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A/E Services for Reeds Creek Fish Hatchery Repairs

Solicitation No: AEOI 0310 DNR1800000003

November 7, 2017

West Virginia

Division of Natural Resources



Mott MacDonald
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Suite 400
Charleston, WV 25302
304.356.3011
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West Virginia
Division of Natural Resources
Property and Procurement Office
324 4th Ave
South Charleston, WV 25303-1228

**Re: A/E Services for Reeds Creek Fish Hatchery Repairs
Solicitation No. AEO1 0310 DNR1800000003**

November 7, 2017

Dear Members of the Selection Committee:

Mott MacDonald is pleased to present this Expression of Interest (EOI) to provide engineering services necessary to design and specify critical repairs to the raceways and piping system. This EOI will address our qualifications, experience, approach, and methodology for meeting project goals and objectives.

Mott MacDonald is a multi-disciplined engineering and architectural consulting firm employing highly qualified staff with many years of experience in delivering civil engineering and surveying services; including everything from the evaluation and design aspects through to the procurement, delivery, and assurance aspects.

We have assembled a team ready to work collaboratively with WVDNR's engineering, management, and operations staff to provide the utmost quality service to deliver an efficient and cost-effective repair and rehabilitation.

We believe the Mott MacDonald team is the best choice for this project and offer the following benefits:

- ✓ Proven local Charleston-based project management and technical support
- ✓ Proven record of projects completed on time and budget
- ✓ Knowledge of state government contracting practices and procedures
- ✓ Knowledge of WVDNR practices and procedures
- ✓ Additional technical support from offices in Morgantown and Pittsburgh

In summary, Mott MacDonald understands that it is imperative that WVDNR select a consultant who has a complete understanding of the project goals and objectives, from concept to commissioning. On behalf of our entire team, we thank you for your careful consideration and look forward to the opportunity to serve the West Virginia Division of Natural Resources and the State of West Virginia.

Sincerely,

Mott MacDonald, LLC

Handwritten signature of Stephen Polen in blue ink.

Stephen Polen, PE
Senior Vice President
412.497.2950
Stephen.polen@mottmac.com

Handwritten signature of Gary Facemyer in blue ink.

Gary Facemyer, PE, PS
Senior Associate and Project Director
304.356.3011
Gary.facemyer@mottmac.com



State of West Virginia
Expression of Interest

Procurement Folder : 379130

Document Description : Addendum No 01 A/E Services for Reeds Creek Fish Hatchery

Procurement Type : Agency Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No		Version	Phase
2017-11-03	2017-11-07 13:30:00	AEOI 0310	DNR1800000003	2	

SUBMIT RESPONSES TO:	VENDOR
BID RESPONSE DIVISION OF NATURAL RESOURCES PROPERTY & PROCUREMENT OFFICE 324 4TH AVE SOUTH CHARLESTON WV 25303-1228 US	Vendor Name, Address and Telephone

FOR INFORMATION CONTACT THE BUYER

Angela W Negley
(304) 558-3397
angela.w.negley@wv.gov

Signature X

FEIN # 16-1006700

DATE November 6, 2017

All offers subject to all terms and conditions contained in this solicitation

ADDITIONAL INFORMATION:

Addendum

Addendum No.01 is issued to publish and distribute the attached information to the Vendor Community.
.....

Expression of Interest

A&E Services for Reeds Creek Fish Hatchery Repairs

The West Virginia Division of Natural Resources (WVDNR) is soliciting AEOI responses from qualified firms to provide architectural /engineering services for critical repairs to the raceways and piping systems at Reeds Creek State Fish Hatchery per the attached bid requirements, specifications and terms & conditions.

INVOICE TO		SHIP TO	
DIVISION OF NATURAL RESOURCES PARKS & RECREATION-PEM SECTION 324 4TH AVE SOUTH CHARLESTON WV25305 US		SUPERINTENDENT DIVISION OF NATURAL RESOURCES BERKELEY SPRINGS STATE PARK 121 SOUTH WASHINGTON ST BERKELEY SPRINGS WV 25411-3284 US	

Line	Commodity Line Description	Qty	Unit Issue
1	Architectural engineering		

Commodity Code	Manufacturer	Model #	Specification
81101508			

Extended Description

A/E design services and contract administration for Berkeley Springs Old Roman Bathhouse Renovations.

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Technical Question Deadline 9am	2017-10-20

DNR1800000003	Document Phase	Document Description Addendum No. 01 A/E Services for Reeds Creek Fish Hatchery	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

Contents

Cover letter

1. Team qualifications

- Introduction and team qualifications
- Team organization chart

2. Communication, schedule, and budget

- Effective communication
- Ability to meet schedules and budget estimates
- Quality assurance plan

3. Approach and understanding

- Goals and Objectives

4. Past performance

5. Resumes

6. Required forms and certifications

- Company and staff licenses
- Sample insurance
- Designated contact, certification, and signature form
- Addendum acknowledgement form

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Section 1: Team Qualifications

Team qualifications

The Mott MacDonald team includes the very best technical and management staff, all dedicated to the successful delivery of the Reeds Creek Fish Hatchery Repairs project. We understand WVDNRs need to select a consultant who will deliver the project on time, on budget, efficient, cost-effective and with the appropriate level of leadership and guidance. The team has experience with West Virginia state government contracting practices and procedures.

Mott MacDonald's staff has strong technical capabilities as well as clear understanding of all project phases, which enables the team to efficiently and cost-effectively execute the project to WVDNR's satisfaction. We look forward to collaborating with WVDNR staff to offer creative and reliable measures to provide fish hatchery repairs at Reeds Creek.

Gary Facemyer, PE, PS will provide overall project management. He has more than 40 years' of responsible charge of public works projects in West Virginia. He has served as Principal Project Manager and Project Engineer for various water, wastewater, site development, solid waste landfills, earthen dams, geotechnical investigations, abandoned mine reclamation projects, hazardous waste sites, and many other miscellaneous civil engineering projects. His duties have included project planning and design, managing construction bids and awards, construction oversight and inspection, and project closeout.

Eric Bess, GISP will assist Gary with schedule, budget, meetings, documentation, and data management. Eric has over 17 years' in GIS, data, and asset management experience across a broad range of sectors. He has served as Project Manager on various projects, including water, stormwater, GIS and asset management, data collection initiatives.

John Green is a Registered Professional Surveyor with over 30 years of experience in the engineering industry in surveying or survey related capacities and as an engineering design technician. He is expertly qualified in most conventional types of surveying and is also experienced in GPS surveying techniques. His specific project experience is primarily in transportation, site design and environmental infrastructure such as water and sewer system projects.

Kevin Garnes has almost 40 years of experience in the civil and architectural design field, including managing a CAD systems network and personnel with an extensive working knowledge of AutoCAD. He has been responsible for design, specifications, cost estimates, and quality control of construction documents for water and wastewater treatment plants, water storage tanks and distributions systems, sanitary sewer pump stations and collection systems, landfill design and permitting, bridge and highway design, right-of-way acquisition, and mining and reclamation plans.

Chris Henry, PE is experienced in wastewater engineering, construction oversight, and inspection over stream mitigation activities. His design experience includes pump station analysis design, sewer rehabilitation and replacement, manhole rehabilitation and replacement, Inflow and Infiltration (I/I) removal analysis, and E&S controls. His additional experience also includes extensive environmental impact monitoring related to mining operations and their effects on hydrologic conditions, and NASSCO pipeline and manhole assessment.

Dave Hechmer, PE is a licensed civil engineer experienced in the design, permitting, and construction of water/wastewater treatment plants, public water supply, wastewater/stormwater collection and conveyance systems. Mr. Hechmer has a proven positive record of project representation to stakeholders, regulatory agencies, and the general public. He is proficient in the use and application of many engineering software programs including but not limited to HydroCAD, Hydroflow, BioWin, EPANET, and SSOAP.

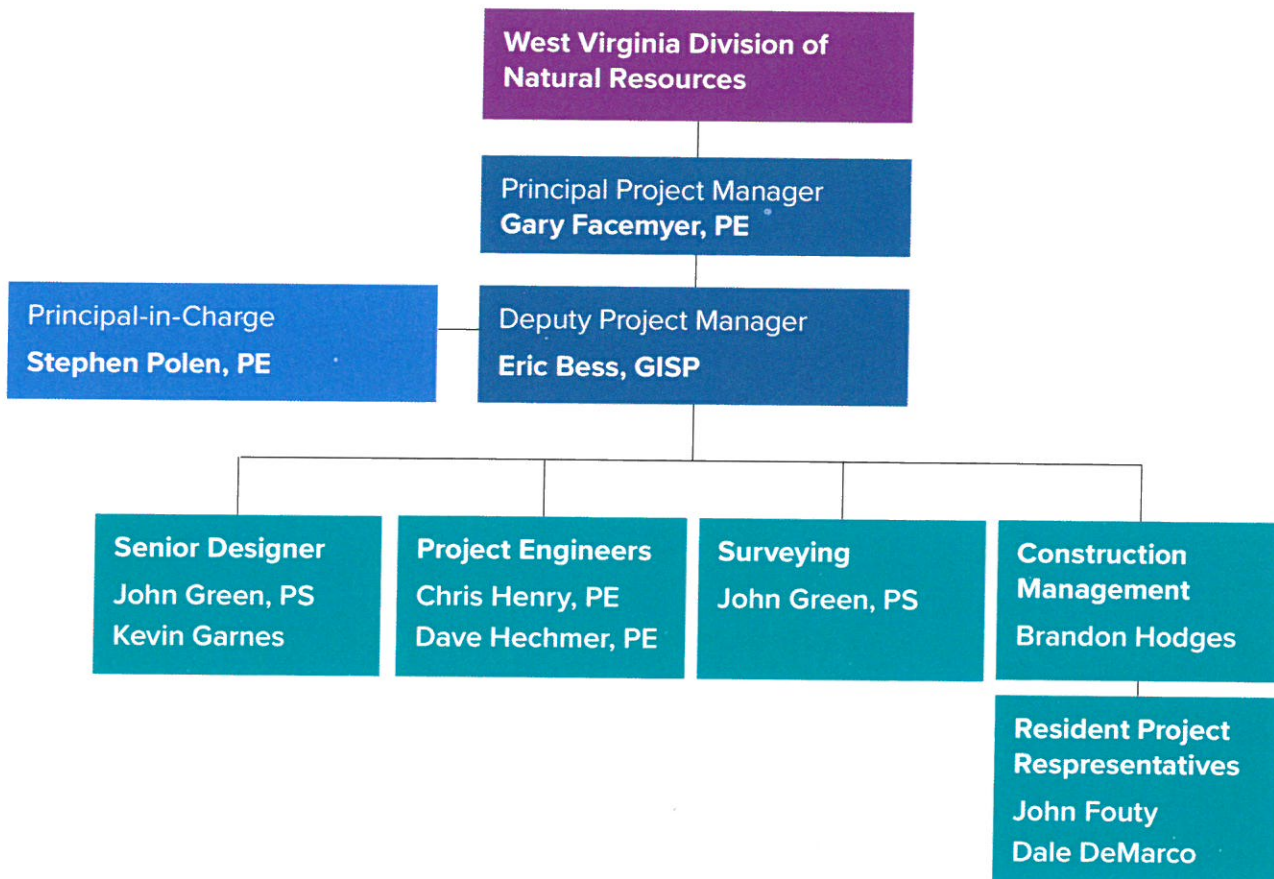
Brandon Hodges has 20 years of experience in the engineering and construction industries. Through a variety of projects and responsibilities, Mr. Hodges has continued an upward rise in the engineering field. Specializing in the utilities industry, he can perform a multitude of tasks in project management, from design and layout, to inspection and quality control testing. He has served as Resident Project Representative on many multi-million dollar projects, and has experience with client interface, site analysis, contracts, plan and code review, and all functions relative to construction administration from groundbreaking through project completion.

John Fouty has 27 years of experience in the engineering and surveying field. His surveying experience includes basic location work, topographic surveys, sub-division layout, and GPS experience in both control and location needs. Mr. Fouty has also served as Resident Project Representative and has provided inspection work for utility installations. He has valuable experience with customer relations and site analysis regarding utility installation, cost estimating, and construction. With Mott MacDonald, he works in a variety of capacities, providing site inspection, design proposals, cost estimates, logistics support, and property research, along with survey assistance and GPS location, when needed.

Dale DeMarco has concentrated his career in the development of industrial and municipal plants and has prepared design and detailed work for coal preparation, float glass, and water pollution control plants. His experience also includes extensive fieldwork in groundwater monitoring. He is proficient in operating numerous pieces of equipment, including, but not limited to, a Trimble GeoXH GPS, a Hach Model FH950 Flow Meter, Marsh-McBirney Model T200 Flow Meter, and various other groundwater and surface water sampling instrumentation. Mr. DeMarco's extensive career also includes safety inspection of bridges and field inspection of crane rails and their supports.

Team organization

Our team will be led by a Charleston-based senior project principal and supported by highly experienced regional experts in all aspects of concrete and piping system rehabilitation. Our complete project team is reflected in our organization chart below. Detailed resumes of key staff members are also included.



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**Section 2:
Communication,
Schedule, and
Budget**

Communication, schedule, and budget

Effective communication

Mott MacDonald believes communication is the key to a project's success. Open, frequent communication of project progress, beginning with the design through completion of the construction phase, enables the client to stay engaged and knowledgeable on the projects status and allows for client feedback at critical milestones to avoid duplicated efforts or re-work that can negatively impact a project's budget and/or schedule. At the onset of the project, Mott MacDonald will work with the client to identify the project stakeholders and communication parameters. Meeting agendas, topics, minutes, and action items will be documented and distributed to the stakeholders for review and acceptance to ensure everyone agrees and is unified in the understanding of the meeting topics and action item responsibilities. Any deviation from scope that may arise during the project will be documented and discussed with the client as to the deviation's impact to budget and schedule so the client is aware of these situations immediately.

Design reviews will be conducted at each stage of the design process; schematic design, design development, and construction documents. The schematic design phase will document the development of each project and its major components. This phase will include a project narrative that describes the Owner's goals and objectives; existing conditions; ecological, cultural, and environmental resources; legal/regulatory approvals needed; description of proposed solutions, and basis of design. A site/landscape plan will be developed along with a construction cost estimate and project schedule. Owner will approve the schematic design before progressing on to the design development phase. The design development phase is intended to further develop the project design with greater detail. At this stage, investigations will be made to establish the topographic, facilities and boundary information; ecological, cultural, and environmental resources to be protected; and the RF information all needed for the final design. Owner will approve the design development documents before progressing on to the final design phase. The development of final design, construction documents, bidding and contract documents will be reviewed at 30%, 60%, 90% and 100% to keep the Owner engaged throughout the project design.

Upon Owner approval of the bidding and contract documents, Mott MacDonald shall coordinate and cooperate with the Owner and WV Purchasing Division to facilitate the bidding process, including issuance of addenda, if necessary. Upon contract award, Mott MacDonald will provide construction phase engineering services, a full or part-time resident project representative, and commissioning services, if requested. Mott MacDonald will attend a pre-construction meeting, if requested. Construction phase services will include material submittal reviews, project site visits, written periodic reports on progress and quality of work, resolve field conflicts, prepare change orders for actual field conditions encountered, recommend approval of progress and final applications for payment and make final recommendations on acceptance of work.

Tools for Efficiency and Working Across Offices

Bentley ProjectWise: Provides a platform for integration and collaboration of remote teams allowing them to function as a single project unit. The ProjectWise system is designed to work with complex linked or referenced engineering, GIS, CAD, and BIM content. The system allows project work to be fully managed and available to project contributors without the traditional delays or format changes that can cause errors and slow production schedules. ProjectWise allows project teams to review, perform quality control, administer redline documents, and manage all project files and content between office locations electronically without the need to ever remove files or content from the system.



Microsoft 365 with Skype: Mott MacDonald invested in a major technology upgrade to our IT systems and bandwidth at all offices over the past 12 months that included the deployment of Microsoft Office 365 communication software. This software, which incorporates Skype and is integrated with Microsoft Outlook, combines contact management, email, telephones, instant messaging and presence technology, video conferencing, and internet-based meetings through laptop and desktop users, plus deployment to all popular mobile devices including iPads and Surface tablets in the field. This technology allows our project manager to know the status of all the team members and be able to contact and coordinate in real-time with everyone, hold impromptu meetings, share files and computer desktops with other Mott MacDonald professionals.



GoToMeeting: GoToMeeting is an online meeting, desktop sharing, and video conferencing software that enables Mott MacDonald to meet with our clients and subconsultants via the Internet in real-time.



BIM: Building Information Modeling (BIM) is an intelligent 3D model-based process that equips architecture, engineering, and construction professionals with the insight and tools to more efficiently plan, design, construct, and manage buildings and infrastructure. Commonly our engineers will demonstrate their design in BIM to help the Client and Contractor visualize the work and ensure conflicts do not exist.



Ability to meet schedules and budget estimates

WVDNR requires services from qualified consulting firms to provide professional expertise for the various engineering components of the Reeds Creek Fish Hatchery Repairs project. These services will be identified by WVDNR; but likely include existing facilities analysis, repair design(s), and construction administration. When each task is scheduled, it is the expectation of WVDNR that the Mott MacDonald Team will be suitably staffed and available with experienced professionals who can meet the immediate needs of WVDNR.

This Mott MacDonald team has completed dozens of like projects. We are also familiar with WVDNR's project delivery requirements and have developed processes and procedures to effectively deliver the required services on time and with a high degree of success. To meet your expectations, Mott MacDonald has assembled a team with the management skills and expertise needed to address this project effectively. Each team member brings specific, direct and pertinent experience as well as an in-depth understanding of working with fish hatchery repairs.

The Mott MacDonald Team's plan for conducting and providing the services requested by WVDNR involves both managerial and technical competency and processes. These include:

- An efficient organization structure that is responsive and flexible to client requests
- Experience in management of facilities for federal, state, and local government entities
- Effective assignment implementation plan
- Unequaled knowledge of the project requirements
- Ability to deliver deadlines
- Meet or exceed the WVDNR's project objectives on time and on budget, within established funding parameters
- Superior technical expertise
- An emphasis on stakeholder consultation and communication
- Maintain comprehensive, in-depth reporting on all elements of an assignment
- Integral quality control / quality assurance plan
- Commitment to delivering value to WVDNR

The elements identified above are addressed herein and in the sections that follow to demonstrate our understanding of this project assignment.

Staffing structure to meet schedules

The Mott MacDonald Team's organizational structure is designed to be flexible and is tailored to be responsive to WVDNR's specific requirements at each unique site location and for each assigned design task. Expert leadership is available in depth for all technical disciplines identified under this solicitation. These resources will be quickly mobilized and assigned to efficiently complete each task and maintain the project schedule. The Mott MacDonald Project Manager will assign the requisite resources for an assignment to control scope, schedule, budgets and perform quality assurance on all project deliverables. This Mott MacDonald team provides the following:

- A team of managers, architects, and engineers who have knowledge of the WVDNR's standards and procedures, and who will apply this knowledge to the project.
- Responsiveness to keep the project on-schedule.
- A project organization that provides dedicated teams for the various tasks to allow for multiple deliverables to be performed simultaneously.
- A compact team that can provide 100% of all A/E services.
- Thorough knowledge of the tasks expected within the project scope.
- A quality control / quality assurance plan that allows review of all deliverables of varying size and complexity.
- Cost estimating and scheduling capabilities that focuses on the unique construction environment at each site location and affords this focus on both a general and detailed level.

It is mandatory that projects be executed in a timely manner, within budget, and delivered seamlessly with no surprises. This will be accomplished with an active risk management program through design and construction and using our proven management and quality assurance techniques. A successful project requires a keen focus and excellent communications to assure smooth and efficient operations. The Mott MacDonald team realizes effective collaboration with WVDNR's Project Manager will be crucial. Hallmarks for each deliverable will be constructability, safety, security and added-value while minimizing inconvenience to the local residents and traveling public. This Team will endeavor to exceed WVDNR's expectations for sustainability by incorporating a high degree of sustainable design and construction practices.

Our approach to a project's undertaking is to provide ample client review opportunities, so that WVDNR's project management team fully understands the project approach, relevant criteria and sees project progression many times during its development. This affords two-way dialog between the project and client leading to active comment and suggestion incorporation as the project develops. This collaborative effort strengthens initial concepts and leads to comprehensive and well thought out work products.

Effective communication

A critical component of a successful project is to ensure that all participants work to the same plan. This project will include a specific Project Plan of Work (PPW) that is a key part of our project control and quality management system and includes sections on contacts, communication protocols, reporting, task assigned individuals, scope, budget, schedule, work breakdown structure, deliverables and specific project criteria. The PPW will be updated during the course of the assignment to incorporate any changes as necessary. The purpose of the PPW is to ensure that all project participants have a clear understanding of the assignment goals before any work begins and enables Mott MacDonald to best utilize the skills of its staff and identify if any additional resources are required.

Regular internal meetings, monitoring progress and corrective actions, will be held to maintain the schedule, and we will keep WVDNR informed of the status of the assignment to enable WVDNR to maintain control of the decision-making process.

The Mott MacDonald Team Project Manager, Gary Facemyer, PE will be responsible for overall Contract Management, ensuring the team meets its commitments for the project and would be the direct point of contact for assigned tasks. Gary will lead the effort and be supported by the various discipline experts to complete specific work required under the contract. Gary will assure that each task has appropriate levels of support and resources for successful completion of assignments. Gary will communicate regularly with the WVDNR Project Manager to assure work is progressing in a manner that meets or exceeds expectations.

This team approach has worked effectively to manage Mott MacDonald's previous experience with similar projects and has taught us that the availability of qualified technical and support staff is essential to effectively serve clients. Having a diverse breadth of staff both locally and corporate-wide, affords flexibility to assign the appropriate technical staff.

Implementing proven budgeting and scheduling solutions

The key to on-time and on-budget performance lies in successfully combining the scope/deliverables, budget and schedule, into a Work Breakdown Structure (WBS). However, as we have experienced on previous projects, we must also continuously communicate with WVDNR as the work is executed and collectively agree to adjust scope and schedule as necessary to deal with unanticipated conditions or events. We believe it far more important to deliver the right project rather than meet a schedule but for the wrong project. The WBS is critical to the successful execution of the project as it establishes what is to be done, who is to do it, how / who will check it, when it will be done, and the budget for the work. Mott MacDonald's Business Management System includes policies on project execution and a suite of project control tools Gary will employ to control, responding to each project task with qualified and experienced staff and produce quality work products delivered on time and within budget.

Gary will be responsible for preparing and administering a Project-Specific Project Management Plan. He will use Mott MacDonald's proprietary Project Management Desktop for defining task budgets and real-time tracking of actual costs.

Each task schedule will be updated on a bi-weekly basis and submitted with monthly progress reports to WVDNR. All stakeholders will be kept informed on a timely basis with respect to the current progress, critical activities, potential delays, mitigation strategies, and corrective actions.

Any change to scope will be immediately assessed by the Mott MacDonald team to consider impacts on current and completed work and to determine the most effective way to integrate the additional scope into the current schedule. If schedule problems develop, our Project Manager will coordinate with our team to assess the problem and develop a revised schedule that all team members can buy into and move forward with to meet the project goals.

Mott MacDonald will use appropriate scheduling software (MS Project) to prepare and monitor the approved assignment schedule and resources. Weekly updates will be tracked to indicate adherence to assignment targets and also provide early warning of activities that are not in compliance with the schedule thereby enabling resource, budget, and scope decisions to be made.

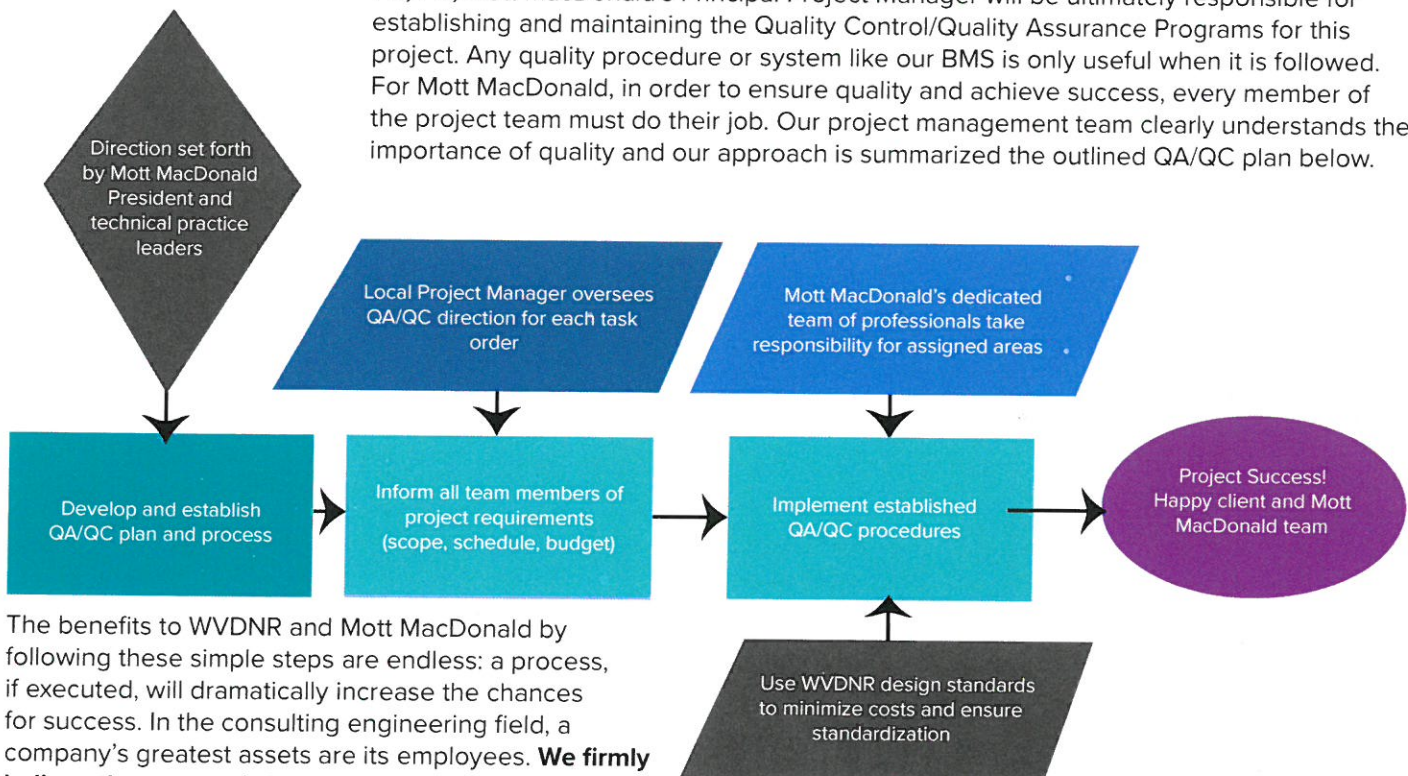
Quality assurance

The Mott MacDonald QA/QC goes beyond checking deliverables prior to submittal. It is a daily work ethic instilled into all of our managers, designers, and technicians.

We understand that WVDNR is making a major capital investment on this facility. As with any major purchase, buyers want the most for their money. They want quality, durability, reliability, and all for a fair and reasonable price. Regardless of size or scope, it will require close coordination between multidisciplines, designers, and construction personnel under unique site characteristics. The Reeds Creek Fish Hatchery Repairs project will require a plan to control quality – a plan that not only addresses quality of the design but also establishes a process to promote quality of conformance, and quality of performance.

Mott MacDonald's process to quality is based on a well-established process, called our Business Management System (BMS). As a part of our commitment to quality, Mott MacDonald submits our procedures to external assessments carried out by independent nationally accredited assessors. This assures an independent evaluation of our policies and procedures and substantiates Mott MacDonald as an ISO 9001 accredited firm. The ISO 9001 accreditation is an independently verified certification that Mott MacDonald has established a formal Quality-Assurance program and verifies that we actually follow those procedures. We have invested in this certification as a commitment to our clients that quality will be upheld throughout our work product.

Mott MacDonald and the entire project team are committed to providing WVDNR with the highest quality of services for this project. We take the approach that quality control begins even before the Notice to Proceed is issued. It begins once the Project Manager thoroughly understands the scope of services for the project, and then assigns and dedicates the very best personnel suited to the tasks that are required. **Gary Facemyer, PE, PS**, Mott MacDonald's Principal Project Manager will be ultimately responsible for establishing and maintaining the Quality Control/Quality Assurance Programs for this project. Any quality procedure or system like our BMS is only useful when it is followed. For Mott MacDonald, in order to ensure quality and achieve success, every member of the project team must do their job. Our project management team clearly understands the importance of quality and our approach is summarized the outlined QA/QC plan below.



The benefits to WVDNR and Mott MacDonald by following these simple steps are endless: a process, if executed, will dramatically increase the chances for success. In the consulting engineering field, a company's greatest assets are its employees. **We firmly believe that no one is better or more equipped and dedicated to providing you with quality projects and services than our local Project Manager.**

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Section 3: Approach and Understanding

Approach and understanding

Goal/Objective 1

Review the existing plans and conditions, as well as the operation of the facility, and evaluate while communicating effectively with the owner to determine a plan that can be implemented in a manner that will minimize disruption to concurrent operation of the facility and meet all objectives.

Proposed Activities

1. Review existing plans, condition reports and operational procedures
2. Meet with WVDNR engineering and facility operations staff to determine a plan that will minimize disruption of existing operations, yet meet all objectives.
3. Develop a written plan to investigate the current situation and determine causes.
4. Prepare a report that recommends methods to rehabilitate structures and piping that meet WVDNR needs and objectives; and minimizes disruption to existing operations.

Goal/Objective 2

As a portion of this process outlined in Objective 1, provide all necessary services to design the facilities described in this EOI in a manner that is consistent with the Division of Natural Resources needs, objectives, current law, and current code; while following the plan to design and execute the project within the project budget.

Proposed Activities

1. Prepare preliminary design documents, including final design criteria, preliminary drawings, outline specifications, and written description of the project.
2. Present the project to engineering and operations staff for review and input into the final design.
3. Prepare opinion of probable total project cost and schedule for approval and make design adjustments, if needed.
4. Prepare construction drawings and specifications showing the required work.
5. Prepare opinion of probable total project cost and schedule based on the final design documents.

Goal/Objective 3

Provide Construction Contract Administration Services with competent professionals that ensures the project is constructed and functions as designed.

1. Assist WVDNR in drafting contract and procurement documents.
2. Attend pre-bid meeting to provide technical support.
3. Provide technical support during bid question period.
4. Serve as WVDNR's representative during construction:
 - ✓ Manage the construction phase, including on-site inspections as client's engineer
 - ✓ Manage the construction phase schedule(s) to minimize facility disruptions
 - ✓ Confirm that materials meet specifications
 - ✓ Oversee construction requirements
 - ✓ Provide punch list to contractor based on the installation contract and site inspections
 - ✓ Assure work meets the design and operational contract terms

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Section 4: Past Performance

Past performance

Competence in professional disciplines

Mott MacDonald's proposed team is comprised of seasoned and proven Charleston-based management supported by regional experts in the field of concrete and piping rehabilitation. The team has strong working relationships with both WVDNR and that State of West Virginia. We believe our bench strength is unmatched and that we are the best firm for this project. Below we have addressed our capabilities to provide the necessary services to complete this project on-time and on-budget. Backed by our proposed team are 2,300 Mott MacDonald professionals throughout the U.S. where we can pull additional expertise and support services as needed to ensure a successful delivery of these facilities.

Mott MacDonald Project Experience

Kinloch Interceptor Inflow and Infiltration Removal Project



Inflow and infiltration collection system rehabilitation

Mott MacDonald assessed and designed a sewer rehabilitation plan to address inflow and infiltration from a separate sanitary sewer system.

Opportunity

The Municipal Sanitary Authority of the City of New Kensington (MSANK) conducted a rehabilitation program to target inflow and infiltration (I/I) as part of an EPA mandated Long Term Control Plan (LTCP). In the first phase of the LTCP, MSANK was required to assess approximately five miles of 8-inch separate sanitary sewer lines and 150 manholes that contributed to the Kinloch Interceptor.

Solution

Mott MacDonald assessed the structural integrity of the sewer pipeline system through closed circuit television (CCTV) inspections. Various rehabilitation methods were investigated based upon the condition of the pipe and implementation practicability. These methods included open cut replacement, pipe bursting, spot repair grouting, and cured-in-place pipe (CIPP) using ultraviolet light, hot water, and steam.

Outcome

CCTV data determined that a majority of the sewer pipeline network contained structural defects such as cracks, fractures, and collapsed pipe. CIPP lining was selected as the primary rehabilitation method for its structural capabilities. CIPP also eliminates the number of locations for potential infiltration and root growth to end of pipe and lateral reinstatement points. To address these locations, hydrophilic pipe end seals and CIPP lateral wye connections were installed to fully rehabilitate the public side of the collection system.

Client

The Municipal Sanitary Authority of the City of New Kensington

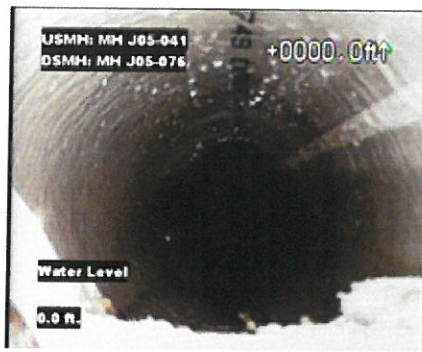
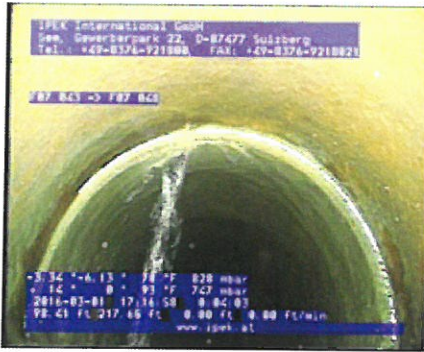
Location

New Kensington, PA

Services

- Wet Weather Flow Study
- Sewer Rehabilitation
- CIPP Rehabilitation Design
- CIPP Mainline to Lateral Connections
- Construction Inspection

Little Pucketa Inflow and Infiltration Removal Project



Inflow and infiltration collection system rehabilitation

Mott MacDonald identified and designed an inflow and infiltration removal program to address excessive wet weather flows from a separate sanitary sewer system.

Opportunity

The Lower Burrell Municipal Authority (LBMA) was placed under an EPA mandated Administrative Order of Compliance (AOC) to develop a LTCP to address excessive I/I within their separate sanitary system. LBMA contracted Mott MacDonald to prepare a systematic approach to identifying areas of high I/I contribution and develop an I/I removal program to address sources in the public collection system.

Solution

LBMA provided CCTV inspections of all sanitary sewers and manhole inspections in the identified project areas. Inspection results indicated infiltration entering through pipe joints and structural defects, such as cracks and fractures in manholes and sewer pipe. Various rehabilitation methods were investigated based upon the condition of the pipe and implementation practicability. These methods included open cut replacement, pipe bursting, joint grouting, CIPP, and cementitious manhole lining.

Outcome

CIPP and cementitious manhole lining were selected as the primary rehabilitation methods. CIPP eliminates the number of locations for potential infiltration and root growth to end of pipe and lateral reinstatement points. To address these locations hydrophilic pipe end seals and CIPP lateral wye connections were installed to fully rehabilitate the public side of the collection system. Manhole inspection indicated infiltration through missing mortar in joints and gaps between the chimney/riser and manhole casting. Each manhole throughout the project area was lined with a cementitious lining and flexible chimney seal.

Client

Lower Burrell Municipal Authority

Location

Lower Burrell, PA

Services

- Sewer Pipeline Rehabilitation
- CIPP Rehabilitation Design
- CIPP Mainline to Lateral Connections
- Construction Inspection

Hempfield Township 2017 Sewer Repairs

2017 Sewer Repairs Project

This sewer repairs project resulted from the ongoing assessment and preventative maintenance of the Authority's sanitary sewer system.

Mott MacDonald Role

Mott MacDonald reviewed preventative maintenance inspection videos with respect to structural and functional defects. We provided recommendations for repairs such as CIPP lining of structurally compromised sewer segments and point repair pipe replacement of sagging sewers. Other responsibilities included preparing construction drawings and technical specifications. We also provided contract bid services, bid review, and contract award recommendations. Mott MacDonald was responsible for reviewing contractor product submittals and providing contractor RFI review and response.

Highlights

Maximized the Authority annual sewer repair budget by applying a combination of available sewer rehabilitation techniques and technologies to provide a long term, low disturbance solution to structural and functional deficiencies within the sewer system.

Client

Hempfield Township Municipal Authority

Location

Hempfield Township, PA

Services

- Sewer Maintenance
- Sewer Rehabilitation
- Bid Phase
- Construction Phase

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Section 5: Resumes

Gary Facemyer, PE, PS

Personal summary

Education:

BS, Civil Engineering,
WV Institute of Technology,
1975

Registration:

Professional Engineer

KY, 18676, 1995
OH, PE56731, 1993
PA, PE042965R, 1992
VA, 0402 024022, 1993
WV, 8287, 1980

Professional Surveyor

WV, 1320, 1995

Memberships:

American Society of Civil
Engineers (ASCE) Fellow

American Water Works
Association (AWWA)

Water Environment
Federation (WEF)

WV Society of Professional
Surveyors (WVSPS)

Mr. Facemyer has been responsible for planning, permitting, design, and construction of public works projects for 40 years. He has served as Principal Project Manager and Project Engineer for various water, wastewater, site development, solid waste landfills, earthen dams, geotechnical investigations, abandoned mine reclamation projects, hazardous waste sites, and many other miscellaneous civil engineering projects. His duties have included project planning and design, managing construction bids and awards, construction oversight and inspection, and project closeout. His responsibilities have included managing quality assurance/quality control, schedules, personnel, company resources, business/market development, clients, and profit.

Selected projects

Asset Field Locations, West Virginia American Water, Statewide, WV: Project Director for an ongoing project to field locate 160,000 water meter tiles using sub-foot GPS data collectors to implement a data management system and SAP/GIS integration. Manages and assists installation contractors to replace these meters with AMR/AMI technology.

Yeager Airport Facility Improvements, Charleston, WV: Project Manager for terminal and ramp improvements, consisting of new passenger boarding bridges, pre-conditioned air units, fixed ground power units, HVAC rooftop unit replacements, and electrical upgrades, including emergency power. Responsible for contract management and construction phase services, and project closeout with FAA.

Asset Data Management, West Virginia American Water, Statewide, WV: Project Director for an ongoing project to develop a GIS system that integrates with client's SAP enterprise resource management system. Responsible for office and field data collection, GPS field location of assets, reconciliation between systems, and asset data management.

Upper Kanawha Valley Water Main Reinforcement and Extension, West Virginia American Water, Kanawha County, WV: Principal Project Manager responsible for planning, design, permitting, bidding, and construction management of 15 miles of 20" and 16" ductile iron pipe, 1500 gpm water booster station, and one million gallon glass-fused-to-steel water storage tank to serve the communities of Pratt and Montgomery. Project includes an open cut crossing of the Kanawha River that impacted federally endangered mussels that had to be permitted and mitigated. Project allows the client to abandon two water treatment plants and serve the municipalities with reliable water from their regional water treatment plant.

Tank Painting, West Virginia American Water, Statewide, WV: Principal Project Manager responsible for providing engineering and project management related to development, management, and implementation of an annual water storage tank painting program.

Geographic Information System (GIS) Conversion, West Virginia American Water, Statewide, WV: Client Manager responsible for converting client's CAD and paper maps to GIS format. Project consists of 9,500 hydrants, 50,000 valves, and 3,350 miles of water main.

Resident Project Representatives, West Virginia American Water, Statewide, WV: Principal Project Manager responsible for furnishing and managing resident project inspectors for various capital improvement projects, primarily water distribution system renewal and replacement projects.

Technical Services, West Virginia American Water, Statewide, WV: Principal Project Manager responsible for providing engineering, surveying, and GIS services to the client's Engineering Group for capital improvements to water distribution system renewal and replacement projects.

Stormwater Pollution Prevention Plans (SWPPP), City of Charleston, WV: Project Manager for 24 SWPPP and 10 site assessments for municipally-owned sites in the city. Responsible for resource planning, schedule compliance, final reporting, and certifications.

Water Storage Tank Demolition, West Virginia American Water, Statewide, WV: Project Manager/Engineer responsible for locating and evaluating 20 existing ground level and elevated, abandoned water storage tanks to be demolished; preparing bidding documents, assisting client in the bidding process and contract negotiations with Contractor; and miscellaneous construction administration services, land research, easements, and right-of-way services.

Potassium Permanganate Chemical Feed, West Virginia American Water Charleston, WV: Project Director responsible for design, permitting, bidding, and construction management of a standalone chemical feed building and equipment for an 80 MGD water treatment plant.

Fayette County Advanced Metering Construction Management, West Virginia American Water, Fayette County, WV: Project Director and Client Manager for construction phase engineering services; resident project representation; mapping services using GPS locations; and GIS mapping of meters, tanks, booster stations, pressure reducing valves, fire hydrants, and gate valves. Responsible for progress monitoring, data management, and data cleansing for the replacement of 12,000 water meters with "smart meter" technology and installation of 1,200 acoustical monitors for leak detection in this municipal system.

Water Storage Tank Rehabilitation, Town of Wayne, Wayne, WV: Project Manager/Project Engineer responsible for tank inspection, and developing plans and specifications to rehabilitate a 150,000-gallon ground supported welded steel water storage tank. Rehabilitation consisted of cleaning, sandblasting to near white, repairing pits, replacing the ladder/platform, replacing bolts/gaskets to manways/access hatches, and painting with a three-coat epoxy paint system. Paint inspection was provided by KTA-Tator, Pittsburgh, PA. Contract performed by Welding, Inc., Charleston, WV.

Water Storage Tank Rehabilitation, Town of Gilbert, Gilbert, WV: Project Manager/Project Engineer responsible for tank inspection, and developing plans and specifications to rehabilitate two 100,000-gallon ground supported welded steel water storage tanks. Rehabilitation for Tank No. 1 consisted of complete demolition and construction of a new welded steel water storage tank on the existing foundation. Rehabilitation for Tank No. 2 consisted of cleaning, sandblasting to near white, repairing pits, replacing the ladder/platform, and replacing bolts/gaskets to manways/access hatches. Both tanks were painted with a three-coat epoxy paint system. The work also included replacement of the yard piping system, including replacing valves to create a more flexible piping system to isolate and drain the twin tanks, fencing, and telemetry. Paint inspection was provided by KTA-Tator, Pittsburgh, PA. Contract performed by Welding, Inc., Charleston, WV. Telemetry contract performed by Patriot Services, Parkersburg, WV.

Slabtown, Tamcliff, Paynter Water Main Extension, Town of Gilbert, Gilbert, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of a water main extension project for the Town of Gilbert. The project was funded by the USDA/Rural Utilities Service and HUD/Small Cities Block grant.

Water Storage Tank New Installations, West Virginia American Water, Statewide, WV: Project Manager/Project Engineer responsible for ten or more ground supported welded steel water storage tanks. Duties included planning, design, permitting, bidding, construction management, and inspection. Paint inspection provided by KTA-Tator, Pittsburgh, PA. Welding, Inc., Charleston, WV was the successful low bidder on all tanks.

Upper Fishers Branch Water Main Extension, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of a water main extension project in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. The project is being funded by the KCC, US Army Corps of Engineers, IJDC grant, and WV American Water.

Sanderson/Dutch Ridge Water Main Extension, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of a water main extension project in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. The project is being funded by the KCC, WVDEP/Abandoned Mine and Reclamation Program, and WV American Water.

Back Fork of Elk, Miller Mountain Phases I & II, Diana Phase I Water Main Extensions, Webster County Economic Development Authority, Webster County, WV: Project Manager/Project Engineer responsible for planning, permitting, design, and bid phase engineering services for a water main extension project in cooperation with the Webster County Commission, Webster County Economic Development Authority, and West Virginia American Water Company. The project is being funded by the WVDEP/Abandoned Mine and Reclamation Program and WV American Water.

Putnam County (Six Areas) Water Main Extensions, Putnam County Building Commission, Putnam County, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of a water main extension project in cooperation with the Putnam County Commission, Putnam County Building Commission, and West Virginia American Water Company. The project was funded by the Putnam County Commission, Infrastructure and Jobs Development Council (IJDC), and WV American Water.

Putnam County Master Plan, Putnam County Building Commission, Putnam County, WV: Project Manager/Project Engineer responsible for the preparation of a master plan to provide public water to serve unserved areas. This comprehensive plan has led to the current water projects that have been constructed, are now under construction, and projects currently being proposed. These projects are funded by various local, state, and federal grants and loans, and contributions from WV American Water.

Cabell County (Six Areas) Water Main Extension, Salt Rock Public Service District, Cabell County, WV: Project Manager/Project Engineer responsible for planning, permitting, and design of water main extension projects in cooperation with the Cabell County Commission and West Virginia American Water Company. The projects were funded by the Infrastructure and Jobs Development Council (IJDC), HUD/SCBG, and WV American Water.

Cabell County Master Plan, Salt Rock Public Service District, Cabell County, WV: Project Manager/Project Engineer responsible for the preparation of a master plan to provide public water to serve unserved areas. This comprehensive plan has led to the current water projects that have been constructed, are now under construction, and projects currently being proposed. These projects have been and will be funded by various local, state, and federal grants and loans, and contributions from WV American Water.

Kanawha County Master Plan, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for the preparation of a master plan to provide public water to serve unserved areas. This comprehensive plan has led to the current water projects that have been constructed, are now under construction, and projects currently being proposed. These projects have been and will be funded by various local, state, and federal grants and loans, and contributions from WV American Water.

Public Water Distribution, Pumping and Storage Projects, West Virginia American Water Statewide, WV: Responsible for planning, design, permitting, construction management, and construction of numerous public water system projects over a 25 year period. Projects included water main extensions, replacements and reinforcements, pumping stations, pressure reducing stations, and water storage tanks. Responsibilities included grant and loan funding applications and strategy for securing the necessary funding.

Upper Winifrede Water Main Extension, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for planning, permitting, design, and construction of a water main extension project in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. The project was funded by the KCC, WVDEP/Abandoned Mine and Reclamation Program, and WV American Water.

Wills Creek, Frame, Upper Frame Phase I & II, Bufflick, Pond Gap, Witcher Creek, Tupper Creek, Doctors Creek, Derricks Creek, Grapevine Road, Sigmon Fork, Kanawha County Regional Development Authority, Kanawha County, WV: Project Manager/Project Engineer responsible for planning, permitting, design, and construction of water main extension projects in cooperation with the Kanawha County Commission, Kanawha County Regional Development Authority, and West Virginia American Water Company. These projects were funded by various local, state, and federal grants and loans; and WV American Water.

Water Main Extension Projects - Putnam County, Cabell County, Kanawha County and Boone County, West Virginia American Water, Various Counties, WV: Lead Consultant for these \$82 million water main extension projects in these counties. Project Manager/Project Engineer responsible for planning, permitting, design, and construction of various water main extensions within these county-wide water main extension projects. (Numerous other consultants were selected to perform similar services throughout these counties). As Lead Consultant, responsible for uniform bidding and contract documents, uniform reporting, contractor invoicing, and overall construction management for WV American Water. These projects were funded by various local, state, and federal grants and loans, and WV American Water.

Eric R. Bess, GISP

Personal summary

Education:

BS, Engineering Technology,
West Virginia University,
Institute of Technology, 1996

AS, Civil Engineering
Technology, West Virginia
University, Institute of
Technology, 1995

Registrations:

NICET Certified Civil
Engineering Technician,
#89568

Certified Geographic
Information Systems
Professional (GISP)

Professional memberships:

Member of American Water
Works Association (AWWA)

American Society of Certified
Engineering Technicians
(ASCET)

West Virginia Association of
Geographic Professionals
(WVAGP)

Mr. Bess has over 17 years of GIS experience, mostly in the Oil & Gas Industry. His range of experience covers a multitude of tasks including database development, workflow and dataflow process management, training, analysis, asset management, and field personnel management. Prior to this, Mr. Bess worked for five years in the coal industry, which also aided in a coal relations GIS support role. He has experience with data creation, compilation, reporting and analysis, and QA/QC of various datasets for business needs.

His mining experience includes a wide range of tasks from traveling with inspectors, to ensuring tools and parts for daily and planned maintenance activity, to traveling with surveyors underground to ensure proper mining direction and location are correct. He also assisted with permitting, mine projection development, ventilation review, and managed the water treatment systems for the bath houses, including ordering and management of the systems and chemicals and reporting requirements for state agencies. He also performed on-site IT support and human resource functions, as needed, for a union workforce of over 200 individuals.

Selected projects

Water System Acquisition Due Diligence, West Virginia American Water Company, WV: Served as Senior GIS Specialist on this project. Client requested due diligence to be done on a smaller water system that may be acquired. Work consisted of creating a GIS linkage between a master easement spreadsheet and parcel outlines in GIS. Assets were digitized from scans that were georeferenced, and buffer calculations performed based on the easement criteria to make a map book of the coverage area with various information displayed.

AMR/AMI Phase I, II, West Virginia American Water Company, WV: Project Manager and Senior GIS Specialist involved in field data collection with sub-foot GPS for a client program to replace probe and manual read meters with AMR/AMI read systems. Responsible for field crew coordination, deliverables for 3rd party contractors who performed the meter change-outs, and progress reporting. Also, the data was provided to the client as coordinates linked to each premise number for updating their master service address database.

Stormwater Surface Runoff Analysis, City of Huntington, Huntington, WV: Served as Senior GIS Specialist on this project involving digitization and data management for surface features in a small pilot area of the city. Responsible for GIS data acquisition and workflow development, proper data attribution for impervious vs. pervious areas, acreage calculation for runoff analysis, and map generation for client review.

Asset Data Management, West Virginia American Water Company, WV: Served as Senior GIS Specialist on this project consisting of data discovery, collection, process development, and integration to WVAW GIS System. Served as liaison with field operations to ensure field mark-ups of data were delivered and assimilated into the WVAW GIS System. Developed a field data collection process with GPS technology for more efficient collection and integration.

Impervious Surface Determination and Analysis Support, Huntington Stormwater Utility, Huntington, WV: Served as Senior GIS Specialist. Client indicated they would like assistance in determination of impervious area within city limits to then apply to their billing system to charge a stormwater runoff rate for commercial properties. Work consisted of providing technical support for client GIS personnel in how to train the software to classify the recently acquired imagery, how to take those results and intersect and calculate the impervious area per tax parcel, how to load the results into their billing system and also advise on a base disclaimer for review by the client's legal department to cover the work done prior to public release.

View shed Analysis, West Virginia American Water Company: Served as Senior GIS Specialist. Client requested due diligence to be done regarding view shed impact for potential timbering at a water treatment plant. Work consisted of creating a set of observation points, barrier of trees to remain and analysing the results using a 6ft tall person located at each observation point to show no negative impact resulting from the proposed timbering.

Upper Kanawha Valley Phase III, West Virginia American Water Company, Kanawha County, WV: Served as Senior GIS Specialist on this project consisting of multiple waterline extension and upgrade contracts. Responsibilities included managing project documentation, data acquisition, GPS data processing, one call design tickets and third party utility contact on project area for proper utility line marking, and crossing procedures and requirements.

Stormwater Pollution Prevention Plans (SWPPP), City of Charleston, Charleston, WV:

Served as Senior GIS Specialist on this project involving 24 SWPPP plans and ten site assessments for 34 municipal sites owned by the City of Charleston. Responsible for template development, data management, and general location and site maps of all field inspection data.

Upper Kanawha Valley Phase II, West Virginia American Water Company, Kanawha County, WV:

Served as Senior GIS Specialist on this project consisting of four waterline extension and upgrade contracts. Responsibilities included georeferencing legacy utility maps, one call design tickets and third party utility contact on project area for proper utility line marking, and crossing procedures and requirements.

Various Projects, Chesapeake Energy Corporation, Various Locations, United States:

- Right-of-Way Process and Mapping: Managed the efforts to standardize the GIS support processes and end products for Pipeline Right-of-Way (ROW). This project entailed working with IT and the ROW group to gain access to their ROW database, and working out a process for automated jobs to update the company's ROW GIS layer each night based upon the previous day's data at end of business. Standard mapping products were then created to relate to that layer with a specialized color code for each parcel status for an up to date view into the project and acquisition status along Pipeline projects in the major shale plays in the U.S. A separate web viewer was also developed with assistance from IT to give a digital view, as well as any hard copy needs the business may have.
- Pipeline Integrity Support (Class Analysis and Review with Operations): As part of the Pipeline Integrity group's role, they would utilize the GIS dataset for pipeline and associated facilities to process in their class location study tools. Once that result was obtained, they would be taken to the field operations and management personnel, with GIS as a liaison to review the results and provide explanation, or take down concerns for possible misidentification needing remediated prior to agency submission. With PHMSA's allowance of the clustering rule, this became an important role in helping reduce the amount of regulated mileage, thereby resulting in lower requirements, man hours, and patrols, and maintenance based upon the pipelines lower class ratings from proper analysis.
- Coordination of IT GIS Efforts with Business Needs for Solution Development and Acceptance: Performed periodic meetings with business leads to determine their goals and how GIS could assist or enhance their goals and outcomes. In doing so, with any web application needed, model or script development, business systems tie-in, or third party solution coordination with other systems, Mr. Bess would work closely with the IT group to ensure all business needs were met on implementation and any final tuning of the solution was done to provide the necessary outcome and product for the business use.
- One Call and Damage Prevention Program Support: GIS was integral in the one call responsibilities of the company. As the results of the GPS'ing of the assets occurred, the company's assets were becoming more spatially accurate, and allowing one call buffer submittals to state agencies to get more accurate, thereby providing more accurate ticket issuance from each state, and allowed for more internal personnel to clear tickets from the office knowing the status of the asset location information. GIS was responsible for data submittal to each agency, and worked with the one call ticket software company to enhance their product for our field personnel needs to enhance their user interface and streamline their work flows for more efficient damage prevention efforts.
- Hyperlinking of Related Documents, Photos, etc. to GIS Features: Performed data gathering and hyperlinking of file paths with the GIS feature classes to external and varied format data sources, so all information could be accessed from the GIS feature or portal without have to search multiple locations for similar data. Drawings, photos, etc. were hyperlinked in the GIS features attribute table so the end user could click the URL and be taken to the secondary source with minimal effort. This consolidated lots of information into a single accessible location for non-GIS centric personnel to utilize easily and efficiently.
- Training and Support for In-house Created Web Application Serving Up Company Pipeline and Facility Data to Internal Non-GIS Centric Users: Performed training and liaison for enhancement requests on internal web applications developed for non-GIS centric users. Assisted with front end development for process and user interface review, to then coordinate with test groups to provide further feedback to IT prior to final rollout. Training was provided upon rollout and again as requested by management to ensure comfort with the solution and the non-GIS centric end users for accessibility and understanding.

Stephen B. Polen, PE

Personal summary

Education:

MS, Engineering Management, Youngstown State University, 1998

BS, Civil/Environmental Engineering, Youngstown State University, 1985

Registrations:

Professional Engineer

OH #E58738, 1994

PA #040360, 1990

FL #0042315, 1989

WV #22401, 2017

MI #6201065969, 2017

Construction Document Technologist (CDT), 1995

Designated Design-Build Professional, 2014

Professional memberships:

American Society of Civil Engineers

American Water Works Association

Water Environment Federation

Pennsylvania Municipal Authorities Association

Mr. Polen has more than 30 years of experience providing engineering services to water/wastewater, general civil, and facilities engineering clients. Mr. Polen is an Area Manager within the Mott MacDonald organization where he has oversight responsibilities including staffing and project goals achievement for Water/Wastewater, Stormwater Projects, and facilities in Western Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana, and Michigan. He also directly manages the Pittsburgh Office of Mott MacDonald while serving as Program/Project Director for several key projects. As Program/Project Director, he coordinates all aspects of engineering projects and functions as the primary contact between strategic clients and the Mott MacDonald organization.

Having previously managed the day-to-day operation and administration of a growing public water utility, Mr. Polen approaches projects from the perspective of the owner. He is able to address operational and management issues and has extensive experience managing capital improvement projects. His experience includes analysis, design, construction, and operation.

Selected projects

Program Management and Design Management Services, Pittsburgh Water and Sewer Authority (PWSA), Pittsburgh, PA: Program Director and Engineer of Record responsible for program oversight. This includes management of staff who perform the day to day functions of water and sewer infrastructure capital improvement program which include project identification, project prioritization based on risk-based methodologies, budgeting, preparation and/or review of conceptual and final designs, design project management, construction administration and financial oversight. The Program includes providing embedded staff who prepare preliminary designs, develop RFP documents, participate in selection of design consultants to develop final design documents, facilitate bid phase services and oversee construction phase services for all Capital and Operational projects. These projects include: lead service line replacement programs, meter replacement projects, valve replacement projects, pump station rehabilitation projects, treatment plant upgrade projects, reservoir and tank upgrade projects, and miscellaneous utility operation projects.

Office Building Renovation, Utilities Investigation, Conceptual and Final Designs, Confidential Client, Pittsburgh, PA: Project Director for site investigations, conceptual and final designs, and construction phase services for the renovation of a two-story, 56,000 square foot office building to provide new office accommodations. Mott MacDonald prepared design and construction cost estimates, design and construction schedules, code analyses, life safety analysis, fire hazard analysis, energy analysis, and high-performance sustainability design report. Renovations took place while the building is occupied; therefore, demolition and construction occurred over six phases. Each phase was completed with commissioning and as-built drawing preparation prior to the start of the next subsequent phase. Design included the construction of a new personnel elevator, ensuring compliance with ADA-accommodations, detailed design of specialized system furniture arrangements, including significant electrical, data, and security accommodations.

New Training and Testing Laboratory, Conceptual and Final design and Construction Oversight, Confidential Client, Pittsburgh, PA: Project director for site investigations, conceptual and final designs, and construction phase services for the renovation and conversion of an existing two-story, 14,400 square foot shipping and receiving building to provide new modern training and testing laboratory accommodations. Conceptual and final design documentation included preparation of design and construction cost estimation, design and construction schedules, code analysis, life safety analysis, fire hazard analysis, and high-performance sustainability design report. Design includes the full demolition of all but the structural shell of the building, full asbestos and lead based paint abatement, construction of a complete Exterior Insulation and Finishing System, extensive raised flooring system, detailed design of specialized modular system furniture arrangements, and significant electrical, data, and security accommodations.

Main Pump Station Upgrades, ALCOSAN Campus, Pittsburgh, PA: Project Director for site investigations, design, and construction phase services for the replacement, upgrade, and new construction of various items to improve the dependability and efficiency of ALCOSAN's 480 MGD Main Pump Station. Major components of work included: upgrade of three existing 2,000 hp pumps with 53-inch impellers, new motors, and new variable frequency drives; replacement

of three existing 1,500 hp pumps with new 2,000 hp pumps; upgrade of pump station power supply and distribution equipment from 5 kV to 13.8 kV; replacement of elevator controls; upgrade of station HVAC equipment; pump discharge piping rehabilitation; replacement of existing drain pumps; rehabilitation of bilge pumping system; design of effluent and potable water improvements; and new pump discharge air/vacuum breaking mechanisms.

General Facility Design Support, Confidential Client, Pittsburgh, PA: Project Director for Site investigations, designs, cost estimating, and construction phase services for general plant-wide facility designs. Projects included: revision of historic as-built drawings; engineering support and generation of new drawings for facility and site utility maintenance projects; field measurements for renovations; preparation of construction cost estimates for facility work; site inspection and surveys of utility system upgrades; review, development, and upgrade of standard specification and design criteria; preparation of Sustainable Design Reports; floor load and similar structural evaluations; hydraulic calculations for sprinkler systems; minor design evaluations; and analysis of LEED qualifications for future buildings.

New Laboratory Test Facility Rearrangement and Utility Extension, Conceptual and Final Design, Confidential Client, Pittsburgh, PA: Project Director for site investigations, geotechnical investigations, conceptual and final design, and construction phase services for the demolition of equipment, utilities, and structural infrastructure associated with a completed test program, and construction of foundations, structural framing, four (4) levels of new work platforms, test stands, mechanical and process equipment and piping, new utility extensions of potable and testing process waters (cooling, chilled, high temperature, high pressure), and new lighting, power supply and distribution, process controls, and instrumentation hardware within a renovated 5,000 square foot high-bay laboratory space. Conceptual and final design documentation included design and construction drawings, specifications, cost estimate, design and construction schedules, design narrative, and calculations.

Engineering Support to Review Vendor's Design of Specialized Simulation Training Facilities, Confidential Client, Pittsburgh, PA: Reviewed vendor's design submittals for the design, off site modular manufacture, shipping, assembly, and final installation of specialized simulation training facilities. Reviewed submittals to confirm vendor performance in accordance with scope of work, as well as verification of completeness, accuracy, constructability, and code compliance. Special evaluation of seismic support structures; catwalk support structures providing normal and emergency ingress/egress; ancillary mechanical rooms; electrical, lighting, data, and communications interconnections; support systems (water, sanitary, HVAC, mechanical, fire suppression) design and interconnections; and full review of the four-level (stackable) modular training assemblies.

Electrical Distribution System Replacement and Power Generator Upgrade, MSANK WWTP, New Kensington, PA: Project Director and Client Contact for site investigations, detailed design, construction phase services for the replacement of the complete Wastewater Treatment Plant electrical distribution system. Scope of work included upgrading from a single utility feeder to two new utility feeders that share the increased load plus an additional 50 percent capacity for future loads. Project also included installation of two new standby 1,200KW rated diesel generators, meeting EPA Tier-2 emissions regulations, and enclosed together in a walk-in weatherproof housing with sub-base fuel tank sized to provide 36 hours of run time at full load. Project scope included the installation of new pad mounted 2500KVA utility transformers, fed from separate utility primary feeder circuits, connected to new 480 volt, 4,000 Amp switchgear line-up. All new mains, ties, and feeder breakers were electrically operated and controllable via an operator interface terminal and a programmable logic controller (PLC) for monitoring by the WWTP facility's SCADA system, configured to alert operations staff of malfunctions. New switchgear was designed to accommodate a future third paralleled 1,250KW generator when future loads are increased at the MSANK Wastewater Treatment Plant.

Customer Service and Training Center Building, ALCOSAN Campus, Pittsburgh, PA: Special consultant for site investigations, design, and construction phase services for a new two-story, 20,000-sf building to provide accommodations for ALCOSAN's training functions, customer service operations, record storage, and parking facilities. This building was sustainably designed and received a LEED Gold rating.

John L. Green, PS

Personal summary

Education:

Civil Engineering (2 years),
West Virginia Institute of
Technology, 1975-1976

Registration:

Professional Surveyor

WV #901, 1991

Memberships:

West Virginia Society of
Professional Surveyors

National Society of
Professional Surveyors

CGIS/LIS Association

West Virginia Association of
Geospatial Professionals

Mr. Green is a Registered Professional Surveyor with over 30 years of experience in the engineering industry in surveying or survey related capacities and as an engineering design technician. He is expertly qualified in most conventional types of surveying and is also experienced in GPS surveying techniques. His specific project experience is primarily in transportation, site design and environmental infrastructure such as water and sewer system projects.

Selected projects

Winona Abandoned Mine Lands (AML) Project, West Virginia Department of Environmental Protection (WVDEP), Fayette County, WV: Senior Designer responsible for all survey activities required to stake out the design and construction baseline and collect design cross section data for this project. Duties also included plotting of survey data, plan preparation, grading design, and dissemination of data to the design team.

Trasher AML Project, WVDEP, Gilmer County, WV: Senior Designer responsible for all survey activities required to stakeout the design and construction baseline and collect design cross section data for this project. Duties also included plotting of survey data and dissemination to the design team.

Barker Portals and Strip AML Project, WVDEP, Barbour County, WV: Senior Designer responsible for all survey activities required to stake out the design and construction baseline and collect design cross section data for this project. Duties also included plotting of survey data and dissemination to the design team.

Marmet Bridge Monitoring Survey, HNTB/West Virginia Parkways Authority, Kanawha County, WV: Senior Designer responsible for high accuracy conventional survey services for I-64/I-77 bridge settlement monitoring project. Responsible for all survey activities required to establish high-stability conventional survey control and the installation of thirteen high accuracy survey targets on four separate bridges, including abutments, piers, and concrete slope monitoring monuments. High accuracy conventional surveys of the targets were repeated periodically for over a year to monitor the structures for movement in any direction. Duties also included reduction of survey data, preparation of a site plan, and survey data report submitted to the design team in the HNTB Scott Depot office after each monitoring survey visit.

Mile 24 Drainage Structure Survey, HNTB/West Virginia Parkways Authority, Mercer County, WV: Senior Designer responsible for mapping for analysis and design of drainage structure for I-77. Also responsible for all survey activities required for site mapping, including topography, existing structures, controlled access right of way locations, and ties to established Turnpike geometric control. Duties also included plotting of survey data, site plan preparation, and dissemination of data to the design team in the HNTB Scott Depot office.

Ghent Maintenance Facility Survey, HNTB/West Virginia Parkways Authority, Mercer County, WV: Senior Designer responsible for mapping for design of maintenance facility improvements. Responsible for all survey activities required for site mapping, including topography, existing structures, utilities, and controlled access right of way locations. Duties also included plotting of survey data, site plan preparation, and dissemination of data to the design team in the HNTB Scott Depot office.

Beckley South Acquisition/Disposition Survey, HNTB/West Virginia Parkways Authority, Raleigh County, WV: Senior Designer responsible for property acquisition and property disposition at the WVPA Beckley South Maintenance facility. Responsible for all survey activities required for boundary surveys, including research, field surveys, and plat and legal description preparation. Duties also included coordination with the WV Parkways Authority's attorney and adjoining property owners to facilitate the project.

Sharon Retaining Wall Survey, HNTB/West Virginia Parkways Authority, Kanawha County, WV: Senior Designer responsible for mapping for analysis and design of a slide remediation project. Responsible for all surveys activities required for site mapping, including topography, existing structures, controlled access right of way locations, and ties to established Turnpike geometric control. Duties also included plotting of survey data, site plan preparation, and dissemination of data to the design team in the HNTB Scott Depot office.

Multiple Projects, West Virginia Turnpike, WV: Senior Designer responsible for all survey operations for all West Virginia Turnpike projects since 1996, including engineering design and boundary surveys.

State Police Building Site Survey, HNTB/West Virginia Parkways Authority, Kanawha County, WV: Senior Designer responsible for site mapping for design of a new state police field office. Responsible for all surveys activities required for site mapping, including topography, existing structures, utilities, controlled access right of way locations, and ties to established Turnpike geometric control. Duties also included plotting of survey data, site plan preparation, and dissemination of data to the design team in the HNTB Scott Depot office.

Utica Shale Gas Well Pads, Chesapeake Energy Corporation, Carroll County, OH: Senior Designer responsible for complete design and plan preparation for three drilling pads for Utica Shale fracturing and gas extraction. Responsible for coordinating plan and design requirements with client, design and 3D modeling for plan preparation and quantity analyses, erosion and sediment control plans for regulatory compliance, quality control reviews of local Ohio surveyor to prepare plats for well permitting, and preparation of as-built record plans.

Upper Kanawha Valley Water Main Extensions Phase III, West Virginia American Water Company (WVAWC), Kanawha County, WV: Senior Designer responsible for conducting engineering design surveys and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this water main extension project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Upper Kanawha Valley Water Main Extensions Phase II, WVAWC, Kanawha County, WV: Senior Designer responsible for conducting engineering design surveys and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Bluefield North Water Main Reinforcements, WVAWC, Mercer County, WV: Senior Designer responsible for conducting engineering design surveys and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Upper Kanawha Valley Water Main Extensions Phase I, WVAWC, Kanawha County, WV: Senior Designer responsible for conducting engineering design surveys (utility locations, profiles, cross sections for permitting purposes, etc.) and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this water main extension project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Coalburg Water Main Extensions, Kanawha County Regional Development Authority, Kanawha County, WV: Senior Designer responsible for conducting engineering design surveys and surveys for rights of way and property acquisitions, including records research and plan and plat preparation for this water main extension project. Also responsible for property research, survey data reduction, technical design work, including water line layout, quantity estimates, CAD drafting in preparation of right of way and construction plans, and federal, state and railroad permitting plats.

Fayette Advanced Metering Infrastructure Project, WVAWC, Fayette County, WV: Senior Designer responsible for all GPS location surveys of water distribution system facilities in this project. The project involved the replacement of over 12,000 existing water meters with new meters and high-tech telemetry devices to facilitate a hands-free computerized meter reading/customer billing process. The project also had an operation and maintenance component which consisted of installing listening and telemetry devices on several thousand fire hydrants and valves for system performance monitoring and leak detection applications. Specific duties required were GPS location data collection, identification, data processing and distribution to the GIS team, and production of water meter location plans for use by the contractor during installation.

Kevin D. Garnes

Personal summary

Education:

Various Engineering Classes,
West Virginia State
University, West Virginia
University Institute of
Technology 1982-1984

Mr. Garnes' has almost 40 years of experience in the civil and architectural design field, including managing a CAD systems network and personnel with an extensive working knowledge of AutoCAD. He has been responsible for design, specifications, cost estimates, and quality control of construction documents for water and wastewater treatment plants, water storage tanks and distributions systems, sanitary sewer pump stations and collection systems, landfill design and permitting, bridge and highway design, right-of-way acquisition, and mining and reclamation plans. His experience also includes commercial, industrial and residential building design, site design, stormwater hydrology and retention structures, and planning and development of industrial parks and subdivisions.

Selected projects

Coonskin Park Accessible Fishing Pier, Kanawha County, WV: Design layout, grading, retaining wall layout, pier design, utilities relocation, cost estimate, and site details.

West Virginia American Water On-Site Office Parking Expansion, Kanawha County, WV: Design layout, grading, drainage, retaining wall layout, and site details.

West Virginia American Water Off-Site Office Parking Lot, Kanawha County, WV: Design layout, grading, drainage, and site details.

Summit Bechtel Reserve Boy Scouts Facility, Fayette County, WV: Coordination of design between civil, landscape architects, mechanical engineers, and architects in the core area of the facility, including the utilities layout and design.

Bluefield Road Booster Station, West Virginia American Water, Mercer County, WV: Design layout for above ground package booster station to improve service through the Princeton area of the existing WV American system. Including property acquisition, site grading and drainage, foundation details, piping, WV DOT permit, cost estimates, material lists, details, and specifications.

Greenbrier Drive Water System Improvements, West Virginia American Water, Summers County: Design of approx. 4,400 ft. of 8" ductile iron pipe distribution mains, to upgrade water service to the area. Including permits, material lists, and details.

Mount Olive Road Extension, West Virginia American Water, Mercer County: Design of approx. 3,200 ft. of 8" ductile iron pipe distribution mains, to upgrade water service to the area. Including the identification of individual right of ways, material lists, and details.

Rich Fork Road Reinforcement, West Virginia American Water, Kanawha County: Design of approx. 7,800 ft. of 12" ductile iron pipe transition mains, to reinforce water service to the Sissonville area. Including the WV DOT permit, stream crossing permits, cost estimates, identification of individual right of ways, material lists, details, and specifications.

39th Street Connection, West Virginia American Water, Kanawha County: Design of approx. 1,400 ft. of 16" ductile iron pipe transition mains, to reinforce water service in the Kanawha City area. Including the cost estimates, WV DOT permit, material lists, details, and specifications.

Chesterfield Avenue Reinforcement, West Virginia American Water, Kanawha County: Design of approx. 7,900 ft. of 16" ductile iron pipe transition mains, to reinforce water service to the eastern Kanawha Valley area. Including the WV DOT permit, cost estimates, identification of individual right of ways, material lists, details, and specifications.

Bluefield Nursing Center Extension, West Virginia American Water, Mercer County: Design of approx. 645 ft. of 8" ductile iron pipe distribution mains, to upgrade water service to the new facility. Including the identification of individual right of ways, WV DOT permit, cost estimates, material lists, details, and specifications.

Eagle View #2 Water Storage Tank, West Virginia American Water, Kanawha County: Design of 157,000-gallon water storage tank, site grading, drainage, yard piping. Including cost estimates, material lists, details, and specifications.

Fayetteville 2nd Ave. Extension, West Virginia American Water, Fayette County: Design of approx. 3,600 ft. of 6" PVC pipe distribution mains to upgrade water service to the area. Including the identification of individual right of ways, WV DOT permit, cost estimates, material lists, details, and specifications.

Goose Run Extension, West Virginia American Water, Cabell County: Design of approx. 1,800 ft. of 6" PVC pipe distribution mains, to upgrade water service to the area. Including the identification of individual right of ways, stream crossing permit, WV DOT permit, cost estimates, material lists, details, and specifications.

Village of Rock Ridge Extension, West Virginia American Water, Summers County: Design of approx. 6,000 ft. of 6" PVC pipe distribution mains to upgrade water service to the area. Including the identification of individual right of ways, WV DOT permit, cost estimates, material lists, details, and specifications.

Route 60 Charleston Reinforcement, West Virginia American Water, Kanawha County: Design of approx. 5,200 ft. of 20" ductile iron pipe transition mains to reinforce water service to the eastern Kanawha Valley area. Including the WV DOT permit, cost estimates, material lists, details, and specifications.

Melissa Road 2015 WV DOT Relocation, West Virginia American Water, Cabell County, WV: Relocation design of approx. 9,300 ft. of 12", 8" & 6" ductile iron pipe to avoid highway construction and maintain service to the area. Including identifying private right of ways, stream crossing permits, cost estimates, material lists, details, and specifications.

Hughston Water Storage Tank, West Virginia American Water, Kanawha County: Design of 1,000,000-gallon water storage tank, installation of 954 ft. of 12" ductile iron pipe, site grading, drainage, road design, yard piping, and valve vaults. Including acquiring property, cost estimates, material lists, details, and specifications.

Riverside Relay Station, West Virginia American Water, Kanawha County, WV: Design layout for above ground package relay station to improve service through the Upper Kanawha Valley area of the existing WV American system. Including property acquisition, site grading and drainage, yard piping, WV DOT permit, cost estimates, material lists, details, and specifications.

Hughes Creek Reinforcement, West Virginia American Water, Kanawha County: Design of approx. 5,600 ft. of 8" PVC pipe distribution mains to upgrade water service to the area. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

Upper Kanawha Valley Extension Phase III, West Virginia American Water, Kanawha County: Design of approx. 31,200 ft. of 16" & 12" ductile iron pipe transition mains, to extend water service to the Montgomery area. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

Upper Kanawha Valley Extension Phase II, West Virginia American Water, Kanawha County: Design of approx. 17,900 ft. of 20" & 16" ductile iron pipe transition mains to extend water service to the eastern part of Kanawha County. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

WV Air National Guard Extension, West Virginia American Water, Kanawha County: Design of approx. 12,300 ft. of 16", 12" & 8" ductile iron pipe distribution mains, to extend water service to the WV Air National Guard at Yeager Airport. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

Summit Bechtel Reserve Tanks, Boy Scouts of America, Fayette County: Design of one 2,000,000-gallon concrete water storage tank and one 6,000,000-gallon concrete water storage tank. Including yard piping, valve vaults, site grading and drainage, chlorine injection station, cost estimates, material lists, details, and specifications.

Leatherwood/Reamer Hill Extension, West Virginia American Water, Kanawha County: Design of approx. 68,100 ft. of 8" & 6" ductile iron pipe distribution mains to extend water service to the area. Including the identification of individual right of ways, stream crossing permits, WV DOT permit, cost estimates, material lists, details, and specifications.

Potassium Permanganate Building, West Virginia American Water Treatment Plant, Kanawha County, WV: Responsible for building design and layout of chemical feed equipment for water treatment plant, including site plans and details.

Christopher Henry, PE

Personal summary

Education:

BS, Agricultural and Biological Engineering (ABE), Penn State University, 2007

Minor Environmental Engineering, Penn State University 2007

Registrations:

Professional Engineer

PA #PE084354, 2015

NASSCO PACP, MACP, and LACP, U-1110-11705, 2014

NASSCO ITCP

CIPP-916-02001879, 2016

Mr. Henry is experienced in wastewater engineering, construction oversight, and inspection over stream mitigation activities. His design experience includes pump station analysis design, sewer rehabilitation and replacement, manhole rehabilitation and replacement, Inflow and Infiltration (I/I) removal analysis, and E&S controls. His additional experience also includes extensive environmental impact monitoring related to mining operations and their effects on hydrologic conditions, and NASSCO pipeline and manhole assessment.

Selected projects

Digester Facilities Upgrade Project, Municipal Sanitary Authority of the City of New Kensington (MSANK), New Kensington, PA: Design Engineer responsible for preparing bid drawings and specifications for the installation of new digester level sensing equipment. This project includes the development of a safety plan for the opening of a live anaerobic digester for equipment installation and the incorporation of new isolation valves to facilitate any future digester system work.

Green Infrastructure Third Avenue Rain Garden Project, MSANK, New Kensington, PA: Design Engineer responsible for preparing bid drawings and specifications for the installation of a modular underground stormwater infiltration basin. This project was the first green infrastructure project required by the Authority's LTCP. Public stormwater grant funding was identified and acquired for the client as the primary funding source of this project.

CSO Floatable Controls Project, MSANK, New Kensington, PA: Project Manager and design engineer responsible for the design to retrofit four existing CSO structures with solids and floatable control devices. The project incorporated baffles into the CSO structures to meet the guidelines of the EPA's CSO Guidance for Nine Minimum Controls

Little Pucketa Interceptor Inflow and Infiltration Removal Project, Lower Burrell Municipal Authority (LBMA), Lower Burrell, PA: Project Engineer responsible for the assessment of sanitary flow meter and CCTV data, and preparation of a corrective action plan. This project is part of the first phase of LBMA's Long Term Control Plan to remove excessive I/I into their separate sanitary collection system. This project includes the installation of cured in-place pipe lining of approximately 36,000 feet of eight-inch sanitary pipe, cementitious manhole lining, cured in place lateral connection lining, and point repair excavations. This project requires the preparation of a PennVest Loan as the client's funding source.

MSANK Kinloch I/I Removal Project, MSANK, New Kensington, PA: Project Engineer responsible for the assessment of sanitary flow meter and CCTV data, and the preparation of a corrective action plan. This project is part of the first phase of MSANK's Long Term Control Plan to remove excessive I/I into the collection system. Three sub basins to the Kinloch Interceptor were identified as having significant wet weather contribution. With no prior background data on the sub basins, flow meters were installed to identify areas of the highest I/I contribution. CCTV data was collected in each of the basins to identify any structural defects in the sewer pipe. A corrective action plan was developed to reduce I/I sources from defective pipes, roof and foundation drains, and leaking laterals.

MSANK Office and Garage Building Project, MSANK, New Kensington, PA: Project Engineer responsible for developing E&S and civil drawings; coordinating the completion of HVAC, plumbing, and electrical drawings; and preparing the bidding package for the design phase. The project consisted of the design and construction of a new administrative office building, laboratory, locker room, and vehicle garage. Exterior site design incorporated permeable pavers and a rain garden to manage storm water runoff through the use of green infrastructure. Provided construction oversight, shop drawing review, and contractor coordination during the construction phase of the project.

MSANK WWTP Upgrade Project, MSANK, New Kensington, PA: Project Designer responsible for developing front end engineering for a 7 MGD wastewater treatment plant upgrade to 20 MGD. Project includes the design of new primary clarifiers, expanding aeration tanks, new secondary clarifier, new chlorine contact tanks, an office building and garage, and new underground piping.

FTMSA Heather Highlands Sanitary Flow Study Report, Franklin Township Municipal Sanitary Authority (FTMSA), Murrysville PA: Project Engineer responsible for assessing sanitary flow meter and CCTV data and preparing the technical report. The Heather Highlands

is a separate sanitary collection system that is known to have excessive wet weather flows resulting in illegal SSO events. As part of this project, a hydraulic flow study, consisting of 16 flow and level meters, was installed to quantify the impacts of rainfall from this drainage area. The project identified several sub basins that contributed significant amounts of dry and wet weather I/I. The report recommended a corrective action using CIPP and sub basin CCTV investigations, and manhole inspections.

FTMSA Sloan School Pump Station Stair Replacement, FTMSA, Murrysville PA: Project Engineer responsible for coordinating preparation drawings, specifications, and bidding documents to retrofit a new three story FRP stairway and safety railing for the pump station.

Chartiers Pump Station Upgrade Project, Lower Burrell Municipal Sanitary Authority, Lower Burrell, PA: Project Engineer responsible for preparing the preliminary design report to rebuild the Chartiers Pump Station. The design included the hydraulic impacts of adding three additional drainage areas to the pump station collection system, increasing the pumping capacity, and providing offline wet weather storage.

Ludwig Pump Station Cost Analysis Assessment, Neshannock Township, PA: Project Designer responsible for completing a cost analysis for various alternatives to repair or replace the existing force main at the Ludwig Pump Station. The cost analysis compared the cost to replace a portion of the existing cast iron force main with HDPE pipe vs two alternatives for a new alignment of the force main. The new alignment compared traditional open trench installation with trenchless tunneling methods.

ALMONO Site Demolition and Rough Grading, RIDC, Hazelwood, PA: Project Designer responsible for providing construction management and field engineering services for the reclamation of a high profile 178-acre Brownfield site which formerly served as the Hazelwood Works for Jones & Laughlin Steel. Work entailed the demolition of existing mill structures and foundations, utility modifications, new sedimentation basins and structures, undercutting, and placement of 800,000 cubic yards of imported clean fill over the site.

MSANK Long Term Control Plan Alternative Analysis, MSANK, New Kensington, PA: As Project Designer, responsible for the design and analysis of project alternatives focused on reducing SSO and CSO discharges throughout the sanitary collections system to achieve compliance with an EPA consent order. Project responsibilities included identifying and assessing control technologies, selecting project locations, design of each proposed alternative, performed cost analysis on designs utilizing green infrastructure, vortex separators, storm separation, and storage facilities.

Erosion and Sediment Control Plans, Confidential Client: Lead Field Designer in charge of determining augmentation pipeline corridors and mapping of required E&S controls for permit submissions. Job responsibilities include E&S inspections throughout construction and post construction phases, mapping of as-built systems, and contractor oversight.

Treatment Plant and Collection System Work Order Management Tracking System, MSANK, New Kensington, PA: Lead Project Designer for the creation and development of a computer based equipment and maintenance tracking system. Project includes the identification and inventory tagging of more than 14,000 treatment plant related assets. Assets are entered into a database to track records of asset size, design ratings, vendor and servicing contact information, and O&M requirements. Coordinates with software developers to create a maintenance program that generates work orders for plant assets automatically based on their O&M schedules. The program also allows for tracking of general maintenance and repairs throughout all municipality operations.

MSANK Long Term Control Plan Flow Modeling, MSANK, New Kensington, PA: Project Designer responsible for conducting RTK analysis using EPA SSOAP Toolbox to determine rainfall-derived infiltration and inflow trends throughout rainfall events in combined and separate systems. Project involved analyzing 100+ meter basins to determine RTK formulas that were used and an Infoworks hydraulic model that was required as part of an EPA consent order.

Interceptor Sewer Rehabilitation Project, MSANK, New Kensington, PA: Project Designer for rehabilitation of approx. 1,300 feet of interceptor sewage lines ranging from 24-inch to 18-inch diameter. Project also included the rehabilitation of 13 manholes throughout the city. The rehabilitation measures that were investigated, included conventional hot water cured felt resin and UV cured GRP resin CIPP procedures. Prepared project specifications and contract documents to include contractor options for hot water or UV curing options. Performed cost estimates on projects and reviewed submittals and design calculations for CIPP wall thickness.

David M. Hechmer, PE

Personal summary

Education:

BS, Civil Engineering,
Clarkson University, 2008

AS, Math & Science, North
Country Community College,
2003

Registrations:

Professional Engineer

PA #PE082271, 2014

Certifications:

NASSCO – PACP, MACP &
LACP Certification
#U-911-132208

Mr. Hechmer is a licensed civil engineer experienced in the design, permitting, and construction of water/wastewater treatment plants, public water supply, wastewater/stormwater collection and conveyance systems. Mr. Hechmer has a proven positive record of project representation to stakeholders, regulatory agencies, and the general public. He is proficient in the use and application of many engineering software programs including but not limited to HydroCAD, Hydroflow, BioWin, EPANET, and SSOAP.

Selected projects

Wastewater Treatment Plant Improvements, Evans City Water and Sewer Authority, Evans City Borough, Butler County, PA: Design Team Member responsible for documenting and permitting the design of plant treatment system upgrades, headworks lift station design, sludge handling systems design, and UV disinfection system selection. Also Construction Team Member responsible for the observation and documentation of project construction to insure conformance with construction documents, providing recommendations to Project Manager for field change directives, assisting contractors with design intent and construction document interpretation, and review of claims and change order requests. Project entailed the design and permitting and construction of a \$8.5 million wastewater treatment plant improvements project.

Wastewater Treatment Plant and Sewer Collection and Conveyance System, Greene Township, Erie County, PA: Project Team Member responsible for calculating systems characteristics and providing project support for the design of sewage lift stations, sludge drying beds, aerobic digestion unit, and chemical feed system. Project entailed the design and permitting of an \$8 million wastewater treatment plant and sanitary sewer collection and conveyance system.

Wastewater Treatment Plant Improvements, Slippery Rock Municipal Authority, Slippery Rock Township, Butler County, PA: Project Team Member responsible for documenting and permitting the design of plant treatment system upgrades, plant return flows design computations, and non-potable water system design. Project entailed the design and permitting of a \$2.5 million wastewater treatment plant improvements project.

Hines Road Water Treatment Plant, Slippery Rock Municipal Authority, Slippery Rock Township, Butler County, PA: Project Team Member responsible for design and permitting of project Post Construction Storm Water Management Planning. Project entailed the design and construction of a membrane filtration water treatment plant.

Water Treatment Plant Improvements, Boyers Water and Sewer Company, Boyers, Butler County, PA: Project Team Member responsible for design, report preparation, and permitting of treatment system upgrades. Project entailed the upgrades to the plant pressurized filtration system and addition of a disinfection contact unit.

Potable Water Transmission Line, Slippery Rock Municipal Authority, Slippery Rock Township, Butler County, PA: Project Team Member responsible for documenting and permitting the design of a 10,000 foot potable water transmission line. Project entailed the design and permitting of a 10-diameter potable water transmission line.

Potable Waterline Replacement and Sanitary Sewer Extension Project, Township of Cornplanter, Venango County, PA: Assistant Project Manager responsible for water and sewer system design, the preparation of hydraulic calculations, design reports, permitting activities, construction documents, presentation of project to permitting and funding agencies, field engineering, contract administration progress meeting lead. Project entailed design and permitting and construction of the Horizontal Directional Drilled replacement of 6,000 feet of water service line, slip-lined installation of 7,000 feet of sanitary force main, and installation of sanitary sewers in two adjacent neighborhoods.

Official Sewage Facilities Plan (Act 537) Update, Harborcreek Township Sewage Authority, Harborcreek Township, Erie County, PA: Project Team Member responsible for existing system review, including sewage lift station evaluations, flow monitoring analysis, and on-lot sewage disposal systems data analysis. Project entailed the completion of the Act 537 update and related existing sewage system evaluations and recommendations.

Water Pollution Control Plant - Phase No. 2 Improvements, Hermitage Municipal Authority, City of Hermitage, Mercer County, PA: Project Team Member responsible for the hydraulic analysis of plant piping systems including analysis of complex non-potable water

Brandon Hodges

Personal summary

Education:

Business Courses,
Parkersburg Jackson
Community College, 1995

Business Courses, Marshall
University, 1994

Certifications:

ACI certified Field Testing
Technician, Grade I

WVDOT Certified Portland
Cement Concrete Inspector

WVDOT Certified Aggregate
Sampling Inspector

WVDOT Certified
Compaction Inspector

Heartsaver First Aid CPR
AED Certification

WV Notary Public

Class 1D Water Operator

OSHA 10 Hour Occupational
Safety and Health
Certification

Mr. Hodges has 20 years of experience in the engineering and construction industries. He has gained experience in both the design and construction phases of utility, site, and building projects. Through a variety of projects and responsibilities, Mr. Hodges has continued an upward rise in the engineering field. Specializing in the utilities industry, he can perform a multitude of tasks in project management, from design and layout, to inspection and quality control testing. He has served as Resident Project Representative on many multi-million dollar projects, and has experience with client interface, site analysis, contracts, plan and code review, and all functions relative to construction administration from groundbreaking through project completion. With Mott MacDonald, he continues to fulfill multiple tasks and assignments for varying client needs, both in the field and in the office.

Selected projects

Chesterfield Avenue Reinforcement / Rich Fork Road Reinforcement, West Virginia American Water, Charleston, WV: Technician selected by client to provide Project Management for the construction phase of two large reinforcement projects. Provided support to Mott MacDonald Resident Project Representatives, and worked with owner, WVDOH, and other utility companies to facilitate any field changes on projects. Reconciled and catalogued daily and weekly reports, and reviewed and approved change orders and pay applications.

Huntington Booster Station Replacements, West Virginia American Water, Huntington, WV: Technician responsible for assisting WVAW distribution team on their booster station program. Responsible for researching and acquiring new sites, rights of way, and any required permits. Performed survey work, as needed. Served as a liaison between property owners and WVAW in negotiations for compensation. Also involved with acquiring and supporting any geotechnical work that is required.

WVDOH Relocations, West Virginia American Water, Multiple Locations, WV: Technician responsible for assisting WVAW Engineering team on all projects involving potential relocations due to WVDOH planned projects, including bridges, storm sewers, and road widenings. Performed utility verifications, researched existing rights of way, designed relocation plans, acquired permits and new rights of way, and provided material take-offs, bid tabs and construction estimates to the owner.

Stormwater Pollution Prevention Plan (SWPPP), City of Charleston, Charleston, WV: Technician responsible for working with city employees to evaluate their respective site for potential stormwater contaminants, reports to team leaders, and assists in writing the SWPPP document. The team was selected to assist the City of Charleston in site evaluations and mapping of 24 city-owned facilities as part of developing SWPPPs for each site.

Various Projects, West Virginia American Water, Charleston, WV: Project Technician responsible for performing a variety of technical services for WVAW Engineering Department upon their request. Services include project design, estimation and layout, boundary and as-built surveys (both conventional and GPS), courthouse research, and right-of-way and easement acquisition. Mr. Hodges also prepares and submits multiple permit applications for WVAW, including West Virginia Department of Highways, United States Army Corps of Engineering, and West Virginia Office of Land & Streams. The client also requested him to serve as a Resident Project Representative on a water line relocation project needing an experienced ambassador due to sensitivity of affected customers.

Sanitary Sewer Upgrade, Town of Delbarton, Delbarton, WV: Lead Inspector on a much needed \$5M sewer system upgrade project, replacing 50+ year old mains and reducing infiltration. The project involved over 25,000 feet of new piping, much of it deep and installed in the roadway. Responsible for overseeing all work, including sheeting and shoring, dewatering operations, pipe installation and backfill, resurfacing, and reclamation. Project involved grinder pump stations, HDPE force main, and required bypass pumping to ensure continuous operation of the system. Project also included CIPP slip-lining, which inserts, inflates, and cures a new liner within the existing pipe through existing manholes, eliminating the need to trench and backfill. Documented work progress and approved change orders and construction estimates. Project required the ability to quickly make field adjustments, avoiding contractor shut downs due to incomplete or incorrect plan information.

Fayetteville Acquisition, West Virginia American Water, Fayetteville, WV: As Construction Administrator, performed multiple duties to assist in a successful transition between water facilities. Project required decommissioning Fayetteville's antiquated water treatment plant, immediate replacement of 24 fire hydrants, and connection of the two systems in multiple places. Concentration also placed on small diameter main replacement and upgrades to distribution lines and meters that allowed for the removal of a water storage tank and increased water pressure for hundreds of customers. Involved in planning, design, inventory management, and all aspects of construction. He communicated with stakeholders, including owner/engineer, City of Fayetteville, WVDOH, Miss Utility, contractors, and customers.

FEMA Storm Sewer, Town of Man, Man, WV: Resident Project Representative for completion and tie in of a 60" HDPE storm drain, including a concrete and gabion inlet structure, drop inlets, and connection to existing facilities. The project was necessary due to floods overwhelming the existing facilities with debris. The project relocated the storm sewer from private citizens' property onto town streets. Oversaw excavation, installation, backfill, and resurfacing. He communicated with necessary parties involved with utility relocation. Documented work progress and approved change orders and construction estimates.

East Main Street Upgrade, West Virginia American Water, Oak Hill, WV: Resident Project Representative on two different water main upgrade projects through a main traffic artery. Upgraded over 2500 lf of 6" cast iron to 12" ductile iron pipe. Projects required detailed traffic control, live taps, and tie-ins. Involved in all aspects of construction, from layout through sampling, testing, completion, and as-builts. Documented work progress through detailed daily reports.

Quality Control Testing, WV Department of Highways, Multiple Locations, WV: Performed aggregate sampling, concrete, and compaction testing on multiple projects throughout West Virginia. Worked with both contractors and state inspectors to ensure project materials met required specifications. Mr. Hodges assisted the Contractor in remediation of deficiencies. Documented test results and reported to Project Managers.

Asphalt Inspection, West Virginia Department of Highways (WVDOH), Charleston, WV: Acted as a Consultant for the WVDOH on a variety of paving projects throughout the district. He worked alone and along with a WVDOH inspector. Observed application, compaction, and quality control testing of asphalt. Also calculated application rate, documented quantities, and pay items.

Water System Upgrades, US Army/Virginia American Water, Fort Lee, VA: Resident Project Representative for the construction of upgrades and reinforcements to the Fort Lee US Army base water system. Strict work and time regulations required diligence and communication. Project included live tapping, valve insertions, and line stops. Required water outages were on a time schedule, and each was completed on time. He was involved in all aspects of construction, from layout through sampling, testing, and completion. Communicated with all stakeholders, including VAWC and US Army officials, contractors, and residents.

20-Inch Water Relocation, West Virginia American Water, Institute, WV: As Resident Project Representative on a one-mile-long water line relocation, removed a potable water line from potentially contaminated soil inside a chemical plant facility and relocated it to a suitable location. Project included hazardous material training and required diligence to avoid disruption of plant facilities. He was involved in all aspects of construction, from layout through sampling, testing, completion, and as-builts. Documented work progress through detailed daily reports.

US Route 50 Bypass / Little Kanawha River Bridge, West Virginia Division of Highways (WVDOH), Parkersburg, WV: Co-Resident Project Representative on a \$25M, 2100 lf, four-lane bridge. Was involved in all aspects of bridge inspection, including excavation, piling, piers and abutments, steel work, and surfacing. He oversaw quality control testing and reporting, and calculated excavation and concrete work for payment. Project also included roadway construction and blasting. Documented work progress through detailed daily reports.

US Route 35 Water and Sewer Relocation, South Putnam Public School District, Teay's Valley, WV: As Resident Project Representative, Mr. Hodges coordinated with contractor, engineer, school district, and WVDOH to relocate utilities for the widening of a main traffic artery from two lanes to three, which required multiple crews working on water and sewer. The project included live tapping, bypass pumping, multiple tie-ins, and an aerial sewer line crossing. It also involved in all aspects of construction, from layout through sampling, testing, completion, and as-builts. Documented work progress through detailed daily reports.

John F. Fouty

Personal summary

Education:

AS, Business Administration,
West Virginia University of
Parkersburg, 2003

Certifications:

WVDOH Aggregate Sampling
Inspector

WVDOH Portland Cement
Concrete Inspector

WVDOH Compaction Inspector

CESSWI (Certified Erosion,
Sediment & Storm Water
Inspector) Part 1

Contractors Association of
WV-Radiation and Hazardous
Material Safety Training

U.S. Department of Labor -
Mine Safety and Health
Administration

Mr. Fouty has 27 years of experience in the engineering and surveying field. His surveying experience includes basic location work, topographic surveys, subdivision layout, and GPS experience in both control and location needs. Mr. Fouty has also served as Resident Project Representative and has provided inspection work for utility installations. He has valuable experience with customer relations and site analysis regarding utility installation, cost estimating, and construction. With Mott MacDonald, he works in a variety of capacities, providing site inspection, design proposals, cost estimates, logistics support, and property research, along with survey assistance and GPS location, when needed.

He has experience in all phases of surveying and working with various surveying and GPS instruments, deed research for oil and gas well locations, plotting deeds, and locating gas lines and boundary markers using conventional equipment or by GPS equipment (Trimble and Sokkia). He has also performed inspection work on oil and gas well sites.

His past responsibilities also included ensuring compliance with OSHA regulations and safety practices. He has the proven ability to establish effective and safe working relations with contractors, subcontractors, consultants, utility companies, government agencies, municipalities, property owners, employees, and the general public.

Selected projects

Queen Shoals Water Main Replacement Project, West Virginia American Water (WVAW), Clendenin, WV: As Resident Project Representative, performed site analysis for over 14,460 LF of 8" ductile iron pipe. Responsible for providing onsite inspection, installation of new main water lines, and abandonment of old water lines. Conducted pressure tests and prepared as-built drawings and connection details from field observations. Provided daily documentation of work performed, materials used, abandonments, and sketches of newly discovered and installed materials for accurate mapping purposes. Coordinated with DOH inspectors and other utilities to ensure a cooperative effort and compliance throughout each project.

Rich Fork Road Reinforcement Project, West Virginia American Water (WVAW), Charleston, WV: Resident Project Representative responsible for providing onsite inspection for installation of approximately 9,160 LF of 12" ductile iron pipe, meter rebuilds, and abandonment of old water lines and materials. Conducted pressure tests and prepared as-built drawings and connection details from field observations. Maintained daily reports and documentation of work performed, materials used, abandonments, and sketches of newly discovered and installed materials for accurate mapping purposes. Coordinated with DOH inspectors.

Miscellaneous Technical Services, West Virginia American Water (WVAW), Kanawha County, WV: In his role as Field Consultant, performed a variety of technical services for WVAW. Services included proposals for project design, estimation, and layout; topographic and as-built surveys; property research; and right-of-way and easement acquisition. Successfully acted as a liaison between WVAW and WVAW customers regarding expansion of the water distribution system.

Mountain Road Reinforcement, West Virginia American Water (WVAW), South Charleston, WV: Resident Project Representative for main line reinforcement. The project involved the upgrade of 1,044 LF of 8" ductile iron pipe, 383 LF of 6" pipe and 400 LF of 2" pipe. Involved in all aspects of construction, from layout through sampling, pressure testing, and completion of as-built drawings. Documented work progress through detailed daily reports.

Chesterfield Avenue Reinforcement Project, West Virginia American Water (WVAW), Charleston, WV: Resident Project Representative responsible for providing onsite inspection for installation of approximately 8,000 LF of 16" ductile iron pipe, meter rebuilds, railroad crossing and occupation and abandonment of old water lines and materials. Conducted pressure tests, and prepared as-built drawings and connection details from field observations. Maintained daily reports and documentation of work performed, materials used, abandonments, and sketches of newly discovered and installed materials for accurate mapping purposes. Coordinated with DOH inspectors.

Dale E. DeMarco

Personal summary

Education:

AAS, Architectural Drafting & Construction, Triangle Institute of Technology, 1980

Registrations:

NASSCO PACP, MACP, and LACP, U-916-07005018, 2016

10 Hour OSHA training course in Construction Safety & Health

CFR 30 MSHA 24 Hour – Mine Surface Training

Mr. DeMarco has concentrated his career in the development of industrial and municipal plants and has prepared design and detailed work for coal preparation, float glass, and water pollution control plants. His experience also includes extensive fieldwork in groundwater monitoring. He is proficient in operating numerous pieces of equipment, including, but not limited to, a Trimble GeoXH GPS, a Hach Model FH950 Flow Meter, Marsh-McBirney Model T200 Flow Meter, and various other groundwater and surface water sampling instrumentation. Mr. DeMarco's extensive career also includes safety inspection of bridges and field inspection of crane rails and their supports.

Selected projects

Stream Mitigation/Restoration, Confidential Client, Washington and Greene Counties, PA: Responsible for conducting oversight and inspection of construction to repair dewatered streams overlying deep mine workings.

Augmentation Compliance, Confidential Coal Mining Client, Washington and Greene Counties, PA: Responsible for augmentation compliance, which involved walking critical streams that had augmentation systems installed to improve flow on streams disturbed by subsurface mining. If a stream was not in compliance with DEP regulations, contacted a third party to activate the augmentation system.

Stream Monitoring, Confidential Coal Mining Clients, Washington and Greene Counties, PA: Scheduler responsible for the coordination of flow measurements at 500 flow monitoring stations. Flow monitoring stations are located along designated sections of streams within the study areas being long-wall mined. Trimble Geo XH sub-foot GPS units are used by up to six, two-person field teams per day to navigate to each individual site of study. Once sites are located, stream flow measurements and digital photos are taken. Any changes along the length of stream in the geologic rock structures, stream channel conditions, or stream flow are documented and photographed and entered into the GPS. Stream flow measurements are taken using a Hach FH950 or Marsh-McBirney Flo-mate 2000. All flow-monitoring sites are monitored monthly at a minimum and daily on a maximum basis. All field data collected is entered into a large database where the data can be queried and printed for the clients at any given time for regulatory agencies, historical record, or research for expansion in new permit areas.

Long Term Control Plan, Municipal Sanitary Authority of New Kensington (MSANK), New Kensington, PA: Inspector for the client who is under Consent Decree Order from the U.S. EPA to address issues of Combined Sewer Overflows (CSOs) within its wastewater system. The wastewater system contains both combined and sanitary sewer lines. Responsible for the inspection of New Kensington's 1700 manholes to obtain sewer diameters, sewer materials, invert depths, and manhole condition to be used to build a hydraulic and hydrologic model of the MSANK sewer system. A Quickview Portable Zoom Inspection Camera was used to take photographs of the condition of manholes and the of pipe penetrations. Locations of catch basins and storm manholes that are combined with the wastewater sewer system were also collected with a Trimble Geo XH sub-foot GPS unit.

Millennium Pump Station Project, Neshannock Township Sewer Department, Lawrence County, PA: Designer for the construction of a wastewater pump station with three sewage pumps, one sewage grinder, and four separate sewer connections to the existing sewer system.

Water Pollution Control Plant Headworks and Blower Building Project, Municipal Sanitary Authority of the City of New Kensington, Westmoreland County, PA: Designer for the construction of a new raw water screening and pumping station, primary electrical substation, secondary aeration blower building, non-potable water pumping station, conversion of the primary aeration basin to a grit removal facility, decommissioning of the existing raw water pumping station and conversion to an odor control facility, and modifications to various systems and facilities associated with these improvements.

Wastewater Treatment Plant Upgrade Project, City of Titusville, Crawford County, PA: Designer for the construction of a new headworks facility, including pumps, screening, grit removal and ancillary equipment, electrical equipment, mechanical equipment, and standby power.

Sewerage System and Facilities Project, Middlesex Township, Butler County, PA:

Designer for the construction of a wastewater treatment plant, including headworks, influent pump station, sequencing batch reactors, aerobic digesters, and UV disinfection. Construction also included an Operations building with office, lab, chemical feed systems, aeration blowers, and dewatering press.

Sewage Facilities Project Design, Coolspring-Jackson Lake Latonka Joint Authority, Lake Latonka, PA:

Designer for the 0.15 MGD extended aeration plant with headworks, aeration tanks, clarifiers, ultraviolet disinfection units, plant water system, flow metering, sludge stabilization, sludge drying beds, sludge transfer/drain pump station, and control building with laboratory and garage.

Pump Station Renovations, Upper Shenango Valley Water Pollution Control Authority, Mercer County, PA:

Lead Designer for the design phase of this project, which consisted of expanding the pump station to an 11.5 MGD pumping capacity. Various improvements to pre-treatment, controls flood protection, and stand-by power provisions were also included as part of the project.

Water Pollution Control Plant Anaerobic Digestion and Ancillary Systems, Municipal Sanitary Authority of the City of New Kensington, Westmoreland County, PA:

Designer for this project that involved the modification or construction of the following units: Anaerobic Digesters, Belt Filter Press, Sludge Screening, Scum Pump Station, and Effluent Water System. In addition, modifications to the following buildings were made: digester building, dewatering building, and the primary aeration building.

Wastewater Treatment Plant Upgrade, Franklin Township Municipal Sanitary Authority, Murrysville, PA:

Lead Designer for the 750,000-gallon Egg-Shaped Anaerobic Digester project which included Class-A biosolids pre-pasteurization, septage receiving/pre-treatment facilities, sand filter hypochlorite/bisulfite treatment, sludge screening, digester gas storage, sludge storage pads, service water treatment using diatomaceous earth filtration, and digestion equipment renovations for the 4.2 MGD treatment plant.

Wastewater Treatment Plant Upgrade & Expansion, Western Butler County Authority, Zelienople, PA:

Designer for the upgrade and expansion of the 1.5 MGD activated sludge plant, increasing capacity to 2.2 MGD and providing excess flow facilities. The project included modification and addition of various unit processes, including excess flow pumping and storage, raw sewage pumping, mechanical screening, grit removal, turbine aeration, clarification, sand filtration, chlorination/dechlorination, flood pumping, and aerobic digester sludge stabilization and sludge storage. The project also included mechanical press sludge dewatering, general renovation, and asbestos abatement.

Wastewater Treatment Plant Project, Canonsburg-Houston Joint Authority, Washington County, PA:

Prepared CAD design drawings for the replacement of the existing grit collector and clarifier mechanisms for this wastewater treatment plant.

Water Pollution Control Plant Improvements, City of Farrell, Mercer County, PA:

Prepared CAD design drawings for improvements to the existing water pollution control plant. Drawings included mechanical, site, concrete, architectural, and HVAC.

Wastewater Pretreatment Facility, Erie Coke Corporation, Erie, PA:

Prepared concrete, structural steel, and architectural design drawings using CAD. This project included an influent equalization tank, SBR Tanks, stripper/scrubber, and control building.

Sewage Treatment Plant, Chicora Borough Sewer Authority, Chicora, PA:

Prepared CAD design drawings for the new wastewater treatment plant. This included concrete and structural steel drawings for the main treatment units/control building and effluent treatment structure, as well as architectural drawings for a handicapped-accessible control building and a drawing of a wooden structure to cover the sludge drying beds.

Upgrade of Access Shafts and Ejector Stations, Allegheny County Sanitary Authority (ALCOSAN), Allegheny County, PA:

Prepared structural, HVAC, and architectural design drawings for the upgrade of ten access shaft structures and two ejector stations. The access shafts upgrade included cosmetic and structured repairs and NFPA and PADEP code compliance.

Process Water Treatment Plant, Masonite Corporation, Towanda, PA:

Prepared concrete and structural steel design drawings for the upgrade of the 1.2 MGD process water treatment plant, which included two concrete shell clarifiers, concrete thickener, pumping facility, and sludge dewatering building.

M

**MOTT
MACDONALD**

M

Section 6: Required Forms and Certifications

State of West Virginia



Certificate

*I, Natalie E. Tennant, Secretary of State of the
State of West Virginia, hereby certify that*

the attached true and exact copy of the Articles of Amendment to the Articles of Organization of
HATCH MOTT MACDONALD, LLC

are filed in my office, signed and verified, as required by the provisions of West Virginia Code
§31B-2-204 and conform to law. Therefore, I issue this

CERTIFICATE OF AMENDMENT TO THE CERTIFICATE OF AUTHORITY

changing the name of the limited liability company to

MOTT MACDONALD, LLC



*Given under my hand and the
Great Seal of the State of
West Virginia on this day of
May 26, 2016*

Natalie E. Tennant

Secretary of State

CERTIFICATE OF *Authorization*

STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

*The West Virginia State Board of Registration for Professional Engineers
having verified the person in responsible charge is registered in
West Virginia as a professional engineer for the noted firm, hereby certifies*

MOTT MACDONALD, LLC
C02536-00

Engineer in Responsible Charge: GARY D FACEMYER - WV PE 008287

*has complied with section §30-13-17 of the West Virginia Code governing
the issuance of a Certificate of Authorization. The Board hereby notifies you of its
certification with issuance of this Certification of Authorization for the period of:*

January 1, 2016 - December 31, 2017

providing for the practice of engineering services in the State of West Virginia.

IF YOU ARE REQUIRED TO REGISTER WITH THE SECRETARY OF STATE'S OFFICE,
PLEASE SUBMIT THIS CERTIFICATE WITH YOUR APPLICATION.



IN TESTIMONY WHEREOF, THE WEST VIRGINIA STATE BOARD OF
REGISTRATION FOR PROFESSIONAL ENGINEERS HAS ISSUED THIS COA
UNDER ITS SEAL, AND SIGNED BY THE PRESIDENT OF SAID BOARD.

BOARD PRESIDENT

WEST VIRGINIA BOARD OF PROFESSIONAL SURVEYORS

Certificate of Authorization

ISSUED TO:

Mott MacDonald, LLC

Charleston, West Virginia



Certificate of Authorization # 17-5733

This certificate is issued by the West Virginia Board of Professional Surveyors in accordance with West Virginia Code § 30-13A-20
The person or organization identified on this certificate is licensed to conduct professional surveying and mapping services
in the State of West Virginia for the period

January 1, 2017 through December 31, 2017

This certificate is not transferrable and must be displayed at the office location for which issued.

In witness whereof I have put my hand, this 2nd day of December, 2016

R. MICHAEL SHEPP, P.S. Chairman

JAMES T. RAYBURN, P.S., Member



NELSON B. DOUGLASS, P.E., P.S., Secretary

SEFTON R. STEWART, P.S., Member

PAUL W. HILL, Public Member



**West Virginia State Board of Registration
for Professional Engineers**

GARY D. FACEMYER
WV PE #008287

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

EXPIRES December 31, 2018

2018

WEST VIRGINIA PROFESSIONAL SURVEYOR

The West Virginia Board of Professional Surveyors certifies that the individual listed below is a PROFESSIONAL SURVEYOR who has qualified for a license under Chapter 30, Article 13A, Code of West Virginia, and has met the requirements for license renewal for the period ending June 30, 2018.



GARY D. FACEMYER

License # 1320

JULY 1, 2017 - JUNE 30, 2018

Board Members

Mike Shepp, PS, *Chairman*
Nelson Douglass, PE, PS, *Secretary*
Tom Rayburn, PS
Sefton Stewart, PS
Paul Hill

Executive Director
Dennis Jarrell

R. Michael Shepp

Nelson B. Douglass





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
07/11/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Willis of New Jersey, Inc. :/o 26 Century Blvd P.O. Box 305191 Nashville, TN 372305191 USA		CONTACT NAME: PHONE (A/C, No, Ext): 1-877-945-7378 E-MAIL ADDRESS: certificates@willis.com FAX (A/C, No): 1-888-467-2378															
INSURED Jott MacDonald, LLC 111 Wood Avenue South Iselin, NJ 08830		<table border="1"> <thead> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> </thead> <tbody> <tr> <td>INSURER A: Fireman's Fund Insurance Company</td> <td>21873</td> </tr> <tr> <td>INSURER B: Travelers Property Casualty Company of America</td> <td>25674</td> </tr> <tr> <td>INSURER C: American Automobile Insurance Company</td> <td>21849</td> </tr> <tr> <td>INSURER D: Underwriters at Lloyd's London</td> <td>15792</td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> <tr> <td>INSURER F:</td> <td></td> </tr> </tbody> </table>		INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A: Fireman's Fund Insurance Company	21873	INSURER B: Travelers Property Casualty Company of America	25674	INSURER C: American Automobile Insurance Company	21849	INSURER D: Underwriters at Lloyd's London	15792	INSURER E:		INSURER F:	
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INSURER E:																	
INSURER F:																	

COVERAGES

CERTIFICATE NUMBER: W2999982

REVISION NUMBER:

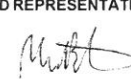
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:	N	N	MZX80979493	06/30/2017	06/30/2018	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY	N	N	MZX80979493	06/30/2017	06/30/2018	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 10,000	N	N	ZUP-15S91842-17-NF	06/30/2017	06/30/2018	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000 \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	WZP81041085	06/30/2017	06/30/2018	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
D	Professional Liab.	N	N	B080120388P17	06/30/2017	06/30/2018	Per Claim/Aggregate \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Authority is Additional Insured as respects to General Liability as per written contract or agreement.

CERTIFICATE HOLDER**CANCELLATION**

For Your Information	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

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Courtesy Notice of Cancellation for Other Than Nonpayment of Premium to Designated Entities - 145977 01 11

Policy Amendment Policy Number: Policy Number: MZX80979493 Effective Date: 06/30/2017;
WZP81041085 Effective Date: 06/30/2017 General Liability; Auto Liability, Workers Compensation

Schedule

Name and Address of Person(s) or Organizations	Number of Days Notice if other than 10 days:
On File with Carrier, as required by written contract	Canacellation Number of Days Notice- 60 When we don't Renew (Non-Renewal)- 30

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

This policy is amended as follows:

- A. If We cancel this policy prior to expiration for any reason other than non payment of premium or at Your request, and we have been notified that You are required under a current contractual obligation to notify a certificate of insurance holder or holders when this policy is canceled, then We will endeavor to mail or deliver a copy of such written notice of cancellation to the certificate holder(s) shown in the Schedule above, as follows:
1. To the name and address corresponding to each certificate of insurance holder indicated in the Schedule above; and
 2. At least 10 days prior to the effective date of the cancellation, as shown in our notice to the first Named Insured, or, if indicated, the longer number of days notice shown in the Schedule above.
- B. Notwithstanding the foregoing, such notice of cancellation is provided on an informational basis and solely to assist You in informing the certificate of insurance holder(s) in advance of pending cancellation in coverage to assist you in meeting Your contractual notice requirements to such parties. Our failure to provide such advance notification to the certificate of insurance holder(s) shown in the Schedule of this endorsement will not extend any policy cancellation date, negate any cancellation of the policy, or grant, alter or extend any rights or obligations under this policy and we shall have no liability for any failure to provide the notice(s) as provided herein.

All other terms and conditions of this policy remain unchanged.

**GENERAL TERMS AND CONDITIONS:
West Virginia Division of Natural Resources
Agency Delegated Procurements Over \$25,000**

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.



(Name, Title)

Gary Facemyer, PE; Senior Associate

(Printed Name and Title)

201 Pennsylvania Avenue, 4th Floor, Charleston, WV 25302-2315

(Address)

304.356.3010

(Phone Number) / (Fax Number)

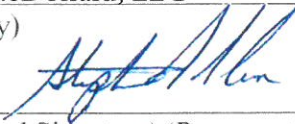
gary.facemyer@mottmac.com

(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Mott MacDonald, LLC

(Company)



(Authorized Signature) (Representative Name, Title)

Stephen B. Polen, PE; Senior Vice President

(Printed Name and Title of Authorized Representative)

October 24, 2017

(Date)

412.497.2950

(Phone Number) (Fax Number)

**GENERAL TERMS AND CONDITIONS:
West Virginia Division of Natural Resources
Agency Delegated Procurements Over \$25,000**

**ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:**

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

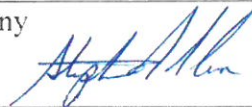
(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Mott MacDonald, LLC

Company



Authorized Signature

October 24, 2017

Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.