination. In addition to Project Coordinator and Designer, Mr. Ryan also assists the Field Services Department by providing technical consultation and assistance, and preparation of proposals and estimates on larger, long term projects. Since 1993, he has participated in instructing the West Virginia Division of Highways (WVDOH) Certified Compaction Technician Training Course. With his vast experience and knowledge in compaction theory and construction materials testing, Mr. Ryan represents the private sector in this WVDOH training course.

PROJECT EXPERIENCE SUMMARY

Rhone Poulenc (Bayer Crop Science USA), *Institute, WV*
As a Project Designer, Mr. Ryan was responsible for permit modification, design and quality control of closure caps for numerous portions of an active hazardous waste landfill. This work involved cooperation and coordination with the plant environmental department, landfill operations management, and West Virginia Department of Environmental Protection. The focal point of these projects was to provide a closure cap design that allowed construction to continue with very little to no operation to landfill operations. Work on these projects consisted of the preparation of permit modification documents, construction quality assurance / quality control plans, health and safety plans, closure cap design, and final completion report upon completion of construction.

Mid American Waste Systems (Waste Management), *Canal Winchester, OH*
As a Designer and Quality Control Manager, Mr. Ryan was responsible for assisting with the design of Municipal Solid Waste Landfill liners and closure caps throughout West Virginia and Kentucky. These projects required thorough and comprehensive quality assurance programs. Mr. Ryan was responsible for generating the contractor's quality assurance / quality control plans and managing the QA/QC programs during construction.

Landfill Hydraulic Barrier Construction, *Private Owner, Parkersburg, WV*
As Quality Control Manager, oversaw field and laboratory investigations of borrow areas to develop a Daniel's window for proper compaction and moisture control to achieve required permeability. As Quality Control Manager, managed full time construction inspection and testing, as well as ongoing engineering consultation for hydraulic barriers in the landfill and leachate pond portions of the project.

Landfill Hydraulic Barrier Construction, *Private Owner, Clarksburg, WV*
As Quality Control Manager, oversaw subsurface investigation to locate a borrow source for the construction of an asbestos and MSW cell. Managed QC testing and inspection of the synthetic and soil liner. Provided certification report for all field and laboratory testing. Managed conformance testing of the HDPE synthetic liner.

Landfill Hydraulic Barrier Construction, *Private Owner, Gallia, OH*
As Quality Control Manager and Senior Designer, managed borrow study to locate suitable soils for landfill development, as well as design and QC inspection of a leachate collection system and sediment pond for this solid waste landfill.

Union Carbide Corporation (DOW Chemical), *Marietta, OH*
As a Project Manager, provided design engineering and drafting, permitting, surveying, drilling and sampling, QA/QC testing and inspection, borrow study and various other services for the closure of several waste facilities.

ERO Landfill Characterization and Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Quality Control Manager, managed QC testing and inspection of all aspects of synthetic and soil liners. Provided certification report for all field and laboratory testing. Managed conformance testing of the HDPE synthetic liner.

City of Buckhannon Landfill Characterization and Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Quality Control Manager, managed QC testing and inspection of the synthetic and soil liner. Provided certification report for all field and laboratory testing. Managed conformance testing of the HDPE synthetic liner.

City of Buckhannon Landfill Final Closure, *WVDEP-LCAP, Charleston, WV*
As Quality Control Manager, managed QC testing and inspection of the synthetic and soil liner. Provided certification report for all field and laboratory testing. Managed conformance testing of the HDPE synthetic liner.

Don's Disposal Service Landfill Characterization and Closure, *WVDEP-LCAP, Charleston, WV*
As Quality Control Manager, managed QC testing and inspection of the synthetic and soil liner. Provided certification report for all field and laboratory testing. Managed conformance testing of the HDPE synthetic liner.

McDowell County Landfill Closure, *WVDEP-LCAP, Charleston, WV*
As Quality Control Manager, managed QC testing and inspection of the synthetic and soil liner. Provided certification report for all field and laboratory testing. Managed conformance testing of the HDPE synthetic liner.

Landfill Closure and Expansion Design, *Private Owner, Prichard, WV*
As Senior Designer, assisted in the permitting and design for closure of an existing disposal area and development of an adjacent expansion area. The project included a complete hydrogeologic site evaluation and monitoring well installation, surveying and mapping, waste limit determination, borrow soil investigation, and design of storm water management system, leachate collection system, and leachate storage system. Following design and permitting, assisted in oversight of construction Quality Control inspection.

Landfill Closure and Expansion Design, *Private Owner, Hurricane, WV*
As Senior Designer, assisted in the permitting and design for closure of an existing disposal area and development of an adjacent expansion area. The project included a complete hydrogeologic site evaluation and monitoring well installation, surveying and mapping, waste limit determination, borrow soil investigation, and design of storm water management system, leachate collection system, and leachate storage system. Following design and permitting, assisted in oversight of construction Quality Control inspection.

Landfill Expansion, *Private Owner, Ashland, KY*
As Senior Designer, assisted with preparation of permitting and design of a vertical expansion (VEX) of an existing landfill facility. This included construction of rock/earthen berms along the margins of the existing facility. The VEX application consisted of engineering plans, cross sections, details, and supporting calculations. Two important elements of the application included a demonstration that adequate soils were available, and that the presence of previous underground mining did not compromise the structural soundness of the berms.

Landfill Expansion, *Private Owner, Morehead, KY*
As Senior Designer, assisted in the preparation of permitting and design documents for closure of an existing disposal area and development of an adjacent expansion area. This included surveying and mapping, waste limit determination, borrow soil investigation, and design of storm water management system, leachate collection system, and leachate storage system. Following design and permitting, oversaw daily Quality Control inspection.

Union Carbide Corporation (DOW Chemical), *South Charleston, WV*
Provided technical services to plant personnel and the Remediation Technologies Group from 1990 through 2000:

- As a Senior Designer, worked with a team of engineers and scientists evaluating and preparing remedial design drawings and construction documents for closure of a Superfund landfill unit located at the former Marietta, OH plant. Project scope included evaluation of alternative cover designs and design of a specialized leachate collection and pumping system. Subsequent work included onsite inspection and certification of the construction.
- As a Senior Designer, provided consultation during closure of three Superfund units at the former Marietta, OH facility. Our firm's responsibilities include Assistant Site Superintendent and Quality Assurance Officer, providing liaison with representatives of surrounding manufacturing facilities as well as state and federal regulatory officials, interpretation of plans and specifications prepared by others, redesign of certain elements to optimize cost and performance, and preparation of certification documents for US EPA and state regulatory representatives.
- As a Senior Designer, prepared closure plans, including detailed engineering design and specification, for three hazardous waste impoundments formerly used as part of the facility waste water treatment system. Project included demolition of existing aerators and mixers, bench scale sludge stabilization studies and stabilization mix design, installation of leachate collection system, and closure cap design and installation.

Parviz J. Jalali, P.E.

Senior Project Engineer Geotechnical

EDUCATION

BA, Civil Engineering	Tehran Institute of Technology, 1973
BS, Civil Engineering	West Virginia Institute of Technology, 1979

REGISTRATIONS AND LICENSES

Registered Professional Engineer	West Virginia

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering, Inc., St. Albans, WV	Senior Engineer 1991 - Present
Triad Engineering, Inc., St. Albans, WV	Project Engineer 1988 - 1991
Triad Engineering, Inc., St. Albans, WV	Staff Engineer 1980 - 1988
Rahvar Engineering Consultants, Inc., Tehran, Iran	Staff Engineer 1975 - 1976

CURRENT POSITION RESPONSIBILITIES

Mr. Jalali is currently Vice President and Geotechnical and Laboratory Departments Manager at TRIAD'S St. Albans office. In this capacity, he is responsible for technical quality of geotechnical and laboratory projects, as well as the overall financial business development, and human resources aspects for both departments. As a Senior Geotechnical Engineer, Mr. Jalali is responsible for geotechnical engineering analysis and design, preparation of geotechnical engineering reports and logging and inspection of soil and rock borings. Mr. Jalali has developed a specialized permeability testing program to facilitate design of a suitable clay liner for a large hazardous waste impoundment designed by TRIAD. Mr. Jalali supervises the project team for geotechnical and geologic studies for all highway related projects. Duties include design and implementation of subsurface investigation, assignment of laboratory testing, and approval of design drawings and technical specifications. Mr. Jalali also oversees operations and maintenance of our in-house computers/servers for all technical and non-technical programs and applications.

PROJECT EXPERIENCE SUMMARY

ERO Landfill Characterization and Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for interim closure of the ERO Landfill facility and performed slope stability analyses of slopes in excess of WVDEP regulations to support a waiver request.

Mingo County Landfill Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for interim closure of the Mingo County Landfill facility.

City of Buckhannon Landfill Characterization and Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for interim closure of the Buckhannon Landfill facility.

City of Buckhannon Landfill Final Closure, *WVDEP-LCAP, Charleston, WV*
As Geotechnical Engineer managed and assisted in laboratory testing of borrow soils available for use in hydraulic barrier construction during the final closure of the City of Buckhannon Landfill facility and performed interfacial slope stability analyses of cap materials to support the composite cap design.

Don's Disposal Service Landfill Characterization and Closure, *WVDEP-LCAP, Charleston, WV*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for final closure of the Dons Disposal Landfill facility near Charleston, WV and performed interfacial slope stability analyses of cap materials to support the composite cap design.

McDowell County Landfill Closure, *WVDEP-LCAP, Charleston, WV*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for final closure of the McDowell County Landfill facility.

Landfill Closure and Expansion Design, *Private Owner, Prichard, WV*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for final closure of the Pritchard Landfill facility and permitting and construction of a new expansion area in accordance with WVDEP Solid Waste Regulations. Also performed interfacial slope stability analyses of liner and cap materials to support the composite liner and cap design.

Landfill Closure and Expansion Design, *Private Owner, Hurricane, WV*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for final closure of the Sycamore Landfill facility and permitting and construction of a new expansion area in accordance with WVDEP Solid Waste Regulations. Also performed interfacial slope stability analyses of liner and cap materials to support the composite liner and cap design.

Landfill Expansion, *Private Owner, Ashland, KY*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for a vertical expansion (VEX) of an existing landfill facility. Performed geotechnical analyses necessary to evaluate the presence of underground mining and determine that it did not compromise the structural soundness of the liner system or the berms.

Landfill Expansion, *Private Owner, Morehead, KY*
As Geotechnical Engineer managed and assisted in the characterization of borrow soils available for final closure of several existing landfill cells and construction of a new expansion area in accordance with RCRA Subtitle D regulations. Also performed interfacial slope stability analyses of liner and cap materials to support the composite liner and cap design.

Union Carbide Corporation (DOW Chemical), *South Charleston, WV*
As Geotechnical Engineer oversaw field permeability testing of compacted clay liner and conformance testing of HDPE liner material for retrofit of an active hazardous waste landfill.

Matthew C. Wright, LRS
Project Geologist

EDUCATION

B.S. Geology	Morehead State University, 1986

REGISTRATIONS AND LICENSES

Licensed Remediation Specialist	No. 233, West Virginia
Monitoring Well Driller Certification	No. WV00405, West Virginia
Well Driller Certification	No. 0331-0380-00, Kentucky
OSHA HAZWOPER 40 Hour Training	
OSHA HAZWOPER 8 Hour Update (Current)	

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering, Inc., St. Albans, WV	Project Geologist 2008 - Present
Subsurface, Inc., Gauley Bridge, WV	President 1995 - 2008
Omega Environmental Cross Lanes, WV	Project Geologist 1994 - 1995
Rucker & Associates Cross Lanes, WV	Project Manager 1993 - 1994
Foppe Thelen Group Wheeling, WV	Project Manager 1992 - 1993
Groundwater Technology, Inc. Wheeling, WV	Project Manager 1990 - 1992

CURRENT POSITION RESPONSIBILITIES

Mr. Wright is currently a Project Geologist with TRIAD's Scott Depot, West Virginia office. In this capacity, he is responsible for designing and implementing technical investigations, which include groundwater characterizations, contaminant delineation, Phase I and Phase II environmental site assessments, Brownfields and Voluntary Remediation Program sites, and Superfund sites. Assessment activities include installation of borings and monitoring wells using direct-push and traditional hollow stem auger drill rigs, as well as collection of soil, groundwater, surface water, and sediment samples. Mr. Wright is a licensed monitoring well driller in West Virginia and in Kentucky. In addition, Mr. Wright develops sampling and analysis plans, evaluates environmental data, and prepares reports and documents.

PROJECT EXPERIENCE SUMMARY

Ashland Branded Marketing, Inc., *Ohio, Kentucky and West Virginia sites*
As Project Manager, supervised underground storage tank (UST) system removals and closure activities at 10-20 sites. Removed and cleaned USTs at each site. Excavated and disposed of any contaminated soils and completed site restoration activities.

American Electric Power, *Cabin Creek Substation, WV*
As Project Geologist, performed quarterly sampling of groundwater monitoring wells as part of the ongoing remediation of the property.

Columbia Gas Transmission Corp., *Various States*
Project Manager on a natural gas transmission project that characterized and remediated several sites contaminated by PCBs, and/or pipeline liquids. Also served as field activities coordinator and characterization team member. Additional duties included client relations, field cost accounting, field equipment/supplies management, site health and safety and QA/QC of final reports.

Chevron USA, Inc., *KY and WV*
As Project Manager, responsible for LUST assessment and remediation at 10-20 operating retail and bulk petroleum facilities. Tasks included installation of groundwater monitoring wells, quarterly groundwater sampling, LNAPL collection, conducting environmental site assessments, installation of remediation systems. Finally, prepared scopes of work and cost estimates and prepared various reports for submittal to the proper state regulatory agency.

CSX Real Property, Inc., *Wheeling, WV*
As Project Geologist at this site, conducted an environmental site assessment at this former commercial facility in preparation for future site development.

Dow Chemical Corporation, *Charleston, West Virginia*
As a direct push technology rig operator, collected soil, groundwater and soil vapor samples during performance of environmental site assessments.

GE Aircraft Engines, *Cincinnati, OH*
As Project Geologist at this site, conducted an environmental site assessment which included monitoring well installation, soil and groundwater sampling.

Super America/Speedway, Inc., *Various states*
As a direct push technology rig operator collected soil, groundwater and vapor sampling during performance of environmental site assessments. As Project Manager, responsible for LUST assessment and remediation at 10-20 operating retail and bulk petroleum facilities. Tasks included installation of groundwater monitoring wells, quarterly groundwater sampling, LNAPL collection, conducting environmental site assessments, installation of remediation systems. Finally, prepared scopes of work and cost estimates and prepared various reports for submittal to the proper state regulatory agency.

West Virginia Division of Highways, *Huntington, WV*
As a direct push technology rig operator collected soil, groundwater and vapor sampling during performance of environmental site assessments.

John B. (JoBe) Hope

Field Services Manager

EDUCATION

Dupont High School
West Virginia State College
WVDOH Certifies Tech Training Classes – Compaction, Aggregate, Portland Cement and Bituminous Concrete
Troxler 8 Hour Nuke Safety and Operation
Troxler Radiation Safety Officer Training
40 OSHA Training
MSHA Training
MSHA Impoundment Inspector Training
ACI Training and Classes
USACOE – Contractor QC Training

CERTIFICATIONS

WVDOT/DOH Compaction Inspector
WVDOT/DOH Portland Cement Inspector
WVDOT/DOH Aggregate Inspector
WVDOT/DOH Bituminous Inspector
ACI – Grade I Field Tech
ACI – Grade I Lab Tech
40 OSHA HAZWAPER Certification
MSHA –Certified Impoundment Inspector
MSHA –Above Ground Hazard Trained
US Army COE – Construction QC Manager for Contractors
PCI Level I and II

EMPLOYMENT HISTORY

Triad Engineering, Inc., St. Albans, WV	Field Services Manager 2006 - Present
Triad Engineering, Inc., St. Albans, WV	Field Technician Supervisor 1999 - 2006
Triad Engineering, Inc., St. Albans, WV	Field Services Manager 1997 - 1999
Triad Engineering, Inc., St. Albans, WV	Field and Lab Technician 1990 - 1997

CURRENT POSITION RESPONSIBILITIES

Mr. Hope is currently the Field Services Department Manager for the St. Albans office of TRIAD. In this capacity he oversees the field staff, by handling calls from technicians on technical matters, staffing and scheduling and serving as the branch Radiation Safety Officer. Mr. Hope also handles and in house QA/QC, schedules training classes, keeps all records of inspections and calibrations. In addition, he also writes proposals for perspective jobs, assigns new jobs and lab work and writes all QC plans.

PROJECT EXPERIENCE SUMMARY

Mid American Waste Systems (Waste Management), *Canal Winchester, OH*
As a Quality Control Technician, Mr. Hope was responsible for QC inspection of Municipal Solid Waste Landfill liners and closure caps throughout West Virginia and Kentucky. These projects required thorough and comprehensive quality assurance programs.

Landfill Hydraulic Barrier Construction, *Private Owner, Parkersburg, WV*
As a Quality Control Technician, Mr. Hope was responsible for QC inspection of a Municipal Solid Waste Landfill liner for a major waste management company at their Parkersburg, WV facility. Project included placement and compaction of a clay liner and HDPE flexible membrane.

Landfill Hydraulic Barrier Construction, *Private Owner, Clarksburg, WV*
As a Quality Control Technician, Mr. Hope was responsible for QC inspection of a Municipal Solid Waste Landfill liner for a major waste management company at their Clarksburg, WV facility. Project included placement and compaction of a clay liner and HDPE flexible membrane.

Landfill Hydraulic Barrier Construction, *Private Owner, Gallia, OH*
As a Quality Control Technician, Mr. Hope was responsible for QC inspection of a Municipal Solid Waste Landfill liner for a major waste management company at their Gallia County, Ohio facility. Project included placement and compaction of a clay liner and HDPE flexible membrane.

City of Buckhannon Landfill Characterization and Interim Closure, *WVDEP-LCAP, Charleston, WV*
As Field Services Manager, was responsible for oversight, data management, and contributions to the certification report for the leachate basin at the City of Buckhannon Landfill facility.

City of Buckhannon Landfill Final Closure, *WVDEP-LCAP, Charleston, WV*
As Field Services Manager, was responsible for oversight, data management, and contributions to the certification report for the final closure cap system at the City of Buckhannon Landfill facility.

Landfill Closure and Expansion Design, *Private Owner, Prichard, WV*
As Field Services Manager, was responsible for oversight, data management, and contributions to the certification report for the final closure cap system at the Pritchard Landfill facility, and for composite liner construction at the adjacent expansion area.

Landfill Closure and Expansion Design, *Private Owner, Hurricane, WV*
As Field Services Manager, was responsible for oversight, data management, and contributions to the certification report for the final closure cap system at the Sycamore Landfill facility, and for composite liner construction at the adjacent expansion area.

Union Carbide Corporation (DOW Chemical), *South Charleston, WV, Institute, WV and Marietta, OH*
As a Quality Control Technician, Mr. Hope was responsible for QC inspection of landfill liners and closure caps for the closure of several waste facilities.

Earnest M. McCarty Jr., *(Mack)*, P.S.

Project Manager-Surveying Department

EDUCATION

B.S. Civil Engineering Technology	WV Institute of Technology, 1992
A.S. Surveying Technology	WV Institute of Technology, 1991
A.S. Drafting and Design	WV Institute of Technology, 1991

REGISTRATIONS AND LICENSES

Licensed Professional Surveyor:	West Virginia	(No.1001)
	Pennsylvania	(No.SU057606)
	Tennessee	(No.2140)
	Kentucky	(No.3666)

PROFESSIONAL ASSOCIATIONS AND ORGAIZATIONS

Society of American Military Engineers	Post President-2006
Huntington Post	Member Since 1998
West Virginia Association of Professional Surveyors	Member Since 1994

DIRECT WORK EXPERIENCE AND PRIMARY RESPONSIBILITIES

Triad Engineering, Inc., St. Albans, WV	Project Manager 2004 - Present
Woolpert LLP, St. Albans, WV	Project Manager 1996 - 2004
Chapman Technical Group, St. Albans, WV	Project Surveyor 1994 - 1996
Pray Construction Company, St. Albans, WV	Project Surveyor 1992 - 1994

CURRENT POSITION RESPONSIBILITIES

Mr. McCarty is currently the Project Manager of the Surveying Department for the St. Albans office of TRIAD. Having managed and completed a wide variety of projects including cadastral boundary surveys, boundary records research, conventional horizontal and vertical control networks, geodetic control surveys, topographic surveys, hydrographic surveys and photogrammetric control surveys. Mr. McCarty is proficient in the use of modern equipment including total stations, global positioning systems, automatic levels, digital levels and survey grade hydrographic equipment. Mr. McCarty is also well versed in the use of many forms of electronic data collection, data processing, and bringing it into drawing multiple CADD platforms for drawing development. Mr. McCarty is trained and proficient in the use of AutoDesk Land Development Desktop, Bentley MicroStation, Trimble Geomatics Office, Trimble Pathfinder Office, C & G Survey Software, Eagle Point, Microsoft Office Package including Word, Excel, Access, Outlook, PowerPoint and Project and the WordPerfect Office Suite of products. Mr. McCarty is also familiar with older surveying equipment, their history of usage, and how they apply when performing modern retracements.

PROJECT EXPERIENCE SUMMARY

West Virginia Department of Transportation, Elkins Bypass, *Elkins, WV-1998 (Woolpert LLP) (JoAnn Ford-WVDOT Project Manager)*
Oversaw the completion of aerial mapping, preliminary right of way services including the completion of right of way questionnaires and courthouse research, utilities verification and location, drainage survey and topographic tie in surveys for a four mile section of four lane highway and a two mile, two lane connector road.

West Virginia Department of Transportation, Corridor L, *Nicholas County, WV 1993 (Chapman Technical Group) (Matt DeJulian-WVDOT Project Manager)*
Oversaw the completion of surveying task including control surveys, preliminary right of way services including the completion of right of way questionnaires and courthouse research, right of way, utilities verification and relocation and storm drainage for a four mile upgrade of two lanes to four.

Alpha Natural Resource, King Coal Highway, *Red Jacket, WV 2005-2006 (Triad Engineering, Inc.) (Robyn Smith-WVDOT Project Manager)*
Oversaw the completion of cross sections to verify the contractors pay estimates in a yearly reconciliation. Survey work had to be completed in the a one week time frame to coincided with the yearly miners holiday.

West Virginia Route 2 Upgrade (Kent to Proctor), Wilbur Smith and Associates, *Natrium, WV 2004-2005 (Triad Engineering, Inc.)*
Oversaw the completion of surveying task including control surveys, preliminary right of way services including the completion of right of way questionnaires and courthouse research, right of way, utilities verification and relocation and storm drainage for a four mile upgrade of two lanes to four.

Bob Evans Farms, Inc., *Columbus, OH*
As a Project Manager provided complete services for an ALTA/ACSM Survey of the Bob Evans Restaurants in Huntington, West Virginia and Cannonsburg, Kentucky. Services included field surveying, courthouse research and assessment of the Title Commitment for the subject property.

Abandoned Mine Lands, *Statewide Contract, WV*
As a Project Manager provided services for topographic mapping and civil design for various Abandoned Mine Land (AML) projects throughout West Virginia. Various types of AML projects include landslide correction include retaining wall design and site grading and drainage improvements, acid mine drainage collection and neutralization, water line upgrade and extensions, and various projects requiring site regrading and drainage upgrade. Work on these projects also included establishing horizontal and vertical control surveys for aerial photogrammetry mapping, baseline layout, referencing control points, generating check cross sections and site surveys including all physical and topographic features of each unique site.

Shanghai Bridge Replacement Project*—Berkeley County, West Virginia*
Performed a comprehensive site survey for the design of a new bridge over Back Creek on Berkeley County Route 18.

APPENDIX C

CONFIDENTIAL CONSULTANT QUALIFICATION QUESTIONNAIRE

TRIAD ENGINEERING, INC.

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
DEP14619 - Site Characterization Study, Leachate Management & Closure Cap Design and Quality Assurance / Quality Control for South Charleston Landfill	May 5, 2009	550592364

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
TRIAD ENGINEERING, INC.	4980 Teays ValleyRoad Scott Depot, WV 25560	N/A

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
304/755-0721	1975	Corporation	YES NO X

6. PRIMARY OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. PERSONNEL EACH OFFICE
4980 Teays ValleyRoad, Scott Depot, WV 25560/ (304)755-0721 / John M. Meeks, PG, LRS / 58

NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
Randy L. Moulton, P.E., President & CEO	

9. PERSONNEL BY DISCIPLINE **(Bold Lettering Indicates Minimum Design Team Members)**

15 ADMINISTRATIVE	— ECOLOGISTS	2 LANDSCAPE ARCHITECTS	1 STRUCTURAL ENGINEERS
— ARCHITECTS	— ECONOMISTS	1 MECHANICAL ENGINEERS	**20 SURVEYORS**
2 BIOLOGIST	— ELECTRICAL ENGINEERS	3 MINING ENGINEERS	48 OTHER
10 CADD OPERATORS	8 ENVIRONMENTALISTS	— PHOTOGRAMMETRISTS	250 TOTAL PERSONNEL
— CHEMICAL ENGINEERS	**3 ESTIMATORS**	— PLANNERS: URBAN/REGIONAL	
12 CIVIL ENGINEERS	**15 GEOLOGISTS**	2 SANITARY ENGINEERS	
60 CONSTRUCTION INSPECTORS	— HISTORIANS	**25 SOILS ENGINEERS**	
15 DESIGNERS	**2 HYDROLOGISTS**	1 SPECIFICATION WRITERS	
4 DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 7
***RPEs other than Civil must provide supporting documentation that qualifies them to supervise and perform this type of work.**

10. If submittal is by joint venture, list participating firms & outline specific areas of responsibility (including administrative, technical, & financial) for each firm. Each participating firm must complete a "Consultant Confidential Qualification Questionnaire". **-NA-**

10a. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? ☐ YES ☐ NO **-NA-**

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED.		
NAME AND ADDRESS: Keddal Aerial Mapping 1121 Boyce Road, Suite 3100 Pittsburgh, PA 15241 P: (724) 942-2881 F: (724) 942-2885 map@keddalaerial.com	SPECIALTY: Aerial Photography / Photogrammetry	WORKED WITH BEFORE __X__ Yes _____ No
NAME AND ADDRESS: Pace Analytical Services, Inc. 5203 Triangle Lane Export, PA 15632 P: (724) 733-1161 F: (724) 327-7793 www.pacelabs.com POC: Carin Ferris, Project Manager Carin.Ferris@pacelabs.com	SPECIALTY: Full organic / inorganic analyses in accordance with RCRA, NPDES, TSCA, 10 CFR 61 Waste Characterization and UST programs for a variety of matrices	WORKED WITH BEFORE __X__ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No

12. A. Is your firm experienced in Solid Waste Landfill Closure Design?

YES **Description and Number of Projects:** Triad has completed closure design services for the WVDEP (LCAP) and several private entities since 1990. Seven (7) LCAP projects have been completed directly for the WVDEP, two (2) are currently in progress, and at least twelve (12) other closure designs have been completed for other clients.

NO

B. Is your firm experienced in Solid Waste landfill site characterization assessment and evaluation?

YES **Description and Number of Projects:** Triad has been involved in assessment projects since 1990. We have completed characterization assessment and evaluation studies on over twenty (20) projects.

NO

C. Is your firm experienced in landfill closure construction inspection?

YES **Description and Number of Projects:** Triad has been involved in construction inspection of closures on over twenty (20) landfill projects for the WVDEP (LCAP) and several private clients since 1990.

NO

D. Is your firm experienced in Aerial Photography and the Development of Contour Mapping?

YES **Description and Number of Projects:** Triad subcontracts aerial photography and photogrametry and conducts the ground control survey to establish horizontal and vertical control used to develop final mapping. It is estimated that we have completed several hundred of these types of mapping projects since the inception of the firm in 1975.

NO

E. Is your firm experienced in evaluating ground water contamination, such as may be associated with landfills?

YES **Description and Number of Projects:** Triad has been involved in sampling groundwater monitoring wells and evaluating contamination problems related to landfills since 1990. This type of assessment work has been conducted in conjunction with most of our closure design projects, as well as several other landfills which are currently operational.

NO

E. Is your firm experienced in Landfill Closure cost estimating?

YES **Description and Number of Projects:** Triad was responsible for preparation of closure cost estimates on all of our closure design projects. As previously indicated, seven (7) of these were LCAP projects which were performed under contract to the WVDEP.

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE DESIGN (describe project)** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
Meeks, John M., PG, LRS Project Manager	Geology/Geotech = 29	Landfill = 19	Environmental = 24

Brief Explanation of Responsibilities:

Mr. Meeks will provide project management, site characterization, and technical design services on the South Charleston Landfill project. He is a senior project manager who has managed most of the landfill projects undertaken by our Charleston area office, including five of the LCAP projects we have completed for WVDEP. He recently served on the team of scientists who performed site characterization at the South Charleston Landfill under the WVDEP Superfund program.

EDUCATION (Degree, Year, Specialization)

BS, 1980, Geology, West Virginia University, Morgantown, WV

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Air and Waste Management Association	Professional Geologist, 1993, Kentucky Licensed Remediation Specialist, 1998, West Virginia

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE DESIGN (name type of design or work)** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
McCoy, L. Lee, PE Senior Engineer	Civil Engineering = 13		

Brief Explanation of Responsibilities:

Mr. McCoy will provide overall engineering oversight and certification throughout the project. He will serve as certifying engineer and will stamp all drawings and reports. Mr. McCoy will also serve on the design team and will assist with design of grading and drainage, access roads, stormwater management, and other civil engineering tasks.

EDUCATION (Degree, Year, Specialization)

BS, 1996, Civil Engineering, West Virginia Institute of Technology, Montgomery, WV

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers Society of American Military Engineers	Professional Engineer, 2001, West Virginia Professional Engineer, 2008, Kentucky Professional Engineer, 2008, Ohio

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE DESIGN (describe project)** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
Jalali, Parviz J., PE Geotechnical Engineer	Geotechnical Engineering = 29		

Brief Explanation of Responsibilities:

Mr. Jalali will plan, direct and oversee all geotechnical aspects of the project, including borrow soil investigation and evaluation, slope stability analysis, laboratory soil testing and classification, foundation evaluation for leachate tanks and other structures, and the selection and specification of any geosynthetic materials necessary for construction.

EDUCATION (Degree, Year, Specialization)

BA, Civil Engineering 1973 - Tehran Institute of Technology
BS, Civil Engineering 1979 - West Virginia Institute of Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	Professional Engineer, 1990, West Virginia

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE DESIGN (describe project)** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
Clutter, Mark A. Civil Engineering	Civil Engineering = 11		

Brief Explanation of Responsibilities

Mr. Clutter will provide the bulk of all site grading and drainage design and supporting calculations. This will include the design of cut and fill slopes, drainage control structures, leachate collection and management measures, access roads, stormwater management basins, and other general civil engineering tasks. Mr. Clutter has 10 years of experience performing civil design for LCAP and private landfill closure and expansion projects.

EDUCATION (Degree, Year, Specialization)

BSCET, 1998, Civil Engineering Technology	Fairmont State College
AS, 1998, Drafting / Design	Fairmont State College
ASCET, 1998, Civil Engineering Technology	Fairmont State College

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)

13a. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR LANDFILL CLOSURE QA/QC** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
Hope, John "Jobe" B.	Construction QA/QC = 19		

Brief Explanation of Responsibilities: Mr. Hope will directly oversee all laboratory materials testing and QC inspection during design and construction. In addition, he will be involved in monitoring and inspection of any geosynthetic liners which are required during closure cap construction. Mr. Hope has conducted and managed QA/QC for all phases of landfill construction since joining Triad 19 years ago. He has been directly responsible for managing the QA/QC department in our Charleston area office since 2006.

EDUCATION (Degree, Year, Specialization)
Dupont High School
West Virginia State College
WVDOH Training Classes - Compaction, Aggregate, Portland Cement and Bituminous Concrete
Troxler 8 Hour Nuclear Safety and Operation; Troxler Radiation Safety Officer Training
40 OSHA Training; MSHA Safety Training; MSHA Impoundment Inspector Training
ACI Training and Professional Development Classes
USACOE - Contractor QC Training

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Concrete Institute (ACI)	WVDOT/DOH Compaction Inspector
WV Contractors Association	WVDOT/DOH Portland Cement Inspector
Ohio Ready-Mix Association	WVDOT/DOH Aggregate Inspector
	WVDOT/DOH Bituminous Inspector
	ACI - Grade I Field Tech
	ACI - Grade I Lab Tech
	PCI Level I and II

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR HEAVY EARTH WORK CONSTRUCTION PROJECTS** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:	YEARS OF (type) EXPERIENCE:
Ryan, Dane H.	Earthwork Construction = 36		

Brief Explanation of Responsibilities: Mr. Ryan is a Senior Designer with more than 20 years of experience in the design and construction QC of landfills and is a NICET Certified Level III Engineering Technician. Given the depth and variety of his experience in earthwork and heavy construction, he will serve in several roles; specifically those dealing with soils and construction. As a senior designer for civil and geotechnical engineering he will direct and oversee many aspects of civil design (grading/drainage) and geotechnical engineering (borrow studies/lab testing) and also will provide senior oversight during construction QC.

EDUCATION (Degree, Year, Specialization)
Drafting Technology, 1976 — Roane/Jackson Technical Center
Pre-Engineering Classes, 1984-1985 — West Virginia State College

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)	
American Concrete Institute (ACI)	Level III Engineering Technician	NICET, 2000
WV Contractors Association	Certified Compaction Technician	WVDOT, 1984
	Certified Aggregate Technician	WVDOT, 1987
	Grade I Concrete Technician	ACI, 1987
	Instructor for Annual Compaction Course	WVDOT, Annual

14. PROVIDE A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE PRIMARY OFFICE WHICH WILL BE USED TO COMPLETE THE SITE CHARACTERIZATION STUDY, LEACHATE MANAGEMENT & CLOSURE CAP DESIGN AND QUALITY ASSURANCE / QUALITY CONTROL FOR SOUTH CHARLESTON LANDFILL.

IN-HOUSE SOFTWARE
Hydrologic Evaluation of Landfill Performance (HELP)
Civil 3D CADD Software
Eagle Point Survey Software
PCSTABL5M Slope Stability Software
HEC-1, HEC-HMS and HEC-RAS Flood Routing Software
Hydraflow Hydrographs and Hydraflow Storm Sewers SWM Software
Flowmaster SWM Software

LABORATORY TESTING EQUIPMENT
Triaxial Compression Machine, Manual Proctor Devices (standard & modified), Automatic Proctor Hammer, Turbidimeter, Hydrometers, pH Tester (soil & water), Electronic Scales
Unconfined Compression Machine, Atterberg Limits Devices, Electrical Resistivity Meters, California Bearing Ratio Devices, Specific Gravity Devices, 2000 Degree Fahrenheit Oven, Permeability Cells and Back-Pressure Panel Boards, Consolidometer, Electronic Manometers, Concrete Compressive Strength Equipment, Sieves and Sieve Shakers, Sample Splitters, Unit Weight Buckets, Slake Durability Machine, L.A. Abrasion Machine, Load Frames, Sodium Sulfate Soundness Test Equipment, Asphalt Test Equipment, Relative Density Test Apparatus

DRILLING EQUIPMENT
CME 550 Track-Mounted Drill Rig
CME 45 ATV-Mounted Drill Rig
Mobile B-53 Truck-Mounted Drill Rig
Deep Rock DR-150 4WD Truck-Mounted Drill Rig (with Down-Hole-Hammer)
Portable Grout Mixer and Pump

FIELD QA/QC TESTING EQUIPMENT
Troxler Nuclear Moisture-Density Gauges
Slump Cones (Concrete slump)
Pressure Meters (Concrete Air Content)
Concrete Thermometers
Concrete Cylinder Molds
Paint Thickness Gauges

FIELD SURVEYING EQUIPMENT
Topcon RTK GPS System
Topcon Electronic Total Stations (4)
Topcon and Sokkia Auto Levels (3)
HP Data Collectors (2)
Carlson Data Collector (1)
Misc. Prisms, Level Rods, Motorola 2-way Radios (6)

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD ASSOCIATED WITH OR RELATING TO LANDFILL CLOSURE OR CONSTRUCTION

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Marion County Landfill LCAP Closure Farmington, WV	WVDEP Fairmont Office 2031 Pleasant Valley Fairmont, WV 26554 (304) 368-2000 POC Mr. Paul Benedum	Borrow soils investigation; Site characterization and evaluation; Surveying and mapping; Construction drawings & specifications; Permit documents; Construction cost estimate; Construction inspection;	To be determined	20%
Morgan County Landfill LCAP Closure Great Cacapon, WV	WVDEP Office of Environmental Restoration 717A Main Street Summersville, WV 26651 (304) 872-3800 POC Mr. Mark Church	Borrow soils investigation; Site characterization and evaluation; Surveying and mapping; Construction drawings & specifications; Permit documents; Construction cost estimate; Construction inspection;	To be determined	10%
Frederick County LF GW Assessment Frederick County, VA	Frederick County Mr. Ed Strawsnyder, PE Dir. of Public Works 107 N. Kent Street Winchester, VA 22601 (540) 665-5643	Semi-Annual well sampling and testing; QC monitoring and testing of new landfill cells	To be determined	Well sampling and testing is ongoing. New cell construction 99% complete.
Number 1 Landfill Closure Cap Settlement Sistersville, WV	Momentive Performance Products Sistersville, WV 26175 Mark Leskowicz (304) 652-8127	Annual surveying and mapping of landfill closure cap to evaluate long-term settlement	NA	Ongoing
US Silica CDD Landfill Permitting Berkeley Springs, WV	US Silica PO Box 187 Berkeley Springs, WV Mr. Greg Fell 304-258-2500	Environmental inspection and monitoring	To be determined	90%
Goff Mountain Landfill Groundwater Statistics Volume Surveys Institute, WV	Bayer CropScience Post Office Box 1005 Institute, WV 25112 Mr. Steve Graves (304) 767-6613	Quarterly and annual statistical evaluation of GW data; Annual volume survey	NA	Ongoing

TOTAL NUMBER OF PROJECTS: 6

TOTAL ESTIMATED CONSTRUCTION COSTS: To Be Determined.

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS RELATING TO LANDFILL CLOSURE OR CONSTRUCTION

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD (LIST 5 TO 7)				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Don's Disposal Landfill Closure Design Charleston, WV	Mr. Clyde Bennett Project Manager West Virginia Division of Environmental Protection 717A Main Street Summersville, WV 26651 (304) 872-3800	$2.9M	2005	YES
McDowell County Landfill Landfill Closure Design Roderfield, WV	Mr. Mark Church Project Manager West Virginia Division of Environmental Protection 717A Main Street Summersville, WV 26651 (304) 872-3800	$2.3M	2003	YES
Number 1 Landfill Landfill Closure Design Sistersville, WV	Momentive Performance Products Sistersville, WV 26175 Mark Leskowicz (304) 652-8127	$500K	2004	YES
Goff Mountain Landfill Landfill Closure Design; Landfill Expansion Design Institute, WV	Bayer CropScience Post Office Box 1005 Institute, WV 25112 Mr. George Kennedy (304) 747-6870	$2.5M	2004	NO
Fayette County Landfill Detailed site assessment; hydrogeologic site investigation; closure feasibility study; borrow soils investigation Fayetteville, WV	Land Resource, LLC Roaring River Development 458 C Maple Lane Fayetteville, WV 25840 Mr. Tom Wagner (866) 469-5263	$1.8M	2007	NO

18. COMPLETED WORK WITHIN LAST 5 YEARS IN WHICH YOUR FIRM HAS BEEN A SUBCONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK WHICH YOUR FIRM WAS RESPONSIBLE) List 5 to 7.

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
Shenandoah County Landfill Edinburg, VA Cell Closure	Shenandoah County Mr. Brad Dellinger, Director 349 Landfill Road, Edinburg, VA (540)984-8573		2003	YES	SCS Engineers
Rockingham County Landfill Harrisonburg, VA Water Sampling and Testing	Rockingham County 2 S. Main Street Harrisonburg, VA 22801 (540) 476-1111	N/A	2005	YES	HSMM
40 West Landfill Construction, Hagerstown, MD Geotechnical, drilling, and lab testing	40 West Landfill 12630 Earth Care Road Hagerstown, MD 21740 Mr. Robert G. Davenport (240) 313-2790	Triad's cost was $10,000.	2006	YES	URS
Resh Road Phase II Landfill Closure, Hagerstown, MD Geotechnical, test pits, drilling and surveying.	Resh Road Landfill 16232 Elliott Parkway Williamsport, MD 21795 Mr. David Mason (240) 313-2600	N/A	2007	YES	URS
Frederick County Landfill Frederick County, VA Convenience Center and Access Road Construction	Frederick County Mr. Ed Strawsnyder, PE Dir. of Public Works 107 N. Kent Street Winchester, VA 22601 (540) 665-5643	N/A	2006	YES	Ricketts Construction Company

19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Department of Environmental Protection.

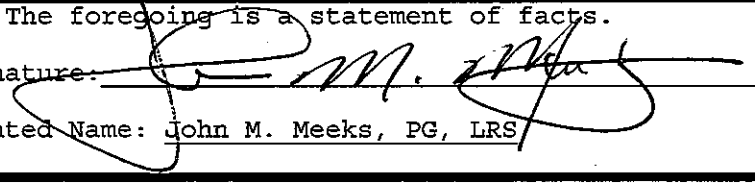
Triad currently maintains a staff of approximately 250 personnel. This includes civil, environmental, geotechnical, and mining engineers, geologists and hydrogeologists, landscape architects, biologists, environmental scientists, and chemists. Our technical support and administrative staff includes designers, CADD technicians, surveyors, engineering technicians, drillers, construction inspectors and clerical personnel. The majority of our professional and technical staff has been with the company for many years.

Facilities and equipment available to support our staff have grown substantially since the inception of the firm in 1975. We maintain a fleet of drill rigs and support vehicles to meet the needs of our field explorations. Our laboratories are supplied with testing equipment necessary to perform a wide range of tests on soil, rock, concrete, aggregate, water, asphalt and other similar construction materials. Each office maintains secure computer networks to support CADD functions, hydrogeologic evaluations, landfill water balance modeling, surface water drainage design, stability analysis, survey data reduction and mapping. With the exception of aerial photogrammetric mapping and analytical water testing, Triad is equipped to complete work on this project without subcontractors. These comprehensive in-house capabilities afford us much better control over the project schedule, quality and cost, thereby minimizing problems that can occur when engineering firms are forced to coordinate efforts among a number of subcontractors.

Triad was previously selected by WVDEP to complete two, three-year LCAP closure design contracts, and was later selected by Quality Based Selection (QBS) methods for several other stand-alone landfill closure design contracts. Therefore, our staff is completely familiar with the work required under this contract. During our previous contract work with LCAP, Triad has successfully completed seven separate landfill projects similar or identical to this project. We are currently completing two additional projects. Because LCAP design projects are geotechnically oriented, our expertise in geotechnical engineering, geology and civil engineering design make us particularly well qualified to provide the requested services.

The Charleston West Virginia area office of Triad will perform the work on this project. The Charleston area office is located less than 30 minutes from the site, and this further enhances our ability to provide efficient, cost-effective services as compared to other firms in the region. We do not believe that any other West Virginia firm can demonstrate the depth and variety of landfill assessment, design engineering and QC experience that Triad can bring to this project. With this extensive experience in design engineering, contract document preparation and QC inspection, we are expertly qualified to provide these services for proper closure and reclamation of the South Charleston Landfill.

20. The foregoing is a statement of facts.

Signature:  Title: Vice President Date: May 2, 2009

Printed Name: John M. Meeks, PG, LRS

RFQ No. 14619

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:
West Virginia Code §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:
If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the ***West Virginia Code***. The vendor **must** make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the ***West Virginia Code*** and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the ***West Virginia Code*** may take place before their work on the public improvement is begun.

ANTITRUST:
In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

LICENSING:
Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:
The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: Triad Engineering, Inc.

Authorized Signature: _____ Date: 5-4-09