

DEP 15235:

Shinnston (Shinns Run) Portals and AMD

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W. PURCHASING
DIVISION

SUBMITTED TO: DEPARTMENT OF
ENVIRONMENTAL PROTECTION
OFFICE OF THE AML&R

SUBMITTED BY: WILBUR SMITH ASSOCIATES

December 9, 2010



West Virginia Environmental Protection Department
Office of Abandoned Mine Lands and Reclamation
Purchasing Division
2019 Washington Street, East
Charleston, WV 25305-0130
Attn: Chuck Bowman

Re: Shinnston (Shinns Run) Portals and AMD, RFQ #15235

Dear Evaluation Committee:

The attached *AML Consultant Confidential Qualification Questionnaire* and the *AML and Related Project Experience Matrix* are submitted in response to the above-referenced Expression of Interest for professional engineering design services and construction monitoring services at the **Dale R Trasher** project in Tucker County. We understand that the types of professional engineering services required by this contract will include civil, environmental, geotechnical, hydrological and construction inspection services and have developed a team to cover all aspects of the project.


Founded in 1952, WSA is a prominent national consulting firm specializing in civil/transportation design, infrastructure improvements, and context-sensitive solutions in both urban and rural environments. The firm is routinely ranked among the top engineering firms in the nation by *Engineering News Record* and has cultivated an outstanding track record for delivering high-quality projects through skilled engineering and proficient project management. Our Charleston, WV office is led by professionals who have successfully completed numerous engineering projects throughout West Virginia. We have received frequent recognition for our outstanding work on these projects. Our project manager is **Mr. George J. (Joe) Crittenden**. Joe brings more than 34 years of civil and site design experience, including 10 years of experience with the AML programs. The staff in the Charleston, WV office will support Joe and is acutely aware of the need to provide economical engineering services while considering the impacts on communities and the environment.

We have chosen to collaborate on this project with **Novel Geo-Environmental (NGE) and CDM Engineering**. NGE has over 20 years of Geotechnical Engineering Experience on AML related projects and CDM has many years of experience providing engineering services on AML related projects. This team can provide all the design services necessary to complete this project in a timely and economical manner. Together, the specialized skills of WSA and its subconsultant partner will provide an exceptional combination of relevant experience and technical resources to successfully meet the DEP's needs.

If you have any questions regarding our submittal, contact me at 304-345-2339.

Respectfully submitted,

WILBUR SMITH ASSOCIATES


Wesley O. Stafford, PE, AICP
West Virginia Division Manager

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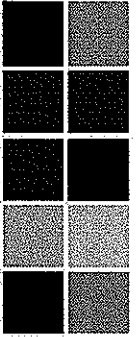
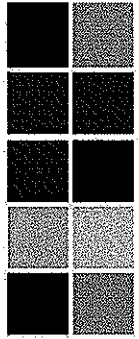


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1 / Corporate Overview

Wilbur Smith Associates

WSA is an international consulting firm providing services in the fields of engineering, architecture, planning, and economics. The firm is multidisciplinary and has a diversified practice with its major concentration of services in the analysis and planning of transportation systems, the design of transportation facilities, and planning and design of community and industrial infrastructure systems and facilities. Established in 1952, the firm has completed more than 30,000 projects including work in 50 states as well as projects in more than 117 countries throughout the world. WSA has provided comprehensive engineering and inspection services for a broad range of transportation facilities, including highways, bridges and other structures, parking, and interchanges in the United States and around the world. *For additional general information about Wilbur Smith Associates, please refer to our web site at www.WilburSmith.com.*

WSA's professional services include:

Water Resources

WSA's water resources division originated as a supplement to highway design, addressing drainage issues on our nation's roadways. Later, these methods were applied to urban and rural development projects. As the company expanded its capabilities, new opportunities surfaced. Since then, the water resources group has evolved into a full service division, supporting not only highway design, but urban and rural planning, site development and other infrastructure and municipal services. Water resources services include:

- hydrology and hydraulics
- hydrodynamic modeling
- drainage and waterline design
- detention ponds/lakes
- stormwater master plans
- stormwater utility development
- FEMA flood studies
- flood control strategies
- watershed modeling
- bridge scour studies
- river mechanics and modeling
- stream restoration
- pump stations

Geotechnical Investigation and Reports

WSA has integrated geotechnical engineering, pavement design, and foundation/site-related construction services into the design of our highway and bridge structures, commercial buildings, power plants, dams, ports, airports, and industrial facilities. Our geotechnical engineering services include:

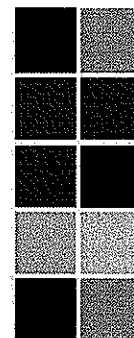
- subsurface investigations
- shallow & deep foundation design
- slope stability analyses
- earth retaining structures & reinforced slopes
- rock slope engineering
- seismic hazard analysis
- ground improvement
- earth dam engineering
- seepage and dewatering analysis
- pavement design and management systems

WSA will be teaming with subconsultants, Novel Geo-Engineering, PLLC (NGE) and CDM Engineering, to fully provide these services to DEP.

NGE is a full-service geotechnical and environmental engineering firm with offices located in St. Albans, West Virginia, and Pittsburgh, Pennsylvania. Led by an experienced management team, NGE provides quality geotechnical services to a variety of clients in both the private and public industry and government sectors. CDM is a consulting, engineering, construction, and operations firm delivering exceptional service to public and private clients worldwide. See extended company overviews at the end of this section.

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1 / Corporate Overview

Environmental Engineering

WSA has provided our clients and the community with environmental planning and National Environmental Policy Act services for over 30 years. This includes over 250 completed projects in more than 36 states. Our environmental capabilities address all transportation modes including, aviation, rail, transit, roadways, bridges, and ports, in addition to site development projects. Our firm is unique because we have in-house technical staff to address the full range of NEPA technical disciplines. This multi-discipline approach provides a culture that encourages creativity and non-traditional methods, thus bringing new ideas and streamlining processes to our clients. In addition to NEPA documentation and a variety of wetland, endangered species, and other natural resource assessments, our experience includes:

- noise and air quality modeling
- hazardous materials surveys
- community impact assessments
- environmental justice analysis
- public and stakeholder involvement
- agency coordination letters
- geographic information services

Engineering (Highway Design)

Since WSA's first roadway design project in the late 1950s, we have continued to grow our roadway and highway design division to offer a full-spectrum of services to our clients. With over 21 design offices in the United States, some of our related services include:

- design of rural and urban streets, arterials, expressways, intersections, & interchanges
- HOV and HOT lanes
- parkways and landscaping
- roadway widening, surfacing, and rehab
- grade separation structures, roadway, & railroad
- roadway hydrology and hydraulics
- route surveying

WSA has successfully completed numerous roadway design projects that have included road section and turn lane widening, curb and sidewalk repairs, intersection improvements, new sidewalk and trail design, bus shelters and other pedestrian access features. These services have also been provided on a larger scale to include planning and final construction design of a major corridor. For these projects, WSA has generated base plans from surveys, feasibility studies, utility coordination and relocation designs, environmental studies and permitting, right of way plans, traffic data collection, analysis, and projections, and concept, preliminary and final construction plans, among other tasks.

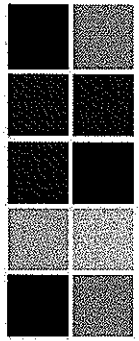
Engineering (Bridge Design)

WSA continues to be a leader in contemporary bridge technology. Our work falls into nearly every category of bridge configuration and contemporary structural materials, and every type of highway structure including overhead signs, mast lights, tension poles, pedestrian bridges, and pedestrian and traffic tunnels and culverts. From feasibility studies, inspections and investigations to new and rehabilitative design and contract documents, WSA is a leader in bridge technology.

- pioneered the design of embedded "integral" post-tensioned caps in structural steel bridges — a first in the U.S.
- employed state-of-the-practice non-linear, structural seismic analysis techniques
- developed the FHWA inspection manual for fracture-critical bridge members — providing instruction for more than 10 years
- 35 years of bridge research for FHWA and the National Academy of Sciences — used in technology transfer worldwide
- extensive experience in bridge hydraulics
- experience ranging from the simplest, single-span bridge to analysis and design of complex structures

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1 / Corporate Overview

Cultural Resources

WSA offers a full scope of archaeological services from Phase I survey to Phase III mitigation and cultural historic surveys and National Register evaluations including resource management. We have a staff of professional archaeologists, architectural historians as well as access to surveyors, computer mapping specialists with expertise in CAD and GIS software and techniques, and graphic artists. WSA has provided cultural resources services on numerous department of transportation projects in Kentucky, Michigan, Tennessee, South Carolina, and West Virginia. Previously, WSA has held the Statewide Cultural Resources contract with WVDOH and has been able to supply archaeological and cultural historic services on a couple of projects.

Throughout its history, WSA has performed a significant number of archaeological and cultural historic projects. Our experience conducting archaeological investigations varies from small scale prehistoric sites to large scale historic farmsteads and industrial complexes. Cultural historic studies performed by WSA include the Statewide Historic Bridge Survey, in which over 300 structures were identified and evaluated. Other recent transportation cultural historic survey projects include the proposed I-66 corridor, in which over 400 structures were surveyed, and KY 52, which contained over 350 evaluated structures.

Natural Resources

As a part of our environmental engineering and planning services, WSA provides services related to natural resource assessment, including wetland/ stream mitigation, pre-construction notification, threatened and endangered species surveys, neotropical and migratory bird habitat and stream buffer variance applications. Additionally, our personnel have experience in the preparation of natural resource reports in support of Categorical Exclusions, Environmental Assessments, and Environmental Impact Statements for transportation projects.

Right-of-Way Services

WSA's right-of-way practice serves as an integral part to the success of our projects. Our professionals are equipped to support public and private sector clients nationwide in planning, negotiations, and relocations. We offer extensive knowledge in permitting and real estate law and possess above-average communication and people skills in order to minimize condemnation rates. Our creative solutions are a precursor to your success and guaranteed to help you achieve your goals. WSA's Charleston office has provided the following right-of-way services to WVDOT under past statewide agreements for right-of-way functions:

- review of right-of-way invoices (procurement by the Department by option, deed, or an agreement)
- review of condemnation packages for invoicing
- property management
- preparation of property descriptions
- plan review
- project oversight
- right-of-way stakeouts

CDM FIRM OVERVIEW

Background

CDM is a consulting, engineering, construction, and operations firm delivering exceptional service to public and private clients worldwide. An employee-owned corporation with over \$1 billion in annual revenues and a multi-disciplinary staff of

about 4,300 in more than 100 offices worldwide, CDM maintains the size, stability, and resources required to successfully undertake a diverse range of projects.

Our full range of comprehensive services includes architectural and engineering design, environmental management and planning, transportation, management consulting, information management, and construction. Projects range from small, short-term solutions to complex, ongoing environmental and infrastructure management programs, with a common focus: *CDM's driving philosophy of providing exceptional client service and building long-term relationships.*

At CDM, client service means exceeding client needs and expectations by listening carefully to

CDM Current ENR Rankings		
Top	Category	Ranking
2010 – Design Firms		
500	Design Firms	21
20	Hazardous Waste	15
20	Water	8
20	Sewer/Wastewater	4
20	Wastewater Treatment	4
15	Sanitary & Storm Sewers	3
10	Solid Waste	5
25	Water Supply	8
15	Transmission Lines & Aqueducts	11
15	Water Treatment & Desalination Plants	5
15	Chemical & Soil Remediation	7
10	Nuclear Waste	9
50	Designers in International Markets	28
2010 – Contractors		
400	Contractors	240
20	Contractors in Hazardous Waste	17
100	Contractors in New Contracts	90
50	Contractors Working Abroad	39
2010 – Design-Build Firms		
100	Design-Build	51
2010 – Program Management Firms		
50	Program Management	21
2009 – Environmental Firms		
200	Environmental Firms	15

each client's unique concerns - technical, financial, socio-economic, and operational - every step of the way. Exceptional client service means understanding the conflicting demands of balancing infrastructure needs and environmental and public health protection with fiscal reality. And it means being flexible in project delivery by offering start-to-finish services or by supporting any individual phase of a larger program. From big-picture program and infrastructure management, to initial studies and design, through construction and operation, CDM's project teams integrate the appropriate multidisciplinary resources and streamline all efforts throughout the entire project life cycle. The result is the best total solution for each and every client.



171 Montour Run Road
Moon Township, PA 15108
(412) 722-1970

650 MacCorkle Avenue West
St. Albans, WV 25177
(304) 201-5180

www.ngeconsulting.com

COMPANY OVERVIEW

NGE, LLC is a full-service environmental and geotechnical engineering firm with offices in Pittsburgh, Pennsylvania and St. Albans, West Virginia. Led by an experienced management team, NGE provides high quality consulting services to a variety of clients in both private industry and government sectors.

Established in 2002, NGE is one of the fastest growing engineering consulting firms in the country.

Who is NGE?

Our staff includes professional engineers, geologists, scientists, construction manager, and foreman with experience in a broad range of technical disciplines. Our management team averages over 20 years of experience per person.

Why NGE?

NGE has the necessary resources to fulfill the needs of clients in-house, yet small enough to provide the personal focus each client deserves. With smaller overhead than larger companies, NGE can provide exceptional services at lower cost.

NGE is a certified Disadvantaged Business Enterprise (DBE) in West Virginia, Pennsylvania, Ohio, Maryland, and New Jersey. NGE is also certified by the Small Business Administration as an 8(a) Small Disadvantaged Business.

Contacts:

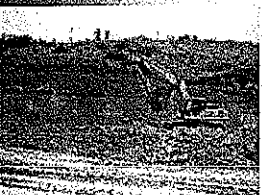
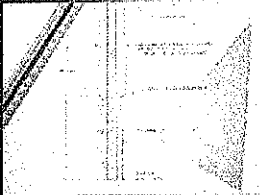
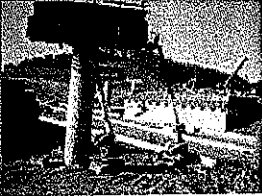
Pennsylvania Office

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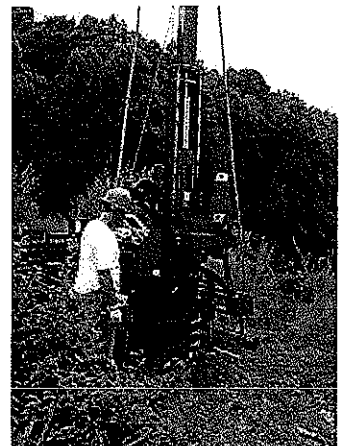
www.ngeconsulting.com



GEOTECHNICAL ENGINEERING

The professional staff of NGE has extensive experience in analyzing and evaluating the natural complexities and variabilities present in the subsurface. With in-house drilling and laboratory equipment, NGE has the tools to investigate soil, bedrock, and groundwater conditions and evaluate their effect on a given project. Whether it's foundation bearing capacity, site grading/slope configurations, or retaining wall design, NGE has the resources to obtain and analyze the subsurface data necessary for project completion. A sampling of the geotechnical services NGE provides includes the following:

- Foundation investigations:
 - Commercial, residential construction
 - WVDOH bridge and roadway
 - Airport geotechnical design
 - Public and private utilities (water storage tanks, wastewater treatment plants, communications towers, etc.)
- Landslide investigation/remediation: slope design, retaining wall design
- Forensic engineering/insurance investigation
- Mine subsidence investigations/ground stabilization
- Dam design/rehabilitation
- Pavement analysis and design
- Groundwater seepage analysis and design



DRILLING SERVICES

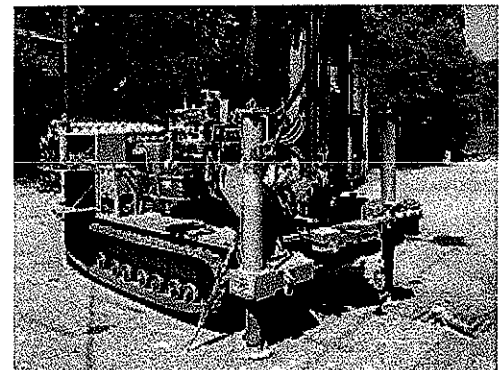
NGE is equipped with a variety drilling equipment to meet the needs of our clients even in the most demanding of environments. This includes:

- Mobile truck-mounted drill rig
- Acker Soil Scout track-mounted drill rig
- CME 45 track-mounted drill rig
- Portable tripod drill
- Dynamic Cone Penetrometer

All of our drill rigs are equipped with hollow stem augers and are capable of conducting Standard Penetration Testing (SPT). The track drills have wireline rock coring capabilities. Due to its compact size, the Acker Soil Scout is able to reach areas that are often inaccessible to larger drill rigs.

If an area is inaccessible to conventional drilling equipment (such as inside buildings) NGE can obtain subsurface information using portable equipment such as the tripod drill and dynamic cone penetrometer.

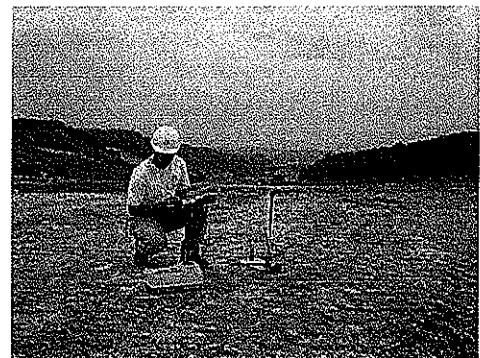
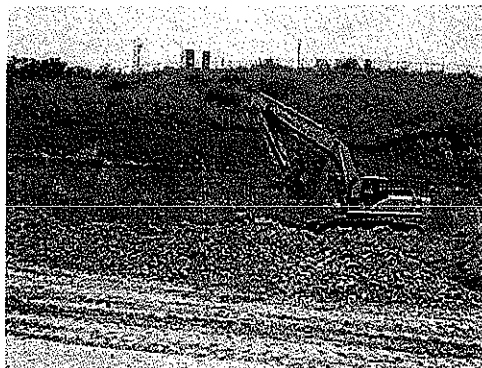
NGE also provides monitoring well installation services that meet the requirements of the State of West Virginia Certified Monitoring Well Driller Program.



CONSTRUCTION MONITORING AND INSPECTION SERVICES

NGE offers inspection services to support a wide variety of construction projects, including highway, building, and airport. Our technicians are qualified and certified in a variety of services and will meet the specific needs of the client in an efficient and competent manner. NGE is also a West Virginia Certified DBE firm as well as Federal Disadvantaged Business (8(a)). NGE can provide and manage the following services:

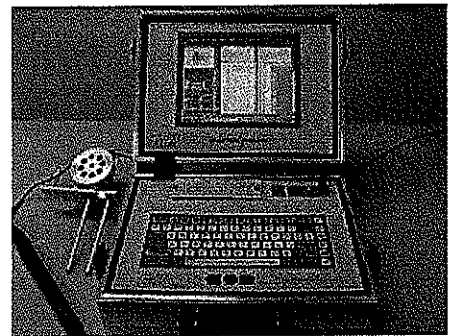
- Materials testing and analysis (concrete, asphalt, fill placement)
- Independent construction inspection
- Contractor submittal and shop drawing review
- Documentation and process verification
- Bidding assistance and analysis
- Cost estimating and cost control monitoring
- Design review
- Value engineering
- Project partnering
- Quality assurance monitoring



LABORATORY TESTING SERVICES

NGE can provide laboratory geotechnical testing in accordance with ASTM standards under controlled conditions to further estimate the engineering properties of soil and rock materials. Typical laboratory soil testing includes :

- Natural moisture content
- Atterberg liquid and plastic limits
- Standard, modified and 1 point Proctor
- Grain size distribution

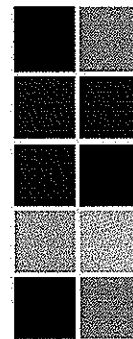


CROSSHOLE SONIC LOGGING (CSL)

NGE provides Crosshole Sonic Logging (CSL) to test the integrity of drilled concrete shafts. CSL testing is a non-destructive method that checks the homogeneity and integrity of concrete in a deep foundation by sending ultrasonic pulses through the concrete from one probe to another. The test measures the propagation time and relative energy of the ultrasonic pulse between parallel access tubes (access tubes typically consist of 2 inch diameter steel tubes attached to the drilled shaft reinforcement cage). The pulse arrival, aka first arrival time or FAT, and the relative energy are affected by the concrete. Uniform concrete yields consistent arrival times with reasonable wave speed and energy. Non-uniformities such as zones of poor quality concrete, honeycombing, voids, and soil inclusions exhibit delayed arrival times with corresponding reduced signal energy.

NGE's broad range of experience in each of the previously listed services enables us to provide our clients with high quality geotechnical engineering, remediation and construction services while meeting budgets and deadlines.

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2 / Project Management and Design Team

Project Management and Design Team

WSA commits its team of professionals to the Department of Environmental Protection for this project. We anticipate that WSA staff can be fully and immediately dedicated to the project under this agreement, if chosen. *Key personnel include:*

George J. Crittenden
Project Manager

Joe brings more than 34 years of civil and site design experience, including 10 years of experience with the AML program. His specific project experience includes obtaining 404/401 permitting from the U.S. Army Corps of Engineers and NPDES Permits, as well as technical and design work on the Marrowbone Waterline Extension in Mingo County, the Ragland-Delbarton Water Supply project in Mingo County, and the Glen Fork / Sabine AML Feasibility and Waterline Extension Study in Wyoming County. He recently served as Project Manager and Technical Lead for the Terry Branch Portals and Refuse Project. His project responsibilities for this assignment will include:

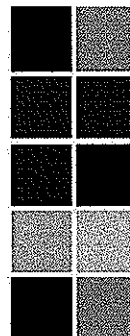
- Formulating the Project Work Plan.
- Establishing the Project Schedule.
- Ensuring that all project milestones are met through the coordination and monitoring of the project schedule and budget for the entire project team.
- Conducting meetings with WV DEP to document decisions or open items (project issues) and to publish meeting minutes that document those decisions/open items.
- Identifying and monitoring all open items/project issues so that all key project information is acted upon/ responded to in a timely and professional manner.
- Participating with the team in site visits in order to assess existing conditions and to collect and verify all appropriate program needs and requirements.
- Confirming that all work is being performed in accordance with the project scope and guidelines.
- Coordinating and monitoring of project engineers/ architects to ensure consistency and quality of work via regular meetings.
- Communicating among all members of the project team to ensure the consistency and quality of work via regular meetings
- Communicating among members of the team to ensure the consistent application of project standards, schedules and date decisions

Wesley Stafford, PE, AICP
Project Director

Wesley Stafford has more than 22 years of experience in highway planning and design. As a consultant he has been the project manager for numerous traffic engineering projects and environmental documents, including developing The West Virginia Statewide Multimodal Plan. His previous experience includes working as both a consultant and with the states of West Virginia and North Carolina. He led NCDOT Statewide Planning Branch's Small Urban Unit. The unit provided multimodal transportation planning expertise to municipalities across North Carolina and plans for the coordinated development of the transportation systems for counties, planning regions, and municipalities on a statewide basis. Mr. Stafford is the project manager for the West Virginia Multimodal Statewide Transportation Plan and has been instrumental in the Beckley Z-Way Design Study, and WWW Transportation Study. Mr. Stafford also worked with NCDOT staff to develop traffic forecast for planning and design branches of the department.

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2 / Project Management and Design Team

Larry Clegg

QA/QC Manager

Larry Clegg began his career in 1987 as an engineering assistant. He joined WSA in 2000 in the Charleston, WV office as a highway design manager, where he focused on providing design services relating to all aspects of highway design. He now serves as a senior project manager, where his major duties include managing budgets, writing proposals, and attending proposal interviews. Larry's contributions to WSA involve a wide range of design projects from studies to final design and have typically included small realignments, interstate weigh station, rural expressways, and urban interstates. He has earned respect in his field, in part, by his strong relationships with clients, as well as his comfort level in all phases of highway design from conception to completion on just about every classification of facility. With significant experience in developing budgets, scopes, and schedules and matching to the firm's resources, Larry has learned to understand and meet the client's needs.

Wes Simpson, PE

Hydrology

Mr. Simpson has over 14 years of experience designing award winning bridge and structure projects. His bridge design experience includes developing plans for new and rehabilitated structures. His design experience ranges from a two-cell concrete box culvert, to 1400-foot-long curved bridge. His experience includes concrete, steel and timber bridges for hydraulic, overpass, and pedestrian structures. He has extensive experience conducting structural analysis, hydrology and hydraulic analysis, hydraulic permitting, and is fluent in numerous software packages, which apply to structural design.

William Carroll

Environmental Scientist

Will Carroll began his career in 1998 as an environmental scientist. He joined Wilbur Smith Associates' Knoxville, TN office in 2005 and has provided erosion control, wetland delineation, stream identification, endangered species surveys, groundwater monitoring, and Phase I and II environmental assessments for both public and private sector clients. He has assisted in permitting and coordination with municipal, state, and federal agencies, and is familiar with NEPA regulations.

Reason W. Martin

Engineering Designer

Mr. Martin is a civil engineering technology graduate from WVU Tech. He has 10 years of experience in surveying, design, drafting, and construction inspection in West Virginia and Virginia. His recent experience includes the U.S. 50 Traffic Operation and Safety Study in Mineral and Hampshire counties, U.S. 522 in Berkeley Springs, U.S. 220 Moorefield Junction Road in Hampshire County, and Route 2 Widening in Brooke County.

Jason B. Huddleston

Senior Engineering Technician

Mr. Huddleston is a 2001 graduate of WVU Tech and has eight years of experience as an engineering technician/designer. He has experience in roadway design, storm sewer design, structural drafting, and ditch design. In addition to his West Virginia work, Mr. Huddleston also has experience in Michigan, Arkansas, Virginia, Ohio, and Utah. Mr. Huddleston participated in the Gilliam Arch Bridge Replacement project in Mercer County along with other bridge projects in Virginia and Utah.

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Tony B. Kitzmiller
Mineshaft/Portal Engineer

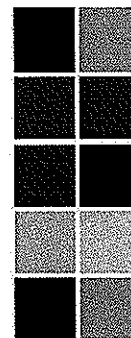
Mr. Kitzmiller has over 37 years of experience in the design of water distribution systems, drainage systems, mine engineering, and civil engineering. He has experience with the supervision of design and construction for coal mining in Northern West Virginia, including water discharges, slurry, and refuse construction. He is intimately familiar with mining conditions and construction, including the design of bridges and roadways near mines. He has experience in managing and construction of methane drainage wells.

Kent S. Whiting
Acid Mine Drainage Treatment & Reclamation Construction Inspection

Mr. Whiting is a geochemist with 20 years of experience in the environmental field. Mr. Whiting worked on one of the first passive treatment systems for metal mine ARD while a graduate student (~1989) and has developed conceptual designs and evaluated system performance for over a dozen passive treatment system projects while at CDM. He has been utilized by the USEPA as a technical expert for passive treatment systems beginning in 1993 and continues to work in this capacity. Mr. Whiting has published several papers on passive treatment and is active in the development of the latest technologies in passive treatment.

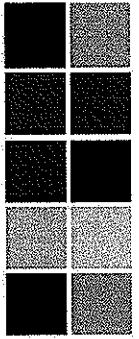
John E. Nottingham, P.E., P.S.
Geotechnical/Materials Testing

Mr. Nottingham has served as Principal Engineer for the West Virginia office of NGE since late 2002 after having managed Geotechnical Services at Triad Engineering. In this capacity, he has served as lead Geotechnical Engineer on a variety of government and commercial design and construction projects. His responsibilities on these projects include direction and coordination of all geotechnical engineering activities. Duties on these projects have included foundation investigation report production, foundation and retaining wall design, fill embankment and cut slope design, dam design and analysis, slope stability analysis, pavement design, design of drainage systems, supervision of subsurface drilling programs, field activity coordination, laboratory data computation and processing, performance of field work, client relations, and supervision of staff and project level geotechnical engineers.



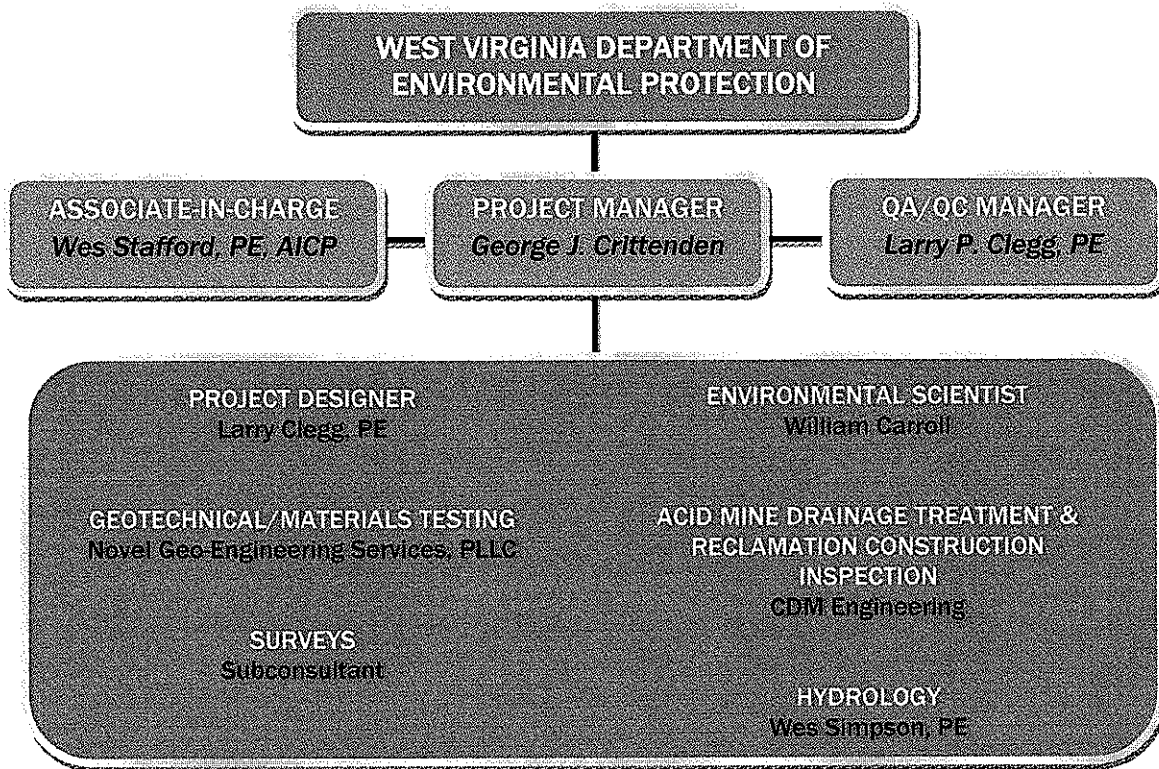
2 / Project Management and Design Team

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2 / Project Management and Design Team

TEAM ORGANIZATION



**Education**

Murray State University 1976

Kentucky State University -
CE & Applied Mathematics
Course Study

Tennessee State University -
CE Course Study

Nashville Institute of
Technology

West Virginia Institute of
Technology - CE Course
Study

Years of Experience

Total Years: 34

WSA: 1

2010–Present

Wilbur Smith Associates
Charlestown, WV

Areas of Specialization

Project management, roadway
design, hydraulics, storm
sewers, roadway geometry,
construction inspection

George Joseph Crittenden

Project Manager

Mr. Crittenden has 34 years of experience in providing project management, client coordination, project design, design studies, value engineering, construction inspection, and surveying for highways, airports, residential subdivisions, correctional facilities, government buildings, private developments, and abandoned mine land reclamation projects. The projects ranged from complex interchange design for the I-64 WV 193 interchange near Barboursville, I-79 FBI Access Road interchange near Clarksburg, and two I-264 interchange projects located in Louisville, Kentucky (I-64/I-264 and I-264/Southern Parkway). Mr. Crittenden has been involved in new highway design, roadway improvement projects, and bridge replacement projects in multiple locations within WV, TN, GA, SC, NJ, PA, and KY. Many of the projects required economical design of safety improvements while under traffic and were of a "fast track" nature

Project Experience

Terry Branch Portals and Refuse Remediation, WVDEP, Wyoming County, WV. Project Manager responsible for delineation of access road into site, demolition and disposal of fan and fan house, reclamation of refuse pile, design of four bat gate mine seals and six dry mine seals. Addressed on-site drainage concerns, and revegetated all areas disturbed by construction.

Water Line Feasibility Studies, West Virginia Department of Environmental Protection, Boone, Mercer, and Raleigh Counties, WV. Project Manager responsible for studies of the water supplies of three areas in southern West Virginia to verify if the areas have been affected by mining activities.

Glen Fork/Sabine Area Phase II Abandoned Mine Lands Water Feasibility Study and Water Line Extension, Wyoming County, WV. Senior Design Technician responsible for interviewing all residents about the quantity/quality of their water source and updating maps to show houses/businesses to support an AML&R grant request to OSM to extend or install water systems in these impacted areas.

Red Star Refuse and Coke Ovens, Fayette County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents for backfilling, soil covering and re-vegetation of over 60 abandoned coke ovens and three refuse piles.

Minden Mine Dump, Fayette County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to install wet seals to permanently lower the water level in the mine workings, to establish positive drainage to a nearby stream, to excavate and regrade the refuse piles, and to provide soil cover and re-vegetate the refuse and all disturbed areas.

Little Slate Creek Refuse Pike, McDowell County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to regrade the refuse pile to establish stable slopes and establish drainage to a nearby stream.

Scott Tipple, Barbour County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to correct two areas impounding water and coal refuse.

Marrowbone Water Line Extension, Mingo County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to extend a water line into the Marrowbone area where the groundwater was found to be contaminated by mining activities.

Delbarton Water Supply, Mingo County, WV. Senior Design Technician responsible for layout of survey work, layout of subsurface investigation, requesting and analyzing laboratory test results, and production of grading plans with details, project specifications and bid documents to extend a Ragland Public Service District water line to serve approximately 150 potential customers due to the degradation of their water supply by coal mines abandoned prior to August 3, 1977.

Section 404 Permit, Rowlesburg Railroad Truss S339-51-0.74, Preston County, WV. Temporary crossing of Saltlick Creek. Work included project narrative; hydraulic models of before, during, and after; determination of the ordinary high water elevation; determining excavation and embankment quantities (permanent and temporary) below OHW; determining drainage structure openings that would allow normal operation of Saltlick Creek. Produced location map, plan view, profiles, cross sections, and required quantities; and produced stream restoration drawings for the crossing removal.



Education

Coursework toward a Masters Degree in Transportation Engineering, North Carolina State University, Raleigh, NC, 1993

BS, Civil Engineering, West Virginia University, Morgantown, WV, 1988

Coursework in Math and Computer Science, West Virginia State College, Charleston, WV, 1984

Registrations

Professional Engineer:
VA (40573) 2004
NC (19007) 1993
MD (30782) 2004
WV (0416061) 2004

Years of Experience

Total Years: 22
WSA: 7

2003 – Present
Wilbur Smith Associates
Charleston, WV

Professional Affiliations

American Institute of Certified Planners

Wesley O. Stafford, PE, AICP

Project Director

Director of Traffic Engineering and Transportation Planning

Mr. Stafford has more than 22 years of experience in highway planning and design. As a consultant he has been the project manager for numerous traffic engineering project and environmental documents, including developing NEPA environmental documents from CEs to an EIS. His previous experience includes working as both a consultant and with the states of West Virginia and North Carolina. He led NCDOT Statewide Planning Branch's Small Urban Unit. The unit provided transportation planning expertise to municipalities across North Carolina and plans for the coordinated development of the road and highway systems for counties, planning regions, and municipalities on a statewide basis.

District 2 Bridge Replacements Design-Build, Logan, Mingo, and Wayne Counties, WV (ongoing) - Project director for a design-build project to replace six bridges in southern West Virginia. The bridge replacements varied in length from 34 to 186 feet. WSA provided comprehensive engineering services to address the bridge and associated roadway design. These design services also included drainage, bridge hydraulics and scour analysis, and environmental planning.

Beckley Z-Way Design Study, Raleigh County, WV (2008) - The West Virginia Department of Transportation/Division of Highways selected WSA for the preparation of a design study for development of a highway facility by combining new and existing facilities for approximately 10.3 miles from Shade Springs to the interchange at Tamarack and ending at Van Kirk Drive in Raleigh County, West Virginia. The project includes a comparative analysis of the proposed Beckley Z-Way and the East Beckley Bypass as well as other potential alternative using QRSII travel demand software. A design study is being completed to compare impacts and cost of each alternative.

Wood-Washington-Wirt (WWW) Multimodal Long-Range Transportation Plan, Parkersburg, WV (2004) - The plan was developed to respond to the Metropolitan Planning Requirements identified in the Intermodal Surface Transportation Efficiency (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21). Conducted travel demand modeling using QRSII and developed recommendations for highway improvements through the design year.

Ohio River Bridge Study, Steubenville, OH (2002) - Developed a matrix to compare various proposed bridge locations using a variety of criteria that measured mobility, environmental impacts, safety, cost effectiveness, and regional economic growth.

West Virginia Statewide Multimodal Plan (2009) - Project manager for transportation plan that will identify and recommend policies, strategies, and projects to address multimodal transportation needs through a 25-year planning horizon.

Mercer County Multimodal Transportation Plan, Mercer County, WV - Conducted travel demand modeling using QRSII and developed recommendations for highway improvements through the 2025 design year.



Larry P. Clegg, PE
QA/QC Manager

Education

BS, Civil Engineering,
University of South Florida,
Tampa Bay, Florida, 1987

BS, Mining Engineering, West
Virginia University,
Morgantown, West Virginia,
1981

Registrations

Professional Engineer:
West Virginia, 1999 (#14216)
Florida, 1991 (#44646)
Arkansas, 2003 (#11467)

Years of Experience

Total Years: 24
WSA: 9

2000 – present
Wilbur Smith Associates
Charlestown, West Virginia

Areas of Specialization

Project management, roadway
design, drainage design,
bridge hydraulics and scour
analysis, pavement design.

Mr. Clegg has over 24 years experience designing and managing highway and transportation projects ranging in scope from sidewalks to large scale highway projects. This experience includes design projects for interstate resurfacing, widening, and new construction, interstate weigh-in-motion stations, major arterial reconstruction and widening, and new highway design, preliminary engineering studies and intersection improvements. He has been involved in all phases of highway design from conceptual engineering to final plans, and has direct experience with the many aspects of highway design such as geometric layout, drainage including bridge hydraulics and scour analysis, utilities, environmental permitting, traffic engineering, and pavement design.

I-95 Express Toll Lanes, Baltimore County, Maryland - Lead highway reviewer for the I-895 Segment of the I-95 Express Toll Lanes Project as part of the General Engineering Consultant Services for the Maryland Transportation Authority. Also provided reviews for the I-695, and MD 43 segments. The project consisted of widening existing I-95 to add managed lanes and the reconstruction of three major interchanges to accommodate the toll way.

Gilliam Arch Bridge Replacement, Mercer County, West Virginia - Project manager for bridge replacement project, including realignment of roadway approaches. The project included horizontal and vertical alignment study and design, along with bridge hydraulic studies and scour analysis.

I-69 Connector, Drew & Lincoln Counties, Arkansas - Project manager for an Interstate Highway design project in southeastern Arkansas. Project consists of five miles of highway design, 15 miles of drainage design including bridge hydraulic studies, and four bridges.

King Coal Highway, Mercer County, West Virginia - Project manager for a 3.2-mile expressway north of Bluefield, WV. Project consists of roadway, drainage, structure, and right of way design for the expressway. Project includes a half cloverleaf interchange and four bridges.

US 50 Traffic Operation, and Safety Study, Mineral and Hampshire Counties, West Virginia - Project manager for a 45-mile safety improvement study in the eastern panhandle of West Virginia. The study consisted of assessments of traffic, and highway geometry conditions, and provided recommendations for the remediation of potential traffic and safety issues.

Nitro, St. Albans Bridge Location Study, Kanawha County, West Virginia - Roadway design engineer for the location study for the replacement of the 60-year old Henderson Bridge replacement. Responsibilities included vertical and horizontal alignments using a range of design speeds for three potential bridge locations within the Nitro-St. Albans area.

US 220, Moorefield Junction Road, Hampshire County, West Virginia - Project manager and design engineer for approximately 3500-foot-long alignment improvement project. Project included an alignment study to develop the most feasible configuration to improve deficient sight distance. Services provided include Roadway Plans, Drainage Design, and Signing and Marking Plans.

**Education**

BS, Civil Engineering, West Virginia University, Morgantown, WV, 1993

Registrations

Professional Engineer:
WV (013934) 1994
DE (11404) 1995

Years of Experience

Total Years: 15
WSA: 2

2007–Present
Wilbur Smith Associates
Charleston, WV

Areas of Specialization

Bridge and structure design, bridge hydraulics, rehabilitation, and inspection; overpasses; pedestrian structures

Wesley D. Simpson, PE

Hydrology

Mr. Simpson has over 15 years of experience designing award winning bridge and structure projects. His bridge design experience includes developing plans for new and rehabilitated structures. His design experience ranges from a two-cell concrete box culvert, to 1400-foot-long curved bridge. His experience includes concrete, steel and timber bridges for hydraulic, overpass, and pedestrian structures. He has extensive experience conducting structural analysis, hydrology and hydraulic analysis, hydraulic permitting, and is fluent in numerous software packages, which apply to structural design.

Moatsville Bridge, Barbour County, WV - Developed bridge plans for 344-foot three-span steel plate girder bridge over the Tygart Valley River.

Sundowner Bridge, Wood County, WV - Developed bridge plans for 56-foot single-span spread box beam bridge over Neal Run.

Patrick Street Bridge, Kanawha County, WV - Field inspected and analyzed structural members in approaches and trusses for bridge rehabilitation plans. This project received the Silver Engineering Excellence Award from the WV ACEC in 2004.

Stony River Bridge, Grant County, WV - Developed bridge plans for a 1400-foot curved twin structures using steel plate girders. This bridge received the West Virginia Division of Highways Engineering Excellence Award in the large bridge category in 2004.

Mount Storm Railroad Bridge, Grant County, WV - Coordinated with Palmer Engineering in the development of bridge plans for four-span, 620-foot post-tensioned concrete twin bridges. These bridges utilized spliced AASHTO I-girders and integral abutments.

Mount Storm Interchange Bridge, Grant County, WV - Developed bridge plans for 260-foot, three-span, steel I-girder overpass bridge. This bridge received the West Virginia Division of Highways Engineering Excellence Award in the small bridge category in 2003.

Curtin Bridge, Nicholas County, WV - Developed bridge plans for three-span, tangent bridge changing to a curved alignment utilizing steel I-girders. The total length of the bridge is 550 feet.

Zion Church Bridge, Mingo County, WV - Developed bridge plans for two-span, curved, rolled beam bridge. This bridge has a very complicated geometry with skewed substructure units and a concentric horizontal curve.

Railroad Overpass Bridge, Logan County, WV - Developed bridge plans for 260-foot, three span, steel I-girder railroad overpass bridge for Arch Coal Company in the Mt. Laurel coal facility.

Seng Camp Creek Bridge, Logan County, WV - Developed bridge plans for 74-foot single span rolled beam bridge over Seng Camp Creek for Arch Coal

Company's Mt. Laurel coal facility.

Clothier Bridge, Logan County, WV - Designed bridge substructure units for 87-foot single-span prestressed AASHTO I-girder bridge. Bridge is temporary structure to be used in hauling a dragline for Arch Coal Company.

Coal-Mac Bridge, Logan County, WV - Developed bridge superstructure plans for 30-foot single-span rolled beam bridge for Coal Mac, Inc.

North Lowney Bridge, Mingo County, WV - Developed bridge plans for a two-span curved continuous steel rolled beam bridge to replace existing one lane bridge.

Simpson Creek Bridge, Harrison County, WV - Developed bridge plans for AASHTO Prestressed Concrete I-Girders, Modified Type IV, to improve alignment and give access to the Meadowbrook new four-lane roadway.

Board Camp Bridge, Mingo County, WV - Developed bridge plans for a two-span adjacent concrete box-beam with a six-inch concrete deck to replace existing one-lane bridge.

Queens Arch Bridge, Upshur County, WV - Developed bridge plans for spread box beam structure to replace existing one-lane concrete arch.

Little Buffalo Creek Bridge, Putnam County, WV - Developed bridge plans for ConSpan three-sided structure, on stem walls, to replace dilapidated existing structure.

31st Street Bridge, Kanawha County, WV - Worked in conjunction with Dunn Engineering to develop bridge plans for an integral prestressed concrete box beam bridge to replace existing bridge.

Midelburg Island Bridge, Logan County, WV - Developed bridge plans for a three-span continuous integral steel-rolled beam bridge to replace existing steel girder bridge.

Above Eden Bridge, Upshur County, WV - Developed bridge plans for structural glued-laminated timber bridge, Type E, to replace existing steel girder bridge.

WV Route 16 over Stewart Run, Ritchie County, WV - Developed a two-cell concrete box culvert plans for the improved alignment and relocation of Route 16.

Keller Run Bridge, Mineral County, WV - Developed bridge plans for structural glued-laminated timber bridge, Type D, to replace existing steel girder bridge.

Mullens Bridge, Wyoming County, WV - Developed bridge plans for prestressed concrete box beam to replace existing pony truss.

Old Mill Bridge, Brooke County, WV - Developed bridge plans for a three-span continuous steel-rolled beam bridge to improve alignment and replace

existing pony truss.

Phillips Falls Bridge, Barbour County, WV - Developed bridge plans for stressed timber deck, Type B and prestressed concrete box beam to replace existing pony truss. Box beam was the alternative chosen.

Slonaker Road, Morgan County, WV - Developed bridge plans for structural glued-laminated timber bridge, Type D, to replace existing low water crossing.

Summers County High School Access, Summers County, WV - Developed bridge plans for prestressed concrete box beam bridge to widen existing structure.

**Education**

BS Plant and Soil Sciences
University of Tennessee, TN
2003

Registrations

Certified Professional in
Erosion and Sediment Control:
National

Years of Experience

With WSA: 5.5
Total: 9.5

Areas of Specialization

Erosion Prevention and
Pollution Control;
Environmental Analysis and
Wetland Delineation; and
Permitting and Agency
Coordination

William (Will) Carroll, Jr.

Environmental Scientist/Construction Inspector

Will Carroll began his career in 1998 as an environmental scientist. He joined Wilbur Smith Associates' Knoxville, TN office in 2005 and has provided erosion control, wetland delineation, stream identification, endangered species surveys, groundwater monitoring, and Phase I and II environmental assessments for both public and private sector clients. He has assisted in permitting and coordination with municipal, state, and federal agencies, and is familiar with NEPA regulations.

Will has contributed to a variety of important WSA projects. He was the environmental liaison for TDOT and WSA's environmental inspector conducting and documenting on-site, twice weekly erosion control inspections for Phase I construction of the SmartFIX 40 project in Knoxville, TN. This project was particularly challenging because of the numerous contractors and subconsultants involved, the volume of work required due to the complexity of construction, the aggressive schedule, and the high visibility and impact. Will considers it his most rewarding project experience, however, because WSA and the other team members were able to successfully meet all of these challenges, a feat that has been praised in local media and has garnered national attention as well. Will also participated in a project which identified roosting trees for the endangered Indianan bat for a highway project in West Virginia.

Before joining WSA, Will worked as an environmental scientist and inspector on government, commercial, and industrial contracts for an environmental consulting firm. He was involved in erosion and sediment control, wetland delineation, tidal stream dredging, and coastal oversight projects. He collected data and inventoried sites for industrial and commercial uses. He participated in several groundwater monitoring, installation, and injection efforts, often under the supervision or observation of state regulators and EPA officials. Will performed and assisted with more than 20 Phase I and II environmental assessments for clients including the US National Parks Service, the Army Corps of Engineers, and various industrial and commercial clients. He assisted in the preparation of SWPPPs, SPCCs, Phase I assessments, and quarterly EPA environmental updates for large industrial clients. In one of his most rewarding projects he was involved with public relations for the City of Niot, TN during installation of a five-mile city water line, and registered more than 1,000 lower income families to receive free installation of water through a public housing grant. Will also worked during and after college for a private consultant providing soil mapping, soil testing, soil analysis, wetland delineation, wetland mitigation, stream enhancements, and soil and plant taxonomy. During his time there he learned to prepare reports, perform presentations, and interact effectively with agency regulators.

Will has made significant contributions to WSA as one of a limited number of environmental scientists. Because he can provide assistance with biological, ecological, historic, and cultural environmental issues and permitting, he has had the opportunity to work on project teams in several states in the South and Midwest. Will tries to communicate effectively with clients about the solutions to the environmental concerns associated with their projects. He is active in the community, participating in river cleanup efforts with the Ft. Loudon watershed group and other local organizations.

WSA WORK EXPERIENCE

Garland Road Roadway and Bridge Replacement Design

Project Location: TN US; Client: Blount County Highway Department

Services provided for this project include environmental clearance, permit preparation, survey, geotechnical, design, hydraulics analysis, right-of-way acquisition, and CEI services.

New U.S. 321 Erosion Prevention and Sediment Control

Project Location: TN US; Client:

Under contract with TDOT, WSA performed erosion prevention and sediment control services for the old State Route 35 (now U.S. 321). Though there were only two lanes with no shoulder at the time, it is now a four-lane, divided roadway. Will served as erosion control inspector, and conducted and documented twice weekly on-site inspections.

TDOT SmartFIX40 Construction Engineering and Inspection Contracts I and II

Project Location: Knoxville, TN US; Client: Tennessee Department of Transportation

This project provided construction phase services for I-40 through Knoxville, including roadway and bridge inspection, erosion control, site materials testing, records maintenance, traffic control, utility inspection, and public involvement. As erosion control inspector, Will conducted and documented on-site inspections for erosion and sediment control twice per week.

May Town Center Planning and Bells Bend Bridge Preliminary Study

Project Location: Franklin, TN US; Client: Bells Landing Partners, LLC

This project included a preliminary bridge and interchange location study, a traffic impact study, and an interchange modification study to evaluate proposed interchange improvements. The project also included an extensive public involvement effort. Will conducted the stream identification assessment, including both field work and documentation, to describe the hydrology for the potential commercial development.

I-70 Supplement Environmental Impact Statement Phase II

Project Location: MO US; Client:

This environmental impact statement involved interchange justification and preliminary engineering for capacity improvements to 35 miles of freeway. Will performed an environmental impact assessment, including both field work and documentation for wetland delineation and stream identification.

East Beckley Bypass Environmental Assessment

Project Location: East Beckley, WV US; Client: West Virginia Department of Transportation

WSA provided services including wetland/stream mitigation and threatened and endangered species surveys for and environmental assessment for the proposed transportation improvements near East Beckley. Will assessed the project for potential roosting trees for an endangered species, the Indianan bat. The survey area covered two miles of proposed roadway.



Education

BS, Civil Engineering
Technology, West Virginia
Institute of Technology,
Montgomery, WV, 1998

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

Years of Experience

Total Years: 10
WSA: 10

2000 – Present
Wilbur Smith Associates
Charleston, WV

Areas of Specialization

Surveying, design, drafting,
GIS, data collection,
construction inspection,
VDOT ITS potential work
assignments; general support,
Work Zone Safety Program,
MUTCD/Signing

Technical Training

Surveying and Mapping
Certificate, Raleigh County
Technical Center, WV, 1994

Reason W. Martin
Engineering Designer
Associate Engineering Technician

Mr. Martin is a civil engineering technology graduate from WVU Tech. He has 10 years of experience in surveying, design, drafting, and construction inspection in West Virginia and Virginia.

District 2 Bridge Replacements Design-Build, Logan, Mingo, and Wayne Counties (2009 design; Ongoing construction) - Technician for a design-build project to replace six bridges in southern West Virginia. The bridge replacements varied in length from 34- to 184-feet. WSA provided comprehensive engineering services to address the bridge and associated roadway design. These design services also included drainage, bridge hydraulics and scour analysis, and maintenance of traffic. Additionally, the scope of services included obtaining NPDES, U.S. Army Corps of Engineers Nationwide, and WVDDHR Health Department permits for the bridge construction and associated utility relocations.

U.S. 522 Berkeley Springs, WV (2005) - Technician/designer for construction plans for four miles of 4-lane expressway in Morgan County. The project involved alignment studies, interchange configuration study, major drainage design, and development of a complete set of plans for construction.

U.S. 220 Moorefield Junction Road, Hampshire County, WV (2002) - Technician/designer for the development of roadway plans for 3,500-foot-long alignment improvement project. Project involved an alignment study to develop the most feasible configuration to improve deficient sight distance. Services included providing roadway plans, drainage design, and signing and marking plans.

Rt. 2 Widening, Brooke County, WV (2003) - Field inspector for the construction of road widening project. Project included providing daily inspection reports and verifying quantities for pay items.

I-70 Sign Renovation, Ohio County, WV (2009) - A member of the inventory team for the 15-mile-long sign renovation project that extends from the Ohio River to the Pennsylvania state line. The inventory included locating and documenting every sign along I-70 including the downtown Wheeling interchanges. Additionally roadside features such as light poles and power drops were located to facilitate the development of the signing plans. This inventory included the use of a GPS system and custom GIS database to provide an electronic archive with digital photographs. Responsible for developing inventory and sign renovation plans, including sign design using GuidSIGN software.

U.S. 50 Traffic Operation and Safety Study, Mineral and Hampshire Counties, WV - Technician for the development of a 45-mile safety improvement study in the eastern panhandle of West Virginia. Project involved assessments of traffic and highway geometry conditions to provide remediation of potential traffic and safety issues.

**Education**

AS, Engineering Technology,
West Virginia Institute of
Technology, Montgomery,
WV 2001

Years of Experience

Total Years: 8
WSA: 8

2002 – Present
Wilbur Smith Associates
Charleston, WV

Areas of Specialization

Drafting, roadway design,
storm sewer design, ditch
design

Technical Training

MicroStation J, MicroStation
V8, InRoads 8.05, GEOPAK
2004

Jason B. Huddleston
Senior Engineering Technician
Senior Engineering Technician

Mr. Huddleston is a 2001 graduate of WVU Tech and has eight years of experience as an engineering technician/designer. He has experience in roadway design, storm sewer design, structural drafting, and ditch design. In addition to his West Virginia work, Mr. Huddleston also has experience in Michigan, Arkansas, Virginia, Ohio, and Utah.

District 2 Bridge Replacements Design-Build, Logan, Mingo, and Wayne Counties (2009 design; Ongoing construction) - Technician for a design-build to replace six bridges in southern West Virginia. The bridge replacements varied in length from 34 to 184 feet. WSA provided comprehensive engineering services to address the bridge and associated roadway design. These design services also included drainage, bridge hydraulics, and scour analysis. The bridge configurations included steel plate girders, adjacent and spread concrete box beams, and rolled steel beams. The bridge design services included analyzing options to provide the most economical configuration tailored to the contractor's strengths.

Gilliam Arch Bridge Replacement, Mercer County, WV (2005 design; 2006 construction) - Technician/ designer for bridge replacement project in Mercer County.

U.S. 52 King Coal Highway, Bluefield, WV (2005 design; Ongoing construction) - Technician/designer for the design development of four miles of divided expressway in southern West Virginia. Project involved alignment studies, interchange configuration study, major drainage design, and development of complete set of plans for construction.

U.S. 522 Berkeley Springs, WV (2005) - Technician/designer for development of construction contract plans for a 4-mile, 4-lane expressway in Morgan County. Project involved alignment studies, interchange configuration study, major drainage design, and development of complete set of plans for construction. Two interchanges were required.

Lynnhaven Parkway, Virginia Beach, VA (2009) - Technician for bridge widening project for Lynnhaven Interchange improvements for a VDOT project.

West Valley Light Rail Transit Project, UT - Technician for UTA Rail over Roper Yard Railroad bridge construction plans.

U.S. 31 Freeway and Interchange Construction, Benton Harbor, MI - Technician/designer for development of drainage design plans for four miles of U.S. 31 4-lane divided freeway and the reconstruction and widening of 3.5 miles of existing I-94 in Michigan.

U.S. 50 Appalachian Corridor D Highway, Parkersburg, WV - Technician for the development of construction plans for 3.5 miles of 4-lane expressway in Wood County.

Mr. Nottingham has served as Principal Engineer for the West Virginia office of NGE since late 2002 after having managed Geotechnical Services at Triad Engineering. In this capacity, he has served as lead Geotechnical Engineer on a variety of government and commercial design and construction projects. His responsibilities on these projects include direction and coordination of all geotechnical engineering activities. Duties on these projects have included foundation investigation report production, foundation and retaining wall design, fill embankment and cut slope design, dam design and analysis, slope stability analysis, pavement design, design of drainage systems, supervision of subsurface drilling programs, field activity coordination, laboratory data computation and processing, performance of field work, client relations, and supervision of staff and project level geotechnical engineers.

Fields of Competence

- Highway & Airport Geotechnical Design
- Foundation Investigations
- Pavement Analysis and Design
- Landslide Analysis & Remedial Design
- Ground Water and Seepage Analysis & Design
- Retaining Wall Design
- Mine Subsidence Investigations
- Forensic & Insurance Investigations
- Construction Monitoring
- Personnel Management
- Project Management (schedule and budget)
- Project Estimating

Education

- B.S., Civil Engineering, West Virginia University - 1987
- M.S., Civil Engineering, West Virginia University - 1995

Registration/Certifications

- Registered Professional Engineer in West Virginia. Registration No. 12357 (since 1994)
- Registered Professional Surveyor in West Virginia. Registration No. 1495 (since 1995)

Employment History

- November 2002 – Present
Branch Manager, Vice President, Principal Engineer, NGE, LLC
- 1997 – November 2002
Geotechnical Services Manager, Triad Engineering, Inc.
- 1996 – November 2002
Senior Engineer, Triad Engineering, Inc.
- 1993 – 1996
Project Engineer, Triad Engineering, Inc.
- 1988 – 1993
Staff Engineer, Triad Engineering, Inc.

Kent S. Whiting, L.G.

Senior Environmental Scientist

Education

M.S. - Geochemistry, Colorado
School of Mines, 1992

B.S. - Geology, Ohio State
University, 1988

Registrations

Licensed Geologist:
Washington, 2007

Mr. Whiting is an aqueous geochemist with 20 years of experience in the environmental field. He has worked on projects at a variety of environmental sites, including current and former mining, wood-treating, foundry, landfill, underground storage tank (UST), and miscellaneous industrial sites. His responsibilities have included designing and conducting treatability studies, planning sampling programs, leading sampling teams in the field, geochemical modeling, database management, and multivariate and landfill statistical evaluations. He has also provided litigation support, including technical review of expert opinions, formulation of deposition questions, and technical support during deposition testimony.

Project Scientist, Solutia Prayon Site, Augusta, Georgia. Mr. Whiting performed electron microprobe (EMP) analyses and leaching tests to determine the source of arsenic in groundwater at an industrial facility. The arsenic was found to have been mobilized from site soils by a high pH, up-gradient source.

Project Scientist, Confidential Aerospace Client, Loma Linda, California. Mr. Whiting evaluated an adsorption-based treatment system used to remove arsenic from water to below the drinking water standard. The less than expected media life was evaluated by performing analyses to determine the degree of competition for adsorption sites, as well as EMP analyses on the spent media to locate any chemical precipitates that may be limiting arsenic adsorption.

Project Scientist, Asarco El Paso Smelter, El Paso, Texas. As part of a groundwater treatment feasibility study, Mr. Whiting evaluated site data, performed treatability bench-scale investigations, performed EMP analyses, and wrote a site conceptual model (SCM) to explain the fate and transport of arsenic at the site. The SCM was used to evaluate potential remedial alternatives for the site.

Project Scientist, Asarco East Helena Smelter, East Helena, Montana. As part of the evaluation of using a permeable reactive barrier (PRB) to treat arsenic in groundwater at the site, Mr. Whiting designed a bench-scale evaluation to test innovative treatment media for use in PRBs.

Project Scientist, Sherwin-Williams Site, Emeryville, California. As part of the evaluation of remedial alternatives for the site, Mr. Whiting performed EMP analyses, and used other analyses to produce a SCM to explain the sources of arsenic to groundwater and the attenuation processes occurring in the subsurface. The SCM was used to evaluate various remediation technologies proposed for the site.

Project Scientist, CR Kendall Environmental Impact Statement (EIS), Montana Department of Environmental Quality, Montana. Mr. Whiting is

responsible for directing a team of remediation and water treatment specialists in developing a post-closure EIS for the CR Kendall Mine near Hilger, Montana. In addition to his duties as project manager, Mr. Whiting also provided geochemical and water treatment evaluations for the site.

Project Manager, Marysville Road Reconstruction Design, Montana. CDM was retained by Stahly Engineering to provide environmental and geotechnical services associated with the redesign of Marysville Road. Mr. Whiting has provided geochemical evaluations and is directing a team of scientists and engineers in preparing an environmental assessment (EA) and associated documents to accompany the alignment and grade plans.

Project Manager, Environmental Engineering Services, Chicago Transit Authority, Illinois. Mr. Whiting acted as project manager for the as-needed environmental engineering services contract with the Chicago Transit Authority (CTA). His responsibilities included overseeing the preparation of recommendations, reports, cost estimates, and contract documents for environmental engineering assignments. Services provided to CTA also included field investigations, boring and sampling programs, laboratory testing, sampling during construction, and coordination of environmental elements for ongoing design and construction projects.

Project Manager, Southeast Rockford Remedial Investigation/Feasibility Study, Illinois. Illinois EPA retained CDM to perform a multi-phased remedial investigation/feasibility study for a 10-square-mile area containing volatile organic contamination of soil and groundwater. Mr. Whiting was responsible for general project management and assisting the client through the closure process.

Project Scientist, Groundwater Monitoring Statistics for RCRA Sites. Mr. Whiting is thoroughly familiar with both EPA and ASTM groundwater monitoring statistical procedures for RCRA sites. His experience has included detection, compliance, and remedial action monitoring at sites in California, Georgia, and Montana, as well as review of proposed monitoring plans at sites in Illinois. Other statistical evaluations have included multivariate analyses to determine the sources of lead contamination at the California Gulch Site at Leadville, Colorado, and to trace the migration of organic contaminants into a lake in northern Michigan.

Project Scientist, Acid Mine Drainage Remediation. Mr. Whiting is experienced in the use of passive treatment technology for the remediation of acid mine drainage. He has acted as a passive treatment expert for EPA and has provided technical support during negotiations with the potentially responsible party (PRP). His experience has included conceptual design, substrate selection for pilot-scale systems, interpretation of cell performance, and operational modifications for numerous passive water treatment systems. Projects have included the Burleigh Tunnel site near Silver Plume, Colorado, the Grey Eagle Mines at Happy Camp, California, the Basin Creek

Honors/Awards

1998 Technical Award - Best
Paper Conferences &
Proceedings/Consulting

Mine in Montana, a large gold mine in Peru, as well as systems in Idaho and Arizona.

Project Scientist, Former Mining Sites. Mr. Whiting's experience includes a large number of studies and investigations at former mining sites. He has performed geochemical modeling on the interaction between groundwater and tailings at the Sharon Steel Mill/Smelter Site near Midvale, Utah, and modeled the effects of mixing, evaporation, and interaction with sulfides of acid mine drainage at the Penn Mine in northern California. Other modeling activities have included triple layer adsorption modeling for waters at the Berkely Pit near Butte, Montana, modeling of land application acid mine drainage treatment at the Noranda Montanore Site in Montana, and acid mine drainage neutralization modeling at the Grey Eagle Mines at Happy Camp, California.

Project Scientist, Sample Analysis. In conjunction with the University of Colorado, Mr. Whiting helped develop the use of the electron microprobe for allocation, bioavailability, and fate and transport of metals at environmental sites. He has over 200 hours of experience analyzing samples from mining, milling, foundry, scrap metal, and other industrial sites. Specific sites have included the Blackbird mining/milling site near Salmon, Idaho, the Norfolk scrap metal/municipal ash site in Norfolk, Virginia, the Central Artery Project in Boston, Massachusetts, and many others.

Laboratory Technician, Soil Sample Preparation and Analysis. Prior to working for CDM, Mr. Whiting worked in the laboratory of geochemistry and isotope geology at Ohio State University. His responsibilities included preparing soil samples and analyzing them by X-ray fluorescence and X-ray diffraction.

Mark R. Nelson, P.G.

Project Hydrogeologist/Geochemist

Mining Project Specialist

Education

M.S. – Geology and Geological
Engineering, South Dakota
School of Mines and
Technology, 2000

B.S. – Geology, Ohio State
University, 1986

Registration

Licensed Professional
Geologist: Wyoming, 1997

Certified Professional Geologist:
American Institute of
Professional Geologists, 1996

Certifications

MSHA Mine Safety Training

OSHA Hazardous Waste
Operations and Emergency
Response Training

Confined Space Entry

Abandoned Mine Safety

First Aid and CPR

Mr. Nelson has worked in various facets of the mining industry since 1988 with a focus on hydrogeology and geochemistry, mine permitting and regulation, mine environmental management, and mine closure. He has worked on over 70 mining projects including gold, base metals, uranium, and industrial minerals projects in Nevada, California, Idaho, Oregon, South Dakota, Wyoming, Colorado, New Mexico, and Inner Mongolia, China. Mr. Nelson has worked at some of the largest open pit mines in the U.S. and the deepest underground mine in the western hemisphere. He has experience working with mining corporations ranging in size from juniors to majors, state regulatory agencies, and federal agencies including U.S. Forest Service (USFS), U.S. Bureau of Land Management (BLM), and US Environmental Protection Agency (EPA). Mr. Nelson has the expertise to understand complex technical issues related to mine hydrogeology and geochemistry and the knowledge and experience to apply this expertise to mine investigations, environmental management, permitting, and closure.

Mine Hydrogeology and Environmental Geochemistry

Project Geochemist, Data Summary Report and Remedial Investigation, Formosa Mine Superfund Site, Oregon. Mr. Nelson assisted in preparation of a data summary report for the Formosa Mine in Oregon, which was prepared for EPA Region 10. The Formosa Mine is an abandoned underground volcanogenic massive sulfide mine located in southwest Oregon. Mr. Nelson authored sections addressing geology and hydrogeology, ore and waste rock geochemistry, and underground mining. Mr. Nelson is also assisting with planning and implementation of a CERCLA remedial investigation for the site, which is in progress.

Project Geochemist, Jack Waite Mine, Shoshone County, Idaho. Mr. Nelson completed a Demonstration of Methods Applicability report for EPA Region 10, which assessed the performance of field portable X-Ray Fluorescence in identifying concentrations of lead and zinc in tailings and soils at the Jack Waite Mine. The Jack Waite mine is an abandoned underground lead-zinc mine located in the Coeur d'Alene district of Idaho.

Project Geochemist, Remedial Investigation Report, Gilt Edge Mine Superfund Site, South Dakota. Mr. Nelson was primary author of the Remedial Investigation Report for the Gilt Edge Mine Superfund Site. The Gilt Edge mine is an abandoned surface and underground gold mine. This project included evaluation of physical characteristics including geology, surface water and groundwater, climate and site water balance; nature and extent of contamination including source materials, acid rock drainage, and contamination in surface water and groundwater; and fate and transport of contaminants.

Honors/Awards

South Dakota Department of
Transportation Award of
Excellence, 2003

Meritorious Service Awards, US
Forest Service, (2004, 2005)

Rocky Mountain Region Minerals
Award, US Forest Service (2006)

Project Geologist, Edgemont Mining District, South Dakota. Mr. Nelson evaluated radiological and physical hazards at an abandoned uranium district mined during the 1950s to 1970s. This work involved reconnaissance-scale investigations at dozens of abandoned surface and underground uranium mines within the district, and evaluation of potential radiological, physical, and geochemical hazards.

Senior Hydrogeologist, Large Scale Gold Mine, Lawrence County, South Dakota. Mr. Nelson completed hydrogeochemical modeling of this 25-million-ton valley fill spent ore dump in order to understand potential long-term environmental liabilities to support evaluation of a post-closure bond at the site. This work involved a coupled model evaluating infiltration into the spent ore dump, mobilization of arsenic and nitrate from the spent ore, and evaluation of fate and transport in the subsurface.

Senior Hydrogeologist, Large Scale Underground Gold Mine, South Dakota. Mr. Nelson evaluated water quality and geochemical characteristics in an underground mine extending to the 8,000-foot level including assessment of existing data and verification sampling of water quality within the mine. He evaluated the potential for acid generation and contaminant migration from the underground mine as part of environmental investigations completed prior to closure of the mine.

Senior Hydrogeologist, Large Scale Mine, South Dakota. Mr. Nelson evaluated water quality data collected from two waste rock dumps of approximately 25 million tons to 50 million tons in size. Mr. Nelson completed technical review of evaluations prepared by mining company consultants and completed fieldwork at the site to evaluate the potential for acid rock drainage at some point in the future based on an understanding of site mineralogy, review of acid base accounting and paste pH data, and evaluation of the waste dump discharge water chemistry.

Staff Geologist, Large-Scale Mine, South Dakota. Mr. Nelson worked with colleagues to complete geochemical characterization of acid generating waste rock and spent ore at a 5-million-ton valley fill waste dump and three heap leach pads containing from 1 to 3 million tons of spent ore. This work involved detailed geochemical analyses and mineralogical investigations. This work was incorporated into design and construction of waste rock and spent ore repositories.

Staff Hydrogeologist, Large Scale Mine, South Dakota. Mr. Nelson was responsible for a major water quality sampling program that included collection of over 800 surface and groundwater samples per year from a network of wells, springs, and streams in vicinity of the mine. Mr. Nelson developed a Microsoft FoxPro-based relational database management system to facilitate interpretation and reporting of the data, which included over 16,000 individual chemical analyses per year.

Mine-Site Environmental Management and Reclamation

Mine Reclamation Specialist, Richmond Hill Mine, Lawrence County, South Dakota. Mr. Nelson participated in successful reclamation and closure of a large-scale acid generating mine including construction of three mine waste impoundments containing approximately 9 million tons of rock, collection and treatment of acid mine drainage, and revegetation of over 200 acres of surface-mining disturbed land.

Mine Reclamation Specialist, Northern Black Hills, South Dakota. Mr. Nelson worked with colleagues to complete reclamation of an exploration area encompassing 140,000 linear feet of exploration roads in steep topography and 814 exploration drilling pads.

Mine Reclamation Specialist, Ridge Runner Uranium Mine, Fall River County, South Dakota. Mr. Nelson conducted shaft closure at this abandoned underground uranium mine. This project used expanding polyurethane foam to form a seal at the collar of the shaft. Mr. Nelson completed NEPA environmental analyses for this project including working with wildlife biologists who assessed potential habitat for sensitive bat species within the underground workings.

Mine Reclamation Specialist, Red Deer Mine, Custer County, South Dakota. Mr. Nelson completed site reclamation at an abandoned mica and feldspar mine including closure of six surface openings into abandoned underground workings. This work involved mechanical collapse of sub-horizontal near-surface underground mine workings.

Mine Reclamation Specialist, D&S and May Complex Mines, Custer County, South Dakota. Mr. Nelson designed bat gate adit and shaft closures for surface openings into abandoned underground gold mines. He also completed NEPA environmental analyses for this project including working with wildlife biologists who assessed potential habitat for sensitive bat species within the underground workings.

Mine Reclamation Specialist, Keystone Mining District, Pennington County, South Dakota. Mr. Nelson conducted shaft closure at this abandoned underground gold mine. This project also used expanding polyurethane foam to form a seal at the collar of the shaft.

Mine Reclamation Specialist, Rachel D Mine, Custer County South Dakota. Mr. Nelson conducted adit and shaft closures at this abandoned feldspar mine. This work included mechanical closure of the surface openings into abandoned underground mine workings. Mr. Nelson completed NEPA environmental analyses for this project including working with wildlife biologists who assessed potential habitat for sensitive bat species within the underground workings.

Mine Permitting and Regulation

Task Leader, State Mine Permit Amendment, Colorado. Mr. Nelson was task leader and primary author for a state mine permit amendment that addresses a 4,000-acre mine including open pit and underground mine areas, several large tailings facilities, and ancillary mine infrastructure. The project included permit modifications that address the affected land boundary, waste rock and tailings storage facilities, the mine environmental protection plan, and the mine reclamation plan.

Task Leader, BLM Mine Plan of Operations, Utah. Mr. Nelson is task leader for preparation of a BLM Plan of Operations for a complex of four underground uranium mines located in southeast Utah. This work has included evaluation of land and mineral status in relation to applicable regulatory jurisdictions, completion of hydrogeological and geochemical evaluations of the mines, completion of surface water drainage plans, modification to reclamation plans, reclamation cost estimates, and preparation of the Plan of Operations in accordance with BLM regulations.

Task Leader, State Mine Permit Amendments, Colorado. Mr. Nelson is task leader for preparation of mine environmental protection plans (EPPs) and associated permit amendments for six underground uranium mines located in the Uravan district of Colorado. This work included geochemical evaluations of waste rock and stockpiled ore, regional hydrogeological evaluations, and evaluations of the potential effects of the mining operation on the environment. This work was used to develop environmental protection plans for the six mines in accordance with the Colorado Mined Land Reclamation Act. The mine permit amendments were completed in spring 2009, and CDM is currently responding to state comments on the proposed EPPs. Project completion is expected in December 2009.

NEPA Interdisciplinary Leader, Mine Environmental Assessment, South Dakota. Mr. Nelson was the interdisciplinary team leader, writer, and editor for the Brite X Mine Expansion Project Environmental Assessment, which was prepared in accordance with National Environmental Policy Act (NEPA) and USFS requirements. He completed effects analyses of mine development, operation, and reclamation, and coordinated the work of a team of interdisciplinary resource specialists in the fields of wildlife biology, aquatic biology, soils, botany, and hydrology.

John T. Gormley, Ph.D., P.E.

Senior Civil Engineer

Education

Ph.D.: Civil Engineering,
Carnegie-Mellon University,
1971

M.S.: Civil Engineering,
Carnegie-Mellon University,
1964

B.S.: Civil Engineering,
Carnegie Institute of
Technology, 1962

Registration

Professional Engineer,
Pennsylvania (1971), Colorado,
Wyoming, West Virginia,
Virginia, Maryland, and Maine

MSHA Self Rescuer and
Underground Safety, 1980

OSHA 40-hr. Hazardous
Material Health & Safety
Training Program, 1986

Dr. Gormley has more than 40 years of experience in management, analysis, design and field investigation projects for industry and government. His experience relates to the mining, water resources and energy development sectors. His experience span the life cycle of projects, from inventory, baseline data development and impact evaluation to planning, alternative analysis, public involvement, preliminary and final design, construction, operation and restoration. He has been instrumental in developing and nurturing multidisciplinary teams and problem solving in the consultancies in which he practiced. In his executive management capacity, he has led many multi tasking programs and projects that required the involvement of several subcontractors and, on occasion, other A/E's or large consultancies.

Mining sector experience includes surface and underground projects in hard rock, uranium, coal and lignite. Assignments have included inventories, reports of investigation, preliminary and final designs, construction quality control and construction reports for Abandoned Mine Lands (AML) reclamation projects; mine land reclamation design for new and operating mines; passive treatment designs for acid mine/rock drainage; design of earth and rock structures; environmental impacts assessments and audits.

Abandoned Mine Land Reclamation

Dr. Gormley has been the project principal, manager or consultant for several state-run, U.S. Forest Service, Office of Surface Mining or Environmental Protection Agency abandoned mine land (AML) reclamation projects in the western United States. Projects occurred in California, Colorado, Montana, New Mexico, South Dakota, Utah, Washington and Wyoming. Projects were associated with the historical mining of gold, silver, uranium, iron, copper and coal. Assignments included inventories of inactive mine sites; subsidence assessment and control; mine sealing, grouting and backfilling; highwall, waste rock and tailings stabilization; mine site drainage control; passive treatment designs; mine site environmental assessments, including direct involvement in engineering and environmental sciences issues and oversight of cultural resources and socio-economic issues; mine site reclamation design, construction bid documents and cost estimating, construction quality control/management.

Mine Sealing, Grouting, Backfilling

Project Director, Argo Tunnel Superfund Site, Idaho Springs, Colorado.

Dr. Gormley directed the source control, blowout control and tunnel sealing feasibility/design for the four mile long Argo Tunnel acid mine drainage Superfund site in Idaho Springs CO (OU3). His work also included tunnel rehabilitation and underground investigations; and the design, construction management, operation and closure of associated support facilities, including a geosynthetic lined and capped sludge holding pond and synthetic line sedimentation pond.

Project Specialist, Iron Mountain Superfund Site, Northern California. Dr. Gormley participated as a specialist to the EPA's Emerging Technologies Program, in technical assessment and peer review meetings on the Iron Mountain Mine Superfund Site in Northern California. Participation included the investigation and evaluations of remediation alternatives including mine sealing, surface stabilization and sealing, subsurface stabilization and subsidence control.

Project Principal, Mine Water Control and Treatment, Camp Bird Mine, Colorado. Dr. Gormley was the project principal for the study of mine water control and treatment for the historic precious and base metal Camp Bird Mine near the head- waters of the Uncompahgre River in southern Colorado. In-mine investigations were conducted to determine the feasibility of separating discharges from various parts of the mine in order to reduce the quantity of water that required treatment.

Project Principal, Subsidence Control Project, Glenrock, Wyoming. Dr. Gormley was the project principal for the investigations, design, construction documentation, and construction quality control for hydraulic backfilling and grouting for subsidence control of underground mine workings beneath the Town of Glenrock, Wyoming.

Project Manager, AML Project, Superior, Wyoming. Dr. Gormley was in charge of field investigations, design, development of construction documents, and construction management for the Superior, Wyoming AML Project. Work included locating and designing seals for over 30 mine openings; stabilization of several coal waste piles; the design and implementation of a specialized grouting method for structure stabilization of two commercial buildings and a public school; and structure repair for the public school.

Project Manager, Vernal Mining District, Utah. Dr. Gormley was in charge of field investigations, design and development of construction bid documents for 25 AML sites in the Vernal Coal Fields, Utah. Work included design of several types of entrance seals, shaft seal, subsidence backfill and reclamation of coal spoil areas in difficult terrain.

Project Manager, Subsidence Control Project, Bellingham, Washington. Dr. Gormley was in charge of this OSM project to determine the subsidence risks, remedial measures and probable costs for the undermined City of Bellingham, Washington.

Project Manager, Subsidence Control Project, Gallup, New Mexico. Dr. Gormley was in charge of this project for the State of New Mexico, Environmental Division, to determine the subsidence risks, remedial measures and probable costs for the undermined city of Gallup, New Mexico.

Mine Drainage Control and Constructed Wetlands

Project Manager, USEPA Manual on Control of Water Entering Mines. Dr. Gormley was the project manager and among the principal authors of the USEPA manual, "Determination of Sources, Paths and Quantities of Water Entering Underground Mines".

Project Principal, Ferris Haggarty AML Site, Wyoming. Dr. Gormley was the project principal for the investigations, analysis and development of the preliminary design report for this turn-of-the-century underground copper mine. Notable activities included tunnel rehabilitation, evaluation of water entering the mine, in-mine separation of fresh and acid mine waters, and the successful design and implementation of a pilot passive treatment system.

Task Manager, Big 5 Tunnel Experimental Wetlands, Colorado. Dr. Gormley was the hydraulics, geotechnical and construction methods consultant for the Big 5 Tunnel Constructed Wetlands Acid Mine Drainage Treatment Research project, Clear Creek County, Colorado.

Project Principal, Rain Mine Constructed Wetlands, Carlin Mining District, Nevada. Dr. Gormley was the project principal for the design and demonstration of two pilot passive treatment systems for this operating gold mine. One system treated the acid-metal drainage from the waste rock disposal area; the other system treated the cyanide-metal drainage from the tailings storage facility.

AML and Mined Land Reclamation, Inventories, Design and Construction Support

Engineer of Record, Dam Reconstruction, Brewer Gold Mine, South Carolina. The Brewer Gold Mine heap leach pad storm water pond was the site of a catastrophic dam failure, resulting in a major downstream fish kill. Dr. Gormley became the Engineer of Record for designing and overseeing the construction of the replacement dam. The replacement dam is an earth and rock fill structure with primary and emergency spillways, a fully lined basin and separate under drain systems for groundwater (springs, seeps) and leachate collection and recovery.

Project Director, USDA Forest Service Region 1, Riley Pass Abandoned Mine Lands, Custer National Forest, South Dakota. Dr. Gormley directed the evaluation of five reclamation alternatives for the 400-acre abandoned surface area uranium mine. Key aspects of the selected alternative included highwall stabilization, sedimentation control, containment of contaminated soils, and the restoration of the unique cliff features at the site. The preliminary design and cost estimate was developed for the selected alternative. Dr. Gormley also completed the technical review for the project's cost-benefit analysis and environmental impact statement.

Principal Investigator, Asset Evaluation, Energy Fuels Nuclear Company, Utah. Dr. Gormley was the principal investigator of the uranium mining assets and liabilities of the Concord Enterprises Company, on behalf of the

Concord Enterprises/Orin Benton Bankruptcy Committee. Energy Fuels Nuclear Company, a wholly owned subsidiary of Concord Enterprises, held the uranium mining assets. Assets included the White Mesa Uranium Mill near Blanding, Utah; several inactive surface and underground uranium mines on the Colorado Plateau; underground and in-situ leach properties in Arizona and Wyoming, respectively; and an exclusive agreement with the Mongolian government for the development of vast but unproven mineable uranium reserves.

Project Principal, Uranium Tailings Area Closure, Homestake Mining Company, Grants, New Mexico. Dr. Gormley was the project principal for the construction quality control of Homestake's uranium tailings facility area near Grants, New Mexico. This was a major earthmoving project that took place over a three-year period. Construction quality control requirements were extraordinary. Field and on-site laboratory operations consistently met the rigorous requirements set by the U.S. Nuclear Regulatory Commission.

Project Principal, Spook Pit Uranium Mine Reclamation, Wyoming Department of Environmental Quality, Abandoned Mined Lands Program. Dr. Gormley was the principal-in-charge of investigations, design and construction bid documentation for the abandoned Spook Pit uranium mine in Campbell County, Wyoming. The Spook Pit was a large pit mine, with a number of audits or drifts extending out from its boundaries. The work also included development of recommendations to the U.S. Department of Energy for the burial or removal of uranium tailings that were in the pit.

Project Oversight, Black Hawk Copper/Cobalt Mine Tailings Facility Restoration, Noranda Mining Company, Salmon National Forest, Idaho. Dr. Gormley performed the technical review of the investigation, remedial design and repair of the closed tailings facility decant pipeline.

Project Auditor, Thin Seam Gold Mine, Environmental Audit, Butte, Montana. Dr. Gormley performed an environmental audit of the surface and underground facilities of a thin seam gold mining operation, as part of a due diligence process of identifying and quantifying assets and liabilities of the mine.

Project Principal, Wyoming AML Program Inventories. Dr. Gormley was the project principal for developing inventories for more than 100 prospective AML sites, early in the development of the WDEQ AML Program.

Project Consultant, Planning Document, Gas Hills Uranium Mining District, Wyoming. Dr. Gormley played a prominent role on the consulting team that developed the AML Reclamation Planning Document, Gas Hills Uranium Mining District, WY, for the Wyoming Department of Environmental Quality (WDEQ) AML Program.

Project Principal, AML Design and Construction QC Projects, Gas Hills Uranium Mining District, Wyoming. Dr. Gormley was the project principal for the investigations, design, construction document preparations and construction quality control for the abandoned North Rex and Utah pit mines and the Peach and two other abandoned underground mines. He performed the same responsibilities as a subcontractor on the earth-works portion of the John Gunnel mine reclamation.

Project Manager, Seneca No.1 Mine AML Project, Colorado. Dr. Gormley was the principal, lead investigator, designer and site manager for the reclamation of this abandoned coal mine. Notable activities included stabilization of a major landslide in progress that was threatening public and private properties and the implementation of practical and permanent drainage control structures.

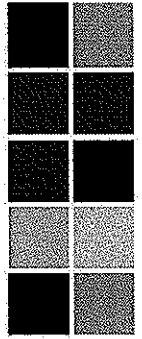
Task Manager, Reclamation Plan for the Alumbrera Project, Argentina. The Alumbrera Project is a 600 million tonne (world-class) copper-gold mine in northern Argentina. Dr. Gormley was in charge of the baseline environmental studies, environmental impact statement and the development of the reclamation plan and cost estimate.

Project Principal, Summitville Mine Site History, Colorado. Dr. Gormley was the Project Principal for the development of the chronological site history of the Summitville Mine for the purpose of identifying and explaining the events leading to the site take-over by the USEPA under Superfund. The work was commissioned by the Summitville Study Group, an assembly of USA metal mining company executives and leaders of prominent environmental advocacy groups.

Project Principal, Atlantic City Iron Ore Mine, AML Site, Wyoming. Dr. Gormley was the project principal for the investigations, design, construction bid documentation and construction quality control for the reclamation of the Atlantic City Iron Ore Mine site in western Wyoming.

DEP 15235: SHINNSTON (SHINNS RUN) PORTALS AND AMD

Department of Environmental Protection, Office of AML&R



3 / Relevant Experience



Reston Section 24 Regional Pond

*Fairfax County DPWES Stormwater Planning Division
Town of Reston, Fairfax County, Virginia*

WSA, as part of our on-call stormwater planning contract with Fairfax County DPWES, is designing retrofit improvements to an existing regional SWM facility in Reston. The project was initiated to provide water quality measures to an aging SWM pond originally designed for volume control only. Since the pond has no viable current access, an access road study of two alternatives has

been performed and the findings presented by WSA to the Reston board members and citizens. Positive feedback from the HOA as to their alternative preference was received by WSA and will be incorporated into the final access road design plan preparation.

The pond retrofit design will not only have positive water quality impacts but will likely consolidate the principal and emergency spillway into a combined spillway with a new barrel installation through the dam structure. The existing emergency spillway has been eroded and compromised due to a monumental storm event coinciding with virtual total blockage of the principal spillway. Since the emergency spillway is an undesirable fill material embankment, a combined spillway is the prudent solution, as the outfall barrel pipe was rusting and in need of removal anyway. The designed riser structure will be modelled using PondPack using Fairfax County PFM standards for stormwater detention. An open cut embankment and restoration design will be prepared as part of the final design. Erosion and sediment control plans with access road and pond improvements sequencing will be prepared.

WSA structural engineering personnel will design a maintenance truck capable bridge on the access road at a stream crossing in the Resource Protection Area (RPA). A floodplain analysis will be performed to ensure upstream flood level increases are limited in accordance with FEMA and county regulations. A Water Quality Impact Assessment (WQIA) may be needed for this project for construction within the RPA.

Guernsey County General Water Plan

Guernsey County Commissioners, Cambridge, OH

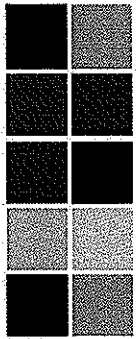
A water distribution study was performed by Wilbur Smith Associates for the eastern portion of Guernsey County. The area was studied to determine the best locations for extending new waterlines to eastern Guernsey County, a computer water model was constructed, and 12 proposed projects were recommended with estimated project costs for each.



Water Resources: The Guernsey County Waterline project was considered Phase I of the northeastern waterline design for Eastern Guernsey. Wilbur Smith Associates installed 30,000 feet of 12-inch PVC SDR-14 waterline. The waterline design included a 350 foot casing bore underneath Interstate 70, and 600 feet of directional bore through Old Washington. WSA also provided construction observation services. This project required close coordination with the EPA to allow automatic air release valves due to changes in elevations. This project also included the demolition of an existing 100,000 gallon standpipe and erection of a new 500,000 gallon elevated storage tank.

DEP 15235: SHINNSTON (SHINNS RUN) PORTALS AND AMD

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3 / Relevant Experience

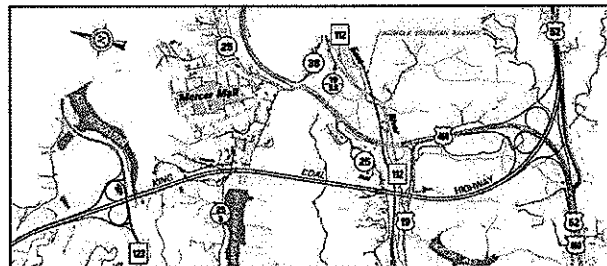
Water and Wastewater: The purpose of the Eastern Guernsey County Water Distribution Study was to develop a possible program of improvements, which was economical, environmentally sound, and easily implemented and manageable. Portions of central and eastern Guernsey County are served with an existing water distribution system installed as early as 1973. Wilbur Smith Associates developed a water distribution model of the existing system. This model is a working electronic AutoCadd/WaterCadd file; the existing water distribution model provided the basis for this study. This study investigated the feasibility of providing potable water service along a selected route, from the Village of Center along SR 22 to SR 800 in Harrison County, then along SR 800 to the Village of Freeport, Ohio, a distance of approximately 23 miles. A cost effective analysis determined that existing residences along connecting side roads could be served at the rate of 10 service connections per mile. These side routes comprise an additional distance of approximately 32 miles. This study also addressed the possibility of providing potable water to Salt Fork State Park.

King Coal Highway

WV DOT, Mercer County WV

Wilbur Smith Associates was retained by the WVDOH in 1999 to prepare a route and interchange location study, construction contract plans, and right of way plans for a section of the King Coal Highway. This section begins at interchange at WV 123 to and extends to the interchange at the existing U.S. 460/U.S. 52 intersection. The location study analyzed various configurations for the two interchanges and three alternative mainline alignments. The location study was completed in 2000, and the right-of-way plans were completed in 2002.

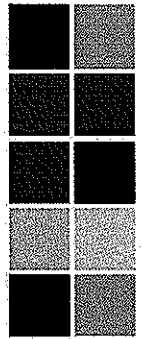
This project was planned and designed through challenging terrain, resulting in highway cuts as deep as 340 feet, fills as high as 170 feet, culverts with up to 150 feet of cover, and bridges with piers as tall as 120 feet. The project required approximately 12 million cubic yards of excavation. The total estimated construction cost for the project is \$71 million. The project included the following tasks:



- location study for both interchanges and the mainline
- design of 3.2 miles of mainline
- design of two interchanges (one partial cloverleaf interchange and one fully directional, excepting one movement, interchange)
- design of four dual bridges spans
- design of lighting for the U.S. 52/U.S. 460 interchange
- design of 2,500 feet of relocated waterlines and relocated sanitary sewers
- design of 15,900 feet of storm sewers and culverts, including a 1,000-foot long twin 60-inch structural plate pipe culvert
- preparation of comprehensive maintenance of traffic plans
- preparation of plans for nine sediment/flood detention basins
- preparation of right-of-way plans
- preparation of 42 legal descriptions for right of way and easement tracts
- preparation of USCOE Section 404 permit application and data, State Health Department permit application, and a WVDEP Underground Injection permit application for highway drainage discharging to a sinkhole
- shop drawing review services during the construction period

DEP 15235: SHINNSTON (SHINNS RUN) PORTALS AND AMD

Department of Environmental Protection, Office of AML&R



3 / Relevant Experience

Sanitary Sewer Extension Phase I & II

Belle Center/Logan County, OH

Belle Center is in north central Logan County, OH located about 70 miles northwest of the City of Columbus. Wilbur Smith Associates was selected to provide complete preliminary and final design services as well as bidding and construction services for the wastewater treatment and wastewater collection system. The project is also co-sponsored by the Board of Logan County Commissioners. The county will provide wastewater treatment (via a 5-mile force main connection) through the Indian Lake Water Pollution Control Facility.



Technically, the system will utilize a network of 177 grinder pumps stationed at strategic locations throughout the village and one lift station. The layout of the collection system will take advantage of alley rights-of-way in order to minimize adverse impacts on the main streets and the many mature trees in the village. The cost of the project is estimated at \$3.5 million. The project is being funded with local as well as the Ohio EPA grant and loan assistance program, the Ohio Public Work's Commission, and the U.S. Corp of Engineers. Design and construction activities took place over a 20-month period.

Baltimore Storm Water Infrastructure Inventory

Village of Baltimore, Baltimore, OH

In the summer of 2007, Wilbur Smith Associates was selected to prepare an inventory of the existing storm water infrastructure in the Village of Baltimore, Ohio. Baltimore is an old Ohio Erie Canal town established in 1825, and is now a merger of three closed communities: the towns of Basil, New Market, and Rome City.

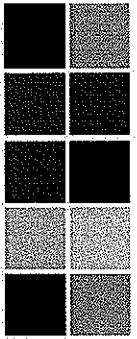
The storm drainage system throughout the village was very old, and in many areas the locations of existing inlets and pipes was unknown because many were located on private property with no recorded easements. WSA's charge was to locate all storm structures, and pipes in the village. The first task was to collect and review old maps and records. These were found in the village hall, local library, county offices, and the office of the Ohio Canal Lands. After these were collected and reviewed, the firm met with some of the older residents of the village to gain their knowledge. Flyers were sent out to all residents in an effort to gain ingress and egress onto private property to locate storm infrastructure.

The next step was to perform a field investigation to locate existing structures and pipes. Fairfield County had recent aerial photography developed for their GIS system. This eliminated the need for new aerial mapping.

The village provided the use of their jet-vac truck with an operator when needed, again making this inventory more cost effective. Splitting the village into tributary areas, WSA's two-man team then began to locate structures. Each structure or change in pipe direction was located using GPS coordinates adjusted to state plane on the same datum as the county's aerial mapping. Data collected for each structure was entered into the aerial mapping database in separate layers. With this information plotted, a storm water inventory map was created.

The next step was to run elevations on all inverts, and to collect data on all new storm lines installed. Keeping this system current allows for it to serve as a living document, and a great tool for the Village of Baltimore's utility department.

DEP 15235: SHINNSTON (SHINNS RUN) PORTALS AND AMD
Department of Environmental Protection, Office of AML&R

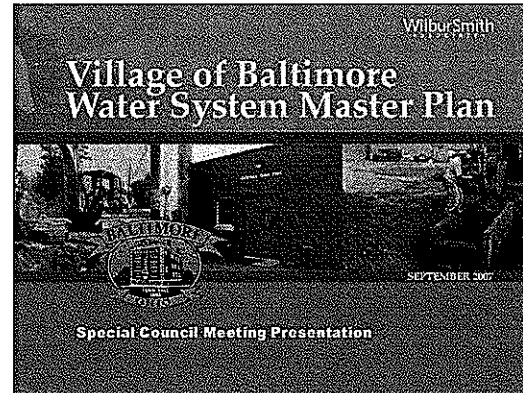


3 / Relevant Experience

Baltimore Water System Master Plan

Village of Baltimore, Baltimore, OH

The Village of Baltimore is experiencing increased activity in residential development due to urban sprawl, and is anticipating significant growth within the next 25 years. In preparation for this growth, the Village of Baltimore contracted with Wilbur Smith Associates to prepare a comprehensive water system master plan to assess the existing system and determine what improvements and additions are needed in the Village of Baltimore water system in order to promote growth and improve existing service.



In order to address and plan for the anticipated growth and prioritize improvements within the existing system, the Village of Baltimore requested that WSA prepare this long range master plan for the water treatment plant, water source, and distribution system. This master plan evaluated the existing system and planned future area improvements based on several criteria including water supply capacity requirements, growth projections, system reliability, fire flow availability, and cost. Recommendations of improvements will be prioritized and arranged into the year 2010, 2015, 2020, and 2030 planned improvements.

The current customer base and service area is expected to grow rapidly in the upcoming years in and around the Village of Baltimore. In addition, it is estimated that more than half of the existing distribution system is more than 40 years old, with the original system being over 70 years old. In addition, many pipes in the existing system are in poor condition, and their size is insufficient to provide fire protection or adequate domestic service in some areas.



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

Request for Quotation

RFQ NUMBER

DEP15235

PAGE

1

ADDRESS CORRESPONDENCE TO ATTENTION OF

CHUCK BOWMAN
304-558-2157

RFQ COPY

TYPE NAME/ADDRESS HERE

Wilbur Smith Associates
Geary Plaza, Suite 210
700 Washington Street East
Charleston, WV 25301

ENVIRONMENTAL PROTECTION

DEPARTMENT OF
OFFICE OF AML&R
601 57TH STREET SE
CHARLESTON, WV
25304

304-926-0499

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS		
11/03/2010						
BID OPENING DATE: 12/09/2010		BID OPENING TIME 01:30PM				
LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29		
SHINNSTON (SHINNS RUN) PORTALS AND AMD						
EXPRESSION OF INTEREST						
THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING EXPRESSIONS OF INTEREST FOR PROFESSIONAL ENGINEERING DESIGN SERVICES AND CONSTRUCTION MONITORING SERVICES AT THE SHINNSTON (SHINNS RUN) PORTALS AND AMD PROJECT IN HARRISON COUNTY, WEST VIRGINIA, PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS.						
BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THIS CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.						
SEE REVERSE SIDE FOR TERMS AND CONDITIONS						
SIGNATURE		TELEPHONE		DATE		
<i>Wesley D. Smith</i>		304.345.2339		12/09/10		
TITLE Associate-In-Charge		FEIN 57-0405950		ADDRESS CHANGES TO BE NOTED ABOVE		

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

AML CONSULTANT QUALIFICATION QUESTIONNAIRE Attachment "B"

PROJECT NAME Shinnston (Shinns Run) Portals and AMD		DATE (DAY, MONTH, YEAR) December 09, 2010		FEIN 57-0405950
1. FIRM NAME Wilbur Smith Associates		2. HOME OFFICE BUSINESS ADDRESS Post Office Box 92 700, Columbia, SC 29202 Washington St., E., # 210, Charleston, WV 25301		3. FORMER FIRM NAME Wilbur Smith and Associates
1. HOME OFFICE TELEPHONE Columbia, SC Tel: 803-758-4500/Fax: 803-251-2064 Charleston, WV Tel: 304-345-2339/Fax: 304-345-2343		2. ESTABLISHED (YEAR) 1952	6. TYPE OWNERSHIP Individual Corporation Partnership Joint-Venture	
6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES NO				
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE 700 Washington St., E., # 210, Charleston, WV 25301 / (304) 345-2339 Charleston, WV / Wesley O. Stafford, PE, AICP / 9 personnel (WV office)				
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM M. Stevenson Smith, PE, Chairman/Chief Executive Officer Jerry Stump, PE, FACEC, Chief Operating Officer - U.S. Operations		8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Terry S. Grubb PE, Regional Vice President 865-963-4329		
9. PERSONNEL BY DISCIPLINE				
ADMINISTRATIVE ARCHITECTS CADD OPERATORS CHEMICAL ENGINEERS CIVIL ENGINEERS DRAFTSMEN CONSTRUCTION INSPECTORS DESIGNERS, HIGHWAY ENGINEERING TECHNICIANS		ECOLOGISTS ECONOMISTS ELECTRICAL ENGINEERS ENVIRONMENTALISTS ESTIMATORS GEOLOGISTS HISTORIANS HYDROLOGISTS		LANDSCAPE ARCHITECTS MECHANICAL ENGINEERS MINING ENGINEERS PHOTOGRAMMETRISTS PLANNERS: URBAN/REGIONAL SANITARY ENGINEERS SOILS ENGINEERS SPECIFICATION WRITERS * Performed by personnel of each Discipline.
180 — 58 — 193 — 169 38 1		5 — — 50 — — 13 3		42 15 10 167 — — 13 19 3 277 1300
STRUCTURAL ENGINEERS SURVEYORS TRAFFIC ENGINEERS TRANSPORTATION ENGINEERS AIRPORT PLANNERS GRAPHIC DESIGNERS GIS PERSONNEL MASS TRANSIT SPECIALISTS OTHER TOTAL PERSONNEL				

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 5

*RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? x YES ☐ NO

Qu'est-ce que le "raisonnement" ?

Qu'est-ce que le "raisonnement" ?

Novel Geo-Environmental, PLLC (NGE)

St. Albans, WV 25177

NAME AND ADDRESS:

One Cambridge Place

Cambridge, MA 02139

NAME AND ADDRESS:

Geotechnical engineering

Acid Mine Drainage Treatment & Reclamation Construction Inspection

SPECIALTY:

SPECIALTY:

SPECIALTY:

SPECIALTY:

SPECIALTY:

SPECIALTY:

SPECIALTY:

X Yes

No _____

WORKED WITH BEFORE

 X Yes

20

WORKED WITH BEFORE

Yes _____

No.

WORKED WITH BEFORE

Yes

No

WORKED WITH BEFORE

Yes _____

 $\frac{O}{Z}$

WORKED WITH BEFORE

Yes _____

No.

WORKED WITH BEFORE

Yes

No.

WORKED WITH BEFORE

Yes _____

No.

WORKED WITH BEFORE

Yes _____

No

YES Description and Number of Projects: **Members of our project team have worked on numerous WVDEP AMP Projects while working for other firms.**

NO

B. Are your firm's personnel experienced in Soil Analysis?

YES Description and Number of Projects: **Hundreds of projects firmwide; We use data obtained from soils laboratories in preparing studies and designs. WSA has geotechnical engineers as part of staffing component. We will be using subconsultant for geotechnical services on small projects only.**

NO

C. Are your firm's personnel experienced in hydrology and hydraulics?

YES Description and Number of Projects: **Hundreds of projects firmwide; Our personnel have experience addressing drainage issues on our nation's roadways and on urban and rural development projects, as well as site development projects and other infrastructure and municipal services.**

NO

D. Does your firm produce its own Aerial Photography and Develop Contour Mapping?

YES Description and Number of Projects:

NO

E. Are your firm's personnel experienced in domestic waterline design? (Include any experience in evaluation of aquifer degradation as a result of mining.)

YES Description and Number of Projects: **Hundreds of projects firmwide; WSA's water resources consults on all aspects of water, wastewater, and sewer engineering. Over the past 25 years, WSA has provided comprehensive water, wastewater, stormwater, and utility design and planning on projects which have entailed working closely with municipalities, water and sewer districts, and other public entities in evaluating existing systems and developing sound recommendations and engineering designs.**

NO

F. Are your firm's personnel experienced in Acid Mine Drainage Evaluation and Abatement Design?

YES Description and Number of Projects:

NO

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Morrison, Donald, E. CET, Project Manager		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 0-1 YEARS OF AML RELATED DESIGN EXPERIENCE: 0-1 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 34	
Brief Explanation of Responsibilities Mr. Morrison will assist in water supply, collection, and transport designs. His experience includes design and construction management of water and wastewater systems, sewer rehabilitation, storm drain systems, and street and roadway projects. Mr. Morrison has additional experience preparing water and wastewater studies including user charge recommendations, system evaluations, contract administration, and construction inspection.			
EDUCATION (Degree, Year, Specialization) Engineering Technician, Institute for the Certification of Engineering Technicians, 1974, Civil Engineering Design			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Water Works Association, National Society of Professional Engineers, America Society of Highway Engineers, Columbus Engineers Club, Ohio Environmental Council, Ohio Alliance for the Environment		REGISTRATION (Type, Year, State) Certified Engineering Technician	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Stewart, David W. Senior Project Manager		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 0-1 YEARS OF AML RELATED DESIGN EXPERIENCE: 0-1 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 33	
Brief Explanation of Responsibilities Mr. Stewart is an expert in water and wastewater treatment systems including chemical, biological, and physical processes. Mr. Stewart will provide hydraulic and treatment design for any AMD active or passive treatment systems.			
EDUCATION (Degree, Year, Specialization) BS, 1976, Civil Engineering and Environmental Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Water Works Association, Water Environment Federation, Ohio Water Environment Association		REGISTRATION (Type, Year, State) Professional Engineer: 1982 MD and VA; 1994 OH Class III Wastewater Treatment Operator 2006	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES		RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)	
NAME & TITLE (Last, First, Middle Int.) Crittenden, George J. Project Designer		YEARS OF AML DESIGN EXPERIENCE: 9	YEARS OF EXPERIENCE YEARS OF AML RELATED DESIGN EXPERIENCE: 10 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 5
Brief Explanation of Responsibilities Mr. Crittenden has 34 years of experience in providing design, technical services, and surveying for mine land reclamation projects, water and wastewater lines, airports, residential subdivisions, and highways. His experience includes extending a water line into the marrowbone area; producing designs and plans to extend a Ragland Public Service District water line to approximately 150 customers; Senior Design Technician responsible for mitigating problems in two impoundments containing water and coal refuse at Scott Tipple; and Senior Design Technician responsible for design and contract documents for grading, installation of bar gate seals, dry seals and establish positive drainage, refuse pile regarding, and soil cover and seeding at Minden Mine Dump. Project Manager for Terry Branch Portals.			
EDUCATION (Degree, Year, Specialization) Drainage Workshop, WVDOT/2005 PSMJ Marketing Workshop/2005 PSMJ Project Manager's Boot Camp/2004 Sediment Control Design, WVDOT/2004 Right of Way Plan Development/2001, 2002 and 2003 Development of Signing, Marking and Maintenance of Traffic Plans, WVDOT/2001			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) National Institute for Certification in Engineering Technologies (NICET), 1993	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Clegg, Larry, P. PE, Senior Project Manager		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF EXPERIENCE YEARS OF AML RELATED DESIGN EXPERIENCE: 24 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 2
Brief Explanation of Responsibilities Mr. Clegg, as senior project manager, is responsible for the execution of the project. These responsibilities include managing the budget, project schedule, and design staff, as well as overseeing the design. Mr. Clegg's experience includes working on many types of civil engineering projects such as grading, water, wastewater, roadway, drainage, hydraulics, and stormwater management.			
EDUCATION (Degree, Year, Specialization) BSEM, 1981, Mining Engineering BSCE, 1987, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) Professional Engineer, 1999 WV; 1991 FL; 2003 AR; 2009 VA	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Williams, Ron PE, PS, SR/WA Senior Right-of-Way and Utility Engineer		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 3 YEARS OF AML RELATED DESIGN EXPERIENCE: 3 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 6	
Brief Explanation of Responsibilities Mr. Williams will be responsible for complete operation and management of an engineering office. He has more than 50 years of right-of-way, engineering, and surveying experience. His work has included design of water treatment distribution lines, wastewater collection and treatment, reclamation of abandoned mine lands for the WVDEP, and highway design for WVDOH.			
EDUCATION (Degree, Year, Specialization) MS, 1977, Civil Engineering BS, 1959, Civil Engineering		REGISTRATION (Type, Year, State) Professional Engineer: 1963 WV; 1993 VA; 1959 PA Professional Land Surveyor: 1963 WV; 1961 PA	
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Senior Member, International Right of Way Association; Fellow, American Society of Engineers; Member, National Society of Civil Engineers; Member, National Society of Professional Surveyors; Member, West Virginia Association of Land Surveyors; Past Chairman, Transportation Research Board, National Academy of Science			
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Shamblin, Cynthia, L. PE, Senior Project Manager		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 0 YEARS OF AML RELATED DESIGN EXPERIENCE: 25 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0	
Brief Explanation of Responsibilities Mrs. Shamblin, as senior project manager, is responsible for the execution of the project. These responsibilities include managing the budget, project schedule, and design staff, as well as overseeing the design. Mrs. Shamblin's experience includes working on many types of civil engineering projects such as bridges, retaining walls, culverts, and hydraulics.			
EDUCATION (Degree, Year, Specialization) MSCE, 1989, Civil Engineering BSCE, 1984, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS National Council of Examiners for Engineering and Surveying National Society of Professional Engineers		REGISTRATION (Type, Year, State) Professional Engineer: 1991 WV and NC; 2007 VA; 2009 DC	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Simpson, Wesley, D. PE, Project Manager		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 0 YEARS OF AML RELATED DESIGN EXPERIENCE: 15 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0	
Brief Explanation of Responsibilities Mr. Simpson, as project manager, is responsible for the execution of the project. These responsibilities include managing the budget, project schedule, and design staff as well as overseeing the design. Mr. Simpson's experience includes working on many types of civil engineering projects such as bridges, retaining walls, roadway, drainage, and hydraulics.			
EDUCATION (Degree, Year, Specialization) BSCE, 1993, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) Professional Engineer: 1998 WV and DE	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Martin, Reason, W. CADD Technician III		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 0-1 YEARS OF AML RELATED DESIGN EXPERIENCE: 0-1 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 2	
Brief Explanation of Responsibilities Mr. Martin will participate in various stages of waterline design and relocation done for various projects. He has nine years of experience in surveying, design, drafting, and construction inspection in West Virginia and Virginia.			
EDUCATION (Degree, Year, Specialization) BS, Engineering Technology/Civil Emphasis, 1998 AS, Civil Engineering Technology, 1997			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Kitzmiller, Tony B. Mineshaft/Portal Engineer		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 38 YEARS OF AML RELATED DESIGN EXPERIENCE: 38 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0	
Brief Explanation of Responsibilities Mr. Kitzmiller has over 37 years of experience in the design of water distribution systems, drainage systems, mine engineering, and civil engineering. He has experience with the supervision of design and construction for coal mining in Northern West Virginia, including water discharges, slurry, and refuse construction. He is intimately familiar with mining conditions and construction, including the design of bridges and roadways near mines. He has experience in managing and construction of methane drainage wells.			
EDUCATION (Degree, Year, Specialization) BSCE, Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: YEARS OF AML RELATED DESIGN EXPERIENCE: YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:	
Brief Explanation of Responsibilities			
EDUCATION (Degree, Year, Specialization)			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	

<u>Field of Engineering</u>	<u>Software Used by WSA</u>	<u>Field of Engineering</u>	<u>Software Used by WSA</u>
Roadway and Other	<ul style="list-style-type: none"> AutoCad AutoTurn Eagle Point 	Hydrology and Hydraulics	<ul style="list-style-type: none"> FlowMaster PondPack Ensoft Hydro XP-SWMM HY-8 TR-20 and TR-55 HEC-1 and HEC-2 HEC-6, HEC-22 HEC-RAS and HEC GeoRAS HEC-12 HEC-HMS Culvert Master
Structures	<ul style="list-style-type: none"> STRAAD III RC Pier STRUDL CONSPAN 	Traffic	<ul style="list-style-type: none"> Merlin Dash Synchro 5 and 6 Passer II-94, Transyt 7F Signal 94, TSIS (CORSIM) SIDRA, VISSIM Highway Capacity Software (HCS) NETSIM, MinUTP

15. CUI NT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED			ENGINEER OF RECORD (Partial Listing of Projects)		
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE	
King Coal Highway Highway and Bridge Design Mercer County, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$ 98,000,000	99%	King Coal Highway Highway and Bridge Design Mercer County, WV	
Charles Town By-Pass Sign Renovation Plans Jefferson County	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$500,000	45%	Charles Town By-Pass Sign Renovation Plans Jefferson County	
I-70 Sign Renovation, Ohio County	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$2,000,000	75%	I-70 Sign Renovation, Ohio County	
District 2 Design/Build	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$5,700,000	80%	District 2 Design/Build	
Beckley Z-Way Raleigh County	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$45,000,000	30%	Beckley Z-Way Raleigh County	
Pennsylvania Avenue Signals Kanawha County	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$500,000	75%	Pennsylvania Avenue Signals Kanawha County	
Statewide Transportation Plan Various Counties	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	N/A	30%	Statewide Transportation Plan Various Counties	
TOTAL NUMBER OF PROJECTS: 7		TOTAL ESTIMATED CONSTRUCTION COSTS: \$ 151,700,000 (Construction Cost)			

CONSULTANT TO OTHERS (Partial Listing of Projects)					
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
	Freeway Corridor Studies	Sub to: HNTB For: Texas DOT 125 E. 11 th Street Austin, TX 78701	2014	N/A	\$595,395 (Fee)
I-4 CEI Services Florida	Construction Engineering and Inspection for Expressway	Sub to: Parson Brinkerhoff For: Florida DOT 605 Suwanee St Tallahassee, FL 32399	2008	N/A	\$492,314 (Fee)

17. ()	COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS THE DESIGNATED ENGINEER OF RECORD (Partial List)		OF PROJECTS	
	PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR
	West Virginia Route 9 Environmental Impact Statement Berkeley County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$162,000,000	2000
	US 522 Highway & Bridge Design Morgan County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$50,000,000	2006
	US 470 Sign Renovation Contract Plans Ohio County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$750,000	2007
	Greenbrier St. Sign Renovation Contract Plans Kanawha County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$500,000	2005
	WV 2 Highway Design Wetzel/Marshall County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$22,000,000	2007
	WV 10 CEI, Logan County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$10,000,000	2002
	WV 2 CEI, Brooke County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$21,000,000	2002
	WV 14 CEI, Wood County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$10,000,000	2004
	I-81 Sign Renovation Berkeley County, WV	WV DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$1,500,000	2005

Sign Fabrication Manual Revisions & Updates, Charleston WV	WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	N/A	2005	N/A
Gilliam Arch Bridge Replacement Highway and Bridge Design Mercer County, WV	WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$1,300,000	2005	Yes
Reedy Creek Hydraulic Study Roane County, WV	WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$ 19.3 (WSA Fee)	1999	No
West Virginia Turnpike Toll Revenue & Rate Reclassification	WV/PED 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$41,700 (WSA Fee)	1999	N/A
US 119 Rock Creek Intersection Traffic Safety and Improvement Study Boone County, WV	WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$69,000 (WSA Fee)	2001	N/A
US 522 EIS Morgan County, WV	WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$351,000 (WSA Fee)	2002	N/A
East Beckley Bypass EA Raleigh County, WV	WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$464,000 (WSA Fee)	2002	N/A
US 50 Traffic Operations and Safety Study Mineral/ Hampshire Counties, WV	WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$185,000	2003	N/A
WV 9 EIS Morgan/Berkeley/Jefferson Counties, WV	WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$509,000 Stop Work Order at 50% Complete	2002	N/A
Ohio SR 7 Traffic Operations & Safety Study Washington County, DOH	ODOT WV/DOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$250,000 (WSA FEE)	2000	N/A

Parkersburg-Marietta MPO Long Range Multimodal Transportation Plan, Wood County, WV & Washington County OH	WWW Interstate Planning Comm 531 Market St Parkersburg, WV 26101	\$267,000	2004	N/A
US 220 Relocation Hampshire County, WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$668,000 (WSA Fee)	2004	No
I-81 Sign Renovation Berkeley Co. WV	WVDOT 1900 Kanawha Blvd. East Charleston, WV 25305-0430	\$195,000 (WSA Fee)	2003	No
I-15 Managed Lanes Value Pricing Demonstration San Diego, CA	San Diego Association of Governments 401 B Street, Suite 800 San Diego, CA 92101	\$777,571	2002	Yes
Grissom Parkway Myrtle Beach, SC	City of Myrtle Beach PO Box 2468 Myrtle Beach, SC 29578	\$678,976	2002	Yes
James White Parkway Design Knoxville KY	Tennessee Dept of Transportation 505 Deadrick Street Nashville, TN 37243	N/A	2000	Yes
I-95 Atlee-Elmont Interchange Hanover County, VA	Commonwealth of Virginia Structure and Bridge Division 1401 E. Broad Street Richmond, VA 23219	\$2,735,809	2001	Yes

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE TYPE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE) (Partial Listing of Projects)						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 ABANDONED MINE LANDS PROGRAM.
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	
Data is not currently available. WSA has served as a subconsultant to numerous firms on large and small projects worldwide.						
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 Abandoned Mine Lands Program.						
Please see the narrative provided at the end of the submittal						
20. The foregoing is a statement of facts:						
Signature: <u>Wesley O. Stafford</u> Title: Associate-in-Charge Printed Name: Wesley O. Stafford, PE, AICP						
Date: December 9, 2010						

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AML CONSULTANT QUALIFICATION QUESTIONNAIRE Attachment "B"

PROJECT NAME Shinnston (Shinns Run) Portals and AMD		DATE (DAY, MONTH, YEAR) 9 December 2010		FEIN 04-247 3650	
1. FIRM NAME CDM		2. HOME OFFICE BUSINESS ADDRESS 2740 Smallman Street, Suite 100 Pittsburgh, PA 15222		3. FORMER FIRM NAME NA	
1. HOME OFFICE TELEPHONE 412-201-5500		2. ESTABLISHED (YEAR) 1947		6. TYPE OWNERSHIP Corporation	
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE 2740 Smallman St., Suite 100 Pittsburgh, PA 15222 412-201-5500 Matthew R. Sickles, P.E., Vice President		8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Matthew Sickles, Vice President, 412-201-5500 Jason Venier, Associate, 412-201-5500 Christopher Calpin, Senior Vice President, 513-583-9800 Randy Rogers, Senior Vice President, 312-346-5000		6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES X NO	

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM Richard Fox, Chairman and CEO John Manning, President and Chief Operating Officer Paul Brown, Executive Vice President Paul Camell, Executive Vice President		8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Matthew Sickles, Vice President, 412-201-5500 Jason Venier, Associate, 412-201-5500 Christopher Calpin, Senior Vice President, 513-583-9800 Randy Rogers, Senior Vice President, 312-346-5000	
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9. PERSONNEL BY DISCIPLINE	
ADMINISTRATIVE 32 ARCHITECTS 185 CADD OPERATORS CHEMICAL ENGINEERS 384 CIVIL ENGINEERS DRAFTSMEN 124 CONSTRUCTION INSPECTORS DESIGNERS, HIGHWAY ENGINEERING TECHNICIANS	10. ECOLOGISTS 5 ECONOMISTS 155 ELECTRICAL ENGINEERS 301 ENVIRONMENTALISTS 62 ESTIMATORS 140 GEOLOGISTS HISTORIANS 255 HYDROLOGISTS
11. LANDSCAPE ARCHITECTS 55 MECHANICAL ENGINEERS MINING ENGINEERS PHOTOGRAMMETRISTS 90 PLANNERS: URBAN/REGIONAL 200 SANITARY ENGINEERS SOILS ENGINEERS SPECIFICATION WRITERS	67 STRUCTURAL ENGINEERS 50 SURVEYORS TRAFFIC ENGINEERS 16 TRANSPORTATION ENGINEERS 5 AIRPORT PLANNERS 25 GRAPHIC DESIGNERS 94 GIS PERSONNEL MASS TRANSIT SPECIALISTS OTHER 3,947 TOTAL PERSONNEL

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 5
 *RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? x YES □ NO

Question: "e".

[illegible]

12. A. Are your firm's personnel experienced in Abandoned Mine Lands Remediation/Mine Reclamation Engineering?

YES Description and Number of Projects: 4

- o Argo Tunnel Active Treatment System Construction and Startup, Idaho Springs and Central City, Colorado (1998)
- o CERCLA Remedial Actions, California Gulch Superfund Site, Leadville, Colorado (2001)
- o Town of Basin, MT (Karen Taylor, Denver)
- o Leadville, Colorado (Steve Fundingsland, Denver)

B. Are your firm's personnel experienced in Soil Analysis?

YES Description and Number of Projects: 100+

CDM offers comprehensive consulting, engineering and construction support services for all aspects of geotechnical engineering. Our geotechnical team provides investigation and laboratory services, analysis, design reports, recommendations and construction management services for projects including commercial and industrial buildings, dams, wastewater and water treatment plants, pipelines, dredging, landfills, and hazardous remediation projects. Our expert staff offer a wide range of design capabilities, including slopes and embankments, excavation and filling, dewatering, blasting and rock removal, temporary and permanent retaining walls, deep and shallow foundations, and on-grade slabs.

CDM has experience in the inspection and rehabilitation of existing dams as well as the design and construction of new dams, including earth embankment, roller compacted concrete (RCC) and conventional concrete dams. Rehabilitation measures designed by CDM engineers have included adding RCC and other types of overtopping protection, raising dam height, modifying existing spillway capacity, and addressing seepage and slope stability concerns.

CDM has extensive experience in mining and the design and construction of tunnels involving traditional soft ground tunneling techniques, rock tunneling, pipe jacking, micro tunneling, directional drilling and ground freezing. Our experience includes underground mining, water supply and wastewater pipeline crossings of highways, railroads and waterways; pedestrian tunnels, highway, railroad and subway tunnels; and water intake structures.

CDM has provided geo-environmental engineering services on a wide variety of projects. Our experience includes design of containment slurry walls, solidification/stabilization of contaminated soils, underwater capping, zero-valent iron reactive walls and groundwater interceptor trenches, including trenches constructed using polymer slurry methods. Additional services include waste landfill design and construction, landfill closure and cap design, groundwater control and design and construction of remediation systems, treatment lagoons, solids dewatering, and waste impoundments

CDM maintains full-service geotechnical testing laboratories that support geotechnical and geo-environmental projects and provide stand-alone services to our clients. These laboratories perform the full range of geotechnical tests, including geosynthetic seam strength testing and bench-scale testing for slurry walls, soil stabilization and soil/ chemical fixation and stabilization. In addition, CDM can mobilize temporary field laboratories for projects as warranted and provide specialty geotechnical field services, including load tests and instrumentation. Laboratory testing services provided include grain size analysis, moisture-density relationship (Proctor), tri-axial shear, direct shear, plasticity, permeability, consolidation, and compressive strength.

C. Are your firm's personnel experienced in hydrology and hydraulic?

YES Description and Number of Projects: 100+

- North Fork Indian Run Bank Stabilization at Brand Road, Dublin, Ohio
- Ault Park Stream Restoration, Cincinnati, Ohio
- Jacks Run Stream Restoration, Pittsburgh, Pennsylvania
- Hydrogeological Assessment of Sunday Mines Group, Colorado
- Hydrogeological Assessment of La Sal Mine Complex, Utah
- Nine Mile Run Habitat Restoration Project, Pittsburgh, Pennsylvania
- Rouge River Watershed Wet Weather Management Demonstration Program, including Streambank Restoration/Stabilization, Wayne County, Michigan
- Anaconda Smelter Superfund Site Reclamation, Anaconda, Montana
- Flood Hazard Mitigation and Bank Stabilization Study, Mecklenburg County, North Carolina
- Midvale Slag Superfund Site, Salt Lake City, Utah
- Streambank Stabilization and Channel Restoration, Libby Asbestos CERCLA site, Libby, MT
- Streambank Stabilization and Channel Restoration, Jack Waite mine, Idaho
- Streambank Stabilization and Channel Restoration, CR Kendall Mine, Lewistown, MT
- Streambank Stabilization, 10 Mile Creek Mine, Helena, MT
- Geomorphic investigation of Warm Springs Creek and Silver Bow Creek, Anaconda Butte CERCLA sites
- Stormwater characterization on Butte Hill, Anaconda Butte CERCLA site
- Channel restoration design on the Clark Fork, Montana

D. Does your firm produce its own Aerial Photography and Develop Contour Mapping?

NO

E. Are your firm's personnel experienced in domestic waterline design? (Include any experience in evaluation of aquifer degradation as a result of mining.)

YES Description and Number of Projects: 100+

- CR Kendall Mine Closure, in Lewistown, Montana
- Basin Creek project, Montana
- Dublin Manor Waterline Design, Dublin, Ohio
- Waterline and Sewer Preliminary Design, Dublin, Ohio
- Walker, Williams and Wakefield Water Line Replacement, Loveland, Ohio
- Oak, Cedar, Ruth and Robin Water Line Replacement, Loveland, Ohio
- Hilliard Road Water Main Rehabilitation, Lakewood, Ohio
- Warren County Water Main Design, Warren County, Ohio
- Waterline Preliminary Design, Dublin, Ohio
- Water Storage, Transmission, Distribution Facilities Design, Permitting, Bidding and Construction Services, City of Florence, Boone County, Kentucky, and Cincinnati, Ohio
- Water Main Design, Mt. Vernon, Ohio
- Water and Sewer Main Design, Dublin, Ohio
- Preliminary Waterline Extension Design Springfield, Ohio
- Preliminary Waterline Extension Design, Port Columbus International Airport, Ohio

F. Are your firm's personnel experienced in Acid Mine Drainage Evaluation and Abatement Design?

YES

Description and Number of Projects: 30

- Barrick Gold Golden Sunlight Mine Passive Treatment Evaluation
- USEPA Jack Waite Mine Passive Treatment Evaluation, Wallace, Idaho
- ASARCO January Adit Passive Treatment Evaluation, Tucson, Arizona
- ASARCO Gem Portal Passive Treatment Evaluation, Wallace, Idaho
- Beaverhead Conservation District, Nitrate Treatment Wetlands, Dillon, Montana
- USEPA Lee Mountain Adit, Rimini, Montana
- CR Kendall Mine EIS, Hilger, Montana
- Minera Yanacocha (Newmont) Passive Treatment Evaluation, Cajamarca, Peru
- Opportunity Ponds Passive Treatment System, Anaconda, Montana
- Basin Creek Mines Inc. Passive Treatment Evaluation, Basin, Montana
- Butte Lower Area One, Butte, Montana
- Butte Metro Storm Drain, Butte, Montana
- Noranda Minerals Passive Treatment Evaluation, Grey Eagle Mines, Happy Camp, California
- Colorado Department of Health, Burleigh Tunnel Passive Treatment System
- Big Five Tunnel, Idaho Springs, Colorado
- Gilt Edge Mine Superfund Site, South Dakota
- Mike Horse Mine, Montana, Water Treatment Plant Design Build
- Summitville Mine Superfund Site, Water Treatment Plant, major renovations, operations and maintenance
- Big Five Mine, Creek/Central City, Colorado
- Burleigh Mine, Colorado
- Basin, Montana
- Upper Tenmile, Montana
- In situ Pit Lake Treatment, Gilt Edge Mine, South Dakota
- Feasibility Study for Passive Treatment of Mine Drainage, Northern California
- Wastewater Evaluation, Stormwater Evaluation, and Process Design Modifications, Including Operations and Maintenance, Copperhill, Tennessee
- Mine Effluent Treatment Systems Evaluation, West/Central Florida
- Argo Tunnel Remedial Design Idaho Springs, Colorado
- Remedial Design, Upper Tenmile Creek Mining Area Superfund Site, Lewis and Clark County, Montana

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Whiting, Kent S. Geochemist		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 18 YEARS OF AML RELATED DESIGN EXPERIENCE: 18 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0	
Brief Explanation of Responsibilities Mr. Whiting is a geochemist with 20 years of experience in the environmental field. Mr. Whiting worked on one of the first passive treatment systems for metal mine ARD while a graduate student (~1989) and has developed conceptual designs and evaluated system performance for over a dozen passive treatment system projects while at CDM. He has been utilized by the USEPA as a technical expert for passive treatment systems beginning in 1993 and continues to work in this capacity. Mr. Whiting has published several papers on passive treatment and is active in the development of the latest technologies in passive treatment.			
EDUCATION (Degree, Year, Specialization) M.S., 1992, Geochemistry, Colorado School of Mines B.S., 1998, Geology, Ohio State University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) Licensed Geologist, 2007, Washington State	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Gormley, John, T. Senior Civil Engineer		YEARS OF EXPERIENCE YEARS OF AML DESIGN EXPERIENCE: 38 YEARS OF AML RELATED DESIGN EXPERIENCE: 38 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:	
Brief Explanation of Responsibilities Dr. Gormley has more than 40 years of experience in management, analysis, design and field investigation projects for industry and government. His experience relates to the mining, water resources and energy development sectors. Mining sector experience includes surface and underground projects in hard rock, uranium, coal and lignite. Assignments have included inventories, reports of investigation, preliminary and final designs, construction quality control and construction reports for Abandoned Mine Lands (AML) reclamation projects; mine land reclamation design for new and operating mines; passive treatment designs for acid mine/rock drainage; design of earth and rock structures; environmental impacts assessments and audits.			
EDUCATION (Degree, Year, Specialization) Ph.D., 1971, Civil Engineering, Carnegie-Mellon University M.S., 1964, Civil Engineering, Carnegie-Mellon University B.S., 1962, Civil Engineering, Carnegie Institute of Technology			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State) Professional Engineer, 1971, West Virginia, Pennsylvania, Colorado, Wyoming, Virginia, Maryland, and Maine	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES		RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)	
NAME & TITLE (Last, First, Middle Int.) Olsen, Roger, L. Geochemist, Senior Vice President	YEARS OF AML DESIGN EXPERIENCE: 27	YEARS OF EXPERIENCE YEARS OF AML RELATED DESIGN EXPERIENCE: 27	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities Dr. Olsen has more than 27 years of experience in the conduct, planning, and management of comprehensive sampling programs for soils and water, treatability studies, implementation of quality control procedures, evaluation of risks/impacts, pilot plant operation, design/engineering of remediation systems, and remediation costs analysis. His experience includes evaluations on over 100 sites contaminated with metals, 50 mining/milling sites, 80 chlorinated solvent sites, 30 RCRA sites and remedial investigation/ feasibility study (RI/FS) studies at more than 150 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites. Dr. Olsen is a recognized expert in evaluating and modeling chemicals in surface water, groundwater, soils, and sediments. Dr. Olsen is the author of over 105 publications or presentations and has been an expert witness in 20 cases.</p> <p>EDUCATION (Degree, Year, Specialization) Ph.D., 1979, Geochemistry, Colorado School of Mines B.S., 1972, Mineral Engineering Chemistry, Colorado School of Mines</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Member, American Chemical Society, Geochemistry Division & Environmental Division Member, American Crystallographic Association		REGISTRATION (Type, Year, State)	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Nelson, Mark, R. Project Hydrogeologist/Geochemist Mining Project Specialist	YEARS OF AML DESIGN EXPERIENCE: 10	YEARS OF EXPERIENCE YEARS OF AML RELATED DESIGN EXPERIENCE: 10	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities Mr. Nelson has worked in various facets of the mining industry since 1988 with a focus on hydrogeology and geochemistry, mine permitting and regulation, mine environmental management, and mine closure. He has worked on over 70 mining projects including gold, base metals, uranium, and industrial minerals projects in Nevada, California, Idaho, Oregon, South Dakota, Wyoming, Colorado, New Mexico, and Inner Mongolia, China. Mr. Nelson has worked at some of the largest open pit mines in the U.S. and the deepest underground mine in the western hemisphere. He has experience working with mining corporations ranging in size from juniors to majors, state regulatory agencies, and federal agencies including U.S. Forest Service (USFS), U.S. Bureau of Land Management (BLM), and US Environmental Protection Agency (EPA). Mr. Nelson has the expertise to understand complex technical issues related to mine hydrogeology and geochemistry and the knowledge and experience to apply this expertise to mine investigations, environmental management, permitting, and closure.</p> <p>EDUCATION (Degree, Year, Specialization) M.S., 2000, Geology and Geological Engineering, South Dakota School of Mines and Technology B.S., 1986, Geology, Ohio State University</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Member, Society for Mining, Metallurgy, and Exploration Member, American Institute of Professional Geologists		REGISTRATION (Type, Year, State) Licensed Professional Geologist, 1997, Wyoming Certified Professional Geologist, 1996, American Institute of Professional Geologists	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES		RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)	
NAME & TITLE (Last, First, Middle Int.) Johnson, Theodore, J. Environmental Engineer, Associate		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 8 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities Mr. Johnson has more than 28 years of experience in environmental engineering, specializing in the planning, design and construction of storm drainage, flood control, channel stability and ecologic enhancement of stormwater and river systems, including more than five projects at mining sites. Mr. Johnson also has developed expertise in regulatory coordination including Clean Water Act, Endangered Species Act, NEPA and CEQA requirements; the use of GIS in analyses of project criteria and requirements; hydrology and hydraulics analyses; sediment transport and scour and deposition analyses; erosion control BMPs; and, habitat analyses.</p>			
<p>EDUCATION (Degree, Year, Specialization) B.S., 1982, Civil Engineering, University of Colorado, Boulder A.A.S., 1978, Land Surveying, Flathead Valley Community College, Kalispell, MT</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Member, American Water Resources Association, former President of the Colorado Section Member, American Society of Civil Engineers, ASCE Environment and Water Research Institute Stream Restoration Committee 2004-2005 Member, Water and Environment Federation		REGISTRATION (Type, Year, State) Professional Engineer, 1989, Colorado	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Aldrich, John, A. Water Resource Engineer, Vice President		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0 YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
<p>Brief Explanation of Responsibilities Mr. Aldrich is an experienced water resource engineer with 30 years experience designing solutions to complex problems in stormwater management, wastewater management, and water supply. He has developed and applied state-of-the-art collection/distribution system models that merge hydrologic/hydraulic analyses with database management systems and geographic information systems (GIS). He has developed more than 25 comprehensive community-wide and/or watershed facility plans for combined and separate wastewater and stormwater systems and water supply/distribution systems. These plans define integrated systems of cost-effective facilities and non-structural measures to resolve system capacity deficiencies and water quality impairments under existing and future conditions, and establish a legal, financial, and institutional framework for implementing the plan.</p>			
<p>EDUCATION (Degree, Year, Specialization) M.S., 1980, Civil Engineering, Ohio State University B.S., 1978, Civil Engineering, Ohio State University</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Member, Water Environment Federation Member, American Public Works Association Member, American Society of Civil Engineers		REGISTRATION (Type, Year, State) Professional Engineer, 1985, Virginia and Ohio	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES		RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)	
NAME & TITLE (Last, First, Middle Int.) McGill, Julie, A. Environmental Engineer		YEARS OF AML DESIGN EXPERIENCE: 0	
		YEARS OF AML RELATED DESIGN EXPERIENCE: 0	
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0	
Brief Explanation of Responsibilities Ms. McGill is a water resources engineer with thirteen years experience in analyzing and planning stormwater and wastewater collection systems, including the application of computer modeling techniques. Ms. McGill has applied the SWMM RUNOFF/TRANSPORT/EXTRAN, XP-SWMM, and HEC-2 models for the analysis of sewer system and open channel hydraulics, stormwater runoff and detention and infiltration/inflow.			
EDUCATION (Degree, Year, Specialization) B.S., 1995, Civil Engineering, The Ohio State University (Cum Laude)			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Volunteer, Engineers Without Borders – Central Ohio Professionals Chapter		REGISTRATION (Type, Year, State) Professional Engineer, 2000, Ohio	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.) Schroeder, John, P. Senior Civil and Environmental Engineer		YEARS OF AML DESIGN EXPERIENCE: 0	
		YEARS OF AML RELATED DESIGN EXPERIENCE: 0	
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 18	
Brief Explanation of Responsibilities Mr. Schroeder is a civil and environmental engineer with more than 17 years of experience in planning, design and construction of stormwater, water and wastewater systems. His specific qualifications include: sewer system assessment, pipeline design, pipeline rehabilitation, stormwater master plans, infiltration/inflow studies, stormwater pollution prevention plans, detention basin design, water transmission design, trenchless pipe planning and design, wastewater pump stations, stormwater and drinking water modeling, water treatment plant design, water quality sampling, construction inspection and cost estimating. He has significant hands-on experience working with and overseeing general contractors and specialized contractors associated with: pipeline construction, pipeline and manhole rehabilitation, flow monitoring, CCTV inspections, and dye/smoke testing. Mr. Schroeder is a certified trainer in the NASSCO pipeline assessment and certification program (PACP) and has been training engineers across the country in this program.			
EDUCATION (Degree, Year, Specialization) B.S., 1992, Civil Engineer, University of Cincinnati			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Program Committee, North American Society for Trenchless Technology Member, National Association of Sanitary Sewer Companies Member, Water Environment Federation Member, OWEA Collections Committee		REGISTRATION (Type, Year, State) Professional Engineer, 1996, Ohio	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES		RESPONSIBLE FOR TMDL DEVELOPMENT PROJECTS (Insert additional copies as necessary)	
NAME & TITLE (Last, First, Middle Int.)		YEARS OF EXPERIENCE: 17	
DePra, P.E., BCEE, Daniel J. Senior Environmental Engineer		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 5
Brief Explanation of Responsibilities Mr. DePra is the Project Manager for the West Virginia Comprehensive Water Planning Study, WV. He has 15 years of project management experience including scheduling, scope development, financial evaluation and tracking, contracts, and subcontractor management.			
EDUCATION (Degree, Year, Specialization) M.S., 2004, Civil Engineering, University of Pittsburgh B.S., 1993, Mechanical Engineering, University of Pittsburgh B.S., 1993, Chemistry, University of Pittsburgh			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	
American Academy of Environmental Engineers Engineers Society of Western Pennsylvania		Professional Engineer, 2009, West Virginia Professional Engineer, 1999, Pennsylvania and Ohio	
13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR TMDL DEVELOPMENTS PROJECTS			
NAME & TITLE (Last, First, Middle Int.)		YEARS OF EXPERIENCE: 20	
Sickles, P.E., Matthew R. Vice President, Environmental and Civil Engineer		YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 8
Brief Explanation of Responsibilities Mr. Sickles is Officer-in-Charge and Office Leader for CDM's Pittsburgh office, responsible for delivering necessary resources to clients to fully meet project needs. He also serves as Officer-in-Charge for NPDES project for Pittsburgh International Airport. During this project, CDM assisted with NPDES permit negotiations. Although the primary emphasis is deicing, some of their outfalls are subject to acid mine drainage TMDL so we are advising in accordance with the TMDL. Mr. Sickles also is officer-in-charge for all CDM work performed for the Pittsburgh Water and Sewer Authority.			
EDUCATION (Degree, Year, Specialization) B.S., 1989, Environmental Engineering, The Pennsylvania State University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	
<ul style="list-style-type: none"> Engineer's Society of Western Pennsylvania Water Environment Foundation Pennsylvania Water Environment Association Southwestern Pennsylvania Engineering Outreach 		Professional Engineer, 2005, Pennsylvania	

14. PROV. .A LIST OF SOFTWARE AND EQUIPMENT AVAILABLE IN THE MARY OFFICE WHICH WILL BE USED TO COMPLETE AML
DESIGN SERVICES

CDM has invested approximately 2.5 million dollars in its field equipment inventory for projects involving Air Monitoring & Sampling, Confined Space Entry, Site Support, Soil Analysis, Soil Sampling, Survey Testing & Measuring, Treatability/Bench Scale, Water Level & Flow, Water Quality, Water Sampling, and Weather Consumables. This equipment can be shipped over night to any project site from the firm's own field equipment centers in Albuquerque, New Mexico; Somerville, Massachusetts; Edison, New Jersey; and Irvine, California.

CDM engineers have developed and used several computerized stormwater models considered to be state-of-the-art for stormwater management studies, including those listed in the table below.

Model Acronym	Full Title	Sponsor/Developer
BASINS-HSPF	Better Assessment Science Integration Points and Nonpoint Sources	EPA OST
DR3M-QUAL	Distributed Routing Rainfall Runoff Model	U.S. Geological Survey
BRASS (RUNOFF)	Basin Runoff and Streamflow Simulation	USACE-Hydrologic Engineering Center
DRM	Deep Reservoir Water Quality Model	CDM
DYNQUAL	Estuary Hydrodynamic Water Quality Model	CDM
ECOHYD	Estuary Water Quality/Ecologic Model	CDM
HEC-1	HEC-1 Flood Hydrograph Package	USACE-Hydrologic Engineering Center
HEC-2	Water Surface Profiles	USACE-Hydrologic Engineering Center
HEC-RAS	River Analysis System	USACE-Hydrologic Engineering Center
HEC-HMS	Hydrologic Management System	USACE-Hydrologic Engineering Center
HSPF	Hydrologic Simulation Program- FORTRAN	EPA
ILLUDAS	Illinois Urban Drainage Area Simulator	Illinois State Water Survey
KINEROS	Kinematic Runoff and Erosion Model	U.S. Department of Agriculture
LAKECO	Lake Ecology Model	CDM
MIKE-11	Generalized Modeling Package - 1D - Runoff	Danish Hydraulic Institute
MIKE-SHE	MIKE-SHE (MIKE 11 integrated w/ groundwater model)	Danish Hydraulic Institute
P8-UCM	Urban Catchment Model	Narragansett Bay Project
PRMS/ANNIE	Precipitation-Runoff Modeling System	U.S. Geological Survey
QUALII	Steady State Stream Water Quality	CDM
RECEIV	Dynamic Receiving Water Quality (included in SWMM)	CDM
RUNOFF	Surface Flow Routine	EPA / CDM
SITEMAP	Stormwater Intercept and Treatment Evaluation Model for Analysis and Planning	Omicron Associates
SLAMM	Source Loading and Management Model	Dr. Robert Pitt (University of Alabama)
STORM	Storage Treatment Overflow Runoff Model	USACE-Hydrologic Engineering Center
SWMM	Stormwater Management Model (3)	EPA/Oregon State University/CDM
SWMM/RUNOFF	SWMM RUNOFF block	EPA and Oregon State University
SWMM/EXTRAN	SWMM EXTRAN block	EPA /CDM
UDSWM	Urban Drainage Storm Water Model	Urban Drainage & Flood Control District
CUHP	Colorado Urban Hydrograph Procedure	Urban Drainage & Flood Control District
TR-55/20	Urban Hydrology for Small Watersheds	U.S. Department of Agriculture
WMM	Watershed Management Model	CDM
WRECEV	Modified Receiving Water Quality and Unsteady Flows	CDM

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED EI					JEEER OF RECORD (Partial Listing of Projects)	
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE		
CERCLA, Molycorp Molybdenum Mine, Questa, New Mexico	USEPA, Region 6 1445 Ross Avenue Suite 1200 Dallas, Texas 75202	R/IFS	\$1,800,000	50		
Remedial Action, Upper Tenmile Creek Mining Area OU4, Helena, Montana	USEPA, Region 8, 1595 Wynkoop St Denver, CO 80202-1129	R/IFS	\$6,700,000	50		
Environmental Engineering Services, Gilt Edge Mine Site, Lawrence County, South Dakota	USEPA, Region 8, 1595 Wynkoop St Denver, CO 80202-1129	Environmental Engineering	\$12,431,771	50		
CERCLA R/IFS Oversight, Butte Priority Soils Mining Site, Montana	USEPA, Region 8, 1595 Wynkoop St Denver, CO 80202-1129	CERCLA R/IFS Oversight	\$160,000,000	50		
C.R. Kendall Mine Post-Closure Drainage Improvements and Environmental Impact Statement, Lewistown, Montana	Montana Department of Environmental Quality 1520 East 6 th Avenue Helena, MT 59601	Environmental Engineering	\$10,000,000	50		
Ault Park Stream Restoration, Cincinnati MSD, Cincinnati, Ohio	Cincinnati MSD 1600 Gest St. Cincinnati, OH 45204	Environmental Engineering	\$5,000,000	75		
TOTAL NUMBER OF PROJECTS: 5					TOTAL ESTIMATED CONSTRUCTION COSTS: \$200 million	

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-C

[illegible]

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM			IS THE DESIGNATED ENGINEER OF RECORD (Partial Listing of Projects)		
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)	
RI/FS/Remedial Design/Remedial Action, Town of Basin Superfund Site, Basin, Montana	USEPA, Region 8, 1595 Wynkoop St Denver, CO 80202-1129	\$5,800,000	2005	Yes	
Remedial Action Oversight, Remedial Design, Midvale Slag Superfund Site, Midvale, Utah	USEPA, Region 8, 1595 Wynkoop St Denver, CO 80202-1129	\$16,850,000	2007	Yes	
Abbott Mine Site Stabilization, Lake County, California	El Paso Energy 1001 Louisiana Street Houston, TX 77002	\$5,000,000	2007	Yes	
North Fork Indian Run Bank Stabilization at Brand Road, Dublin, Ohio	City of Dublin, Ohio 5200 Emerald Parkway Dublin, Ohio 43017-1006	\$237,475	2005	Yes	

RFQ No. DEP15235STATE OF WEST VIRGINIA
Purchasing Division**PURCHASING AFFIDAVIT**

West Virginia Code §5A-3-10a states: 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.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

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.

WITNESS THE FOLLOWING SIGNATUREVendor's Name: Wilbur Smith AssociatesAuthorized Signature: [Signature] Date: 12/9/10State of West VirginiaCounty of Kanawha, to-wit:Taken, subscribed, and sworn to before me this 9 day of December, 2010My Commission expires March 31, 2020

AFFIX SEAL HERE

NOTARY PUBLIC [Signature]