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Header @ 1

List View

- General Information
- Contact
- Default Values
- Discount
- Document Information
- Clarification Request

Procurement Folder: 1257503

Procurement Type: Central Purchase Order

Vendor ID: 000000160928

Legal Name: CIVIL & ENVIRONMENTAL CONSULTANTS INC

Alias/DBA:

Total Bid: \$0.00

Response Date: 08/29/2023

Response Time: 11:59

Responded By User ID: kevinhanks

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Last Name: Hanks

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Phone: 304-933-3119

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SO Dept: 0313

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Status: Closed

Solicitation Description: EOI - 2023 AML Contract N1

Total of Header Attachments: 1

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

**State of West Virginia  
 Solicitation Response**

**Proc Folder:** 1257503  
**Solicitation Description:** EOI - 2023 AML Contract N1  
**Proc Type:** Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2023-08-29 13:30	SR 0313 ESR08292300000001040	1

**VENDOR**  
 000000160928  
 CIVIL & ENVIRONMENTAL CONSULTANTS INC

**Solicitation Number:** CEOI 0313 DEP2400000005  
**Total Bid:** 0  
**Response Date:** 2023-08-29  
**Response Time:** 11:59:31  
**Comments:**

**FOR INFORMATION CONTACT THE BUYER**

Joseph E Hager III  
 (304) 558-2306  
 joseph.e.hageriii@wv.gov

**Vendor Signature X** **FEIN#** **DATE**

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Enterprise Portal				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Commodity Line Comments:**

**Extended Description:**

Enterprise Portal

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
2	Glosser/Williams Property				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Commodity Line Comments:**

**Extended Description:**

Glosser/Williams Property

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
3	Miller Mine Drainage				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Commodity Line Comments:**

**Extended Description:**

Miller Mine Drainage

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
4	Shinnston (Sheppard) Mine Drainage				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Commodity Line Comments:**

**Extended Description:**

Shinnston (Sheppard) Mine Drainage

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
5	Simpson Creek Highwall, Tipple & Portals, Phase II				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Commodity Line Comments:**

**Extended Description:**

Simpson Creek Highwall, Tipple & Portals, Phase II

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
6	Weaver Portals and Drainage Phase III				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Commodity Line Comments:**

**Extended Description:**

Weaver Portals and Drainage Phase III

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
7	West Fork #9				0.00

Comm Code	Manufacturer	Specification	Model #
81100000			

**Commodity Line Comments:**

**Extended Description:**

West Fork #9



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

State of West Virginia  
 Centralized Expression of Interest  
 Agricultural

<b>Proc Folder:</b> 1257503		<b>Reason for Modification:</b>	
<b>Doc Description:</b> EOI - 2023 AML Contract N1			
<b>Proc Type:</b> Central Purchase Order			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2023-08-09	2023-08-29 13:30	CEOI 0313 DEP2400000005	1

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:** 000000160928  
**Vendor Name :** Civil & Environmental Consultants, Inc.  
**Address :** 120 Genesis Boulevard  
**Street :** Same as above  
**City :** Bridgeport  
**State :** West Virginia                      **Country :** USA                      **Zip :** 26330  
**Principal Contact :** Steven A. Cain  
**Vendor Contact Phone:** 304-933-3119                      **Extension:** N/A

**FOR INFORMATION CONTACT THE BUYER**

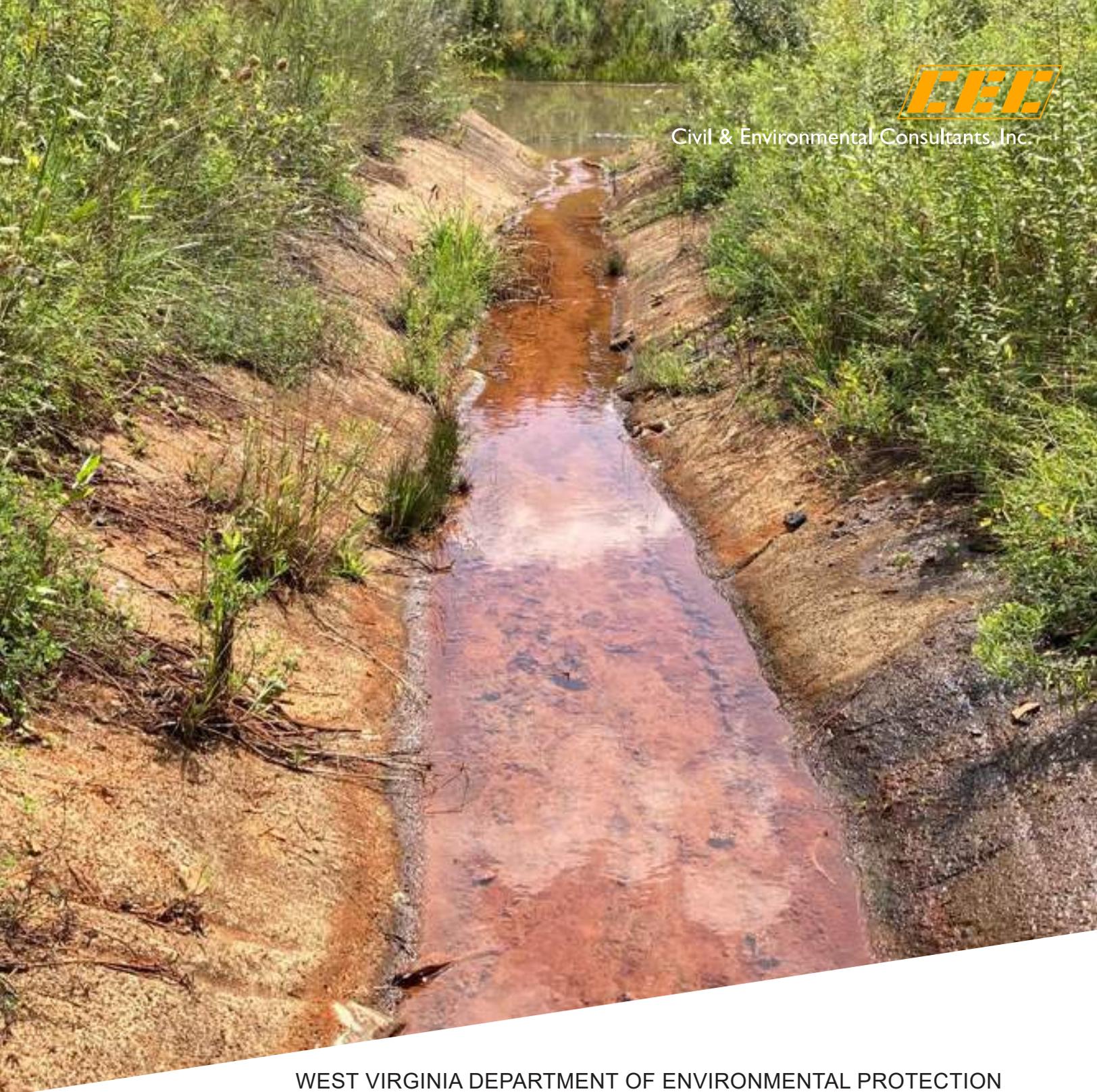
Joseph E Hager III  
 (304) 558-2306  
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**Vendor Signature X**  **FEIN#** 25-1599565                      **DATE** 08/29/2023

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



Civil & Environmental Consultants, Inc.



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

**2023 AML CONTRACT N1  
CEOI 0313 DEP240000005**

CEC | BRIDGEPORT  
Project 334-969  
August 29, 2023



August 29, 2022

Mr. Joseph E. Hager III  
Department of Administration  
Purchasing Division  
2019 Washington Street East  
Charleston, West Virginia 25305-0130

Dear Mr. Hager:

Subject: Proposal for Professional Engineering Services  
Solicitation No. CEOI 0313 DEP2400000005  
EOI – 2023 AML Contract N1  
CEC Project: 334-969

Civil & Environmental Consultants, Inc. (CEC) is pleased to submit this Expression of Interest (EOI) to West Virginia Department of Environmental Protection (WVDEP) for the 2023 AML Contract N1 project located in Harrison, Barbour and Randolph Counties, West Virginia. Our preparation of this proposal is based the Expression of Interest (EOI) dated August 9, 2023.

The civil engineering services representing **CEC's Bridgeport, West Virginia location** include surveying/geo-spatial, civil engineering, hydrological, hydrogeological, geotechnical engineering, transportation engineering, ecological, and environmental services. Also within CEC Bridgeport's footprint can be found landscape architecture and planning, and other specialty services. The management and delivery of these projects will be performed through our local Bridgeport, West Virginia office. Our office is built with experts in the region and currently has over 130 staff comprised of engineers, surveyors, geochemists, hydrologists, permitting specialists, construction technicians, and more. The employees comprising our project team have extensive and varied experience specializing in the aspects of engineering necessary for the completion of the 7 projects within Contract N1. We are confident that the enclosed materials highlight our team and our capabilities.

This document presents an overview of CEC's qualifications and experience. We have included a diversified group of successful past projects to display our depth of experience and ability to be responsive to your needs. CEC is a nationally ranked firm that is **98<sup>th</sup> out of the top 500 Design Firms** list published by Engineering News-Record (ENR) in 2023. CEC is a national firm with a footprint of over **30 offices** across the country from which we can pull in a very wide range of experts in the variety of needs the WVDEP may have. We take pride in being integrated into our communities. The people you will be working and communicating with throughout the project are local experts that are based out of our Bridgeport, West Virginia office. The project will be fully managed through our office which is staffed with **130 employees including: engineers, surveyors, permitting experts, and scientists** that call West Virginia their home and work hard to improve our community and the state. We also maintain a working relationship with local materials testing and drilling firms to provide a broader scope of services and allow our clients to enjoy the benefits of one primary project consultant.

CEC is committed to providing the technical expertise and resources necessary for a multitude of tasks, our commitment goes beyond technical services as we are driven by quality deliverables that meet the scope, schedule, budget and goal of projects. CEC understands the funding mechanism associated with AML projects and we will treat your resources like our own resources, upholding the highest level of fiscal responsibility. In support of the current WVDEP AML program and potential future projects, CEC continues to mentor and prepare multiple teams of qualified managers, designers, and engineers to support the efforts of the WVDEP for the successful completion of current and future projects.

Thank you for providing CEC the opportunity to present our qualifications to the West Virginia Department of Environmental Protection. We look forward to the opportunity to communicate directly with the WVDEP and discuss our approach to this project in a shortlist interview. Should you have any questions, please do not hesitate to reach out to Joseph D. Robinson at (443) 366-2606 or Steve Cain at (304) 669-3940.

Respectfully submitted,  
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

  
Joseph D. Robinson, P.E.  
Vice President

  
Steve A. Cain, P.E.  
Vice President



# PROFESSIONAL ENGINEERING & CONSULTING SERVICES FOR 2023 AML CONTRACT N1

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# 1.0 Firm Overview

In 1989, four engineers and scientists came together with a singular vision: to be a people-first company, one that promotes a culture where clients and employees enjoy working together, and that is responsive to client needs with integrated services and high-quality work for projects both complex and routine. More than 30 years later, Civil & Environmental Consultants, Inc. (CEC) has 1,400+ team members in offices nationwide. Headquartered in Pittsburgh, Pennsylvania, we are consistently ranked on Engineering News-Record's annual lists of the Top Design Firms and Top Environmental Firms in the nation.

**A culture of accountability. We own it.** At CEC, every member of our team has a personal stake in ensuring the success of our clients. Because their success is our success. As employee-owners of the firm, we are all personally accountable for building lasting relationships and delivering outstanding results. Because we don't just work at CEC. We own it.

**Being easy to work with. We own it.** At other firms, you may find one person you work well with. Here, our clients tell us they work well with all of us. It's because all of us are invested in your success. We're accessible, responsive, and operate with integrity.

**Putting people first. We own it.** At CEC, people come first. Always. Whether that's our clients, our employees, or our community. It's why we listen more and work harder to understand the unique needs of our clients. And it's why we prioritize the career development of every individual on our team. People are why we do this, and why we love what we do.

**Teamwork. We own it.** We are at our best when we work together. That means bringing together a diverse team of talented, passionate, multidisciplinary experts to work closely alongside clients to craft comprehensive solutions to complex problems. We believe that by working together, no problem is insurmountable.

**Safety excellence. We own it.** We believe all accidents are preventable and are committed to creating an accident- and incident-free workplace for employees and subcontractors through training, safe workplace practices, and processes for assessing project hazards. CEC strives for safety excellence throughout our entire organization and holds all individuals accountable for the safe performance of their work.

CEC is an expanding, multi-disciplined company that is home to:

- +Civil Engineers
- +Geotechnical Engineers
- +Transportation Engineers
- +Structural Engineers
- +Environmental Scientists
- +Environmental Engineers
- +Chemical Engineers
- +Geologists
- +Hydrogeologists
- +Hydrologists
- +Ecologists
- +Biologists
- +Wetland Scientists
- +Threatened & Endangered Species Experts
- +Agronomists/Soil Scientists
- +Emissions Testing Professionals
- +Meteorologists
- +Chemists
- +Archaeologists
- +Construction Managers and Inspectors
- +Environmental Technicians
- +Treatment Plant Operators
- +Land Surveyors
- +Landscape Architects
- +GIS Analysts and Programmers



## 1.1 Commitment to Safety

CEC is committed to conducting its business in a manner that sustains and protects the safety and health of its employees. CEC strives for continuous improvement in the effectiveness of its safety and health programs. We affirm that:

- Working safely is a key corporate value and a condition of employment.
- All workplace hazards can be safeguarded against by using proactive measures and actions.
- Occupational safety and health is part of every employee's total job performance.
- Each CEC employee is responsible, and is held accountable for establishing safe workplace conditions to prevent injuries and occupational illnesses.
- Training employees to work safely is essential and is the responsibility of CEC Managers and Supervisors.
- Creating and maintaining a safe workplace, combined with the prevention of personal injuries and accidents, is good business.
- An effective Safety Program is part of CEC's vision and mission.

CEC's Workplace Safety Program and Manual provides general physical hazard assessments for tasks commonly performed by CEC employees. The program requires a hazard assessment and preparation of a project safety plan for all field operations. The plans are continuously updated through the use of Job Safety Assessments and on-site safety meetings for CEC personnel.

## 1.2 Attention to Quality

CEC performs our professional services under our corporate Quality Assurance Plan (QAP). This QAP was developed to verify the engineering, design, plans and other deliverables prepared by the project team and the various disciplines are supported by comprehensive studies and sound engineering judgment, in compliance with established policies, guidelines and standards, and contain appropriate design flexibility and cost saving measures. This QAP entails a comprehensive listing of CEC quality policies and standard operating procedures that are available on CEC's internal network. It is consistently reviewed and updated by a multi-office team of experienced professionals to ensure "Best Quality Control Practices" are uniformly applied. In support of this QAP, CEC is committed to the application of established design policies, guidelines, and processes developed and published by review and resource agencies. From a quality standpoint, technical personnel review the technical quality, accuracy and completeness of all designs, analyses, drawings, estimates, and report text. Peer-level personnel are responsible for the performance of an

independent check of all calculations and project deliverables prior to each project milestone submission.

As part of the QAP, reviews will be performed for the appropriate element throughout the design/construction process. These reviews will be completed prior to submitting reports, plans, construction documentation, or other deliverables. These reviews will verify the adequacy of the information presented and compliance with established guidance documents. The QAP also documents procedures for work procedure and equipment use, employee and project safety, project management and records and communications. The goal and objective of the QA/QC Policy is to provide a safe and consistent delivery of quality services to the WVDEP.

## 1.3 Controlling Costs and Maintaining Schedules

CEC has written quality policies that are provided to all employees; these policies define critical work quality and internal control procedures. Employees are instructed and required to record hours worked daily in the Deltek system and each employee-prepared time sheet is reviewed and approved by a system defined supervisor. Project management personnel have online access to project budgets, project cost and hours, billing and accounts receivable information. In addition to online access, each month the Accounting Department distributes to the project manager and principal-in-charge copies of a summary project status report showing budget and actual project information.

Project cost controls are provided by our fully integrated accounting system. The management information system is used to compile and control costs by project and by task, independent of personnel used, or their office location. Costs specific to the project are consolidated by accounting and verified by the CEC project manager for accuracy. Further accounting control is provided for monthly reviews of all projects. The costs incurred are compared to progress on the projects to confirm that the expenditures of budgeted funds correlate to the overall progress on the projects.

## 1.4 Staff Availability

CEC regularly reviews workload by office and by Practice through a series of regularly scheduled meetings/reviews. Each office holds a weekly meeting to review new and upcoming proposal activity and reports shared opportunities. Additional practice meetings/ reviews are held to review workload, schedule manpower and anticipate schedule changes. CEC regularly monitors our workload and backlog against staff availability and adds personnel, as necessary, to meet client and project requirements and has the ability to augment staff from our 31 office locations and over 1,400 personnel.

## 2.0 Key Personnel & Sub-consultants

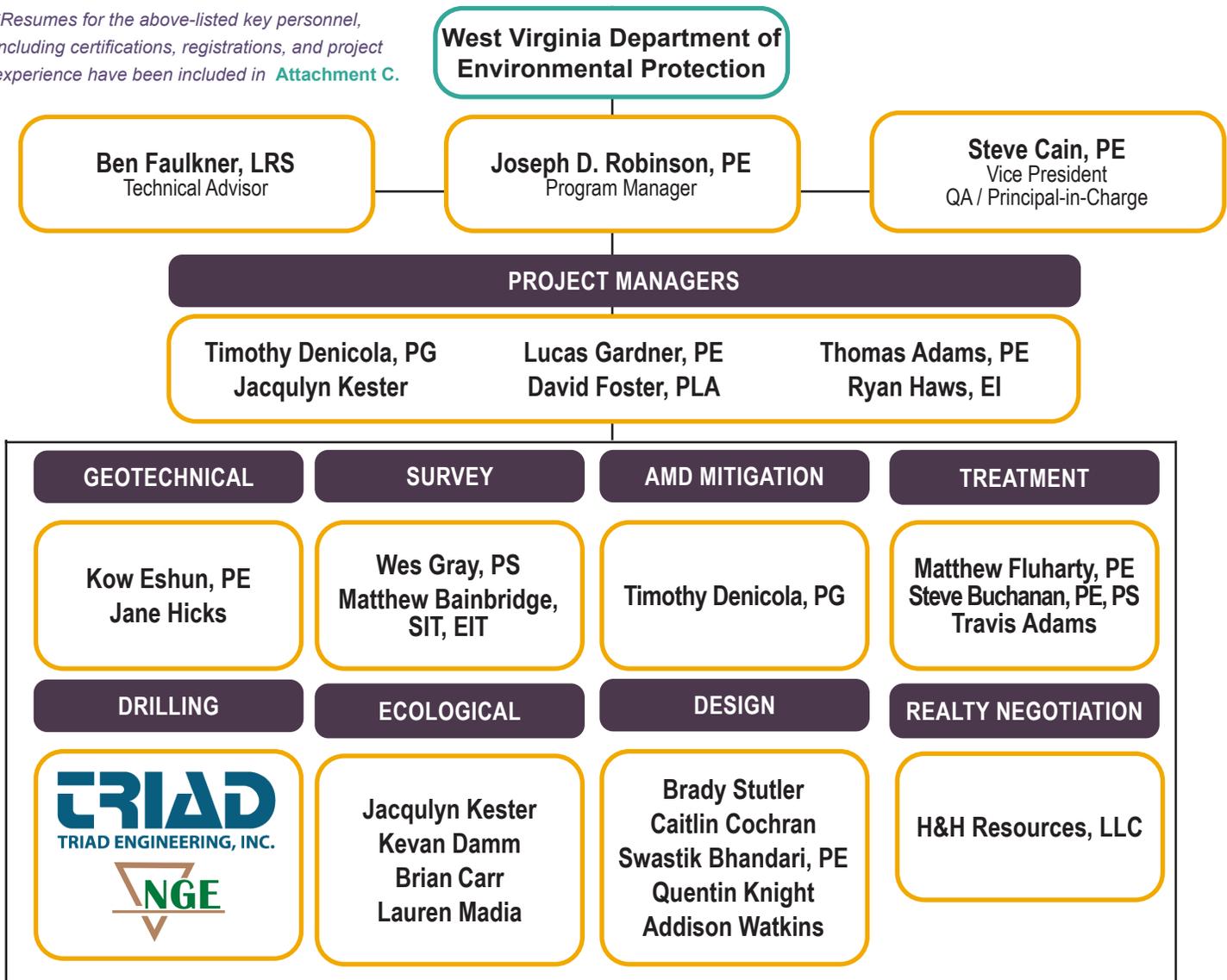
The following key personnel will assist in the 2023 AML N1 project. CEC's project team is comprised of individuals that have the technical knowledge, professional experience and project understanding to support the West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands and Reclamation (WVDEP-DLR-AML) with geotechnical investigation and design of landslides, investigation/reclamation/design of dangerous impoundments and highwalls, acid mine drainage (AMD) investigation and mitigation, portal sealing and hydraulic engineering. The project team identified to work with the WVDEP has extensive experience in full service design solutions for performing site assessments and design remediation and mitigation services throughout West Virginia. In addition, our team has extensive experience in ecosystem restoration, and Clean Water Act

Permitting and NEPA. Each of the anticipated team members presented in the organizational chart that follows is based out of CEC's Bridgeport, West Virginia office and will be crucial in the successful execution of these projects.

In addition to the key personnel noted in the organizational chart below, CEC's Bridgeport, WV office has more than 100 technical and managerial personnel who can provide a wide range of services, including but not limited to Construction Field Services, Environmental Engineering, Permitting and Ecological Services.

The project managers list shown represents the lead project managers that will be utilized for the N1 contract. CEC has a total of eight (8) additional senior level project managers available for assignment to manage and assist in management to ensure an efficient and quality completion of projects

*\*Resumes for the above-listed key personnel, including certifications, registrations, and project experience have been included in Attachment C.*



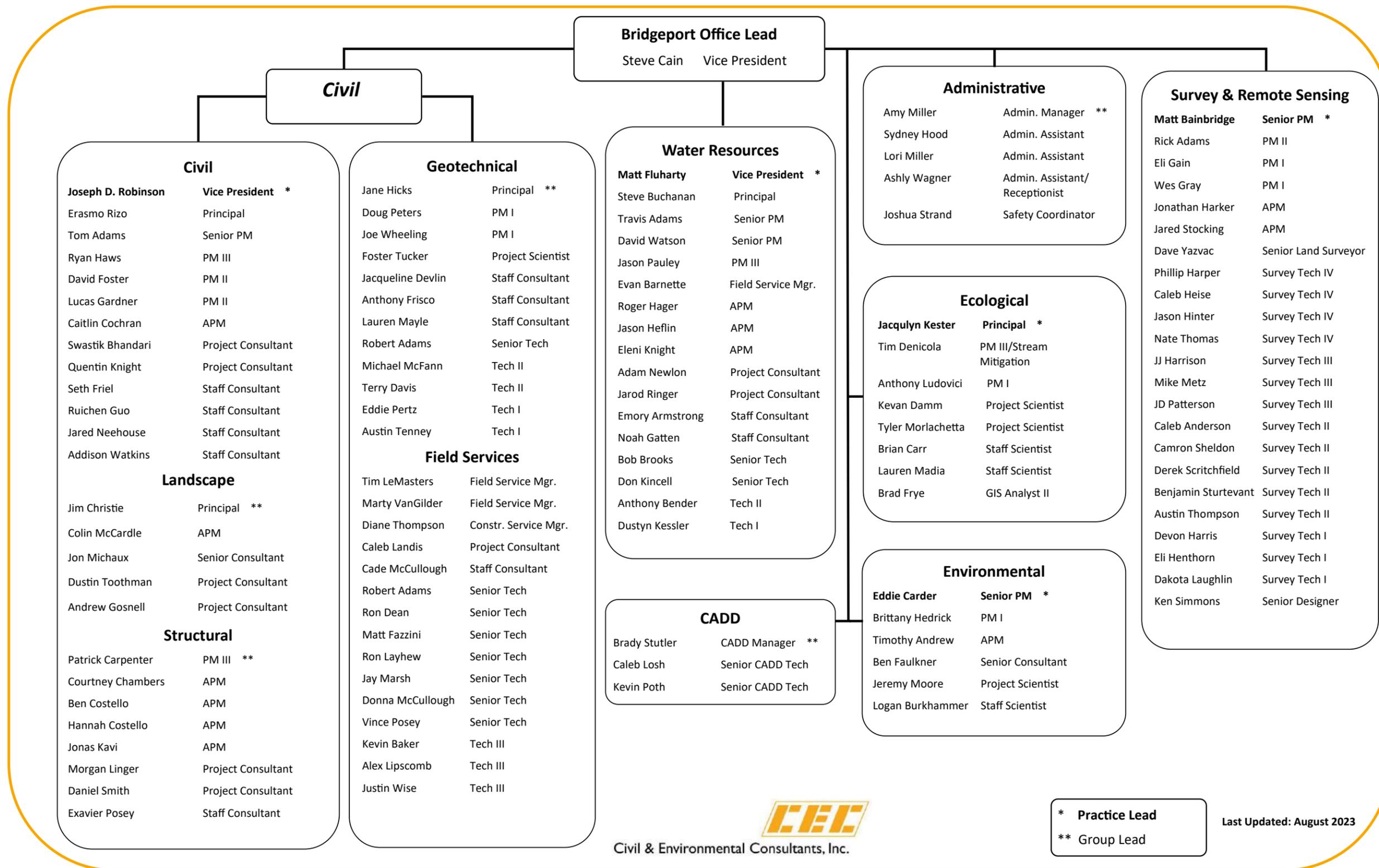
Name	Role	Years of Experience	Education	Registrations
Joseph Robinson, PE	Program Manager	19	B.S., Civil Engineering, West Virginia University	Professional Engineer (WV, OH, PA, TX, VA, MD)
Steve Cain, PE	Quality Manager/ Principal-in-Charge	30	B.S., Engineering Technology - (Civil Emphasis), Fairmont State University	Professional Engineer (WV, PA, MD)
Ben Faulkner	Technical Advisor	44	Certificate, Environmental Studies, WV College of Graduate Studies B.S., Biology, Concord University	
Timothy Denicola, PG	Project Manager/ AMD Mitigation	14	M.S., Geology, West Virginia University B.S., Chemistry, Clarion University of Pennsylvania	Professional Geologist (PA) Certified Floodplain Manager
Jacquelyn Kester	Project Manager/ Ecological	17	B.S., Environmental Sciences, West Virginia University	
Lucas Gardner, PE	Project Manager	7	B.S., Civil Engineering Technology, Fairmont State University	Professional Engineer (WV)
David Foster, PLA	Project Manager	11	B.S., Landscape Architecture, West Virginia University	Professional Landscape Architect (WV)
Thomas Adams, PE	Project Manager	18	M.S., Civil Engineering, West Virginia University B.S., Civil Engineering, West Virginia University	Professional Engineer (WV)
Ryan Haws, EI	Project Manager	17	MBA, Business Administration, University of Phoenix B.S., Civil Engineering, West Virginia University	Engineer in Training (WV)
Kow Eshun, PE	Geotechnical	18	M.S., Geotechnical Engineering, The University of Akron B.S., Civil Engineering, Kwame Nkrumah University of Science and Technology	Professional Engineer (WV, VA, TX, TN, PA, OH, NC, NY, NJ, NV, MS, MI, MD, KY, IN, FL, DC, AZ)
Jane Hicks	Geotechnical	26	M.A., Education, West Virginia University B.S., Mining Engineering, West Virginia University	
Wesley Gray, PS	Survey	24	B.S., Engineering Technology - (Civil Emphasis), West Virginia University Institute of Technology A.S., Civil Engineering Technology, West Virginia University Institute of Technology	Professional Surveyor (WV)
Matthew Bainbridge, SI, EI	Survey	19	B.S., Civil Engineering Technology, Fairmont State University B.S., Mathematics, Fairmont State University	Survey Intern (WV) Engineer in Training (WV)
Matthew Fluharty, PE	Treatment	23	B.S., Civil Engineering, West Virginia University	Professional Engineer (WV, PA, OH, MD)
Steve Buchanan, PE, PS	Treatment	39	B.S., Civil Engineering, West Virginia University	Professional Engineer (WV, PA, MD, OH) Professional Surveyor (WV)



Name	Role	Years of Experience	Education	Registrations
Travis Adams	Treatment	25	B.S., Environmental Science (Emphasis on Water Quality), West Virginia University	
Kevan Damm	Ecological	11	B.S., Wildlife Ecology & Management, West Virginia University	
Brian Carr	Ecological	2	B.S., Environmental Science, Water Science, West Virginia University	
Lauren Madia	Ecological	18	B.S., Ecology and Evolution, The Ohio State University	
Brady Stutler	Design	19	Certificate, Civil Engineering Technology, Fairmont State College Certificate, Computer Aided Drafting & Design, United Technical Center	
Caitlin Cochran	Design	10	B.S., Mechanical Engineering, Southern Methodist University	
Swastik Bhandari, PE	Design	9	M.S., Civil Engineering, Southern Illinois University 2013: B.S., Civil Engineering, Tribhuvan University	Professional Engineer (WV, NC)
Quentin Knight	Design	6	B.S., Civil Engineering Technology, Fairmont State University	
Addison Watkins	Design	1	B.S., Civil Engineering Technology, Fairmont State University B.A., Spanish, Fairmont State University	

2.1 Bridgeport Office Personnel

**BRIDGEPORT ORGANIZATION CHART**





## 2.2 Sub Consultants

**Triad Engineering Inc.** will assist CEC with their geotechnical investigation by performing subsurface drilling. Since the 1990s, Triad has performed geotechnical drilling and/or geotechnical engineering services on 100s of West Virginia DEP AML&R projects. Triad has maintained open-ended drilling contracts from 2014 to 2017 and 2019 to present. Drilling services include the following:

- Soil Drilling and Sampling using hollow stem augers and split spoon sampling
- Rock coring using NQ coring tools to collect core samples of the underlying bedrock
- Installation of piezometers into mine voids to allow for water level determination and water sampling
- Installation of slope inclinometers and other instrumentation to monitor slope movements.

**NAICS CODE: 541330 | SERVICE(S): ENGINEERING SERVICES | CERTIFICATION: Current SBA Small Business Status for 541330**

CEC will use **Novel Geo-Environmental, LLC (NGE)** to assist in performing additional geotechnical investigation by performing the subsurface drilling. Since inception in 2003, NGE has performed geotechnical engineering and/or geotechnical drilling services on over 110 West Virginia DEP AML projects. Geotechnical drilling services for AML projects have included the following services:

- Soil drilling and sampling using hollow-stem augers and split-spoon sampling.
- Rock coring using a NQ-wireline system to collect continuous samples of bedrock.
- Installation of piezometers into mine voids to allow for water level determination and water sampling.
- Installation of inclinometers to allow for prolonged monitoring of slope movements.

Minority Business Enterprise Program:

**CERTIFICATION: MBE/DBE/SBE**  
**NAICS CODE: 541330**  
**SERVICE(S): ENGINEERING SERVICES**  
**CERTIFICATION: MBE/DBE/SBE**  
**NAICS CODE: 541620**  
**SERVICE(S): ENVIRONMENTAL CONSULTING SERVICES**

CEC will also utilize **H&H Resources LLC** to assist in performing the field investigations and construction execution by negotiating right-of-way acquisition from multiple landowners. Since inception in 2015, H&H Resources LLC has negotiated for and been involved in over 500 miles of pipeline and 25 miles of electric transmission line right of way acquisition. H&H Resources LLC would utilize the following services for CEC to complete projects in a timely manner:

- Strong experience managing midstream right-of-way development and acquisition and procuring compressor sites and land purchases.
- Adept at coordinating and streamlining contributions from site development, mapping and GIS, title, document specialists, field agents, right of way technicians, and professionals charged with handling post acquisition matters from project initiation through construction and reclamation.
- Dynamic negotiator who utilizes outstanding negotiation skills with an exceptionally high rate of successful outcomes.

**CERTIFICATION: IRWA (International Right of Way Association)**

## 3.0 Project Overview

CEC has reviewed the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation's (WVDEP-DLR-AML) request for qualifications relating to the project released under the 2023 AML Contract N1 Expression of Interest (EOI). The EOI identifies a group of projects located in Harrison, Barbour and Randolph Counties, West Virginia. The projects include the following:

- Enterprise Portal
- Glosser/Williams Property
- Miller Mine Drainage
- Shinnston (Sheppard) Mine Drainage
- Simpson Creek Highwall, Tipple & Portals, Phase II
- Weaver Portals and Drainage Phase III
- West Fork #9

CEC's professional services will consist of providing the WVDEP-DLR-AML with site reconnaissance, landowner negotiation and easement procurement, site access plans, geotechnical subsurface investigations, MS4 compliance (if applicable), water quality tests, preparation of designs, plans, and specifications relating to site access, impoundment and highwall reclamation, remediation of open or collapsed portals, remediation of mine pools and drainage design, erosion and sediment controls, landslide stabilization if required, and clearing and grubbing/site revegetation to be performed within the limits of disturbance. Removal of dangerous existing structures will be necessary at some of the project locations. In addition, rehabilitation and/or replacement of existing passive treatment systems may be required. Permitting applications will also be submitted as necessary for each project's successful completion. The following sections of this letter include our understanding of the project requirements.

### 3.1 Understanding of Project Requirements

#### Abandoned Mine Drainage (AMD) Remediation

CEC personnel specialize in abandoned mine drainage (AMD) remediation having designed remediation projects within various coal fields of West Virginia and Pennsylvania. Personnel utilize a geochemical approach considering the AMD sources in addition to temporal and spatial variation of chemical constituents. Variation of chemical constituents is assessed through effective field sampling, bench testing, and calculations including metals acidity, alkalinity generation rate, heterogeneous iron oxidation rate, chemical oxygen demand, settling velocity, reagent and sludge volume, and required retention time. These parameter are meshed with available land area, drainage features, and vertical relief to appropriately

design functional AMD treatment systems.

CEC has developed designs to mitigate AMD generation ranging from systems to control water levels in mines, to the addition of buffering agents to control AMD generation by spoils and refuse. CEC has also designed both passive and active systems to treat AMD. CEC has designed wetland systems to address AMD discharges where the AMD chemistry and flow volumes are appropriate for passive treatment. CEC has extensive experience developing mine water remediation plans for active permitted coal mines, bond forfeiture sites (BFS), and AML. CEC has designed and implemented active, semi-active, and passive mine water treatment technologies ranging from large-scale, automated facilities to mitigate large volume/poor quality discharges, to water-driven alkaline reagent dosers, to successive alkalinity producing systems (SAPS) which incorporate various passive technologies.

CEC offers full-service mine water remediation including pre-engineering surveying and data collection, engineering design, construction specifications and cost estimate, bid and contract documents, construction oversight, and post-construction monitoring. Services include assessment and recommendations of existing mine water treatment systems and development of operations, maintenance, and replacement plans. CEC is experienced in managing all aspects of regulatory compliance associated with land reclamation and water remediation activities and regularly communicates with regional councils, state environmental agencies, Office of Surface Mining and Reclamation and Enforcement (OSMRE), and the United States Army Corps of Engineers (USACE).

#### On-site Reconnaissance

CEC will conduct an on-site reconnaissance to characterize the various features requiring resolution at each project location. The reconnaissance will include viewing areas where abandoned mine entries may be currently discharging acid mine drainage (AMD). The surrounding terrain around landslides, subsided areas, and portal openings, along with documentation of general site conditions will be characterized. In addition, the site reconnaissance will include a review of existing and previous AML mine seals and conveyance systems, as well as identifying possible site access for equipment. CEC will conduct a desktop review of available landslide mapping and soil maps to identify additional high risk areas near the area prior to the site visit. The findings of this site visit will be incorporated into the layout and design of the remediation of identified site features as well as restoration and management practices.

#### Topographic and Planimetric Survey.

CEC will perform a topographic and planimetric survey of the project sites. This survey will provide the existing contour mapping of the site at the time of the Small Unmanned Aerial

System (sUAS) Flight. This sUAS flight will be supplemented with more traditional survey methods to provide a detailed base map suitable for developing construction drawings.

### Ecological Delineation

Wetlands will be identified and delineated in accordance with the routine determination methodology described in the 1987 United States Army Corps of Engineers' (USACE) Wetlands Delineation Manual (USACE Manual), supplemented by the 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (USACE Supplement), National Wetland Plant List, and United States Department of Agriculture's (USDA) 1991 Hydric Soils of the United States. Streams and other waters, such as ponds, seeps, springs, etc., will be identified by the presence of an ordinary high water mark as defined in 33 Code of Federal Regulations (CFR) Part 328.3(e) and USACE Regulatory Guidance Letter No. 05-05. Streams will be classified as perennial, intermittent, or ephemeral in accordance with outlined definitions. Floodplains will be identified and delineated from Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps and other available state or local floodplain mapping information.

Wetland and waters determination data will be recorded on field data forms and each aquatic resource will be photographed. CEC will mark the boundaries of wetlands and other waters with consecutively numbered surveyor's ribbon and locate the boundaries using aerial/LiDAR topographic mapping and Trimble® Geo-XT or Geo-XH Global Positioning System (GPS) equipment. The mapping and GPS boundary locations will be used to prepare a wetland and waters delineation map.

After completing the identification, field delineation, and classification of wetlands, buffers, other waters, and floodplains within the study area, CEC will prepare a wetland and stream delineation report. The report will include a description of the classification and delineation methods, wetland and waters determination field data forms and photographs, tabulation of the type and quantities of each aquatic resource, and a wetland, waters, and floodplain delineation map showing the location, extent, and classification of each aquatic resource within the Site.

### Geotechnical and Water Chemistry Investigation

A subsurface drilling plan will be prepared and implemented on each project within N1. CEC will coordinate with a drilling subcontractor to perform exploratory borings at appropriate locations suitable to quantify onsite materials as needed for backfilling and grading of disturbed areas as well as for general site earthwork. Proposed borrow areas will be identified during the site reconnaissance with boring also planned to evaluate these areas. Test boreholes will also be drilled to provide samples for laboratory testing to assess physical and chemical properties of unreclaimed refuse and spoil as applicable to the individual sites. CEC will have the boring samples analyzed by a

state approved soils' lab to determine acid base accounting and suitability for reuse as backfill material. Based on the individual project requirements, laboratory testing may include Atterberg limits, direct shear, standard Proctor, grain size analyses, and moisture content.

For individual projects requiring landslide remediation, CEC may elect to perform test pits to obtain soil samples to aid in design of landslide repair plans. Test pits will be considered in areas where the topography is more conducive to excavator access and setting up a drill rig might not be practical or safe. This decision will be based on the site reconnaissance.

Water quality samples may be collected from surface waters and field identified groundwater seeps in pertinent features to be reclaimed to quantify contaminant loads in the shallow aquifer. Water quality parameters may include field temperature, pH, specific conductivity, dissolved oxygen, and oxidation-reduction potential. Laboratory parameters may include acidity, alkalinity, total iron aluminum and manganese, dissolved iron aluminum and manganese, calcium, magnesium, and sulfate. Discharge measurements will be collected from GIS and field identified surface waters using a SonTek FlowTracker 2 Acoustic Doppler Velocity Meter. Drainage conveyances to be installed or repaired in the mitigation of dangerous impoundments or chronic AMD discharges in particular may reference the results of the water chemistry testing to facilitate a suitable selection of channel protection or lining material.

The results of the geotechnical and water chemistry investigation will be incorporated into a Water Chemistry and Geotechnical Investigation Report. CEC will submit a report to the WVDEP-DLR-AML summarizing its findings and conclusions. These findings will be incorporated in the design of the applicable site remediation.

### Clearing and Grubbing

CEC will design and develop a Clearing and Grubbing plan to remove woody vegetation and accumulated trash to prepare the site for construction. Delineated wetlands and waterways will be protected by biodegradable filter sock. Several of the projects are in close proximity to residential structures. Clearing and grubbing and earthwork operations upslope from the residential structure will consider the use of super silt fence between the work and the structures to be protected.

### Access Roads

CEC will design all-weather style construction access roads to facilitate access to the project sites. Where construction is anticipated to impact public roadways, a Maintenance of Traffic (MOT) plan will be developed using the standards from the West Virginia Department of Transportation, Division of Highways, Manual on Temporary Traffic Control for Streets and Roadways to enable construction operations while limiting impact to public travel ways and a provide safe interaction between public traffic and construction operations.

### Landslide Stabilization

CEC will incorporate the data collected and conclusions established in the geotechnical investigation to develop remedial design plans and specifications for the landslides on the applicable projects. CEC anticipates conventional earthwork operations can be performed in a manner that will provide an adequate factor of safety for the sites. Dependent upon the individual site topographies, it is possible alternative approaches such as reinforced soil slopes or gabions may be required. Alternative approaches may be considered if deemed necessary after the site reconnaissance. Diversion ditches will be evaluated for use upslope of planned remediation areas to intercept and divert stormwater from the face of the slope. Intermediate subsurface drains installed in conjunction with drained foundation keys and bonding benches will be utilized to further promote stability of the rehabilitated slopes. Temporary and permanent stabilization in the form of erosion and sediment controls and planting will be designed and implemented as necessary.

### Portal Sealing and Regrading

Several projects have numerous portals that are noted as being open, partially collapsed, or completely collapsed with active AMD seepage. These are to be sealed and/or regraded. CEC will evaluate the condition of the portals to identify an ideal sealing strategy for each. Wet mine seals modified mine seals, or bat gate seals will be designed as appropriate to properly close all open entryways and provide hydraulic relief to collapsed portals.

A mine pool dewatering plan will be designed and incorporated as necessary that will treat existing AMD water prior to release into project area streams. The results from the water chemistry investigation will form the basis of this plan.

Earthwork operations will be designed to provide positive drainage throughout the project areas and utilize excavated materials to backfill the mine seal installations and subsidence features, thereby eliminating falling hazards, mine entry points, and reestablishing stream flows in channels and/or existing or proposed drainage facilities.

### Highwall Reclamation

CEC will complete the layout of the reclamation of the disturbed areas and establish the proposed final elevations and grades for the site. CEC will finalize the site plan for the proposed development in accordance with the WVDEP-DLR-AML requirements. Onsite soil refuse that is to be disposed of will be placed within the graded areas. CEC will prepare the final site grading plan, to include two-foot contours to represent proposed site grading and spot elevations within the proposed disturbance.

CEC will provide a project site with balanced earthwork and will prepare earthwork volumes accounting for topsoil stripping and shrink/swell adjustments. Soil blending will be investigated and

incorporated into the design to reuse as much onsite material as possible if that is found to be an acceptable solution. Onsite mine refuse will be placed against the toe of the highwall and buried beneath the subsequent compacted fill layers during the highwall reclamation process to form a cap around the entirety of the refuse. Earthwork operations will be designed to provide positive drainage throughout the project areas and utilize excavated materials to bring up the gradient in front of the highwalls to provide a gradual slope along the project limits, reducing falling hazards.

### Mine Spoil Refuse and Gob Pile Reclamation

CEC will evaluate the sites to identify suitable locations to spread and dispose of mine spoil refuse and gob material as necessary. Topsoil will be stockpiled to set aside valuable organic material for later use. In order to provide a soil cap over the refuse of suitable thickness, onsite borrow areas may need to be used. Subsurface investigation will be completed as needed to identify suitable borrow locations within the project area. The borrow material will be reused as a cap over the mine spoil refuse and will be topped with the stockpiled topsoil to better facilitate revegetation. The final grade will be blended into the existing topography and graded to drain in a manner that reconnects stream flows and moves overland and subsurface flows offsite.

### Repair or Replacement of Existing Drainage Systems

CEC understands that existing impoundments, faulty drainage systems, or lack of drainage systems may be the cause of the drainage problems at some locations. It is possible that existing AML mine seals or conveyance systems may be failing. As such, CEC will review the existing drainage systems and features onsite and propose either maintenance, repair, replacement, or new systems be installed if conditions warrant.

### Hydraulic and Hydrological Assessment, Stormwater Management, and Conveyance Structures

The purpose of this task is to prepare a stormwater management plan for collection, conveyance, and detention measures as required for post development conditions in accordance with the requirements of WVDEP-DLR-AML.

- CEC will perform a preliminary pre- and post-development hydrologic and hydraulic analysis to determine stormwater management requirements for post-development conditions as required.
- CEC will perform detailed engineering analysis and design for any stormwater collection, conveyance, and detention systems required for the site. CEC will prepare design drawings and specifications for the stormwater drainage system design to include plan view layout, cross sections (as needed) and construction details in accordance with WVDEP-DLR-AML standards.

CEC will design open channel flow limestone ditches to capture

surface runoff and ground water and direct that flow around or through the Project site. Care will be taken to divert uphill runoff around proposed grades. All designed ditches will have engineered linings to provide stability and resist tractive stream forces. Limestone may be specified for all riprap lined ditches to add alkalinity to captured waters. Design pipes to transport captured ditch flows where necessary. Horizontal borings will be considered as a means of relieving hydraulic pressure conveying flows through to receiving ditches. CEC will design subsurface drains (where necessary) to safely convey ground water into constructed ditches or directly into receiving streams.

CEC is experienced in hydraulic and hydrologic analysis, dynamic two (2) dimensional flow modelling, culvert and bridge design, and preparation of hydraulic reports necessary to support the findings. Natural Channel Design (NCD) techniques will be considered where appropriate as an alternative to conveyance ditches. NCD will also be considered where needed to help restore natural order to clogged and impacted streams.

Where proposed open channel ditches traverse through subsidence zones or other areas where stream water loss is evident, CEC will propose the use of grouted riprap or geosynthetic clay liners to span these locations and reduce flow loss to deep underlying mines.

#### **Construction Quality Assurance and Quality Control (QA/QC)**

CEC will provide a full-time construction technician to observe and document the progress of the construction. The CEC construction technician will observe the daily construction activities relating to the remediation plans for the individual sites. Conditions encountered will be communicated with the DEP AML and the CEC project manager daily. Daily field reports and construction activity logs summarizing the construction activities and containing photographic documentation will be completed, reviewed, and recorded daily. The CEC construction inspector will have the authority to stop-work for safety reasons and if work is deviating from the Engineer-approved design and plans. CEC experts local to Bridgeport will be available with engineering support and services throughout construction.

#### **Realty Negotiation and Acquisition**

CEC will subcontract H&H Resources, LLC (H&H Resources) to perform realty negotiation and acquisition. H&H Resources has strong experience in managing right of way acquisition projects with recent clients such as Antero Midstream, Competitive Power Ventures and First Energy Corporation. With this relevant experience, H&H Resources will be able to Match the needs of the client with the roles of the mapping department, title determination, documents specialists, managers, and other professionals handling projects in the post-acquisition phase of CEC. By facilitating the lines of communication and reporting between CEC and the WVDEP, progression of projects will be efficient and as seamless as possible. H&H Resources has an established organizational process for developing and

maintaining records, reports and other mechanisms for tracking the progress toward meeting the client's objectives and goals. CEC, the WVDEP, and H&H Resources will work together towards meeting with landowners, evaluating and approving negotiations, developing contracts, and more.

#### **Revegetation of Disturbed Areas**

CEC will develop temporary and permanent revegetation plans for disturbed areas. Revegetation plans will utilize either mining reclamation standard revegetation specifications or a more diverse native non-invasive planting scenario including grass seed mixes, woody and herbaceous shrubs, and hardwood trees.

#### **Permitting Submittals**

CEC experts local to Bridgeport, will prepare and submit the following necessary permits as applicable and as determined at the pre-design meeting:

- West Virginia Department of Environmental Protection Division of Water and Waste Management (WVDEP-DWWM) National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit
- WVDEP-DWWM Section 401 Water Quality Certification permit
- United States Army Corps of Engineers (USACE) Regional General Permit for Abandoned Mine Lands (Section 404)
- West Virginia Department of Highways (WVDOH) MM-109 Encroachment Permit

Additional permits may become necessary as investigation into each of the project locations progresses. Those permits may include, but not be limited to:

- Stream Activity Application
- Fish Spawning Waiver
- Floodplain Permit
- Various Agency Technical Assistance Letters

CEC will notify the WVDEP-DLR-AML in the event that any additional permits become necessary and collaborate towards a solution.

#### **National Environmental Policy Act (NEPA)**

CEC would commence the ecological services component of the project by performing desktop reviews of the following resources, at a minimum:

- Available aerial imagery and topographic maps to assess areas that may have a higher probability of containing streams and/or wetlands
- United States Fish and Wildlife Service's (USFWS) Information for Planning and Consultation website to generate a list of federally protected species that may be within range of the project

- State Historic Preservation Office's (SHPO) interactive website to review known cemetery locations, archaeological sites, or architectural resources that may be present onsite or within the viewshed of the project
- Review of local, state, or national parks including refuge lands and wildlife management areas
- West Virginia's National Wild and Scenic Rivers Systems website
- Federal Emergency Management Agency (FEMA) mapped flood hazard areas
- West Virginia Department of Environmental Protection's (WVDEP) Technical Applications and Geographic Information System (TAGIS) for public water supplies, aquifers, or principal drinking water areas; and,
- United States Department of Agriculture's (USDA) web soil survey to assess mapped soils and prime farmlands

These desktop reviews would assist CEC in determining required field surveys and to aid in a targeted field approach. CEC would perform a wetland and stream delineation based on the footprint of the preliminary design to assess the project areas for onsite aquatic resources. Based on the results of the aforementioned desktop reviews, CEC could also conduct bat habitat and hibernacula surveys and identification of noxious weeds concurrent with the delineations, thus reducing mobilizations. During the onsite reconnaissance, CEC would also collect information regarding existing site conditions and land-use. The information collected during the desktop analysis and field review would later be utilized as part of the early consultation process with resource agencies during scoping.

Once the results of the field survey(s) have been completed, the data would be post-processed and reviewed in accordance with CEC's Quality Control Manual. Following the review, the data would be supplied to engineering for incorporation into a final plan set, that would avoid and/or minimize impacts to onsite identified resources, to the extent feasible.

Once the final design is complete, CEC would analyze the project for its potential to impact identified resources and would solicit comments from state and federal resource agencies. CEC would prepare, at a minimum, letter requests to the following agencies to solicit comments on the proposed action:

- USFWS and West Virginia Division of Natural Resources for a review of state and federal protected species.
- SHPO for a cultural resources review.
- County Floodplain Manager to ensure the project is compliant with Executive Order 11988.

CEC would review the comment letters received from the various agencies to determine if the proposed action would be within the

constraints of a Categorical Exclusion (CE), or if additional level of reviews [Environmental Assessment (EA) or Environmental Impact Statement (EIS)] would be required. If it is determined that the project would not have significant effects on the quality of the human environment (individually or cumulatively), CEC would complete the Categorical Exclusion Determination Form and provide the necessary supporting documents (figures) and attachments (agency consultation letters and responses) to support the determination.

If the proposed action would have the potential for measureable impacts on the environment, CEC would prepare an EA or EIS consistent with the structural layout provided in the OSMRE's 2019 *Handbook on Procedures for Implementing the National Environmental Policy Act*. The format would generally include:

- Title page.
- Table of contents.
- Purpose and Need for the Proposal: CEC would include a succinct description of the proposed project, a brief statement of what the proposal is and why the action is being considered, and the need for the action. The purpose and need statement would be carefully crafted as to control the scope of the analysis yet without narrowing it so much as to preclude reasonable alternatives.
- Proposed Action and Appropriate Alternatives: CEC would include a description of the No-Action Alternative, Proposed Action, Reasonable Alternatives, and any Alternatives Considered but Eliminated.
- Affected Environment: This section is not necessarily required but a discussion can be useful in analyzing the context and intensity of the impacts.
- Environmental Impacts: This section of the analysis would include a discussion of short- and long-term impacts, direct and indirect impacts, and cumulative impacts. This chapter would also include discussions on the resources referenced in the aforementioned desktop review section.
- Consultation and Coordination. This section would contain a list of parties that were consulted, including a record of compliance with other applicable statutes and regulations including the clean water act.
- References Cited.

The level of public involvement would vary with the differing types of NEPA compliance. Based on the information contained in the RFP, CEC does not anticipate the need for development of an EIS. Though formal scoping does not necessarily apply to CEs or EAs, CEC would work with OSMRE to provide necessary information to support a public notice regarding the preparation of environmental documents or that an EA is being prepared. In conjunction with OSMRE, CEC would identify agencies/ stakeholders known to be interested or affected by the proposed



action and work to develop schedules for soliciting comments. If it is determined the proposed action would have significant impacts requiring an EIS, CEC could also work with OSMRE to develop an appropriate public involvement plan and strategies.

## 4.0 References

We encourage WVDEP to contact the following client contacts to discuss our previous performance on similar projects. CEC has performed numerous landslide remediation projects with the following clients.

**Mr. Lee Kaplan, PG, MPH**

Posillico, Inc.  
Project Executive  
1750 New Highway  
Farmingdale, NY 11735  
Phone: 917-868-5472  
Email: [lkaplan@posillicoinc.com](mailto:lkaplan@posillicoinc.com)

**Mr. Tim Miller**

Maryland Department of the Environment  
Regulatory & Compliance Engineer Senior - Abandoned Mine  
Land Division  
160 South Water Street  
Frostburg, MD 21532  
Phone: 304-689-1465  
Email: [tim.miller@maryland.gov](mailto:tim.miller@maryland.gov)

**Mr. Ben Sampson**

Lyons Run Watershed Association  
President  
Phone: 412-347-1060  
Email: [bsampson@sampsonmorrisgroup.com](mailto:bsampson@sampsonmorrisgroup.com)



## **A. AML Consultant Qualification Questionnaire**

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
AML CONSULTANT QUALIFICATION QUESTIONNAIRE**

Attachment "B"

PROJECT NAME <b>2023 AML Contract N1 Projects</b>	DATE (DAY, MONTH, YEAR) August 29, 2023	FEIN 25-1599565
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1. FIRM NAME <b>Civil &amp; Environmental Consultants, Inc.</b>	2. HOME OFFICE BUSINESS ADDRESS 700 Cherrington Parkway Moon Township, PA 15108	3. FORMER FIRM NAME N/A
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4. HOME OFFICE TELEPHONE 412.429.2324	5. ESTABLISHED (YEAR) 1989	6. TYPE OWNERSHIP <input type="checkbox"/> Individual <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Joint-Venture	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE  
Bridgeport Office | 120 Genesis Boulevard, Bridgeport, WV 26330 | 304.933.3119 | Joseph D. Robinson, PE | 23

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM Dustin Kuhlman   PE   CEO Harry Dravecky   PE   COO	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Steven Cain   PE   Vice President & Office Lead
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9. PERSONNEL BY DISCIPLINE

131 ADMINISTRATIVE	114 ECOLOGISTS	9 LANDSCAPE ARCHITECTS	16 STRUCTURAL ENGINEERS
2 ARCHITECTS	ECONOMISTS	17 MECHANICAL ENGINEERS	185 SURVEYORS
9 BIOLOGIST	17 ELECTRICAL ENGINEERS	MINING ENGINEERS	6 TRANSPORTATION ENGINEERS
76 CADD OPERATORS	211 ENVIRONMENTALISTS	10 PHOTOGRAMMETRISTS	265 OTHER
6 CHEMICAL ENGINEERS	ESTIMATORS	PLANNERS: URBAN/REGIONAL	
370 CIVIL ENGINEERS	28 GEOLOGISTS	1 SANITARY ENGINEERS	
10 CONSTRUCTION INSPECTORS	HISTORIANS	4 SOILS ENGINEERS	
DESIGNERS	HYDROLOGISTS	SPECIFICATION WRITER	
			<b>1487 TOTAL PERSONNEL</b>

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 8 WV Professional Engineers in Bridgeport (51 companywide)

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

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE?  Yes  No

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED. Attach "AML Consultant Qualification Questionnaire".

<p>NAME AND ADDRESS:                  TRIAD Engineering, Inc.                  10541 Teays Valley Road,                  Scott Depot, WV 25560</p>	<p>SPECIALTY:                  geotechnical investigation services                  including drilling investigation and                  technical reporting of findings</p>	<p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:                  H&amp;H Resources                  1536 Rock Run Road                  West Union, WV 26454</p>	<p>SPECIALTY:                  Realty negotiation and acquisition as                  well as supporting services such as                  title research and documentation</p>	<p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:                  Novel Geo-Environmental, LLC                  650 MacCorkle Avenue West                  St. Albans, WV 25177</p>	<p>SPECIALTY:                  geotechnical investigation services                  including drilling investigation                  and technical reporting of findings</p>	<p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes  <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No</p>

12. Experience

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

**YES Description and Number of Projects:** CEC personnel have 90 years of direct Abandoned Mine Lands Remediation/Mine Reclamation Engineering experience. In 2018, CEC was awarded the Excellence in Construction Award for the Shinns Run Portals Reclamation Design Project by the Associated Builders and Contractors, Inc. CEC personnel have also designed the Ohio Abandoned Mine Lands Project - Flint Run Acid Mine Drainage that received a national award. The list below is some of the project that CEC personnel have designed in the past.

1. Stollings (White) Portals, three mine seals, sediment and erosion control
2. Norton Highwall #1 reclamation design to eliminate 8,900 LF of highwall with 11,145 LF of drainage ditches
3. Virginia DMME AMD Passive Treatment System (non-BFS) - sulfate reducing bioreactor, settling pond, aerobic wetlands
4. Tub Run Highwall and Refuse Phase II, reclamation design to eliminate 12,500 LF of highwall with 11,400 LF of drainage ditch design and roadway design
5. Tub Run Highwall and Refuse Phase I, reclamation design to eliminate 10,000 LF of highwall with 9,900 LF of drainage ditch design with a large box culvert
6. Greenbrier Hollow Refuse, reclamation design removal of cast over the hill coal refuse pile, 2 mine seals and 1,015 LF of drainage ditch design.
7. Island AMD Passive Treatment System (non-BFS) - iron oxidation, acid neutralization, metal precipitation/collection, hydrologic conveyances
8. Sauls Run Strip and Landslide "Emergency AML Project" This project was completed from start to finish in (4) weeks including field survey, design, subsurface investigation plan, design and removal of three slips behind house on Sauls Run.
9. North Taylor AMD Passive Treatment System (non-BFS) - acid neutralization, mixing basin, aerobic wetlands, hydrologic conveyances, revegetation

CEC personnel have successfully completed 20+ acid mine drainage evaluation and abatement design projects.

NO

B. Is your firm experienced in Soil Analysis?

**YES Description and Number of Projects:** CEC has routinely completed soil analysis and acid base accounting for mining impacted properties including the West Virginia Department of Environmental Protection Office of Abandoned Mine Lands. On all of our past AML reclamation design projects, CEC performed soil analysis or had the analysis performed by subconsultants. CEC has routinely completed soil analysis on AML for stream restoration focusing on ABA, Pyritic Sulfur, and Nutrient Content. CEC has also performed soil analysis for the Oil & Gas Industry focusing on VOCs, PAHs, Phthalate Esters, Petroleum Compounds, Metals, Anion, and Radionuclides. CEC has completed soil analysis on approximately 50 projects.

NO

C. Is your firm experienced in hydrology and hydraulics?

**YES Description and Number of Projects:** CEC personnel have successfully completed numerous hydrology and hydraulics projects associated with bridges, box culverts, piping, ditchwork, and sediment ponds. CEC personnel have completed 60 AML related hydrology and hydraulics projects. Swastik Bhandari from the Bridgeport CEC office has Master's Degree in Water Resources (hydrology and hydraulics, proficient with Flowmaster- Storm Drainage Design - Storm Drainage Modeling - Stormwater BMP Research and Design - Surface Water Hydraulics/Hydrology - HydroCad v8.0, have been published numerous times and a licensed Professional Engineering. CEC has local industry experts as noted above in hydrology and hydraulics.

1. Shinns Run Portals (WVDEP) - field surveying, subsurface investigations of impounded mine pools, records review, HEC-RAS hydrologic evaluation, streambed seals, ditchwork, piping, subsurface drains, stream bank protection, roadbed protection, soil testing, preliminary and final designs / construction plans, dewatering operation, mine drainage treatment, opinion of cost, bid schedule, calculation brief, meeting attendance
2. Pageton (Lambert) Portals (WVDEP) - Reclamation design of coal refuse pile with 51,000 cubic yards of excavation, 24 wet mine seals, 13,700 L.F. sediment control, 1,600 L.F. ditchwork, piping, streambank protection, 24 acres revegetation, topographic surveying, construction mapping, soil testing, hydraulic studies and design, preliminary and final design, construction plans and specifications, engineers cost estimate, bid schedule, calculations brief, onsite preliminary design/pre-bid/pre-construction meetings, reporting and invoicing
3. Birds Creek Number 4 (WVDEP) - Reclamation design of coal refuse pile with 35,000 cubic yards of excavation, 8 wet mine seals, 5 bat gate designs, 18 acres revegetation, topographic surveying, construction mapping, soil testing, hydraulic studies and design, preliminary and final design, construction plans and specifications, engineers cost estimate, bid schedule, calculations brief, onsite preliminary design/pre-bid/pre-construction meetings, reporting and invoicing.

NO

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

**YES Description and Number of Projects:** CEC routinely collects LiDAR topographic data and aerial imagery with more than 250 projects successfully delivered for various state, federal and private clients. Typical resolution of contour mapping is suitable to produce 1ft contours. Also CEC personnel managed the North and South mapping contract for several years for the West Virginia Department of Environmental Protection, Division of Land Restoration, Office of Abandoned Mine Lands. The contract consisted of a 3 year assignment with the WVDEP and involved surveying and mapping services to be used for the design and construction of Abandoned mine lands projects located throughout the northern counties of West Virginia.

NO

E. Is your firm experienced in domestic waterline design? (Include any experience your firm has in evaluation of aquifer degradation as a result of mining.)

**YES Description and Number of Projects:** CEC's Bridgeport office has a water resources group which has 10 staff members and has over 100 years of experience with domestic waterline design and construction. This group has also performed design and construction of several AML waterline projects including Terra Alta, Masontown, Tunnelton and 2 projects in Lewis County. CEC completes extensive water transfer projects for the oil & gas industry and municipal water supplies on approximately 50 projects. CEC personnel have also worked on over 8 waterline feasibility studies with the West Virginia Department of Environmental Protection office of Abandoned Mine Lands.

CEC staff members have extensive experience in the evaluation of aquifer degradation as a result of mining to determine if abandoned mine lands impact to groundwater and surface water. In the Town of Newburg, WV CEC looked at impact for 96 homes. Correspondence from the Newburg PSD indicated past mining operations may contribute to their water quantity and quality problems. The Project involved a Preliminary Investigation to determine the impact pre-law mining had on the water resources within the study area. The investigation included project mapping, public and private record search and surface, ground water sampling along with resident interviews, geologic and hydraulic investigations and review and identification of historic mining operations in or near the project area. Mining has impacted potable water supplies and a further determination was made if the mining occurred before or after the Surface Mining and Reclamation Control Act of August 3, 1977 (pre-law mining). Pre-law impacts qualify for assistance from the Abandoned Mine Lands program. The investigation concluded all seven (7) resident's water supplies have been impacted by abandoned pre-law deep mines and qualify for AML funding. Alternatives investigated for mediation included No Action, Individual Well and Water Treatment Systems, and extension of the Norton Harding Jimtown PSD distribution system to the affected 7 residents at an estimated cost of \$378,000.

Another project involved extending approximately 15 miles of waterline to serve 103 residents whose water supply had been diminished or contaminated. The project involved a preliminary investigation to determine the impact pre-law mining had on the water resources within the study area. This study included surface and ground water sampling and reporting; public and private record search to determine if residents potable water supply have been impacted by mining; and secondly, if the mining that impacted potable water supplies occurred prior to the Surface Mining and Reclamation Control Act of August 3, 1977. Pre-law impacts qualify for assistance from the Abandoned Mine Lands (AML) Program. The preliminary investigation included a complete hydrologic and geologic investigation of the study area and development of supporting documents and maps to apply for the AML&R Grant for the waterline extension. The study determined that residents water supplies have not been impacted by abandoned mine lands.

NO

F. Is your firm experienced in Acid Mine Drainage Evaluation and Abatement Design?

**YES Description and Number of Projects:** CEC routinely assesses AMD and designs passive and active treatment management practices for treatment of acid mine drainage. CEC has completed approximately 20 AMD remediation projects. CEC employs mining geochemists with nearly 30 AMD remediation projects in prior and current employment.

Benjamin Faulkner, LRS has 44 years of experience working in West Virginia on Acid Mine Drainage projects and is on the Acid Mine Drainage Task Force. Timothy Denicola, PG CFM has 7 years of experience with acid mine drainage projects.

NO

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES **RESPONSIBLE FOR AML PROJECT DESIGN** (Furnish complete data but keep to essentials)

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
<b>Faulkner, Benjamin B.</b> Bridgeport, WV Office	42	44	2

**Brief Explanation of Responsibilities**  
Mr. Faulkner provide technical expertise and oversight with regard to all aspects of the project. His start to end project delivery experience and history of research in environmental matters will aid the project team to deliver a successful project tailored to the needs of the WV DEP.

**EDUCATION (Degree, Year, Specialization)**  
Graduate Certificate, 1986, Environmental Studies, WV College of Graduate Studies  
B.S., 1979, Biology, Concord University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
-Society of Environmental Toxicology and Chemistry -West Virginia Mine Drainage Task Force -Society for Freshwater Science -West Virginia Coal Association, Inc. -International Mine Water Association -American Society of Mining and Reclamation -Society for Mining, Metallurgy, and Exploration, Inc. -Air & Waste Management Association -American Society of Reclamation Sciences	Licensed Remediation Specialist, West Virginia  Approved Person - Surface Mine/Quarry Permit Applications, West Virginia Department of Environmental Protection Mines and Minerals

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
<b>Cain, Steve, A.</b> Bridgeport, WV Office	N/A	30	25 Domestic 0 AML

**Brief Explanation of Responsibilities**  
Mr. Cain will be the Principal in Charge for these projects. Of his 30 years of experience, 24 have been spent working on water and wastewater projects with the West Virginia Department of Environmental Protection, WDTRF and SRF utility design and construction programs. Mr. Cain has performed preliminary design and facilities planning, surveying and mapping, design plan preparation, construction monitoring and post design/construction projects. Mr. Cain also has been the principal in charge and civil practice lead for several large civil engineering and construction projects. Over the past year Mr. Cain has served as the office lead and COA for all engineering projects in WV.

**EDUCATION (Degree, Year, Specialization)**  
B.S., Engineering Technology - (Civil Emphasis), Fairmont State University, 1992

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Fairmont State University Technology Advisory Board West Virginia Rural Water Association American Society of Highway Engineers		REGISTRATION (Type, Year, State) Professional Engineer, WV, MD, PA SafeLand USA - Basic Orientation, PEC Safety 10-hour Construction Safety, Occupational Safety & Health Administration	
NAME & TITLE (Last, First, Middle Int.)  <b>Robinson, Joseph, D.</b> Bridgeport, WV Office	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 1	YEARS OF AML RELATED DESIGN EXPERIENCE: 19	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 5
Brief Explanation of Responsibilities Mr. Robinson will be the overall CEC/AML program manager acting as a main point of contact and coordinating the managers and professional staff for the planned projects. Mr. Robinson has nineteen years of diverse experience in civil, geotechnical, water resources, structural engineering, Oil & Gas site & pipeline design and residential/commercial site design. Mr. Robinson has designed various projects including site layouts, grading plans, sanitary sewer, storm water management, impoundments, roads, sediment control measures, segmental retaining walls, flood plain analyses and concrete design projects. Mr. Robinson has currently been responsible for the Bridgeport civil practice, construction management of WVDNR and Oil & Gas Sites, design lead on AMLER funded developments, actively managing the AML Contract 8 and Special Inspector of Record for the Texas border wall projects.			
EDUCATION (Degree, Year, Specialization) B.S., Civil Engineering, West Virginia University, 2004			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Concrete Institute American Society of Civil Engineers National Council of Examiners for Engineers and Surveyors Ohio Oil & Gas Association West Virginia Oil and Natural Gas Association		REGISTRATION (Type, Year, State) Professional Engineer, WV, OH, PA, MD, VA, TX	
NAME & TITLE (Last, First, Middle Int.)  <b>Eshun, Kow O.</b> Bridgeport, WV Office	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 10	YEARS OF AML RELATED DESIGN EXPERIENCE: 10	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 2
Brief Explanation of Responsibilities Mr. Eshun is a Principal with in CEC's Bridgeport Office and will be responsible for geotechnical aspects as well as monitoring project progress.			
EDUCATION (Degree, Year, Specialization) B.S., 2005, Civil Engineering, Kwame Nkrumah University of Science and Technology M.S., 2013, Geotechnical Engineering, The University of Akron			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Society of Civil Engineers, Project Management Institute, Deep Foundations Institute		REGISTRATION (Type, Year, State)  Professional Engineer - TX 125207 KY 32596 MD 50794 WV 22377 PA PE086130 VA 0402058215 OH PE.82794	

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
<b>Denicola, Timothy A.</b> Bridgeport, WV Office	7	9	0
Brief Explanation of Responsibilities Mr. Denicola will conduct water quality and soil chemical sampling along with provide any AMD remediation design that may be required.			
EDUCATION (Degree, Year, Specialization) M.S., 2013, Geology, West Virginia University B.S., 2006, Chemistry, Clarion University of Pennsylvania			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Member of several northern WV non-profit watershed associations		REGISTRATION (Type, Year, State) Erosion and Sediment Control Responsible Personnel (Green Card), 2015, Maryland, No. RPC004062  State Highway Administration Erosion and Sediment Control (Yellow Card), 2015, Maryland, No. 15-477  Association of State Floodplain Managers (ASFPM) Certified Floodplain Manager (CFM), No. US-18-10271	

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
<b>Fluharty, Matthew W.</b> Bridgeport, WV Office	19	21	21
Brief Explanation of Responsibilities Mr. Fluharty will be in charge of any domestic waterline design that may accompany the projects associated with this solicitation.			
EDUCATION (Degree, Year, Specialization) B.S., 2000, Civil Engineering, West Virginia University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS American Water Works Association American Society of Civil Engineers		REGISTRATION (Type, Year, State) Professional Engineer, West Virginia Professional Engineer, Pennsylvania Professional Engineer, Maryland Professional Engineer, Ohio	

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
<b>Adams, Travis W.</b> Bridgeport, WV Office	20	23	23
Brief Explanation of Responsibilities Mr. Adams will be a part of any domestic waterline design that may accompany the projects associated with this solicitation.			
EDUCATION (Degree, Year, Specialization) B.S., 1998, Environmental Science (Emphasis on Water Quality), West Virginia University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	

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

1. AutoCAD Civil 3D
2. ESRI ArcGIS
3. Topcon, Nikon, and Trimble Robotic Total Stations
4. Topcon, Trimble RTK-GPS
5. Leica Terrestrial LIDAR 3D Scanner
6. Velodyne Mobile LIDAR (ground and aerial based)
7. DJI small unmanned aircraft system (sUAS)
8. Topcon, Nikon automatic levels
9. Trimble GeoExplorer 6000 Series
10. YSI ProPlus Multi-parameter Probe
11. Marsh McBirney Flow Meter
12. Hanna HI 98703 Turbidity Meter
13. Hanna HI 99121 Direct Soil pH Meter
14. Submersible and Peristaltic Pumps
15. Mini RAE 3000 Portable Handheld VOC Monitor
16. Corel 98 Suite
17. Microsoft Office Suite
18. North American Green Erosion Control Blanket Software
19. KY Pipe Water and Sewer Line Software
20. Bentley MicroStation with InRoads

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Francis Drainage Maintenance Harrison County, West Virginia	West Virginia Department of Environmental Protection - Abandoned Mine Lands, 101 Cambridge Place Bridgeport, WV 26330	Surveying, Geotechnical and Subsurface Investigation, AMD Evaluation and Passive Treatment Design, Drainage and Stormwater Design, and earthwork	\$4,700,000	95%
Border Wall RGV 08 and RGV 09 Design Build - Civil, Structural, H&H, Electrical Rio Grande Valley, Texas	United States Army Corps of Engineers, 819 Taylor St, Fort Worth, TX 76102	Border wall structural design and layout, new road design, site grading, stormwater systems, surveying/mapping, construction stakeout and inspection	\$541,000,000	Design: 100% Construction: 20%
Sand Spring Run - Stream Sealing and Restoration Frostburg, Maryland	Maryland Department of the Environment - Abandoned Mine Land Division 160 South Water St, Frostburg, Maryland 21532	Stream restoration design and Geosynthetic liner design and sealing, sanitary sewer relocation.	\$491,000	Design: 100% Construction start: Spring 2022
Lyons Run AMD Remediation Project and Mitigation Bank Westmoreland County, PA	Lyons Run Watershed Association 2500 Eldo Road Monroeville, PA	Historic water quality review, water quality sampling, remediation design, development of mitigation banking prospectus, ecological delineation, survey.	\$1,800,000	Design: 90% Construction Start: Spring 2022
Export/Delmont AMD Remediation Westmoreland County, PA	Lyons Run Watershed Association 2500 Eldo Road Monroeville, PA	Historic water quality review and sampling, Ecological delineation, chemical loading and treatment calculations, engineering design of an automated calcium oxide slurry treatment system and development of solids handling practices.	\$5,500,000	Design: 30% Construction Start: 2023
MND 9 Landslide Stabilization, Moundsville, WV	HG Energy, LLC 5260 Dupont Road Parkersburg WV	Site survey, ecological delineations, permitting, geotechnical engineering design of the landslide remediation and stabilization, construction inspection and compaction testing.	\$350,000	Design: 100% Construction: 80%

Kirk Pad Landslide Remediation Salem, WV	Antero Resources Corporation 535 White Oaks Blvd Bridgeport WV	Site assessment, topographic survey, permitting, Geotechnical investigation and remediation design.	\$300,000	Design: 100% Construction: 80%
River Road Slips Landslide and Road Repair Monongalia County, WV	WVDOH District Four 2460 Murhpys Run Road Bridgeport, WV 26330	Complete surveying, permitting, right of way, utility coordination, and geotechnical investigation/design of pile and lag walls, soil nail walls, and tieback walls for 20 landslides along County Route 45 (River Road) in Morgantown.	\$4,250,000	Design: 100% Construction start: Spring 2022
Moose Lake subsidence mitigation and construction inspection for multiple panels Cameron, WV	MarkWest Energy Partners, LP 4600 J. Barry Court Suite 500 Canonsburg, PA	Engineering, survey, geotechnical, permitting, and construction engineering and inspection in support of subsidence mitigation around sensitive infrastructure during long wall mining operations.	\$3,000,000	Design: 100% Construction: 50%
Monongah Precast Mine Grouting Plan and Bridge Replacement, Monongah, WV	WVDOH District Four 2460 Murhpys Run Road Bridgeport, WV 26330	Mine subsidence evaluation, mine subsidence grouting and stabilization plan, survey, ecological delineations and permitting, geotechnical investigation and design, bridge replacement design, roadway improvements and staged construction design.	\$2,500,000	Design: 100% Construction start: Summer 2022
Buffalo Creek Mine Subsidence Bridge Replacement, Mannington, WV	EQT Production Company 400 Woodcliff Drive Canonsburg PA WVDOH District Four 2460 Murhpys Run Road Bridgeport, WV 26330	Mine subsidence evaluation, survey, ecological delineations and permitting, geotechnical investigation and design, bridge replacement design, roadway improvements and temporary traffic control plans.	\$2,500,000	Design: 90% Construction start: November 2021
TOTAL NUMBER OF PROJECTS: 10 (CEC has many more projects running concurrently. These are the most applicable			TOTAL ESTIMATED CONSTRUCTION COSTS: \$561,691,000	

CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
Border Wall RGV 08 and RGV 09 Design Build - Civil, Structural, H&H, Electrical Rio Grande Valley, Texas	Border wall structural design and layout, new road design, site grading, stormwater systems, surveying/mapping, construction stakeout and inspection.	United States Army Corps of Engineers, 819 Taylor St, Fort Worth, TX 76102	2023	\$541,000,000	\$35,000,000
Guyan Creek Bridge Construction Engineering Mount Olive, WV	Demolition Plan, Erection Plan, Shoring Design, Temporary Bridge Design	West Virginia Division of Highways, Engineering Division, Capitol Complex, Building 5, 1900 Kanawha Blvd., East, Charleston, WV	2021	\$751,306	\$751,306
Marshall County Airport Extension NPDES Permitting Marshall County, WV	NDPES permitting and construction services	Ohio-West Virginia Excavating, Co. 56461 Ferry Landing Road Shadyside OH	2023	\$3,000,000	\$15,000
Exelon Clearsight TX Power 1 Surveying Lubbock, TX	Right-of-way mapping, vegetation analysis, power line compliance reporting	South Plains Electric Cooperative Incorporated	December 2021	Undisclosed	\$60,000
Cubby's Daycare Site Development Bridgeport, WV	Water/sewer line design, Surveying, Construction Inspection, Geotechnical and Civil Engineering	CUBBY'S CHILD CARE CENTER, INC 801 Genesis Blvd Bridgeport, WV 26330	Summer 2022	\$3,000,000	\$300,000
Hawk's Nest State Park Improvements Ansted, WV	Civil Site design, ADA Pathways, Construction Administration	West Virginia Division of Natural Resources 324 4 <sup>th</sup> Avenue South Charleston, WV 25303	Spring 2022	Undisclosed	\$200,000

16. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Beaver Creek Passive AMD Treatment Preston County, WV	Friend of the Cheat, Inc. 119 South Price Street Suite 206 Kingwood, WV 26537	\$296,000	2020	Yes
Shinns Run Portals Subsidence and Portal Sealing Shinnston, WV	WVDEP, Office of Abandoned Mine Lands 601 57th St. SE, Box 20 Charleston, WV 25340	\$1,617,796	2016	Yes
Mcalpin Portals and Drainage Mine portal sealing and drainage structure maintenance Bridgeport, WV	WVDEP, Office of Abandoned Mine Lands 601 57th St. SE, Box 20 Charleston, WV 25340	\$1,351,743	2018	Yes
Charles Pointe Development Commercial site development and mass earthwork with complete infrastructure design Bridgeport, WV	Genesis Partners, LP P.O. box 1000 Bridgeport, WV 26330	\$20,000,000	2018	Yes
Lower Dempsey Stream Restoration highwall grading on AML Logan, WV	Ecosystem Investment Partners, LLC 5550 Newbury St, Ste B Baltimore, MD 21209 Canaan Valley Institute, Inc. 494 Riverstone Rd Davis, WV 26260	\$5,200,000	2016	Yes
Georges Creek Shaft Stream restoration and sealing and mine portal closure Frostburg, WV	Maryland Department of the Environment - Abandoned Mine Land Division 160 South Water St, Frostburg, Maryland 21532	\$5,216,206	2018	No
Dulaney Subsidence Damage Complaint Mine Subsidence Evaluation and Report for Structure Damage Colliers, WV	State of West Virginia Board of Risk and Insurance Management 1124 Smith Street Suite 4300 Charleston, WV 25301	undetermined	2020	N/A
St. Clair Subsidence Damage Complaint Mine Subsidence Evaluation and Report for Structure Damage Brenton, WV	State of West Virginia Board of Risk and Insurance Management 1124 Smith Street Suite 4300 Charleston, WV 25301	undetermined	2019	N/A

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
Corduroy Inn at Snowshoe	Omni Associates 207 Jefferson St. Fairmont, WV 26554	\$21,000	2019	Yes	Omni Associates
MCPARC Wave Pool Improvements	Omni Associates 207 Jefferson St. Fairmont, WV 26554	\$24,000	2018	Yes	Omni Associates
Elkins Mon General	Omni Associates 207 Jefferson St. Fairmont, WV 26554	\$24,000	2018	Yes	Omni Associates
East Side Fire Station	Omni Associates 207 Jefferson St. Fairmont, WV 26554	\$22,000	2019	Yes	Omni Associates
Bridgeport Rec Center, Site Development	City of Bridgeport 515 West Main St. Bridgeport, WV 265330	\$600,000	2019	Yes	Omni Associates
First Exchange Bank	Omni Associates 207 Jefferson St. Fairmont, WV 26554	\$23,000	2019	Yes	Omni Associates
Pike Fork Bridge Construction Engineering Webster Springs, WV	WVDOH, District 7 131 highland Drive West, WV 26452	\$1,600,000	2019	Yes	Bear Contracting, LLC

18. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.

Civil & Environmental Consultants, Inc. (CEC) personnel have experience with esoteric aspects of mine land reclamation and mine water remediation. CEC does not employ generic remediation strategies but assesses and evaluates critical details of water chemistry, reaction dynamics, soil properties, hydrologic properties, regional geology, and client and landowner needs. CEC personnel have decades of experience in the reclamation community, familiarity with modern reclamation techniques, and access to a suite of engineering design/geochemical software. Site grading, volumetric analysis, and hydraulic assessments constitute a bulk of work completed by CEC Bridgeport. CEC presents an interdisciplinary team utilizing a data and client-driven approach to mine land reclamation and mine water remediation:

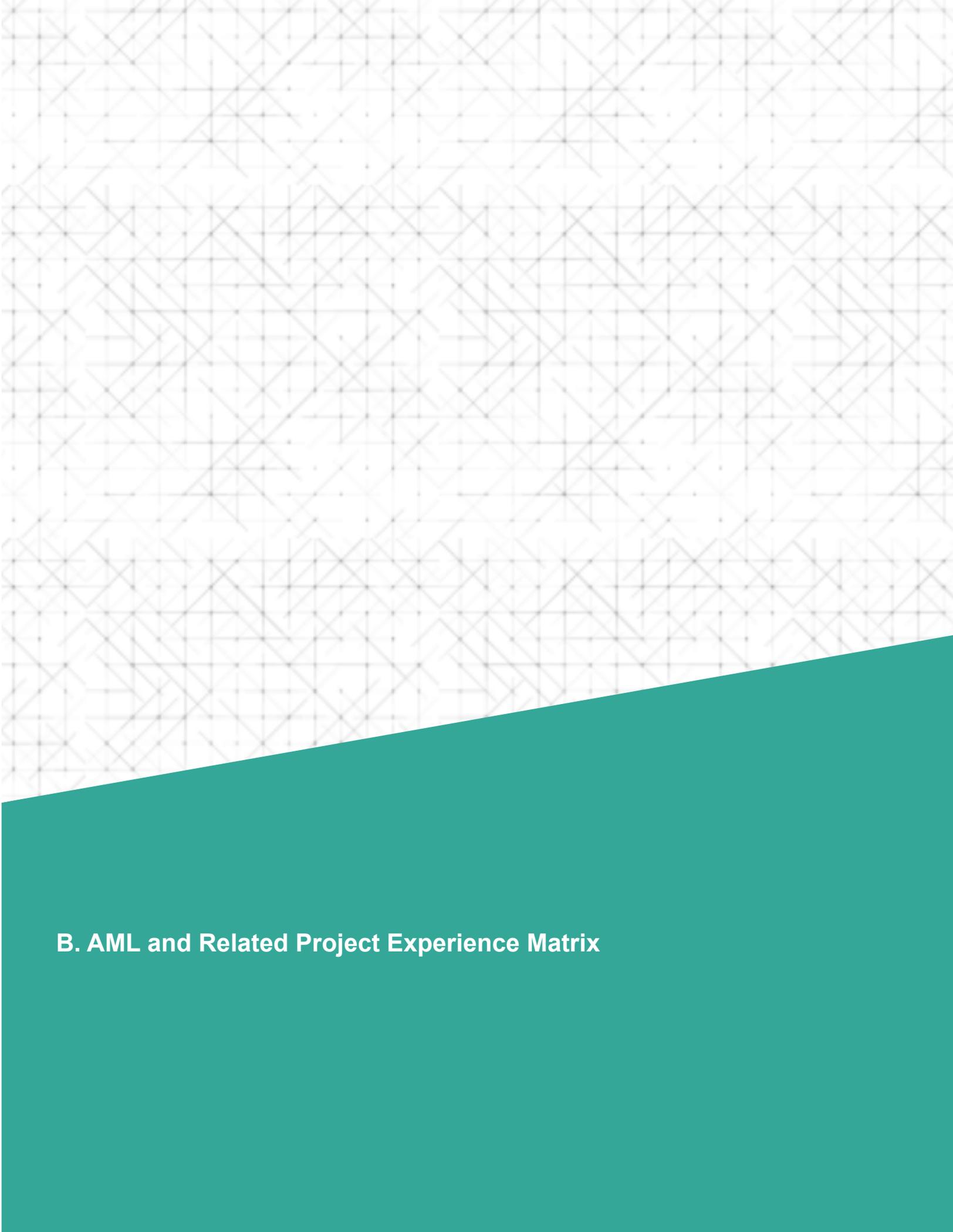
19. The foregoing is a statement of facts.

Signature: Steven C. Cain

Title: VICE PRESIDENT

Date: 08/29/2023

Printed Name: STEVEN CAIN



## **B. AML and Related Project Experience Matrix**

**AML and RELATED PROJECT EXPERIENCE MATRIX**

PROJECT	Exp. Basis C=Corp. P=Personnel *	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional					
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/ Mitigation/ Replacement	Construction Inspection/ Management	Water Treatment	Equipment/ Structure Removal	Stream Restoration	Geotechnical/Stability	Timothy Denicola, PG AMD Design	Steve Cain, PE QA/QC Manager	Ben Faulkner, LRS Technical Advisor	4 Survey Crews	5 CADD Operators
			Francis Drainage Maintenance	P		X			X				X	X			X		X	P	M	P
McAlpin Portals and Drainage	P		X	X	X	X			X	X		X		X	X					P	P	
Lyons Run AMD Remediation	P		X			X				X	X		X			X	P		P	P	P	
Export AMD Assessment	P		X			X				X	X		X			X	P		P	P	P	
Hodgesville (Wright) Mine Blowout	C		X	X	X	X			X	X		X								P	P	
Arlington (Gain) Highwall	C		X			X				X								P		P	P	
Camden (Hartley) Dangerous Landslide*	C		X			X				X	X				X					P	P	
Shinns Run Portals	P			X	X	X			X	X		X		X			P			P	P	
Special Rec. Multiple Projects	C		X	X	X	X			X	X		X			X					P	P	
Norton Highwall #1	P		X	X	X	X				X		X	X				P			P	P	
Tub Run Highwall and Refuse Phase II	P		X	X	X	X			X	X		X	X							P	P	
Tub Run Highwall and Refuse Phase I	P		X			X				X			X							P	P	
Newburg Waterline Feasibility Study	P					X					X		X								P	
Point Mtn. Waterline Feasibility Study	P					X					X		X								P	
Greenbrier Hollow Refuse	P		X	X	X	X				X		X	X							P	P	
Sauls Run (Carpenter) Landslide	P		X	X	X	X				X		X	X		X		M			P	P	
Pageton (Lambert) Portals	P		X	X	X	X				X		X	X							P	P	
Birds Creek #4	P		X	X	X	X				X		X	X							P	P	
Church Creek/Manown Highwall	P		X		X	X				X			X	X						P	P	
Racine (Bradshaw) Portals	P			X	X	X				X			X	X						P	P	
Hampton #4 Maintenance	P		X			X				X	X			X	X		M			P	P	
Howesville Sites	P		X	X	X	X			X	X	X		X	X	X					P	P	
Sandy Run Highwall and Portals	P		X	X	X	X			X	X	X		X	X	X					P	P	
Wilsie-Rosedale Waterline Feasibility I.D. # 324	P					X					X		X		X						P	
Laurel Valley (Daniels) Landslide	P		X			X				X					X		M			P	P	
Price Hill Airshaf/Buildings	P			X	X	X				X	X		X	X		X		M		P	P	
Glady Fork AMD Trmt. Plant.	P			X		X				X	X	X	X		X		M			P	P	

**AML and RELATED PROJECT EXPERIENCE MATRIX**

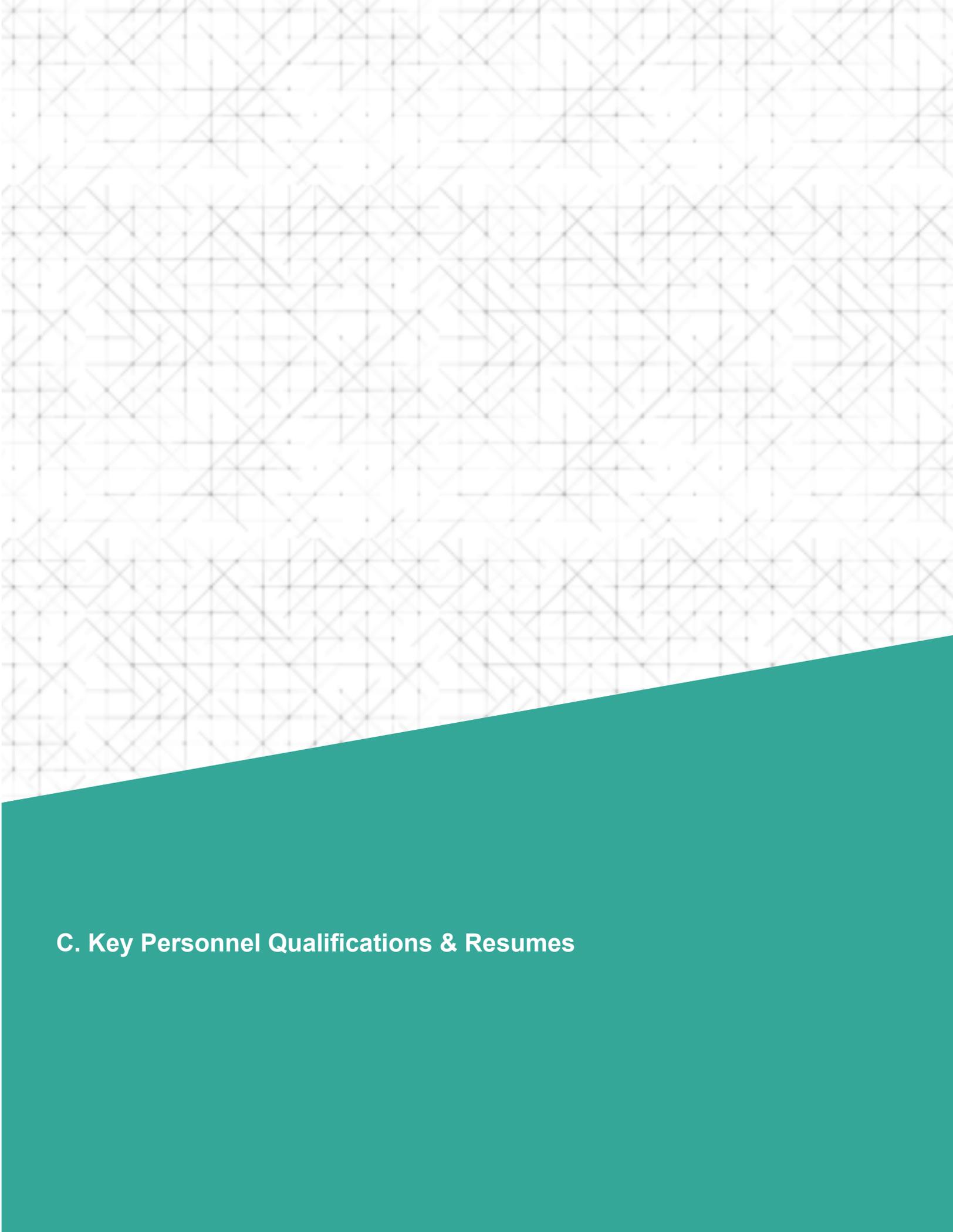
PROJECT	Exp. Basis C=Corp. P=Personnel *	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE REQUIREMENTS														PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional				
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/ Mitigation/ Replacement	Construction Inspection/ Management	Water Treatment	Equipment/ Structure Removal	Stream Restoration	Geotechnical/Stability	Timothy Denicola, PG AMD Design	Steve Cain, PE QA/QC Manager	Ben Faulkner, LRS Technical Advisor	4 Survey Crews
Weaver Portals, Ph. I & II	P		X	X	X	X			X	X	X	X	X	X	X			M		P	P
Nixon Run AMD	P		X	X	X	X				X	X		X	X	X			M		P	P
Taylor Waterline Feasibility, I.D. # 309	P					X					X		X								P
Poplar Ridge Waterline Feasibility, I.D. # 298	P					X					X		X								P
Summit Park Waterline Feasibility I.D. # 288	P					X					X		X								P
Fairmont (Hendrickson) Subsidence	P			X		X			X	X						X		M		P	P
Tunnelton (Dillsworth) Landslide	P			X		X			X	X			X			X		M		P	P
Arlington (Cox) Drainage	P			X	X	X			X		X					X		M		P	P
Sauls Run Strip and Landslide	P		X			X			X		X				X	X		M		P	P
Hodgesville Waterline Feasibility I.D. # 275	P					X					X		X								P
McElwain Waterline Feasibility I.D. # 271	P					X					X		X								P
Old Bridgeport Hill Mine Drainage, Ph II	P		X	X	X	X			X	X	X		X	X	X	X		M		P	P
Flint Run East Acid Mine Drainage	P		X			X			X	X	X		X	X	X	X			P	P	P
Murray City AMD and Art Project	P			X	X	X				X	X		X							P	P
Danehart Acid Mine Drainage	P		X			X			X	X			X			X		M		P	P
Nutters Tipple Bond Forfeiture	P		X			X				X				X	X	X		M		P	P
Lake Milton Acid Mine Drainage	P		X			X				X	X		X	X	X	X				P	P

\* List whether project experience is corporate or personnel based or both.

\*\* Use this area to provide specific sections or pages if needed for reference.

\*\*\* List Primary Design personnel and their functional capacity for the projects listed.

Attachment "C"



## **C. Key Personnel Qualifications & Resumes**

# Joseph D. Robinson, P.E.

## Vice President



### 19 YEARS OF EXPERIENCE

#### EDUCATION

B.S., Civil Engineering, West Virginia University, 2004

Mr. Robinson is a Vice President with nineteen years of diverse experience in civil, geotechnical, water resources, structural engineering, Oil & Gas site & pipeline design and residential/commercial site design. He has designed various projects including site layouts, grading plans, sanitary sewer, storm water management, impoundments, roads, sediment control measures, segmental retaining walls, flood plain analyses and concrete design projects. Mr. Robinson has currently been responsible for the Bridgeport civil practice, construction management of WVDNR and Oil & Gas Sites, design lead on AMLER funded developments, actively managing the AML Contract 8 and Special Inspector of Record for the Texas border wall projects.

#### PROJECT EXPERIENCE

##### Civil Site Design Experience

##### Site Development Projects, Timberbrook Condos\*

Responsible for grading, quantities and design plan production.

##### Site Development Projects, Bridgeport BUMC Parking Lot, Bridgeport, WV\*

Responsible for grading, quantities, design plans and construction.

##### Site Development Projects, Energy Plaza Partners, WV\*

Site Grading Project along Rt 50 Responsible for grading, quantities, design plan production and survey stakeout.

##### EPP Experience, Energy Plaza Partners, WV

Project management and design of one site for future development. Project included civil site design for rough grading, E&S controls, surveying, as-built and concept site layouts.

##### Site Development Projects, 200 Orchard Street\*

Segmental Retaining Wall Project Responsible for site layout, segmental retaining wall design, design plan production, survey stakeout and construction.

##### Site Development Projects, Mon General\*

Segmental Retaining Wall Redesign Project Responsible for segmental retaining wall design, design plan production and construction.

##### Health Care Facility Design\*

UHC Project - Jerry Dove Drive, Bridgeport, WV Responsible for final site grading, drafting and segmental retaining wall design & construction. Physicians Office Building - Jerry Dove Drive, Bridgeport, WV Responsible for final site grading, drafting and construction oversight.

#### EXPERTISE

Project planning, coordination and permitting of Site Development projects in WV

Diverse experience in civil, geotechnical, water resources, structural engineering, and site design

#### REGISTRATIONS

Professional Engineer

- WV 19756
- OH 77637
- MD 45171
- VA 0402053304
- PA 083558
- TX 139413



# Joseph D. Robinson, P.E.

## Vice President

### Site Development Projects, GAL Land Company, Bridgeport, WV\*

Oversaw site grading, quantities, storm water management, permitting, survey stakeout, final grading for individual lots and construction.

### City development Projects, Clarksburg\*

Clarksburg Safe Routes Project. Responsible for design layout, quantities, plan production and construction. Clarksburg Streetscape Project 2010 Responsible for site layout, quantities, design plan production and survey stakeout.

### Federal/State Tactical Infrastructure Projects

#### TFC, Texas Facilities Commission, Texas

**Role:** Special Inspector of Record (SIOR)

Provided oversight of Construction Quality Assurance for Quality Control (QC) and Special Inspections (SI) for approximately 5 miles of border wall infrastructure.

### DESIGN-BUILD OF RGV 08 , FENCE SEGMENT, Starr County, TX

**Role:** Design Manager/Special Inspector of Record

Construction of 20.69 miles of wall, roads, drainage, and lighting for providing border security.

### DESIGN-BUILD OF RGV 09, FENCE SEGMENT, Starr and Hidalgo Counties, TX

**Role:** Design Manager/Special Inspector of Record

Construction of 20.69 miles of wall, roads, drainage, and lighting for providing border security.

### Floodplain Analyses & Inundation Studies Experience

#### Floodplain Analysis Designs, Antero\*

Responsible for inundation and floodplain studies for 5 site locations

### Layout Projects & Railroad Projects

#### HDD Kanawha River Crossing, Mountaineer Gas Company , Kanawha County, WV

**Role:** Principal

Mountaineer plans to construct a pipeline near Charleston, Kanawha County WV. A Horizontal Directional Drilling (HDD) crossing is proposed along the Kanawha River. The gas pipe will be a 12-inch HDPE and the approximate length of the pipeline crossings is 1,400 feet.

#### CSX Railroad Permit Application, South Charleston, Kanawha County, WV

**Role:** Principal

This proposal includes labor, travel and expenses necessary to perform the tasks listed below and complete engineering design and permit preparation of a gas line inside of steel casing underneath of CSX railroad tracks in South Charleston, West Virginia.

#### North Pinch Road River Crossing HDD, Elk River, Mountaineer Gas Company , Kanawha County, WV

**Role:** Principal

CEC will conduct an on-site field delineation within an approximately 2-acre area to identify streams and delineate wetland boundaries. CEC's wetland delineation services will be performed in accordance with the 1987 U.S. Army Corps of Engineers Manual, supplemented by the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0, the National Wetland Plant List (Lichvar, 2016), and the U.S. Department of Agriculture's Hydric Soils of the United States. CEC will identify wetlands using the three (3) criteria described in the Corps Manual: hydrophytic vegetation, hydric soils, and hydrology.

### Natural Gas Development Experience

#### Antero Midstream, Operations

Project principal providing oversight of P&ID plan sets for over 30 stations and Engineer of Record for retrofit of an existing compressor station to a maintenance facility and development of new office, warehouse and buildings for midstream operations in West Union, WV Area.



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### **Antero Resources, Production**

Project principal providing oversight of development of new field office building for production operations in West Union, WV Area.

### **ACP, Dominion Energy, VA**

**Role:** Engineer of Record

Engineering, construction and stormwater compliance. Design of temporary access roads for spreads 3A, 4A, and 4. Preparation of permit/construction plans, stormwater management calculation packages, and associated relevant documentation for each temporary access road in compliance with Dominion's Annual Standards and Specifications for review by DEQ. Collaboration with project prime consultant and third party reviewer to complete full deliverable packages and compliance documentation. Coordination with Dominion's permitting group to provide compliance with aquatic features and karst areas, and to resolve connections with ESC and water conveyance on pipeline ROW.

### **Eastern Panhandle Expansion Project, Mountaineer Gas Company, WV**

**Role:** Engineer of Record

Planning and permitting support for the 21.5 mile long Eastern Panhandle Expansion project . Services included routing assistance, alignment plans, survey, aerial mapping, aquatic resource delineations, bat habitat survey, subsurface exploration, HDD evaluation, E&S design and permitting, and environmental inspection.

### **Antero Resources Experience, WV**

Professional Engineer and Project Manager with project experience for several design aspects including 50 well site designs, 3 pit closures, several site NOV improvement projects, facility design, slip repairs, facility geotechnical design and construction oversight. Project management of these sites include civil site design, ecological impacts, surveying and geotechnical investigation. \* Professional Engineer for 21 well site and 2 fresh water impoundment designs in Doddridge, Harrison, Ritchie and Tyler counties, West Virginia. Design elements for the site included associated impoundments (fracture pits), fresh water impoundments, well pad, manifold pad, offload pad, staging pad, production pads, water truck turnaround pad, spoil pads and access roads. Design tasks included design grading, erosion & sediment controls, site balancing & quantities and design plan production. \*Antero Pullman Bypass Road Project, Ritchie County, West Virginia

### **EQT Production Experience, WV**

Responsible for design and management of 49 well sites including the following tasks: Civil Site design Site survey Lease survey, well plats, lateral sketches, rec plans, unit boundaries and Hardline maps Construction Stakeout As-built surveying and impoundment certifications Ecology and Permitting MM109 and County Route Improvements Flood Plain permitting and Analysis Water Purveying Geotechnical Engineering Structural Engineering \* Professional Engineer for 9 well site designs in Doddridge, Marion, Ritchie, Tyler and Wetzel counties, West Virginia. Responsible for the design of associated impoundments (flow back and completion pits), well pad, manifold pad, water truck turnaround pad, spoil pads and access roads. Design Tasks included design grading, erosion & sediment controls, project management and coordination, site balancing & quantities and design plan production. Mr. Robinson coordinated environmental impacts for permitting, associated pit certifications, site observation of construction and as-built plans and quantities.

### **Triana Energy Experience, WV**

Responsible for design of two well sites including the following tasks: Civil Site design Site survey Lease survey, well plats, lateral sketches, rec plans, unit boundaries and hardline maps Construction Stakeout As-built surveying and impoundment certifications Ecology and Permitting MM109 Flood Plain permitting and Analysis Water Purveying

### **Arsenal Resources Experience, WV**

Responsible for design of 4 well sites including the following tasks: Civil Site design Site survey Lease survey, well plats, lateral sketches, rec plans, unit boundaries and Hardline maps Construction Stakeout As-built surveying and impoundment certifications Ecology and Permitting MM109 Flood Plain permitting and Analysis Water Purveying Site Safety Plans

### **Northeast Natural Energy LLC Experience, WV**

Responsible for design of nine well sites including the following tasks: Civil Site design Site survey Lease survey, well plats, lateral sketches, rec plans, unit boundaries and hardline maps Construction Stakeout As-built surveying and impoundment certifications Ecology and Permitting MM109 Flood Plain permitting and Analysis Water Purveying Safety Plans



# Joseph D. Robinson, P.E.

## Vice President

### Williams Experience, WV

Project management experience includes design of a compressor station, surveying, permitting and ecological impacts, bat habitat assessment, geotechnical investigation.

### Structural Design & Analyses Experience

#### Structural Design\*

Hotel and Home Designs in Maryland, Virginia and Delaware Responsible for vibratory & driven pile designs, concrete grade beam design, timber beam design, engineered beam design, timber flitch plate design and concrete foundations. Smith Services Project Responsible for concrete mat foundation analysis for warehouse facilities and design plan production. PDC Gamelli Bridge Responsible for existing steel tube bridge analysis/load rating for equipment crossing.

### Waterline Design Experience

#### Waterline Design\*

Responsible for hydrostatic calculations for Adrian PSD Phase V, Adrian PSD Phase VI, Century Volga PSD, Mannington PSD Extension and Wetzel PSD Phase IV Project, Special Inspection Projects UHC/WVUM, Special Inspection Projects WVUM

*\* Work performed prior to joining CEC*

### TRAINING

PEC SafelandUSA Training

CNX Gas Hazard Training

Antero Resources Field HSE Orientation

SWN (TAP) 2015 - Core

EQT Contractor Safety Orientation

### PROFESSIONAL AFFILIATIONS

American Concrete Institute

American Society of Civil Engineers

National Council of Examiners for Engineers and Surveyors

Ohio Oil & Gas Association

West Virginia Oil and Natural Gas Association

### ARCHITECT EXPERIENCE

WYK Projects

### PRESENTATIONS

CEC Corporate PM Training

# Steve A. Cain, P.E.

## Vice President and Bridgeport Office Lead



### 30 YEARS OF EXPERIENCE

#### EDUCATION

B.S., Engineering Technology - (Civil Emphasis),  
Fairmont State University, 1992

Mr. Cain, a professional engineer with CEC, has 30 years of experience in civil engineering design and project management.

Steve's experience in civil engineering design encompasses many aspects of civil engineering design including land surveying, mapping, site development, sanitary sewer system design, storm sewer system design, potable water distribution system design and hydraulic modeling. Additionally, Steve also has experience in water treatment system design and rehabilitation as well as wastewater treatment design.

Steve has also spent a large part of his career in managing projects from conception to completion. As a project manager Steve has assisted clients in identifying potential project needs, assisting the client in securing project funds, performed and directed detail design, and participated in and managed construction activities.

Steve also has lead and managed over 100 miles of mid-stream natural gas pipeline design projects. These projects encompassed preliminary alignment selection, in the field alignment routing, oversight of property "deed mosaics", construction plan oversight, and as-built preparation.

#### PROJECT EXPERIENCE

##### Wastewater

##### **Barry Street Sanitary Sewer Evaluation Survey (SSES), City of Fairmont, Fairmont, WV\***

Steve was the Project Manager for providing SSES to determine the cause of basement flooding of 10 residents from the sanitary sewer system along Barry Street in the City of Fairmont. The work included smoke testing the Barry Street drainage shed that provides sanitary and storm sewer service to approximately 200 City of Fairmont customers to determine illegal connections to the sanitary sewer system. Steve performed dye testing and coordinated Close Circuit TV inspection services to determine the cross connections of the storm sewer to the sanitary sewer. A written report was provided summarizing the deficiencies found and provided a written recommendation for corrections that included a preliminary cost estimate for construction.

##### **Sanitary Sewer Improvements Phase II, City of Shinnston, Shinnston, WV\***

Steve was the Project Manager for the preliminary and final engineering design services for the sanitary sewer system extensions for the Shinnston Sanitary Board. The project consists of the extension of gravity sewer collection and transmission system into areas outside of the City of Shinnston corporate limits to provide public wastewater treatment to approximately 170 new customers. The project area encompasses areas know as Drain Hill, WV20 (Haywood Road), Gypsy Hill, and Gypsy Hill Road. The new system will include six new duplex pump stations and will transport customer wastewater to the City of Shinnston existing wastewater treatment plant.

#### EXPERTISE

Sanitary Sewer Evaluation Surveys  
Wastewater Pumping System Design &  
Rehabilitation

#### REGISTRATIONS

Professional Engineer  
• WV 15264  
• MD 33727  
• PA PE056215

#### CERTIFICATIONS

SafeLand USA - Basic Orientation,  
PEC Safety  
10-hour Construction Safety,  
Occupational Safety & Health  
Administration



## **Steve A. Cain, P.E.**

### **Vice President and Bridgeport Office Lead**

#### **Sanitary Sewer Improvement Project, City of Grafton, Grafton, WV\***

Steve was the Project Engineer for investigating and recommending sanitary sewer improvements that were necessary for compliance with the City of Grafton's Long Term Control Plan (LTCP). The planned improvements included the installation of a new sanitary collection system in the older downtown area of the city that currently has a combined storm/sanitary system. The project will include approximately 10,000 LF of line installation, along with 54 manholes.

#### **Wastewater System Improvements, Town of Franklin, Franklin, WV\***

Steve prepared for submission to the West Virginia Infrastructure Jobs and Development Council for a preliminary engineering report detailing the proposed upgrades and improvements to the Town of Franklin's existing 200,000 GPD lagoon system wastewater treatment plant. The project also included collection system improvements by means of internal pipe lining systems and the installation of the new manholes within the Town's older downtown collection system. Steve also provided final design of the proposed improvements.

#### **Kingmill Valley PSD Sewer Upgrades Phase II, KMVPSD, Marion County, WV\***

Steve prepared the preliminary engineering report for the submission to the West Virginia Infrastructure Jobs and Development Council for the design and construction of a new wastewater collection system for the Millersville area of Pleasant Valley, West Virginia. The project also included the design of upgrades to nine existing wastewater pumping stations. Preliminary engineering report included preliminary engineering design, cost estimates, and proposed funding scenarios.

#### **Sanitary Sewer Improvements Phase I, City of Shinnston, Shinnston, WV\***

Steve was the Project Manager for the preliminary and final engineering design services for the sanitary sewer system improvements for the Shinnston Sanitary Board. The project consisted of the study of the city's entire sanitary sewer system and identifying areas where significant amounts of inflow and infiltration are entering the sanitary sewer system and proposing corrective action. Preliminary engineering services included extensive sanitary sewer evaluation surveys, which included detailed field inspections of existing facilities, smoke and dye testing, flow monitoring, line videos, and hydraulic modeling. Preliminary engineering services also included the planning of proposed improvements, feasibility studies, and assistance in obtaining funding. Final design of accepted alternatives, bid package preparation, construction management and inspection services, and as-built drawing preparation were also part of this project.

#### **Sanitary Sewer Improvements, City of Fairmont, Fairmont, WV\***

Steve was the Project Engineer for the preliminary and final engineering design services for the sanitary sewer system improvements for the Fairmont Sanitary Board. The project consisted of the study of the city's entire sanitary sewer system and identifying areas where significant amounts of inflow and infiltration are entering the sanitary sewer system and proposing corrective action. Preliminary engineering services included extensive sanitary sewer evaluation surveys, which included detailed field inspection of existing facilities, smoke and dye testing, flow monitoring, line videos, and hydraulic modeling. Preliminary engineering services also included the planning of proposed improvements, feasibility studies, and assistance in obtaining funding. Final design of accepted alternatives, bid package preparation, construction management and inspection services, and as-built drawing preparation were also part of this project.

#### **Dakota/Meredith Springs Wastewater System Extension, City of Fairmont, Marion County, WV\***

Steve was the Project Engineer for the planning, design, and construction inspection services for a sanitary sewer extension serving approximately 100 residences in the Meredith Springs/Dakota Camp Area within the City of Fairmont service area. The project also included the preparation of a facilities plan and funding applications for submission to the West Virginia Department of Environmental Protection. Design services included the routing and design of a gravity sewer system, manholes, lift stations, and all appurtenances, the preparation of specifications, bidding, and contract documents, solicitation of bidders, and recommendation for award. Steve was also responsible for providing construction management services and overseeing construction inspection services including constructability review, project inspection, contractor pay request reviews and as-built drawing preparation.

#### **Town Of Flemington Sewer System, Town of Flemington, Taylor County, WV\***

Steve was responsible for the preparation of the preliminary engineering report, funding applications, overall design, bidding documents with technical specifications, bidding procedures, construction engineering, and budget control for a sanitary sewer collection and treatment system. The project consisted of nearly six miles of gravity and pressure collections lines. The project also included the design and construction of four sewage lift stations and a 50,000-GPD extended aeration wastewater treatment plant.



## **Steve A. Cain, P.E.**

### **Vice President and Bridgeport Office Lead**

Other responsibilities included the acquiring of a wasteload allocation, West Virginia Public Service Commission certificate, West Virginia Division of Environmental Protection National Pollutant Discharge Elimination System permit, West Virginia Division of Highways permit and all other permits necessary for construction.

#### **Town of Farmington Wastewater Improvements, Town of Farmington, Farmington, WV\***

Steve performed inflow and infiltration investigation by means of visual inspection, smoke testing, dye testing, and television video. Steve was also responsible for overall design of improvements, bidding documents with technical specifications, bidding procedures, construction engineering, and budget control. Steve provided construction management duties during the construction phase of improvements that included the construction of a 125,000-GPD oxidation ditch wastewater treatment plant.

#### **Hurricane Damage Assessment to Wastewater Pumping Stations, Virgin Islands Waste Management Authority, US Virgin Islands**

**Role:** Field Engineer

Part of a two teams performing hurricane damage assessments of 8 major and 22 minor pump stations in the US Virgin Islands. Assessment teams performed comprehensive evaluations of the civil, mechanical and electrical conditions of each pump station and made determinations as to the causes of each identified issue and whether the damages were pre-existing or storm-related. The assessment reports provided the authority with a path forward for restoring normal operations, upgrading the reliability and weather resistance of the stations, and provided the basis for an application to FEMA for financial assistance to repair the storm-related damages. At several stations, the team was able to perform temporary repairs to address safety and operational issues.

#### **Wastewater Treatment Consolidation Study, Chemung County Sewer Districts, Elmira Chemung County, NY**

**Role:** Task Manager and Field Engineer

Part of a team that evaluated two publicly owned wastewater treatment plants and developed recommendations for upgrades based on long term reliability, improving treatment performance, and achieving compliance with Total Maximum Daily Loads (TMDLs) for total nitrogen and phosphorous, which take effect in 2025 as part of the Chesapeake Bay TMDL. Developed budgetary capital costs for two upgrade alternatives: 1) upgrading each facility separately at the current locations, and 2) abandoning the 50+ year old facility and consolidating all treatment at the location of the 30+ year old facility.

### **Water**

#### **Water System Improvements Phase II, City of Shinnston, Shinnston, WV\***

Steve was the Project Manager for the preliminary and final engineering design services for the replacement of approximately 11 miles of existing 10" cast iron water line with new 12" PVC water line from the City's water treatment facility to the connection point in the City limits. Preliminary engineering services included the planning of proposed line replacement improvements, feasibility studies, and assistance in obtaining project funding. Final design included the line replacement, the design of a Johnson Screen at the raw water intake, and bid package preparation.

#### **Stonewood Water System Improvements, City of Stonewood, Stonewood, WV\***

Steve was the Project Manager for conducting a water loss study for the City of Stonewood that identified that the unaccounted water loss ranged on average from 15 to 30 percent. The water loss study included the review of the existing system data, acoustical testing, correlation testing, pressure evaluations, evaluation of break reports and review of the billing records. Steve also provided oversight of design for the proposed improvements. The project was designed for the replacement of the 50 year old existing water distribution system throughout the City of Stonewood's residential communities. The construction was completed in 2015.

#### **Jane Lew Water System Improvements, Jane Lew PSD, Lewis County, WV\***

Steve was the Project Manager for the design and construction of approximately 11,500 LF of two-inch galvanized waterline including valves, the removal and replacement of 25 existing gate valves, the installation of 17 new gate valves in the existing distribution system, and installation of 13 bypass meters. The project also included the installation of an eight-inch diameter river crossing pipe to replace an existing crossing, the installation of a supervisory control and data acquisition (SCADA) controlled solenoid valve station and booster chlorination station. Additionally, the project included the extension of 1,500 LF of two-inch polyvinyl chloride water line and a 37 GPM booster pump station to provide service to six new customers and included the fencing of the existing 100,000 gallon water storage tank for security purposes.



## **Steve A. Cain, P.E.**

### Vice President and Bridgeport Office Lead

#### **Fairmont-Mannington Water Main, City of Fairmont, Marion County, WV\***

Steve was the Project Manager for the planning, design, and construction inspection of a 13-mile water main extension from the City of Fairmont to serve the City of Mannington. The project included mapping, route surveys utilizing GPS, assistance in obtaining project funding, design of the 13-mile, 12-inch, and 16-inch water main, preparation of specifications, bid and contract documents, right-of-way acquisition, construction surveys, and construction management and inspection services.

#### **Alpine Lake Water System Improvements, ALPUC, Preston County, WV\***

Steve was the project engineer for the preliminary design, detailed design, and construction services for a water system improvement project. Improvements to the water system included the design of four booster pump station upgrades, distribution line replacement, and storage tank improvements. The project also included the planning and design of two new source wells and the design and construction of a new potable water treatment facility.

#### **Water System Improvements, City of Shinnston, Shinnston, WV\***

Steve was the Project Engineer for the planning, design, and construction inspection services for a water distribution system upgrade for the City of Shinnston. Services included the mapping and hydraulic modeling of the existing water distribution network, the identification of problem areas, forecasting future water usage for projected growth areas and the completion of funding applications, detailed design drawings, specifications, bidding, and contract documents, solicitation of bidders and recommendations for award. CEI services include constructability reviews, construction management, project inspection, processing routine pay requests and the preparation of as-builts drawings. The project successfully reduced unaccounted for water from 35% to 10%.

#### **Kanawha Falls Water System Improvements, Kanawha Falls PSD, Gauley Bridge, WV\***

Steve was the Project Manager for the preliminary design and detailed design services for a water system extension project to provide potable water service to approximately 50 new customers in the Kanawha Falls and Boonesborough area of Fayette County, West Virginia. The project includes the construction of a new distribution system and a 30 GPM hydro-pneumatic booster pump station.

*\* Work performed prior to joining CEC*

#### **PROFESSIONAL AFFILIATIONS**

Fairmont State University Technology Advisory Board

West Virginia Rural Water Association

American Society of Highway Engineers



## Ben B. Faulkner Senior Consultant



### 44 YEARS OF EXPERIENCE

#### EDUCATION

Certificate, Environmental Studies, WV College of Graduate Studies, 1986

B.S., Biology, Concord University, 1979

Ben Faulkner is experienced in all environmental aspects of mining with over 40 years of experience in environmental matters. He has enjoyed diverse perspectives as environmental permit manager, regulator, preparer, researcher, and consultant. His focus has been on environmental compliance and characterization of mined properties, with 5 years of mine law enforcement and over 35 years as industry manager, academic research associate, and private consultant to the coal, hard rock, and aggregate mining industries. His experience spans working in state mining programs in IL, OH, KY, PA, SC, TN, TX, VA and WV and CERCLA projects in GA, TN and OH. International projects include USVI, Canada, and Wales. He is recognized as a Federal Court expert witness in characterization and chemical/passive treatment of mine drainage as well as land reclamation and aquatic restoration/evaluation of dramatically disturbed lands. He is the only person to serve on both editorial committees of the Office of Surface Mining's Acid Drainage Technical Initiative for coal and metal mining sectors. He is also qualified through ASTM as an Environmental Professional for the purpose of conducting Environmental Site Assessments, Environmental Compliance Audits, and Due Diligence Inquiries. Recent work with USDaE grant took him to over 140 mine sites in 5 states for characterization of drainage treatment and precipitates potential for Rare Earth Elements recovery.

#### PROJECT EXPERIENCE

##### **EIP SWV Stream Mitigation Bank CQA, Ecosystem Investment Partners, Davy McDowell, WV**

2016. Served as Senior Consultant when this Stream Restoration Project encountered deep mine drainage that manifested as visible red seepage in the restored stream channel. High iron concentrations and copious staining and precipitation compromised water uses and the macroinvertebrate assemblage. Mr. Faulkner characterized the drainage and outlined/critiqued several proposed alternatives for remedy. He designed and field supervised an alternative involving careful excavation of the deep mine outcrop to divert the pooled mine water into a design diversion away from problematic spoil. He also designed passive treatment systems to mitigate the impacts of several localized drainage influences at the project.

##### **Attorney-Client Privileged Information, Babst- Calland, Confidential Confidential, WV**

2016. Mr. Faulkner's expertise was sought in this legal matter where a land developer had altered headwater streams. The regulatory authority brought an enforcement action against the landowner requiring stream restoration involving disturbance of previously undisturbed strata. Mr. Faulkner reviewed the soils/water sampling and characterization effort and offered an interpretation of the results of the Acid Base Accounting, Synthetic

#### EXPERTISE

Experienced wheel loader and track excavator operator

#### REGISTRATIONS

Licensed Remediation Specialist  
• WV 300

#### CERTIFICATIONS

E1527 Standard Practice for Phase I Environmental Site Assessment, ASTM

Certified Blaster, West Virginia Department of Environmental Protection Office of Explosives and Blasting

Class 32 Safety Sensitive Personnel, West Virginia Office of Miner's Health, Safety & Training

MSHA Surface Miner, Mine Safety And Health Administration

8-hour HAZWOPER Refresher Training, Safety Unlimited, Inc.

Hydrogen Sulfide Awareness Training, Safety Unlimited, Inc.

40-Hour OSHA HAZWOPER, Occupational Safety & Health Administration

Environmental Professional, ASTM

Approved Person - Surface Mine/Quarry Permit Applications, West Virginia Department of Environmental Protection Mines and Minerals

Heartsaver CPR AED, American Heart Association

SafeLand USA - Basic Orientation, PEC Safety

West Virginia Scientific Collecting Permit, Division of Natural Resources

Private Applicator Certification, Tennessee Dept. of Agriculture

10-Hour OSHA Construction Safety (Occupational Safety & Health Administration), OSHA

ATV Safety Institute Training, ATV Safety Institute

Recreational Off-Highway Vehicle Training, Recreational Off-Highway Vehicle Association

Phase I and II Environmental Site Assessment, ASTM



Civil & Environmental Consultants, Inc.

## **Ben B. Faulkner**

### Senior Consultant

Precipitation Leaching Procedure, and prediction of water quality for the proposed mitigation effort.

#### **Pedigree Study for Polycystic Kidney Research Foundation, J.W. Riley Hospital, Department of Medical Genetics, Indianapolis, IN\***

2010. Mr. Faulkner completed a genetic study for the research of Adult Polycystic Kidney Disease.

#### **Freshwater Institute Mine Aquaculture Research Project, The Conservation Fund, statewide, WV\***

1995-1996. Mr. Faulkner served as Principal Investigator in preparing an inventory of mine drainage resources in West Virginia suitable for aquaculture. Grants from US Department of Agriculture allowed Mr. Faulkner the opportunity to research mine-related water resources through his established relationships with mine engineers and managers. He located the high flow discharges (many abandoned and isolated) and characterized the seasonal flow and water quality, providing a practical working inventory of these precious resources for the development of aquaculture and other water uses. As a follow up to the project, he provided location, sampling, characterization and site evaluation services to West Virginia University (WVU) Extension Service Aquaculture Projects.

#### **Environmental Site Assessment for US Food & Drug Administration, AquaBounty Technologies, Lindside Monroe, WV\***

2011. Mr. Faulkner prepared this Site Assessment for an aquaculture grow-out facility to satisfy USFDA concerns about genetically modified Atlantic Salmon. The assessment was patterned after an international study involving egg production and culture in Prince Edward Island, Canada and grow-out in Panama, Central America. Mr. Faulkner was responsible for surveying and mapping the facility, and evaluating the potential for native species impact should the fish escape from the facility. He evaluated water quality and fish habitat/assemblage downstream in Rich Creek and in the New River in two states.

#### **WV-10 Evaluation of Reclamation Techniques, WVU Research Corporation, statewide, WV\***

1990-1991. Mr. Faulkner worked with three PhD researchers in two states, examining various reclamation techniques and passive treatment technologies and their long-term efficacy. The project involved evaluation of the profitability of re-mining and water quality at re-mining sites.

#### **Stormwater Permits for Chromated Copper Arsenate Wood Preservative Facilities, various, statewide, WV\***

1991-1992. Enactment of a new WV State Code required that NPDES stormwater permits be obtained by the wood preservative industry for all treatment facilities. Mr. Faulkner led a team of scientists and investigators who contacted five individual facility operators in four WV counties. He was responsible for coordinating the land surveying, mapping, site characterization, human and eco-risk assessment and remediation efforts that were associated with obtaining stormwater permits for these previously unregulated facilities.

#### **Acid Mine Drainage Bond Forfeiture Project, WVDEP, statewide, WV\***

1987-2002. When coal operations fail to meet their reclamation and water quality obligations under their environmental permits, the regulatory authority revokes their permits and they forfeit their performance bonds. For 14 years, Mr. Faulkner was the Project Principal for a contract to evaluate the water quality impacts from 890 revoked sites. He either personally sampled or supervised the extended water sampling effort for these sites in 39 counties, and maintained a database of site information and water quality. He represented WVDEP in negotiations with US Department of Interior Office of Surface Mining, Reclamation and Enforcement in developing policy and a program for dealing with water quality at revoked sites, including the characterization and prioritization of the sties, designing and implementing chemical and passive treatment systems, evaluations of the treatment, and policy refinement. Mr. Faulkner worked closely with the Stream Restoration Group and Abandoned Mine Lands (AML) offices of WVDEP to coordinate mitigation efforts and served as special consultant to the WVDEP Director for special projects. He regularly assessed stream impacts for the State by macroinvertebrate monitoring using EPA's Rapid Bioassessment Protocol.

#### **Problematic Active Mine Drainage Inventory, WVDEP, statewide, WV\***

1984-2001. Beginning in 1994, the WV Legislature ordered an inventory of problematic drainage at active coal mine sites that threatened the solvency of the Special Reclamation Fund. The fund is generated through taxes on the coal industry and used by WVDEP to address delinquent land reclamation and water quality issues. Mr. Faulkner served as Project Principal under a personal services contract with WVDEP to work closely with reclamation inspectors to sample and inventory raw water sources that required treatment to meet effluent limits. This field work was repeated in 1996, 1998, and 2000 and remains the most comprehensive study of mine water quality in the state. Mr. Faulkner coordinated the identification, sampling, laboratory contracts



## **Ben B. Faulkner**

### Senior Consultant

and data management, and prepared detailed GIS analysis of the occurrence, source, chemical loading, and treatment technology from the over 600 sources of drainage identified in the study.

#### **AML Problem Area Descriptions - Remediation Projects, former employer, statewide WV & OH\***

1987-2015. Mr. Faulkner field reviewed hundreds of Abandoned Mine Lands sites in WV and prepared Problem Area Descriptions for the State of WV. After prioritization and selection of the individual project, Mr. Faulkner prepared mitigation alternatives that addressed land stabilization and water quality improvement. Some of these projects were watershed level and others were focused sites. He worked closely with mining engineers, land surveyors, and other scientists to design detailed reclamation plans and treatment strategies to accomplish these objectives in both WV and OH.

#### **Elgin Equipment Water Quality Projects, Elgin Equipment Group- Norris Screen & Manufacturing, Cook Legacy Water & Energy, WV, VA, PA, IL, CA\***

2013-2015. Elgin Equipment Group is a leading global manufacturer of products and solutions for the mining and materials handling industries. Mr. Faulkner was contracted by Elgin to evaluate the application and development of proprietary pressurized membrane technologies and proprietary anti-biological coatings of water handling equipment. This work involved Mr. Faulkner's field and laboratory efforts to characterize mine drainage and the bench/pilot/full-scale application of pressurized membrane separation technologies to achieve metals, selenium, chloride, sulfate, and other TDS treatment objectives at several mine sites and shallow groundwater mitigation sites in several states. Mr. Faulkner also designed and conducted laboratory efforts to demonstrate the efficacy of a proprietary equipment coating in resisting mollusk colonization.

#### **Mine Drainage Investigation, Luminant Mining, TX\***

2015-2016. Mr. Faulkner has investigated problematic mine drainage at Luminant's Oak Hill lignite coal surface mine and submitted a work plan for further characterization of the hydrology of the site. Working with Dr. Jeff Skousen of WVU, the team addressed limnology of a mine pit, groundwater and surface water monitoring to gather information to remediate problematic drainage.

#### **Austinville, VA Lead Mine Issues, Attorney Client Privileged, Austinville Wythe, VA\***

2014-2018. Mr. Faulkner was engaged by the landowner of a US Revolutionary War era mine site to address water quality issues associated with this underground lead/zinc mine. He has characterized the drainage at the site and prepared a Substantive Rationale for the improvement of water quality by appropriate land reclamation and water management. Relying on successful CERCLA projects, Faulkner employed an adaptive management strategy in making specific water management recommendations and assisted professional engineers in designing permanent drainage and remediation structures. He represented the client in Federal District Court (Roanoke, VA) as an Expert Witness on mine drainage and land reclamation. The court ruled for the client.

#### **Copper Basin Project, OXY, USA - Glenn Springs Holdings, Inc., Ducktown Polk, TN\***

Ben 1997-current. Mr. Faulkner was engaged by OXY subsidiary GSHI to lead the initial investigation of water quality at this former copper mining and sulfuric acid manufacturing site in TN. As the project matured to a Voluntary Cleanup Oversight and Assistance Program project under CERCLA, Faulkner provided characterization of the surface water impacts from mine waste and identified a remediation strategy at the several thousand-acre site in two watersheds. Since 1997, Faulkner has been a principal investigator and designer at this environmental award-winning site. This project has been championed by both the Tennessee Department of Conservation and Environment and USEPA as a model for the nation to deal with CERCLA mine sites because of the prompt, dramatic improvement in aesthetics and water quality in the affected watersheds and the recovery of the Ocoee River. The project received the 2015 TN Governor's Environmental Stewardship Award, allowing OXY to negotiate a settlement with USEPA. Faulkner was the principal designer of passive systems at the project, and participated in the establishment of Biological Performance Goals, Annual Macroinvertebrate Monitoring, Stream Habitat Restoration and Wetland efforts and banking, Waste Characterization and Remediation, preparation of Engineering Evaluation/Cost Analysis (EE/CA) and Remedial Investigation documents. He has served as curator of historic and remediation images for the documentation of efforts at the site. He continues to monitor the re-establishment of habitat and fauna at the site through focused monitoring of streams and wildlife. He materially participates in field monitoring and/or evaluation of a diverse list of environmentally focused activities at the project. He coordinates the Wildlife Habitat Council Program. He has reported on the approach and progress of the project at a number of state, national, and international symposia.



## **Ben B. Faulkner**

### Senior Consultant

#### **Columbia Phosphorous Facility, OXY, USA, Glenn Springs Holding, Inc., Columbia Maury, TN\***

2008-current. OXY, USA's subsidiary GSHI operated a phosphorous mining and processing facility near Columbia, TN until the 1970's. Mr. Faulkner was commissioned to pioneer the removal of P4 and other contaminants from a wastewater stream from the legacy property. He applied successful principles in constructed treatment wetlands to design two phases of passive systems to successfully remediate the contaminants. He continues to assist GSHI in monitoring the site and development of wildlife habitat for their Wildlife Habitat Council Program.

#### **Greenbrier Streams Biosurvey, Greenbrier Minerals, a subsidiary of Coronado Coal LLC, Anjean Greenbrier, WV\***

1984-current. Mr. Faulkner has conducted macroinvertebrate monitoring and stream characterization using EPA's Rapid Bioassessment Protocol and WVSCI methods at over 40 sites within an environmentally sensitive 30,000-acre property. Faulkner is wholly responsible for conducting the field work, works closely with a Society for Freshwater Science qualified taxonomist for identification to the genus level, and prepares the appropriate reports for NPDES and Aquatic Ecosystem Protection Plans. The reports are cumulative for the 30+ year study.

#### **Special Selenium and Raw Water study for major Appalachian Coal concern, Confidential, WV\***

2012-2018. Mr. Faulkner has been the project principal for a special study of a major idled coal property in West Virginia where the company was under a consent decree to characterize and reduce selenium concentrations in their multiple discharges from surface, underground and refuse operations. He led teams collecting water samples and maintained a comprehensive water quality database for over 3 years. The study included real time flow monitoring employing pressure transducers at over 30 surface water weirs. The project matured to including raw water sampling to facilitate application for post-mining effluent limits. Faulkner helped design, construct, maintain, and monitor several very large bioreactors for selenium removal.

#### **Arch Coal Subsidiaries - Special Projects, Arch Coal Leer Mine, Mountain Laurel, and (formerly ICG) Patriot, Eastern, Hazard, others, Statewide WV & KY\***

2006-current. Mr. Faulkner has provided professional services to several Arch coal subsidiaries since 2006. For ICG Eastern in Nicholas/Webster counties, WV, he collected raw and stream water samples for new permits, worked to insure chemical and passive treatment system compliance, and obtained permit release. He implemented several dye tracer studies to determine local hydrology related to problematic drainage. He conducted macroinvertebrate stream studies. He designed bioreactor systems to effectively collect and treat selenium laden drainage. This was implemented after bench and pilot scale efforts designed, monitored, and evaluated by Mr. Faulkner. Until the property became idle in 2014, Faulkner maintained a database of water quality for this work, consisting of over 11,000 samples. For Arch's northern WV mine sites, Faulkner was commissioned to evaluate problematic drainage near Morgantown and Bruceton Mills and refine existing chemical treatment and evaluate the opportunity to implement passive strategies. At the new Leer Mine, Faulkner conducted a chemical treatability study for problematic drainage and presented an array of treatment alternatives and associated cost-benefit analysis. In Mingo and Logan counties, WV, Faulkner conducted a dye tracer study to determine the groundwater path from an impoundment near a community. He dealt with a unique calcium deposition issue at the ICG Hazard Surface Mine Complex. He conducted dye-tracer studies for the Vindex complex near Mount Storm. He reviewed water quality and operations of a chemical treatment system for a legacy flooded mine in Preston County to propose changes in pumping and water management efforts.

#### **Richard Mine Drainage AML Project, WV Conservation Agency through GAI Consultants, Morgantown Monongalia, WV\***

2007-2008. Mr. Faulkner was commissioned by GAI to characterize the Richard Mine Drainage and its effects on Decker's Creek. Faulkner collected samples based on extensive mine mapping reconnaissance, and performed field testing and detailed laboratory bench scale chemical treatment studies at the facilities of REIC Laboratories, Inc. From this, he developed a feasibility study involving several chemical treatment alternatives strategies that could be employed by WVCA and its partners in the AMD treatment project.

#### **Copperhill Industries Special Projects, Copperhill Industries, Copperhill Polk, TN\***

2013-2018. Mr. Faulkner has assisted this materials reprocessing firm with stormwater and NPDES permit requirements on a CERCLA/RCRA property. He has collected and evaluated surface and groundwater samples to prepare detailed plans for waste and water management including surface diversions and passive treatment systems. Faulkner has also assisted the firm with collection and analysis of mine waste materials for the purpose of characterization and marketing.



## **Ben B. Faulkner**

### Senior Consultant

#### **Mettiki Coal Special Projects, Alliance Resource Partners, LP, Mt. Storm Tucker, WV\***

2001-2016. Mr. Faulkner has performed special projects for Mettiki since 2001. He conducted surface and groundwater studies on surface properties overlaying a critical subsidence zone. At Mettiki's request, he proposed and designed a surface water diversion and passive treatment system to deal with AML drainage as a mitigation proposal for Mettiki to mitigate proposed activities elsewhere. Faulkner has most recently assisted Mettiki with selenium abatement efforts in-situ by subsurface water management and treatment. He is also evaluating the performance of their existing chemical treatment plant at the Oakland, MD site.

#### **Peabody Coal - Will Scarlett Mine Environmental Suit, Confidential - Attorney Client Privilege, Stonefort, IL\***

2010. The Will Scarlett Mine has been represented as the most severe acid mine drainage issue in Illinois. Mr. Faulkner was commissioned by Peabody to characterize the AMD issues at the site, and to document the evolution of the chemical treatment efforts. His work included a comparison of the historic decade-long relationship between AMD treatment costs with precipitation. He also evaluated the empirical costs to achieve NPDES compliance for the site based on historic expenditures and a treatability study.

#### **Preservati Special Projects, Met Coal and Land Development Construction Sites, Princeton Mercer, WV\***

2002-2013. Mr. Faulkner has assisted this coal company with stormwater permits and drainage studies at its land development interests for more than a decade. His work included runoff analysis and designing diversion and sediment control structures. He has also assisted with re-vegetation issues in a recent large-scale Lepidopteran-based issue at their surface mining operations.

#### **Martin Marietta Auburn Quarry Drainage, Martin Marietta, Auburn, GA\***

2008. Mr. Faulkner was contracted by MM to characterize problematic drainage at this granite quarry near Atlanta. His work included soils/overburden Acid Base Account and a chemical treatment evaluation where he proposed materials handling alternatives and chemical treatment scenarios for meeting pH limits for the NPDES permit.

#### **Coalfields Expressway Mine Drainage Issue, Marshall Miller & Associates, Maxie Buckhannon, VA\***

2001-2002. Coal bearing strata and abandoned coal refuse areas lay in the path of the proposed Coalfields Expressway. MMA was commissioned by the VA Dept. of Transportation to perform the geotechnical and environmental work for the design of the project. MMA contracted Mr. Faulkner to assist with the chemical stabilization of the coal refuse associated with the project. The work was accomplished to ensure minimal impact to the environment and involved water and soils sampling and Acid Base Accounting analysis.

#### **Carmeuse Glass Rock Plant and Quarry Drainage Issue, Carmeuse Lime through BBC&M, Glenford Perry, OH\***

2008-2009. Mr. Faulkner characterized metals and Total Suspended Solids drainage issues at this quarry operation. He collected water samples and prepared recommendations for water treatment and management, and materials handling as needed to achieve NPDES effluent limits.

#### **Coal Mine Drainage Issues in TN, various, statewide, TN\***

2005-2010. Mr. Faulkner was engaged to characterize drainage issues from coal mine operations at several coal interests in the State of TN. His clients included Crossville Coal and Sequatchie Valley Coal treatment issues.

#### **Krypton Slope Stability Project, Confidential - Attorney Client Privilege, KY**

2012. A coal client contracted Mr. Faulkner to perform water quality characterization and determine groundwater paths associated with a civil suit involving a large landslide. Mr. Faulkner designed and implemented a dye/tracer study to assist with the characterization of the drainage. The project involved remote sensors for specific conductance and charcoal dye traps to determine the presence and intensity of tracers introduced in the subject drainage.

#### **Mine Complex Management - Permitting & Compliance, Island Creek Coal, Holden Logan, WV\***

1985-1988. Mr. Faulkner worked as an in-house consultant for Island Creek Coal. His work involved preparing mining and NPDES permits and ensuring environmental compliance at seven mine complexes in WV and Kentucky. He dealt with prospect, underground, surface and preparation issues and conducted numerous Probable Hydrologic Consequences Studies and prepared all necessary permitting and compliance duties associated with a major corporate mining interest.



## **Ben B. Faulkner**

### Senior Consultant

**Mine Management - Permitting and Environmental Compliance, Leckie Smokeless Coal Co., Anjean Greenbrier, WV\***  
1983-1990. Mr. Faulkner was the Environmental Compliance Manager for this coal operation on 30,000 acres in a native trout watershed. In addition to managing daily environmental compliance at the many surface preparation/refuse and deep mine operations, he obtained permits and handled public relations. During his tenure, the company was awarded a number of WV Surface Mine & Reclamation Association Reclamation Awards. Mr. Faulkner departed the firm but continued to perform consulting services for them for many years.

**Helvetia Artesian Mine Drainage Project, Carter Roag Coal Co. (United Coal Co.), Helvetia Randolph, WV\***  
2012. This completed deep mine allowed mine water with high iron concentrations to discharge through an existing bore hole to a sensitive trout stream. Mr. Faulkner was contracted to characterize the drainage and make recommendations as to improve treatment. His work involved drainage characterization, aeration and oxidizer efforts, and addition of polymers and flocculants.

**Penn Virginia Special Projects, Penn Coal Corporation, Charleston, WV\***  
2000-2011. Penn Virginia contracted Mr. Faulkner to conduct stream characterization at its many operations in Boone and Kanawha Counties. This involved macroinvertebrate collection and stream habitat evaluation utilizing USEPA Rapid Bioassessment Protocol. Mr. Faulkner also assisted Penn Virginia with the design, construction and evaluation of a number of passive treatment systems.

**West Virginia DNR Surface Mine Reclamation Inspector, WVDNR, predecessor to WVDoE and WVDEP, statewide, WV\***  
1979-1984. Mr. Faulkner began his environmental career as a State Mine Inspector in McDowell and Wyoming Counties. There he inspected over 100 deep mine operations, 30 surface mine operations, and a number of coal preparation facilities and refuse areas. He received training in coal refuse site inspection, hydrology and drainage control, and best management practices. He transferred to Greenbrier/Fayette/Nicholas/Summers Counties where he inspected a dozen limestone quarries and over 100 mine sites. In this capacity, he reviewed mine permit applications, oversaw the permit application process, and ensured environmental compliance of the permits when issues. He had statewide responsibilities with special drainage projects

**Haile Gold Mine Drainage, Haile Mining, Kinross Gold, Kershaw, SC\***  
2001-2002. Mr. Faulkner reviewed mine waste management and chemical treatment efforts at this historic mining property and designed passive treatment systems to mitigate constituents of environmental concern. The company implemented the systems which performed satisfactorily for many years until decommissioned upon mine reactivation.

**City of Princeton Phase I ESA for The Dean Company, City of Princeton WV, Princeton Mercer, WV**  
The Dean Company operated a log veneer processing facility in Princeton, WV for decades before moving its operations out-of-state. The 35 acre facility with multiple structures totaling 275,000 square feet was characterized under ASTM standards E1527-13.

**Antero Special Projects - Gas monitoring, Clearwater site characterization, monitoring, Antero Energy, Pennsboro Ritchie, WV**  
Background water sampling and drainage characterization for a \$800M central water treatment facility for this Natural Gas firm included dedicated landfill and on-going monitoring of receiving streams for watershed organization. Gas monitoring of waste lagoons for more than a dozen facilities.

**Dominion Gas Phase I ESA Glade Creek Industrial Park, Dominion, Summersville Nicholas, WV**  
Performed Environmental Site Assessment for new warehouse and maintenance facility under ASTM standards.

**WVU Emergency UST, West Virginia University, Beckley Raleigh, WV**  
WVU purchased the campus of Mountain State University and encountered subsurface UST issues associated with a residence hall. Investigated the issue with Ground Penetrating Radar and subsequent excavation.

**V&S Enterprises Phase I ESA, V&S Land, Clarksburg Harrison, WV**  
V&S leases property with commercial structures for the oil & gas industries. Two properties (one in Clarksburg, WV and another in Bealsville, OH (project 185-865 in 2018) were characterized under ASTM standards.



## **Ben B. Faulkner**

### Senior Consultant

#### **Williams Threedubs Compressor Facility Coal Mining Incidental to Land Development, Williams Company, West Liberty, WV**

**Role:** Senior Consultant

In developing its multi-million dollar compressor facility near West Liberty, WV, Williams encountered coal that complicated the stability of the pad. Under WV law, coal removal incidental to land development is required to obtain a special surface mining permit. Requirements for this permit satisfy the requirements of federal and state mining laws with respect to all major environmental and legal issues. This involved characterization of soils, overburden, coal, drainage, safety, and property issues. Similar characterization efforts were conducted for another Compressor Facility in Brooke County to the northeast in 2018 where coal removal was also necessary. Faulkner reported on the permit preparation at the 2019 International SME Conference in Denver, CO.

#### **Surface Coal Mine Drainage, Attorney Client Privileged, Wise Wise, VA\***

2019-2019 A lawsuit between a major environmental group and established coal mining concern involved TDS from mine drainage and associated fills. Plaintiff alleged violations of Clean Water Act, RCRA and SMCRA. Faulkner conducted extensive file work and field work to characterize the drainage and mining history to represent the company in Federal court (Abingdon) as an expert witness in mine drainage and land reclamation. It was established that valley fills were point-sources under NPDES and that the operator had been in compliance with applicable statutes for TDS and other chemical parameters of concern. Faulkner's biological monitoring also convinced the court there was no environmental degradation. The Court granted the defendant's motion for summary judgement.

#### **Buckeye Selenium Compliance Plan, Greer Industries, Inc, Cheat Lake, WV**

**Role:** Senior Consultant

Designed and helped client install, maintain, and monitor a V-notch weir with recording pressure transducer. The pressure transducer measures the height of water in the weir, and when compensated against a nearby atmospheric pressure transducer and calibrated against a regularly read staff gauge, returns a log of accurate flow through the weir. The values are used to produce selenium and other parameter loadings.

#### **Eastern Panhandle Pipeline Expansion , Mountaineer Gas, WV Eastern Panhandle**

**Role:** Senior Consultant

Reviewed available mapping and imagery to prepare Phase I Environmental Site Assessment for new 20 mile pipeline to Martinsburg from Berkeley Springs, WV.

#### **Mission Coal Assessment, confidential, two mine complexes in West Virginia, two mine complexes in Alabama**

**Role:** Senior Consultant

A mining company sought information in a confidential bid for mining assets in a bankruptcy case. A team of CEC mining professionals was engaged through counsel to review available records and field reviewed the mine properties (totaling several thousand acres and hundreds of permits) for due diligence and environmental compliance. Ben Faulkner reviewed all records and was responsible for field review of all Alabama properties.

#### **Inventory of Rare Earth Elements from Coal Mine Drainage , WVU Research Corporation - US Department of Energy Grants, Appalachian Coal Region\***

2017. Faulkner contacted major coal producers in WV,VA,OH,PA,MD and made arrangements for confidential sampling of acidic mine drainage and precipitates at over 140 treatment facilities. He collected the samples and inventoried the reserves and potential for extracting strategic rare earth elements from the drainage.

#### **Painesville Plant Site , OXY, USA - Glenn Springs Holdings, Inc. , Painesville, OH - shores of Lake Erie\***

This legacy site has been reclaimed and has an ongoing program for The Wildlife Habitat Council. Faulkner assisted in design and implementation of activities that resulted in certification by WHC. Faulkner was chosen to present his innovative monitoring work at this and other sites at WHC's annual international meeting in Baltimore in 2019.

#### **Environmental Audits for Real Estate Transactions for Industrial Properties, various, northern and central WV\***

**Role:** Principal Investigator



## **Ben B. Faulkner**

### Senior Consultant

A consulting firm to which Ben Faulkner sub-contracted was responsible for performing environmental audits for the potential purchaser of hundreds of tracts of land with a history of timbering and coal mining operations. Faulkner led a team that inventoried and characterized over 400 tracts and 10,000 acres in six counties. The process included aerial reconnaissance and videotaping from a helicopter in 1984. Global Positioning Systems (GPS) technology was in its infancy and advance mission planning and post-mission correction was necessary. Faulkner's databases of this and statewide (39 counties) public projects commissioned by WVDEP were selected by WVU faculty for use in early ESRI courses taught at the university.

*\* Work performed prior to joining CEC*

#### **TRAINING**

HazWOPER Annual General Site Worker Refresher 2022-02-21

#### **PROFESSIONAL AFFILIATIONS**

Society of Environmental Toxicology and Chemistry

West Virginia Mine Drainage Task Force

Society for Freshwater Science

West Virginia Coal Association, Inc.

International Mine Water Association

American Society of Mining and Reclamation

Society for Mining, Metallurgy, and Exploration, Inc.

Air & Waste Management Association

American Society of Reclamation Sciences

Metallurgical Coal Producers Association

**CHAIRMAN OF THE WEST VIRGINIA MINE DRAINAGE TASK FORCE [WWW.WVMDTASKFORCE.COM](http://WWW.WVMDTASKFORCE.COM)**

**RECORD OF EXPERT LEGAL TESTIMONY TO 2021-06 AVAILABLE UPON REQUEST**

**PROFICIENT IN MEDICAL OFFICE MANAGEMENT**

#### **PUBLICATIONS**

Faulkner, Ben B., Deal, K.A. "Recovery of North Potato Creek – Copper Basin, TN" at 2015 American Society for Mining and Reclamation Symposium, Lexington, KY.

Faulkner, Ben B., Eger, Paul, Gusek, J. Biochemical Reactor/Anaerobic Wetland Design/Startup Issues at 2015 American Society for Mining and Reclamation Symposium, Lexington, KY

Faulkner, Ben B., Bowers, M. "Impacted Watershed Recovery in the Copper Basin Tennessee" at 2013 Society for Freshwater Science International Meeting, Jacksonville, FL.

Faulkner, Ben B., Bowers, M. "Impacted Watershed Recovery in the Copper Basin Tennessee" at 2013 Society for Environmental Toxicity and Chemistry, Nashville, TN

McDonald, Lewis, and Faulkner, B. Inorganic Selenium Speciation in Mine Drainage Impacted Waters" in International Journal of Environmental Analytical Chemistry 2012.

Meek, Al, Odell, K., and Faulkner, B. "Selenium Treatment –Arch Eastern Birch Mine" presented at the 2012-13 WVMDTaskForce.com Symposia



## **Ben B. Faulkner**

### Senior Consultant

- Faulkner, Ben B. and Miller, F. "Land and Water Restoration in the Copper Basin of TN" presented at the 2010 ASMR Conference in Pittsburgh, PA
- Faulkner, Ben B. and Miller, F. "Adaptive Management of an Acidic Superfund Mine Site" presented at Montana Tech Symposium on Mine Planning, Permitting, Operation and Closure, Butte, MT.
- Faulkner, Ben B. and Miller, F. "Land and Water Reclamation of the Copper Basin of TN" at USEPA/National Ground Water Assoc. Workshop October, 2008 Denver, CO
- Faulkner, Ben B. "Passive Treatment Systems as a Component in Improving Water Quality in the Copper Basin" presented at USEPA's 2007 BioChemical Workshop in Coeur d'Alene Idaho.
- Faulkner, Ben B., Bowers, M. Stokes, C. "Bench-Scale Treatment of a Sulfate-Reducing Bacteria Treatment of Copper Basin, TN Mine Drainage" presented at the 2007 WVSMDTF Symposium
- Faulkner, Ben B. "Reclamation of the Copper Basin, TN" presented at the International Conference on Acid Rock Drainage 2006 in St. Louis, MO.
- Faulkner, Ben B., Miller, F. "The Largest AMD Treatment Plant in the World?" presented at the 2005 WVSMDTF symposium
- Faulkner, Ben B. "The Copper Basin Reclamation Project" presented at 2004 ASMR & WVSMDTF International Mtg.
- Faulkner, Ben B. "Improvement of Water Quality at and Eastern US Copper Mine by Passive AMD Systems and Land Reclamation" presented at ASMR International Mtg., Lexington, KY
- "Improvement of Water Quality at and Eastern US Copper Mine by Passive AMD Systems and Land Reclamation" presented at Virginia Tech/ University of Virginia Mine Drainage Symposium
- Faulkner, Ben B. "Improvement of Water Quality at and Eastern US Copper Mine by Passive AMD Systems and Land Reclamation" presented at National Association Of State Land Reclamationists National Meeting, Charleston, WV
- Faulkner, Ben B. "Mine Drainage at Active Mines in West Virginia – 2000" presented at the WVSMD Task Force Symposium, Morgantown, WV
- Faulkner, Ben B. "Vegetation and Aquatic Ecosystem Enhancement" at USEPA's 2000 Environmental Impact Statement Workshop, Charleston, WV
- Faulkner, Ben B. "Reduction in Acid Loads at the Alton Project" Presented at the 2000 WVAMD Task Force Symposium
- Faulkner, Ben, editor "A Handbook of Technologies for Avoidance and Remediation of Acid Mine Drainage" published 1998 by ADTI, NMLRC & OSM.
- Faulkner, Ben B. "Acid Mine Drainage Inventory in WV" presented at the WVAMD Task Force Symposium, April, 1997, and at WV Non-Point Source Symposium, October, 1998; also published in Green Lands, Summer, 1998
- Faulkner, Ben B. "Acid Mine Drainage in WV" presented at the National Association of Abandoned Mine Lands Programs Annual Conference, August, 1997.
- Hedin, R., Skousen, J., Faulkner, B. "Water Quality Changes and Costs of Remining in PA and WV". Presented at the WVAMD Task Force Symposium April 1997
- Faulkner, Ben editor Handbook for Use of Ammonia in Treating Mine Waters published by West Virginia Mining & Reclamation Association. 1990. "Using Ammonia to Treat Mine Waters" Green Lands, winter, 1991. presented to WVMRA Technical Workshop at Annual Symposium, Charleston, WV - January, 1991
- Faulkner, Ben B. "Field Trials in AMD Treatment" presented at WV AMD Task Force Symposium, Morgantown, WV - April, 1991
- Faulkner, Ben B. "Field Trials in AMD Treatment - An Update" presented at International Mine Drainage Conference at Pittsburgh, PA - April, 1994.
- Skousen, Jeffrey, and Faulkner, Ben. "Acid Mine Drainage Treatment with Active & Passive Technologies" in Land Reclamation: Advances in Research & Technology. Am. Soc. of Agriculture Engineers. 1992.



## **Ben B. Faulkner**

### Senior Consultant

Skousen, Jeffrey, and Faulkner, Ben B. "Effects of Land Reclamation and Passive Treatment Systems on Improving Water Quality". 1995. Green Lands Volume 25, Number 4

Skousen, Jeff, Faulkner, B.B. et al. "Overview of AMD Treatment with Chemicals". 1996. Green Lands Volume 26.

Skousen, J. , Faulkner, B.B. AMD Control & Treatment 1996. (2nd edition) WVU & NMLRC (Chapters 17, 23, & 31).

#### **PRESENTATIONS**

Faulkner, Ben B. "Anoxic Limestone Drains to Treat AMD" presented at WVMRA Symposium, Charleston, WV - January, 1992

Faulkner, Ben B. "Field Trials in AMD Treatment - An Update" presented as WVMRA Symposium, Morgantown, WV - April, 1993

Faulkner, Ben B. "AMD Passive Treatment System Recommendations" 23rd Annual WVMRA Symposium, 1996

Faulkner, Ben B. "An Environmental Impact Statement of Alternate Water Supply for Princeton, WV" for fulfillment of coursework for Preparing and Evaluating Environmental Impact Statements, WVCOGS.

Faulkner, Ben B. "Limnology of a North American Dimictic Lake" Senior Independent Study, Concord University Biology Department.

Faulkner, Ben B. Independent Studies "Mortuary Science"; "The Genetics of Polycystic Kidney Disease", "Preservation Techniques of Biological Materials" Concord University Independent Study Presentations.

Faulkner, Ben B. "A Primer on Mine Drainage, Aquatic life, and Electrical Conductivity" presented to the National Mine Association WCC meeting 2010-06-10 attended by US Congressmen and staff.  
[http://www.washingtoncoalclub.org/docs/20100610\\_Faulkner.pdf](http://www.washingtoncoalclub.org/docs/20100610_Faulkner.pdf)

"Water Conductivity - An Initial Screening Tool" Two videos were prepared through the National Mining Association featuring Ben Faulkner. Both were available on the NMA website and featured on FacesofCoal.org but may be available at:  
<https://www.youtube.com/watch?v=wwGKFca65I0>

Faulkner, Ben B. "Surface Coal Mining Incidental to Land Development for the Natural Gas Industry" presented at 2019 International SME Conference, Denver, CO. Session: Surface Mining: Coal & Energy: Advancement Through Innovation. 2019.

Target Video to Reform Waters of the United States (WOTUS) Legislation sponsored by client.  
<https://www.youtube.com/watch?v=y4Yn66h0P3M>

"How's Your Tech? Hi-Tech, Lo-Cost (Pocket-Tech) Tools" presented at the Wildlife Habitat Council 2019 Conservation Conference in Baltimore, MD. by Ben B. Faulkner and Rick Passmore.



# Timothy A. Denicola, P.G., CFM

## Project Manager III



### 14 YEARS OF EXPERIENCE

#### EDUCATION

M.S., Geology, West Virginia University, 2013

B.S., Chemistry, Clarion University of Pennsylvania, 2006

Mr. Denicola is a project manager whose multi-disciplined background includes expertise in geochemistry, geology, and hydrology. His experience includes mine water remediation, ecosystem restoration, and environmental assessments and remediation. Specific capabilities include soil, surface and groundwater chemical analysis, hydrologic data collection, design of mine water treatment systems, design of stream and wetland restoration, geotechnical soil and rock exploration drilling, construction quality assurance, environmental assessments and remediation, and development of various spill control plans. Mr. Denicola manages projects from conceptual through final completion in collaboration with a qualified team of personnel.

#### PROJECT EXPERIENCE

##### **AMD Treatment, Broad Top Township, Bedford County, PA\***

Various active and passive AMD treatment systems operate within Broad Top Township. Mr. Denicola conducted geochemical calculations that directly translated into several passive system designs, conducted chemical and hydrological sampling as part of an assessment and recommendations study, and conducted the post-construction final inspection of the most recently construction AMD treatment system.

##### **Kanes Creek South Site #3, Office of Surface Mining (OSM) Watershed Cooperative Agreement (WCAP), Preston County, WV\***

Several acid mine discharges impairing Dills Run, required development of a passive remediation system. Mr. Denicola oversaw the final stages of system design, construction stormwater permitting, and West Virginia Non-Point Source (NPS) 319 and Office of Surface Mining (OSM) Watershed Cooperative Agreement (WCAP) grants management, as well as conducted construction oversight and completion of pre- and post-construction monitoring. The final system ultimately consists of a flushing limestone bed followed by two settling ponds in series. The system is successfully neutralizing all acidity, introducing residual alkalinity, and is removing all metals to analytical minimum detection limits.

##### **Well Plugging and OG Infrastructure Modifications, Ecosystem Investment Partners, Ritchie County, WV**

**Role:** Project Manager / Geologist

To facilitate successful stream restoration for a mitigation banking client, various components of traditional oil & gas operations required abandonment or modification. Mr. Denicola pulled historic production records for several conventional wells then proceeded to coordinate with infrastructure owners, subconsultants, and regulatory inspectors. Tasks included preparation of plugging / modification agreements, permit packages, and onsite construction quality assurance. Mr. Denicola acted as site geologist coordinating with contractors and reviewing daily reports to ensure appropriate well bore preparation, plugging materials and intervals, and completion methods. Additionally, thousand of feet of small diameter conveyance pipelines were rerouted and appropriately trenched, backfilled, and as-built surveyed.

##### **Mine Water Remediation | Watershed Restoration**

##### **Beaver Creek at Auman Road Passive AMD Treatment, Friends of the Cheat River, Preston County, WV**

**Role:** Project Manager / Geochemist

#### EXPERTISE

Abandoned Mine Drainage (AMD)  
Ecosystem Restoration  
Mitigation Banking  
AMD Treatment Design  
Monitoring Well Installation  
Soil Boring Advancement  
Rock Coring Exploration  
Soil Chemical Sampling  
Water Quality Sampling  
Stream and Wetland Design  
Aquifer Pumping  
Contaminant Tracking  
Survey/Construction Layout

#### REGISTRATIONS

Professional Geologist  
• PA PG005483

#### CERTIFICATIONS

Certified Floodplain Manager,  
Association of State Floodplain  
Managers

## **Timothy A. Denicola, P.G., CFM**

### **Project Manager III**

A tributary to a cold water fishery (CWF) is impacted by acidic, aluminum contaminated water emanating from an abandoned coal surface mine. Mr. Denicola designed two passive mine water treatment systems consisting of flushing limestone beds (FLB), settling ponds, and aerobic polishing wetlands. Each FLB utilized an automatic dosing siphon, large diameter limestone, and trench drain conveyance to reduce loss of substrate porosity and increase alkalinity generation and flushing velocities. Settling ponds utilize perforated stand-pipes to regulate the effluent rate and achieve particle settling velocities. Aerobic wetlands were designed with thick, native, non-invasive grasses, woody shrubs and wetland trees to facilitate final polishing while increasing ecological habitat. Extensive chemical, hydrologic, and volumetric calculations were utilized to ensure optimal cost-effective performance.

#### **Severe AMD Characterized by High Acidity, Iron, and Aluminum, Satcher Pre-Treatment Pond (SPTP)\***

The SPTP was constructed to handle severe AMD characterized by high acidity, iron, and aluminum. In 2013, the system required refurbishment. Chemical and hydrologic assessment, funding acquisition, design, and construction were completed by Mr. Denicola and the landowner. The resulting system is an improved flushing limestone bed with improved hydrologic capacity, acid neutralization, and metals removal.

#### **AMD Remediation, Slabcamp Tributary, Preston County, WV\***

Four severe AMDs are impairing a tributary to Slabcamp Run and a 5.4-acre wetland. Mr. Denicola completed pre-construction monitoring, execution of landowner right-of-entry agreements, acquisition of an environmental consulting firm, communication with the U.S. Army Corps of Engineers (USACE) regarding wetland and waterways permitting, communication with the State Historic Preservation Office (SHPO) to complete a Section 106 review, communication with West Virginia Department of Natural Resources (WVDNR) to complete a National Environmental Policy Act (NEPA) review and composed an Environmental Assessment (EA), communicated with Region VI Planning and Development Council for the necessary consultation letter, and assisted development of a conceptual design.

#### **AMD Remediation,, Ingrand Mine, Preston County, WA\***

Two severe AMDs impairing Dills Run required development of a passive remediation system. Mr. Denicola oversaw pre-construction monitoring, completion of land purchase through execution of a subdivided land deed, acquisition of an environmental consulting firm, communication with the USACE, SHPO, NEPA, and Region VI, and assisted development of a final design with associated specifications, bid, and contract documents. The passive treatment system utilizes a flushing limestone leach bed, two settling ponds, an anaerobic vertical flow wetland (AVFW), and a polishing wetland and is successfully reducing contaminant loads to Dills Run and Kanes Creek.

#### **Valley Point #12 Refurbishment, Kanes Creek South Site #1 and Valley Highwall #3 Upgrades, Deckers Creek Watershed\***

After years of successful acid neutralization and metals load reductions at numerous systems within the Deckers Creek Watershed, system efficacy had reduced at several systems and refurbishments were necessary. Mr. Denicola oversaw extensive system assessments and coordinated with landowners and the Deckers Creek Restoration team to facilitate improvements. The result was award of funding for two projects, a completed design for one, and a funding request for the final system.

#### **Successive Alkalinity Producing System and Active Lime Doser Assessments, Deckers Creek Watershed\***

As a responsibility of project management, Mr. Denicola thoroughly audited all existing systems within the Deckers Creek watershed. The most extensive audits were conducted at a successive alkalinity producing system (SAPS) that utilizes flushing limestone leach beds, settling ponds, and an AVFW. Chemical, hydrologic, and redox potential data were collected, and geochemical software was utilized to evaluate the iron reducing capability of the AVFW, which ultimately proved to be highly successful. The SAPS was receiving AMD with pH=2.6 and high ferric iron and aluminum concentrations and was discharging water of circum-neutral pH with metals below minimum detection limits. The AVFW alone displayed a redox potential of -0.093 V and conversion of all ferric iron into the ferrous form. In addition, the Deckers Creek watershed utilizes two active tipping bucket lime dosers for neutralization of severely degrading AMD. Mr. Denicola thoroughly audited both active systems through a series of geochemical sampling and evaluation techniques. The results of the audits substantiated the necessity of future funding for refurbishment.

#### **Geotechnical Study, Richard Mine\***

The Richard Mine discharges 400 gallons per minute of water characterized by pH=4.0 and high iron and aluminum concentrations. The discharge emanates from a partially flooded mine pool within a 2,300-acre mining complex. Treatment will require a full-scale active facility. To assess the design requirements, Mr. Denicola oversaw acquisition of an environmental



## **Timothy A. Denicola, P.G., CFM**

### **Project Manager III**

consulting firm for successful installation of a 342-foot-deep monitoring well. To facilitate the project Mr. Denicola executed a notarized landowner entry agreement, obtained and evaluated mine maps, and utilized field pumps and transducers to monitor water level and chemistry of the Richard Mine pool.

#### **Clean Creek Program, Friends of Deckers Creek\***

Since 2002, the Friends of Deckers Creek has participated in the Clean Creek Program (CCP) which consists of quarterly chemical, biological, and flow sampling at 13 key locations along the 24-mile length of Deckers Creek. In addition, collected data are compiled into an annual State of the Creek Report for distribution to community members and funding agencies. Mr. Denicola took an active role in performing CCP duties, funding acquisition, and report writing.

#### **Lyons Run AMD Remediation and Mitigation Bank, Lyons Run Watershed Association, Westmoreland County, PA**

**Role:** Project Manager / Geochemist / Designer

The Lyons Run watershed is severely impaired by acidic, iron and aluminum contaminated mine water. Mr. Denicola completed baseline water quality sampling, remediation design, and development of a mitigation banking prospectus. Mr. Denicola managed site delineations and baseline biological monitoring, high resolution LiDAR topographic UAV flights, geotechnical site assessment, and regulatory components including USACE, PADEP, and local requirements. The project will ultimately utilize a successive alkalinity producing system (SAPS) to neutralize acid, collect precipitated solids, and improve watershed ecological function while generating mitigation banking credits to offset long-term operations and maintenance costs.

#### **Export AMD Assessment and Conceptual Design, Lyons Run Watershed Association, Westmoreland County, PA**

**Role:** Project Manager / Geochemist / Surveyor / Designer

Two mine water discharges near Export, PA, convey a combined 3000 gallons per minute of severely acidic, iron and aluminum contaminated mine water into a watershed having fishery potential. Mr. Denicola completed a historic water quality review, baseline water quality sampling, chemical loading and treatment calculations, site surveying, and developed a conceptual engineering design utilizing a calcium oxide auger driven lime doser and solids handling practices. The design includes an innovative approach to working within site constraints while ensuring sufficient carbon dioxide off-gassing, reagent mixing, precipitated solids handling, onsite solids disposal, and simplified operations and maintenance.

#### **Active AMD Treatment Conceptual Design, Brubaker, Clearfield County, PA\***

Mr. Denicola developed the winning conceptual design for active treatment at the abandoned Dean Clay Mine discharge in the Brubaker Run watershed. The design utilized calculations for acid neutralization and sludge production rates. The design included active treatment BMPs, surface water diversion and high flow bypasses, and a proposal for an on-site sludge disposal assessment requiring a geotechnical study of the nearby mine workings.

#### **AMD Assessments and Recommendations,, Buck Mountain #2 and Lausanne Tunnel, Eastern Pennsylvania\***

Several passive AMD treatment systems required an assessment and recommendations report to evaluate treatment efficacy. Mr. Denicola conducted chemical and hydrological sampling and completed an assessment of each location including recommendations and associated costs. Development of the recommendations required calculations of acid and metal loads, alkalinity generation and acid neutralization rates, ferrous iron oxidation rate, sludge volume, and BMP sizing for necessary hydrologic retention time.

#### **Herods Run Passive Treatment Project, U.S. Army Corps of Engineers (USACE) Regional General & WV Department of Natural Resources (WVDNR), Upshur County, WV\***

Herods Run is impacted by acidic, iron contaminated water emanating from an abandoned coal surface mine. Mr. Denicola prepared the winning conceptual design, developed the preliminary and final engineering design drawings, and prepared the construction specifications, cost estimates, and bid package. Mr. Denicola prepared permit application packages for the U.S. Army Corps of Engineers (USACE) Regional General for AML permit and WV Department of Natural Resources (WVDNR) Stream Activity permit. Throughout the project Mr. Denicola facilitated open communication between a non-profit watershed association, various landowners, and a private energy company owning easements.

#### **Semi-Active AMD Treatment, Sewickley Creek, Brinkerton, Westmoreland County, PA\***

The Brinkerton Semi-Active AMD Treatment project was affected by a high volume of alkaline mine water discharge and the existing passive treatment system required refurbishment. Mr. Denicola assisted in redesign of a Maelstrom Oxidizer, pond berm



## **Timothy A. Denicola, P.G., CFM**

### **Project Manager III**

stabilization, incorporation of top flow weirs to allow collection of chemical and hydrological data, and conversion of a smaller acidic mine water collection area into an anoxic limestone drain. Mr. Denicola also performed construction oversight at various stages of project completion.

#### **Public Sector | Municipal**

##### **AMD Treatment, Broad Top Township, PA\***

Various active and passive AMD treatment systems currently operate within Broad Top Township. Mr. Denicola conducted geochemical calculations that directly translated into several passive system designs, conducted chemical and hydrological sampling as part of an assessment and recommendations study, and conducted the post-construction final inspection of the most recently construction AMD treatment system.

#### **Mining | Coal**

##### **Regulatory Compliance Audits, Private Coal Client, Southern WV\***

**Role:** Geologist

Via EPA Consent Decree, a southern West Virginia coal company required periodic environmental compliance audits. Mr. Denicola conducted dozens of audits focused specifically on verifying SPRP and SPCC Plan accuracy and ensuring compliance with TSCA, SWDA, SARA, EPCRA, and CERCLA. Additional services included review of NPDES Daily Monitoring Reports (DMR) and verifying compliance with earthen ponds and valley fill engineering inspections.

##### **Stalnaker Phase III Permit Release, Robert Gifford Esq., Phillipi, West Virginia**

**Role:** Project Manager

As a component of streamlined record keeping, the client required closure of several active mining permits on idle mine lands having prior completed the site reclamation phase. Assistance from CEC was requested for several outstanding components of the closure process related to haul roads, permit boundaries, and regulatory meetings. Mining experts with CEC having multiple decades of familiarity with regionally specific mining history, personnel, and requirements assisted the client to achieve final Phase III release.

##### **Herods Run Passive Treatment Project, WV\***

Herods Run is impacted by acidic, iron contaminated water emanating from an abandoned coal surface mine. Mr. Denicola prepared the winning conceptual design, developed the preliminary and final engineering design drawings, and prepared the construction specifications, cost estimates, and bid package. Mr. Denicola prepared permit application packages for the U.S. Army Corps of Engineers (USACE) Regional General for AML permit and WV Department of Natural Resources (WVDNR) Stream Activity permit. Throughout the project Mr. Denicola facilitated open communication between a non-profit watershed association, various landowners, and a private energy company owning easements.

##### **Brubaker Active AMD Treatment Conceptual Design, PA\***

Mr. Denicola developed the winning conceptual design for active treatment at the abandoned Dean Clay Mine discharge in the Brubaker Run watershed. The design utilized calculations for acid neutralization and sludge production rates. The design included active treatment BMPs, surface water diversion and high flow bypasses, and a proposal for an on-site sludge disposal assessment requiring a geotechnical study of the nearby mine workings.

##### **Buck Mountain #2 and Lausanne Tunnel AMD Assessments and Recommendations, Eastern Pennsylvania\***

Several passive AMD treatment systems required an assessment and recommendations report to evaluate treatment efficacy. Mr. Denicola conducted chemical and hydrological sampling and completed an assessment of each location including recommendations and associated costs.

##### **Regulated Mining Property AMD Treatment and Refuse Research Study, TN\***

An extensively reclaimed, regulated mining property treats acidic groundwater emanating from various locations. Mr. Denicola conducted an assessment of various treatment options ultimately identifying the most cost-effective method of meeting NPDES compliance at several discharge points. In addition, Mr. Denicola is currently completing a treatment test cell study to assess techniques for mitigating acid production in mining refuse, thereby eliminating the need for long-term AMD treatment.



## **Timothy A. Denicola, P.G., CFM**

### **Project Manager III**

#### **Lehigh River Basin Watershed Assessment\***

Mr. Denicola was provided chemical data from approximately two dozen abandoned mine discharges (AMD) in several impaired subwatersheds of the Lehigh River. Utilizing spatial and statistical software, Mr. Denicola prepared an assessment and recommendations report identifying priority AMDs and priority subwatersheds for remediation. Statistical methods utilized univariate statistical data and multivariate data including principal component and hierarchical cluster analysis. Based on geochemical calculations, site-specific treatment options were recommended including associated engineering and construction costs.

#### **Kanes Creek South Site #3, WV\***

Several acid mine discharges impairing Dills Run, required development of a passive remediation system. Mr. Denicola oversaw the final stages of system design, construction stormwater permitting, and West Virginia Non-Point Source (NPS) 319 and Office of Surface Mining (OSM) Watershed Cooperative Agreement (WCAP) grants management, as well as conducted construction oversight and completion of pre- and post-construction monitoring. The final system ultimately consists of a flushing limestone bed followed by two settling ponds in series. The system is successfully neutralizing all acidity, introducing residual alkalinity, and is removing all metals to analytical minimum detection limits.

#### **Satcher Pre-Treatment Pond (SPTP)\***

The SPTP was constructed to handle severe AMD characterized by high acidity, iron, and aluminum. In 2013, the system required refurbishment. Chemical and hydrologic assessment, funding acquisition, design, and construction were completed by Mr. Denicola and the landowner. The resulting system is an improved flushing limestone bed with improved hydrologic capacity, acid neutralization, and metals removal.

#### **Slabcamp Tributary AMD Remediation, WV\***

Four severe AMDs are impairing a tributary to Slabcamp Run and a 5.4-acre wetland. Mr. Denicola completed pre-construction monitoring, execution of landowner right-of-entry agreements, acquisition of an environmental consulting firm, communication with the U.S. Army Corps of Engineers (USACE) regarding wetland and waterways permitting, communication with the State Historic Preservation Office (SHPO) to complete a Section 106 review, communication with West Virginia Department of Natural Resources (WVDNR) to complete a National Environmental Policy Act (NEPA) review and composed an Environmental Assessment (EA), communicated with Region VI Planning and Development Council for the necessary consultation letter, and assisted development of a conceptual design.

#### **Ingrand Mine AMD Remediation, WV\***

Two severe AMDs impairing Dills Run required development of a passive remediation system. Mr. Denicola oversaw pre-construction monitoring, completion of land purchase through execution of a subdivided land deed, acquisition of an environmental consulting firm, communication with the USACE, SHPO, NEPA, and Region VI, and assisted development of a final design with associated specifications, bid, and contract documents. Scheduled for construction in 2016, the passive treatment system will utilize a flushing limestone leach bed, two settling ponds, an anaerobic vertical flow wetland (AVFW), and a polishing wetland.

#### **Watershed Based Plan and Quality Assurance Protection Plan\***

As a responsibility of project management, Mr. Denicola composed a Watershed Based Plan (WBP) and Quality Assurance Protection Plan (QAPP) for approval by the United States Environmental Protection Agency (U.S. EPA). The WBP identifies priority remediation sites to meet compliance with West Virginia Department of Environmental Protection (WVDEP) Total Maximum Daily Loads (TMDL) requirements for the WV 303(d) list of impaired streams. In addition, Mr. Denicola composed a QAPP to ensure that the U.S. EPA-accepted sampling and data handling protocols were being utilized universally across all staff members and sampling events within the watershed.

#### **Coalfields Expressway Habitat Assessment, WV\***

Mr. Denicola obtained and interpreted mine maps from four coal beds to assist the ecological team. Dozens of historic mine openings were identified, thereby directing the ecological team to potential Indiana Bat hibernacula.



# Timothy A. Denicola, P.G., CFM

## Project Manager III

### Environmental Compliance Audits, Various Locations in Pennsylvania, West Virginia and Kentucky\*

Throughout 2015, Mr. Denicola conducted environmental compliance audits at regulated mining properties. Audits consisted of reviewing toxic waste inventories and hazardous materials handling, verifying that proper pond and fill certification protocols were met, and ensuring that NPDES daily monitoring and compliance was met.

### Richard Mine Geotechnical Study, Confidential Client\*

The Richard Mine discharges 400 gallons per minute of water characterized by pH=4.0 and high iron and aluminum concentrations. The discharge emanates from a partially flooded mine pool within a 2,300-acre mining complex. Treatment will require a full-scale active facility. To assess the design requirements, Mr. Denicola oversaw acquisition of an environmental consulting firm for successful installation of a 342-foot-deep monitoring well. To facilitate the project Mr. Denicola executed a notarized landowner entry agreement, obtained and evaluated mine maps, and utilized field pumps and transducers to monitor water level and chemistry of the Richard Mine pool.

\* Work performed prior to joining CEC

### TRAINING

Advanced AMDtreat Mine Drainage Cost Calculation Software, U.S. Office of Surface Mining Reclamation and Enforcement (15-Hour)

PEC/Safeland Training, 8-Hour Course, ID# PEC 100784550

Level I Applied Fluvial Geomorphology

Level II River Morphology and Applications

Level III River Assessment and Monitoring

Level IV River Restoration and Natural Channel Design

### PUBLICATIONS

Updates to Deckers Creek Watershed Based Plan. Friends of Deckers Creek, Monongalia County, West Virginia. November 2014.

Quality Assurance Protection Plan, Deckers Creek Watershed, West Virginia. Friends of Deckers Creek, Monongalia County, West Virginia. November 2013.

Geochemistry of Mine Pool Discharges in the Pittsburgh Coal Basin. West Virginia University Electronic Thesis and Dissertation. August, 2013.

### PRESENTATIONS

In Proceedings, Geological Society of America, Denver, Colorado; October 2013: Geochemistry of Mine Pool Discharges in the Pittsburgh Coal Basin. Paper No. 245-9. Denicola, T. 2013.

Mid-Atlantic Stream Restoration Conference, Baltimore, Maryland; September 2017: Stream Restoration on Coal Mining Impacted Properties, West Virginia. Civil & Environmental Consultants, Inc., Bridgeport, WV.

West Virginia Mine Drainage Task Force Symposium, Morgantown, West Virginia; March 2018: Stream Restoration of Coal Mining Impacted Properties, West Virginia. Civil & Environmental Consultants, Inc., Bridgeport, WV.

EcoStream Stream Ecology & Restoration Conference, Asheville, North Carolina; August 2018: Stream Restoration of Coal Mining Impacted Properties, West Virginia. Civil & Environmental Consultants, Inc., Bridgeport, WV.

Mid-Atlantic Stream Restoration Conference, Baltimore, Maryland; September 2019: Floodway Improvements & Habitat Restoration Post-Disaster, Howards Creek, Greenbrier County, West Virginia. Civil & Environmental Consultants, Inc., Bridgeport, WV.

Mid-Atlantic Stream Restoration Conference, Baltimore, Maryland; July 2021: Post-Construction Stream Restoration on Coal Mining Impacted Properties, West Virginia. Civil & Environmental Consultants, Inc., Bridgeport, WV.



# Jacquelyn D. Kester

## Principal



### 17 YEARS OF EXPERIENCE

#### EDUCATION

B.S., Environmental Sciences, West Virginia University, 2005

#### EXPERTISE

Section 404/401 Clean Water Act Permitting  
Section 7 Consultation under the Endangered Species Act  
Section 106 Consultation under the National Historic Preservation Act  
Aquatic Resource Delineations  
National Environmental Policy Act analyses

Ms. Kester is the Ecological Services Lead for CEC's Bridgeport, West Virginia Office. She has extensive experience in attaining baseline data for reporting and permitting projects. She is knowledgeable of permitting at the local, state, and federal levels for aquatic resource impacts associated with transportation, energy infrastructure, and site development projects. She regularly provides technical advice and assistance in the interpretation and application of federal and state laws, regulations, and Executive Orders. Ms. Kester manages Clean Water Act (CWA), National Environmental Policy Act (NEPA), and Endangered Species Act (ESA) aspects of projects, including developing scope and budget; building a team of technical resources; coordinating with the owner to develop strategies to meet the project's goals; managing budget/schedule; and delivering high-quality services.

#### PROJECT EXPERIENCE

##### **WVDEP - Division of Land Restoration, Office of Abandoned Mine Lands & Reclamation, West Virginia**

Coordinated the field effort for completion of stream and wetland delineations for a landslide repair along a roadway embankment, which serviced the West Virginia Army National Guard's Camp Dawson Facility. CEC found that the landslide was likely the result of the roadway being constructed in an area where mine spoil materials were "back flipped" onto the lower hillside. The landslide repairs plans proposed impacts to the adjacent perennial stream for which a Nationwide Permit-3 application was prepared. Oversaw the preparation of a botanical survey and report production resulting from the project location being within range of a federally endangered botanical species. Completed Section 106 coordination with the State Historic Preservation Office and prepared a waiver for submission to the West Virginia Division of Natural Resources (WVDNR) due to the perennial stream's "use designation".

##### **CNX Midstream Operating Company, LLC, West Virginia**

**Role:** Principal

Served as client contact for the preparation of proposals and oversaw invoicing and budget control on numerous well connects, laydown yards, and compression facilities. Provided overall coordination with CNXM and maintained regular and consistent communication pertaining to the planning and execution of projects. Maintained a spreadsheet to provide weekly update reports via email to the CNXM project team detailing field work progress, environmental report development progress, permit development and agency processing progress, receipt of clearances, permits, upcoming work, and outstanding issues. Ms. Kester managed the natural resource permitting activities for various midstream projects. Oversaw the preparation and performed quality reviews of nationwide permit packages, stream activity applications, and agency coordination letters for Section 7 consultation under the ESA and Section 106 consultation under the NHPA. Coordinated and managed sub-contractors for cultural resources studies with the West Virginia Division of Culture and History (WVDCH).

##### **Pope Properties, LLC, West Virginia**

**Role:** Ecological Task Manager

Coordinated field efforts for completion of stream and wetland delineations and stream functional assessments for a real estate development. Performed quality reviews of data collection and report preparation. Performed on-site agency meetings with the West Virginia Division of Natural Resources (WVDNR). Performed quality reviews of data collection and report preparation.



Civil & Environmental Consultants, Inc.

# Jacquelyn D. Kester

## Principal

### **Genesis Partners, LP, West Virginia**

**Role:** Ecological Task Manager

Coordinated the field efforts for completion of stream and wetland delineations, stream assessments, and mitigation monitoring in association with real estate projects. Performed quality reviews of reports and data collection. Attended on-site agency meetings with the EPA, U.S. Army Corps of Engineers (USACE), West Virginia Department of Environmental Protection (WVDEP), and WVDNR.

### **Doss Enterprise, LC, West Virginia**

**Role:** Ecological Project Manager

Coordinated the field efforts for completion of stream and wetland delineations for the development of a business park. Oversaw the preparation and performed quality reviews of a nationwide permit package, stream activity application, and agency coordination letters for Section 7 consultation under the ESA and Section 106 consultation under the NHPA.

### **Jay Bee Oil and Gas, West Virginia**

**Role:** Ecological Project Manager

Following an EPA Administrative Order for Compliance on Consent, Docket Number: CWA-03-2016-0063DW, Ms. Kester developed an Environmental Management System (EMS) for Jay Bee's Marcellus gas operations in West Virginia for EPA review and approval. The EMS served to enhance overall environmental performance at Jay Bee's multiple operations, and to assist their future operations in complying with applicable regulations. The EMS incorporated multiple Mandatory Environmental Plans for compliance with Sections 10, 401, 402, and 404 of the Federal Clean Water Act. Additional components developed for the EMS included environmental awareness training, an internal compliance audit plan and forms, and a corrective and preventative action system.

### **Ecosystem Investment Partners, West Virginia**

**Role:** Ecological Task Manager

Coordinated the field effort for completion of stream and wetland delineations and stream assessments. Performed reviews of data collection and report preparation for the development of large scale mitigation banking projects. Proposal preparation and budget control for Indiana bat habitat assessments and conservation plans. Coordinated with and managed sub-consultants for cultural resource studies. Attended on-site agency meetings with the EPA, USACE, WVDEP, and WVDNR.

### **Ronald Lane, Inc., West Virginia**

**Role:** Ecological Project Manager

Coordinated the field effort for completion of stream and wetland delineations and stream assessments. Performed reviews of data collection and report preparation for the development of large commercial site development. Attended client meetings to provide guidance on permitting requirements.

### **Town of Marlinton, West Virginia**

**Role:** Ecological Project Manager

Coordinated the field effort for completion of stream and wetland delineations. Performed quality review of data collection and report preparation.

### **Jewel City Church, West Virginia**

**Role:** Ecological Task Manager

Coordinated the field effort for completion of stream and wetland delineations. Performed quality review of data collection and report preparation.

### **Town of Harman, West Virginia**

**Role:** Ecological Task Manager

Coordinated the field effort for completion of stream and wetland delineations associated with an emergency repair of a waterline and sewer line following flooding. Oversaw the preparation and submission of nationwide permit packages for impacts to streams and wetlands. Agency coordination for Section 7 consultation under the ESA and Section 106 consultation under the NHPA.



## Jacquelyn D. Kester

### Principal

Preparation of stream activity applications through the OLS. Compiled documents for categorical excluded activity through the Federal Emergency Management Agency.

#### **Friends of Black Water, West Virginia**

**Role:** Ecological Project Manger

As part of a grant application submitted by the FOB, an Abandoned Mine Land Economic Revitalization Program (AMLER) grant was awarded for re-development of a trail project crossing a State Park, Monongahela National Forest, and lands impacted by historic mining activities. In coordination with the West Virginia Department of Environmental Protection's (WVDEP) AMLER staff, an Environmental Assessment (EA) was prepared for trail improvements including trail widening and relocation, pedestrian bridge improvements, and installation of new suspension bridges and scenic overlooks. The EA was prepared to meet the Office of Surface Mining Reclamation and Enforcement's (OSMRE) National Environmental Policy Act (NEPA) requirements while also addressing the U.S. Forest Service's NEPA requirements for actions located in their decision space. The proposed actions and development of the EA also had to maintain consistency with the 2006 Monongahela National Forest Land and Resource Management Plan.

#### **Water and Land Solutions, Maryland**

**Role:** Ecological Project Manager

Prepared a Prospectus for a proposed mitigation bank in Cumberland, Maryland that sought to obtain stream credits through the removal of a low-head dam on the North Branch Potomac River. The Prospectus was prepared to address obstacles identified by past stakeholders who had assessed removing the dam including: ownership of the dam; removal of contaminated sediment within the impounded zone behind the dam; potential nutrient impacts from sediments released following dam removal; and flood conditions regulated by Section 408 of the U.S. Army Corp of Engineers, Baltimore District.

#### **City of Clarksburg, West Virginia**

Coordinated the field effort for completion of stream and wetland delineations associated with the Haymond Highway over Elk Creek Bridge Replacement. Oversaw the preparation and submission of a nationwide permit package for impacts to Elk Creek associated with a deep foundation system. Agency coordination for Section 7 consultation under the ESA. Managing subconsultant for Section 106 coordination and development of a Memorandum of Agreement due to the bridge be listed under the NHPA. Preparation of stream activity applications through the OLS.

#### **Hancock County Board of Education, West Virginia\***

**Role:** Ecological Task Lead

Performed stream and wetland delineations for the development of a new elementary school located in West Virginia. Assisted in sampling benthic macroinvertebrates and biological monitoring. Prepared a Nationwide Permit 39 Pre-construction Notification with a joint 401 Water Quality Certification. Completed a jurisdictional determination site visit with the USACE. Developed an onsite, out-of-kind permittee responsible mitigation plan to compensate for permanent impacts; the plan was designed to incorporate the mitigation project into the school's science curriculum.

#### **Town of Coalton, West Virginia**

**Role:** Ecological Project Manager

Coordinated and oversaw field efforts for delineations, and bat habitat and hibernacula assessments for removal and replacement of the existing water distribution system, construction of a new water treatment plant and water tank upgrades in Randolph County, West Virginia that was funded through an AMLER Pilot Program Grant. Prepared an EA to include the project background, purpose and need, project alternatives, existing conditions, environmental effects, and associated agency activities. Prepared a clear and concise EA consistent with the structural layout provided in the OSMRE's 2019 Handbook on Procedures for Implementing the National Environmental Policy Act for execution of a FONSI.

#### **West Virginia Department of Transportation, Division of Highways, West Virginia**

**Role:** Ecological Project Manager

Coordinated and oversaw field efforts for delineations, and bat habitat and hibernacula assessments for the Patterson Creek Bridge Replacement, Monongah Pre-cast Bridge Replacement, and Tunnelton Drainage Project. Oversaw the preparation and performed quality reviews of nationwide permit packages and agency coordination letters through the USFWS, WVDNR, and WVDCH. Compiled documents for categorical excluded activities through the Federal Highways Administration.



# Jacquelyn D. Kester

## Principal

### **Mylan Park, West Virginia**

**Role:** Ecological Project Manager

Coordinated and oversaw field efforts for delineations, and bat habitat and hibernacula assessments for development of a 35.83-acre multi-level pad with 142 RV sites and four cabins in Monongalia County, West Virginia that is being funded in part by a \$3.75-million AMLER Pilot Program Grant. Prepared agency consultation letters for submission to the WVDNR, WVDCH, National Resources Conservation Service (NRCS), Monongalia County Floodplain Coordinator, WVDEP's Division of Air Quality, and Region VI Planning and Development Council in order to solicit comments and maintain compliance with federal, state, and local laws, and executive orders. Prepared an EA to include the project background, purpose and need, project alternatives, existing conditions, environmental effects, and associated agency activities. Prepared a clear and concise EA consistent with the structural layout provided in the OSMRE's 2019 Handbook on Procedures for Implementing the National Environmental Policy Act for an anticipated execution of a Finding of No Significant Impact (FONSI).

### **Mountaineer Gas Company, West Virginia**

**Role:** Ecological Project Manager

Managed the natural resource permitting activities for various distribution pipelines. Oversaw the preparation and performed quality reviews of nationwide permit packages, stream activity applications, and agency coordination letters for Section 7 consultation under the ESA and Section 106 consultation under the NHPA.

### **Allegany County, Maryland**

**Role:** Ecological Task Manager

Coordinated the field effort for completion of stream and wetland delineations for two stream sealing projects to prevent stream loss into the underlying deep mines. Sand Spring Run involved the relocation of a 798 linear foot long portion of Sand Spring Run to its natural contour, resulting in 726 linear feet of restored stream channel. Woodland Creek / Staub Run re-aligned a 1,410 linear foot long portion of Woodland Creek and a 1,846 linear foot long portion of Staub Run to their natural contour, resulting in 3,172 linear feet of restored stream channel. Worked cooperatively with the Maryland Department of the Environment-Abandoned Mine Land Division for the preparation of joint permit applications, including Non-tidal Wetlands and Waterways Permits and Nationwide Permit-27. Completed agency coordination for Section 7 consultation under the ESA with the United States Fish and Wildlife Service (USFWS), Chesapeake Bay Field Office and Section 106 consultation under the National Historic and Preservation Act (NHPA) with the Maryland Historic Trust.

*\* Work performed prior to joining CEC*

## **TRAINING**

40-hour Wetland Delineation Course, March 31, 2011

Advanced Hydrology for Jurisdictional Determinations, April 19, 2012

Identification of Sedges, Grasses, and Rushes, December 19, 2012

Connectivity of Streams and Wetlands to Downstream Waters, November 14, 2013

NEPA: Writing the Perfect EA/FONSI or EIS, February 16, 2016

Endangered Species Act Section 7 Consultation Training, August 25, 2016

Allegheny County Community College: A to Z Grant Writing, May 7, 2021

OSMRE's Virtual Public Briefing on the Bipartisan Infrastructure Law, June 9, 2022

## **PROFESSIONAL AFFILIATIONS**

Harrison County Chamber of Commerce



# Lucas A. Gardner, P.E.

## Project Manager II



### 7 YEARS OF EXPERIENCE

#### EDUCATION

B.S., Civil Engineering Technology, Fairmont State University, 2016

Mr. Gardner is a registered professional engineer in West Virginia and has contributed to the growth and success of CEC's civil / site practice in the Bridgeport office by providing high quality civil engineering design services. His experience includes performing design of site layout and grading, stormwater management systems, and erosion and sedimentation controls for various markets and clients including architects, real estate developers, municipalities, oil and gas companies, and non-profit organizations. Lucas manages and contributes to multiple phases of projects from conceptual designs and cost estimates to creation of final construction plans and permitting documents.

#### PROJECT EXPERIENCE

##### Mining

##### Beaver Creek Passive AMD Treatment, Friends of the Cheat, Preston County, WV

**Role:** Civil Designer

Performed the grading and hydraulic design of the various basins and pipes throughout the treatment system. Created construction plans including plan and profile views and details.

##### Civil / Site Development

##### General Commercial Site Development

**Role:** Civil Designer / Project Manager

##### "The Bridge" Indoor Sports & Recreation Complex, City of Bridgeport, WV

**Role:** Civil Designer

Designed and created plans for the earthwork phase and building phase of "The Bridge" Indoor Sports and Recreation complex in Bridgeport, West Virginia.

##### Charles Pointe Crossing, Genesis Partners, Bridgeport, WV

**Role:** Civil Designer

Designed and created construction drawings for the development of approximately 165 acres for commercial use in Bridgeport, WV.

##### Menards Home Improvement Stores Civil/Site Plans, Menard, Inc., WV, USA

**Role:** Civil Designer

Created the Civil/Site construction drawings for two Menards stores in West Virginia located in Bridgeport and Barboursville. Designed each site including finished grades of roads, buildings, parking, curbs, and sidewalks, and performed stormwater management design and calculations.

#### EXPERTISE

Site Layout / Grading and Earthwork Analysis

Stormwater Management / BMP Design

Erosion & Sedimentation Control / NPDES Permitting

ADA Accessibility

3D Rendering

#### REGISTRATIONS

Professional Engineer

- WV 25447

#### CERTIFICATIONS

AutoCAD Civil 3D Certified

Professional, Autodesk



## **Lucas A. Gardner, P.E.**

### **Project Manager II**

#### **Doss Business Park, Doss Enterprises, LC, Jane Lew, WV**

**Role:** Civil Designer

Contributed to the development of approximately 25 acres of pad space for the proposed business park in Lewis County. Designed the proposed grading, stormwater management features, and erosion and sediment controls. Created construction plans and NPDES permitting documents.

#### **North Central Crossroads, Ronald Lane, Inc., Clarksburg, WV**

**Role:** Civil Designer

North Central Crossroads is an approximately 400 acre site at the intersection of I-79 and US Route 50 in Harrison County, West Virginia, creating 180 acres of mixed use pad space. The project is in the early stages and will continue to develop in the coming years.

#### **Shogun Restaurant and Retail Building, WYK Architects, Clarksburg, WV**

**Role:** Civil Designer

Created the Civil/Site construction drawings for Shogun's new building at Emily Drive in Clarksburg. Site design included finished grading of the building footprint, parking, curbs, and sidewalks, and performing stormwater management design and calculations.

#### **First Exchange Bank - Whitehall, OMNI Associates - Architects, Whitehall Marion, WV, USA**

**Role:** Civil Designer

Created the Civil/Site construction drawings for the bank's location in Whitehall. Designed finished grades of entrance roads and driveways, the building, parking, curbs, and sidewalks, performed stormwater management and underground detention design and calculations, and designed utility relocations.

#### **Ten Mile Land Office, Ten Mile Land, LLC., Bridgeport Harrison, WV, USA**

**Role:** Civil Designer

Created the Civil/Site construction drawings for Ten Mile's office space in the White Oaks development in Bridgeport. Site design included finished grading of roads, the building, parking, curbs, and sidewalks, and performing stormwater management design and calculations.

#### **Emerson Commons, Emerson Commons, LLC., Parkersburg Wood, WV, USA**

**Role:** Civil Designer

Designed and created construction drawings for three phases of the expansion of Emerson Commons covering approximately 45 acres in Parkersburg, West Virginia. Performed site grading design and earthwork balance calculations, roadway and utility design, stormwater management design, and highway improvement plans for Emerson Avenue (WV Route 68).



# David A. Foster, P.L.A.

## Project Manager II



### REGISTRATIONS

- Registered Landscape Architect
- WV 090923

### 11 YEARS OF EXPERIENCE

#### EDUCATION

B.S., Landscape Architecture, West Virginia University, 2012

Mr. Foster has more than 10 years of civil/site experience. His experience covers the natural gas, site development, master planning and transportation areas. This encompasses design and permitting of gas lines, M&R Station pads, roadway and bridges, temporary and permanent waterlines, erosion and sediment control design, business & industrial park layouts, park and rec facilities, trail planning and landscape design. In addition to design he also develops 3D models, renders and animations to assist developers in showcasing their developments to potential investors.

#### PROJECT EXPERIENCE

##### **Palatine Park Phase 1, Marion County Economic Development Authority, Fairmont Marion County, WV\***

Assembled construction plans for park improvements that included a splash park, amphitheater seating, restrooms, parking lot and walkway.

##### **Palatine Park Phase 2, Marion County Economic Development Authority, Fairmont Marion, WV\***

Created construction plans for an extension of the river front walkway and revitalization of the former suspension bridge abutment. This included an overlook on the existing abutment along with historic signage and lighting.

##### **Park and Rec Master Planning WV & MD\***

Assisted in development of master plans for various municipalities. This ranges from state to city parks, county wide trail planning and state park lodging facilities.

##### **White Oaks Business Park Conceptual Planning\***

Produced numerous conceptual designs and layouts of potential development. Designs included layout and renderings for hotels, banks, restaurants, office buildings and convenience stores.

##### **Mobley to Majorsville 20" Pipeline, MarkWest Energy Partners, LP, Marshall and Wetzel Counties WV**

**Role:** Lead Designer

Worked through alignment and layout selection with MarkWest to create a 40 mile proposed route for the pipeline project. This involved various design elements including valve site locations, access roads, horizontal directional drilling, road crossings, stream and wetland crossings and property owner reroutes. After assisting MarkWest through route development, a 250 page issued for construction package was prepared for construction.

##### **Old Route 50 Road Relocation, MarkWest, Sherwood, WV**

**Role:** Designer

Assembled issued for construction plans for the road realignment. The project included rerouting approximately 600' of roadway to allow for enhanced tractor trailering access and future room for valve site additions.

##### **Structure Replacement Access Roads, Duquesne Light Company, Pittsburgh, PA**

**Role:** Designer



## **David A. Foster, P.L.A.**

### **Project Manager II**

Assisted the Pittsburgh office and client in the development of access roads and pads for new structure locations. The project involved 95 different structures along a existing high voltage transmission line which spans between Brunot Island and Crescent Township. Each pad and access road required a unique design due to topography, land owner and client requirements.

#### **US Route 30 and Ohio SR 57 Roadway Improvements , Speedway LLC, Riceland, OH**

**Role:** Designer

Developed construction plans for the new roadway improvements surrounding the proposed Speedway location. This included a lane addition to US Route 30 for new access to the site as well as a road widening of SR 57. The project also featured a future planned roadway improvement along SR 57.

#### **Lincoln High School Fieldhouse, Harrison County BOE, Shinnston, WV**

**Role:** Project Manager/Designer

Facilitated site design and coordinated with Architectural Sub Consultant for the Fieldhouse addition. Managed client contact and bid scheduling. Assisted in preparation of bidding documents and BOE requirements.

#### **WVU Towers Improvements Project, American Campus Communities, Morgantown, WV**

**Role:** Designer

Design-build project that consisted of pedestrian and vehicular circulation improvements, drainage improvements, west end plaza addition and south side plaza addition. Presented design during multiple design development meetings to nationwide project team client. Collaborated with WVU to meet design desires and requirements. Worked with contractor to create creative and cost effective options for preferred design.

#### **Kanawha Valley River and Trail Gateway, County of Kanawha, Charleston, WV**

**Role:** Planner

The Kanawha County Commission hired CEC to coordinate the planning of trail systems proposed by various organizations in the Upper Kanawha Valley (UKV), as well as address planning to develop Kanawha River access points at strategic locations that will attract not only trails but river related recreation to the towns. Attended development meetings and worked on planning team. Presented to the steering committee a draft concept for the overall plan to help create a vision of the master plan. Aided the planning team with creation of maps, illustrations and narratives

#### **Longwall Grading Plans, MPLX, Multiple**

**Role:** Project Manager/Designer

Developed a workflow for the grading analysis for MPLX. Created grading plans along the existing pipeline to aid MPLX in ROW acquisition requirements. Identified earthwork storage volume requirements and made recommendations for storage areas.

#### **Moose Lake Grading Plans, MPLX, Cameron, WV**

**Role:** Project Manager/Designer

MPLX requested that CEC perform a grading analysis of the two existing pipeline ROWs due to planned longwall mining operations. MPLX will need to expose their existing gas lines to reduce stresses caused by the longwall operations. The analysis for each ROW included, estimated required excavation yardage, spoil pile locations and topsoil locations to aid in workspace requirements and construction approach.

#### **Lincoln High School Fieldhouse, Harrison County Board of Education, Lincoln High School**

**Role:** Project Manager/Designer

CEC worked with the BOE and the Lincoln High School administration to develop plans for the fieldhouse addition to the existing fieldhouse facility. CEC sub-contracted the Architectural work to Omni Associates and mainly acted as a project coordinator to the county BOE. The addition require some minor site design work prepared by CEC.

#### **S. Georgia/S. Alabama Avenue , City of Martinsburg, Martinsburg, WV**

**Role:** Designer

Developed construction plans for S Alabama Ave, S Georgia Ave, W Stephen St and W John St including drainage corrections, street realignment, super elevation corrections, concrete curbing, ADA ramp replacements and stormwater design.



## **David A. Foster, P.L.A.**

### **Project Manager II**

#### **MGC Tunnel Hill Replacement, Mountaineer Gas Company, Cameron, WV**

**Role:** Designer

Creation of Alignment Sheets for construction as well as creation of SWPPP package for NPDES permit submittal.

#### **Smithburg Access Road to 12, MPLX, Smithburg, WV**

**Role:** Project Manager/Designer

Created plans for a 5,000' access road to an existing valve site. This design had to work with existing pad design and crossing of a multiple gas line ROW to a existing valve site. Plans were utilized for construction and permit modification drawings to the existing pad.

#### **East Dale Elementary School, Omni Associates , Fairmont, WV**

**Role:** Project Manager/Designer

Project consisted of a 8 classroom addition to the existing school site. The addition required the development of a expanded parking lot, circulation improvements and expanded playground area for the increased student enrollment. Developed preliminary site layouts to assist the Marion Count BOE in building addition options. Created design development plans for submittal to School Board Authority. Developed construction documents for final submittal to the School Board Authority. Worked closely with Architect to develop a cost effective design.

#### **Eastern Panhandle Expansion Project, Mountaineer Gas, WV**

Created alignment sheets for a 23 mile 10" steel gas line starting in Morgan County and ending in Berkeley County. This included alignment sheets for erosion and sediment control plans and construction plans.

#### **Hawks Nest State Park Improvements, WYK, Hawks Nest, WV**

**Role:** Designer

Developed construction plans for Hawks Nest Lodge Plaza and ADA access. Plans feature improved ADA access, walking trail, plaza, main entrance access, curb and gutter and new fence around pool addition.

#### **Hydraulic Analysis, Antero Midstream Partners LP, WV**

Created plan and profile sheets accompanied by spreadsheet calculations to size surface waterlines and provide pump spec requirements.

#### **Cameron Ridge Pad, MarkWest Energy Partners, Marshall County, WV**

**Role:** Designer

Developed construction plans for the Cameron Ridge M&R Pad. This included approximately 15,000 CY of earth movement to create a 2.5 Acre pad. The construction package included a access road, perimeter berm with ditch and plunge pool outfalls.

#### **Hurrigan Creek Bridge, Republic Services, Eules, TX**

**Role:** Designer

Assisted in the creation of construction plans for a 125' concrete I-girder bridge. Prepared details outlining the abutments, wingwalls, bearing pads, deck, parapet, approach slabs and girder layouts.

#### **Genevieve Maintenance Building, Antero Midstream, West Union, WV**

**Role:** Designer

Provided 3D modeling of the proposed site to assist Antero with internal discussion related to the proposed facility. Utilized infraworks software to generate still shots of the proposed site.

#### **East View Development, Chris Lane , Clarksburg, WV**

**Role:** Designer

Aided in development of the master plan and 3D animation of the planned business and industrial park. Utilized Infraworks, Adobe Photoshop and Civil 3D.

*\* Work performed prior to joining CEC*



# Thomas W. Adams, P.E.

## Senior Project Manager



### 18 YEARS OF EXPERIENCE

#### EDUCATION

B.S., Civil Engineering, West Virginia University, 2003

M.S., Civil Engineering, West Virginia University, 2005

#### EXPERTISE

Commercial Site Design  
Erosion and Sedimentation Control Design  
Stormwater Management Design  
Regulatory Permitting

#### REGISTRATIONS

Professional Engineer  
• WV 19863  
• MD 37637  
• OH 79388

Mr. Adams has experience as a project engineer and project manager in completing site development projects including commercial, residential, industrial, oil & gas, and municipal. Design experience includes site layout, grading, storm water management, erosion and sediment control, water and wastewater design, utility coordination, and NPDES permitting. Mr. Adams has an excellent understanding of construction cost estimating, permitting requirements, and bid documents preparation.

#### PROJECT EXPERIENCE

##### **Mon-Fayette Junction, HF, LLC, Morgantown Monongalia, WV\***

Project Engineer for 58 Acre Commercial Business Park in Cheat Lake. Development included multiple building pad sites ranging from 2 to 19 acres. Design included 2000 feet of roadway, stormwater conveyance, stormwater management, and E&S controls.

##### **Brooke Hills Park Cabins, Brooke Hills Park Commission, Wellsburg Brooke, WV\***

Project engineer for the design of four cabins pad sites, access road, and utility extensions. Project included West Virginia Health Department and WVDEP permitting along with public bidding.

##### **Brooke Hill Park 2016 Improvements, Brooke Hills Park Commission, Wellsburg Brooke, WV\***

Project engineer for the layout and grading of a commercial pool and three pre-cast concrete accessory buildings. Project included West Virginia Health Department and WVDEP permitting along with bidding and construction administration.

##### **Worthington Drive Pond, City of Bridgeport, Bridgeport Harrison, WV\***

Project engineer for flood control pond for the City of Bridgeport, WV. Pond was designed as a wet pond to reduce the runoff to the city's existing stormdrain system downstream of Worthington Drive while also providing recreational usage by neighboring properties.

##### **Dominion Regional Headquarters, Dominion, Bridgeport Harrison, WV\***

Project engineer for design parking lot, waterlines, gravity sewer lines, stormwater design, E&S design, & permitting for the dominion regional headquarters building in Bridgeport, WV. Project was designed and constructed to receive LEED certified.

##### **Evansdale Drive Relocation, West Virginia University, Morgantown Monongalia, WV\***

Project engineer for the relocation of Evansdale Drive on the WVU campus and adding a secondary road into Coliseum parking lot. Design included layout, grading, stormwater, and E&S. Bidding and construction administration was provided to complete the project.

##### **Milan Puskar Stadium Renovations, West Virginia University, Morgantown Monongalia, WV\***

Project engineer for design of site improvements, utility relocations (sewer, storm, electric, fiber, water), stormwater design, E&S, & permitting for the renovations of Milan Puskar Stadium at West Virginia University. Bid documents and specifications were provided for completion of the construction.



## **Thomas W. Adams, P.E.**

### Senior Project Manager

#### **Crystal Ridge Phase 2, Morgan T Development, LLC, Bridgeport Harrison, WV**

Project engineer for a 65 lot subdivision in Bridgeport, WV. Project included design of access roads, gravity sewer lines, waterlines, stormwater management, E&S, and permitting.

#### **Dorsey Knob Slide Repair, BOPARC / City of Morgantown, Morgantown Monongalia, WV\***

Project engineer for the grading of a slide repair and parking lot restoration at Dorsey Knob park. Project included stormwater design, public bidding, and construction administration.

#### **Camp Bosco Improvements, Catholic Diocese of Wheeling-Charleston, Huttonsville Randolph, WV\***

Project manager for design of trails, parking area, stormwater conveyance, and E & S for new dorm facility and campus improvements at Camp Bosco.

#### **Nazareth Farm Bridge Replacement, Catholic Diocese of Wheeling-Charleston, Center Point Doddridge, WV\***

Project manager for the replacement of an existing bridge with a precast concrete box culvert. Project included HEC-RAS modeling of the stream and construction documents.

#### **Sun Valley Industrial Park Access Road, Harrison County Commisioners, Clarksburg Harrison, WV\***

Project manager for the design of an access road into an industrial park. Project included Industrial Access Road funding through the WVDOH. Design included layout, grading, stormwater, and E&S.

#### **Preston High Meat Processing Facility, Preston County Board of Education, Kingwood Preston, WV\***

Project engineer for the design of roadway, parking lot, building pad, stormwater, and E & S. Project included a building addition to the animal processing facility and a new barn at Preston County High School.

#### **Seneca Medical Supplies Facility, Clouse Construction, Ripley, WV\***

Project engineer for a warehouse facility for Seneca Medical Supplies within an industrial park. Project included design of roadway, utilities, stormwater conveyance, E&S, & permitting.

#### **FedEx Distribution Facility, Trinity Construction, Morgantown Monongalia, WV\***

Project engineer for FedEx distribution warehouse facility in Morgantown, WV. Project included design of roadway, gravity sewer lines, stormwater management, E&S, & permitting.

#### **Grace Baptist Church Auxiliary Building, Bridgeport Harrison, WV\***

Project manager for the construction of an auxiliary building (gymnasium and classrooms) for Grace Baptist Church in Bridgeport, WV. The project included HEC-RAS analysis of Simpson Creek for fill placement in addition to layout, grading, storm, E&S, and utility design.

#### **White Oaks Boulevard Extension, White Oaks Development, Bridgeport Harrison, WV\***

Project engineer for the design and construction of 800 linear feet of a four lane boulevard extension. Project included roadway, storm, E&S, and utility design to access additional sections of a commercial business park.

#### **North Camp Subdivision, D C Develoment, LLC, McHenry Garrett, MD\***

Project engineer for a 101 lot subdivision with direct ski slope access to Wisp Resort in McHenry, MD. Project included design of access road, gravity and pressure sewer lines, waterlines, stormwater management, E&S, and permitting.

#### **Fantasy Valley Subdivision, D C Development, LLC, McHenry Garrett, MD\***

Project engineer for a 21 lot subdivision adjacent to the Fantasy Valley Golf Course in McHenry, MD. Project included design of access road, gravity and pressure sewer lines, waterlines, stormwater management, E&S, and permitting.

#### **Creekside Condominiums, Don Nemith Builders, Oakland Garrett, MD\***

Project engineer for a ten townhouse complex adjacent Deep Creek Lake. Project included design of access, parking, gravity and pressure sewer lines, waterlines, stormwater management, E&S, and permitting.



## **Thomas W. Adams, P.E.**

### Senior Project Manager

#### **Deep Creek Marina Showroom, Deep Creek Marina, LLC, McHenry Garrett, MD\***

Project engineer for a commercial boat and atv sales office in McHenry, MD. Project included design of access, parking, utilities, stormwater management, E&S, and permitting.

#### **Lodestone Golf Course, D C Development, LLC, McHenry Garrett, MD\***

Project engineer for design of E&S and permitting for the construction of the Lodestone Golf Course in McHenry, MD. Project included multiple creek crossings and coordination with planned residential developments adjacent to the golf course.

#### **Greenbrier Subdivision, D C Development, LLC, McHenry Garrett, MD\***

Project engineer for a 48 lot subdivision adjacent to the Lodestone Golf Course in McHenry, MD. Project included design of access roads, gravity and pressure sewer lines, waterlines, stormwater management, E&S, and permitting.

#### **Ten Mile Office, VanNostrand Architects PLLC, Bridgeport, WV**

**Role:** Project Manager

Project manager for site design and permitting for an office building within an existing business park. Project required site design and grading, storm water design, utility coordination, and local permitting.

#### **Alpine Lake Sewer Project, Alpine Lake Public Utility Company, Terra Alta, WV**

**Role:** Project Manager

Project manager for replacement of approximately 1,300 linear feet of a 15-inch sanitary sewer line. Project included construction plans, bidding services, and construction inspection.

#### **Mountain State Brewing Company, Desmone Architects, Bridgeport, WV**

**Role:** Project Engineer

Project engineer for the site layout, grading, storm water, utility coordination, and permitting for a restaurant within an existing business park.

#### **West End Connector, Joe DeFazio Oil Company, Morgantown, WV**

**Role:** Project Engineer

Project engineer for the development of a gas station and Dunkin Donuts facility within a developing business park. The project included site layout, grading, storm water, erosion and sediment control, and permitting.

#### **Cubby's Daycare Facility, VanNostrand Architects, PLLC, Bridgeport, WV**

**Role:** Project Manager

Project manager for site design and permitting for a child daycare facility building within an existing development. Project required site design and grading, storm water design, utility coordination, and local/state permitting.

#### **The Bridge Feature Field, ELA Group, Inc., Bridgeport, WV**

**Role:** Project Manager

Project manager for storm water design and permitting for installation of a turf athletic field at The Bridge in Bridgeport, WV. This project was a design-build project and required coordination with the landscape architect, turf installer, site contractor, and the City of Bridgeport.

#### **Ritchie County Athletic Fields Improvements, ELA Group, Inc., Ritchie County, West Virginia**

**Role:** Project Manager

Project manager for storm water design and permitting for installation of a turf surface on the existing football field, baseball field, and softball field. This project was a design-build project and required coordination with the landscape architect, turf installer, site contractor, and the Ritchie County Board of Education.

#### **Elkins High School Athletic Field, ELA Group, Inc., Elkins, West Virginia**

**Role:** Project Manager



## **Thomas W. Adams, P.E.**

### Senior Project Manager

Project manager for storm water design and permitting for installation of a turf surface on the existing football field. This project was a design-build project and required coordination with the landscape architect, turf installer, site contractor, and the Randolph County Board of Education.

#### **Bridgeport Indoor Sports and Recreation Center, Omni Associates, Bridgeport, WV**

**Role:** Project Engineer

Civil engineering services for the proposed City of Bridgeport 40 million dollar recreational complex on 55+ acres. CEC provided services to create the 55+ acre site in mountainous terrain and meet ADA regulations, the project moved over 350,000 cubic yards of earth. Project required phasing of construction to allow for permit issuances and funding to be finalized.

#### **Charles Pointe Crossing, Genesis Partners, Bridgeport, WV**

**Role:** Project Engineer

Civil engineering services for 104 acres of development creating 67 developable acres of pad sites within Charles Pointe. This was a phased project consisting of 4,000,000 cubic yards of earthwork, 4,000 linear feet of boulevard, and utility extensions.

#### **Financial Institution Sites**

##### **Ohio Valley Community Federal Credit Union, P.W. Campbell Contracting Company, Wheeling, WV**

**Role:** Project Manager

Project manager for site design and permitting for an credit union building within the City of Wheeling. Project required demolition of existing building, site design and grading, storm water design, utility coordination, and local permitting.

##### **United Bank - Weston, Adrenaline, LLC, Weston, WV**

**Role:** Project Manager

Project manager for site design and permitting for a bank building within the City of Weston. Project required building demolition, site design and grading, storm water design, utility coordination, and local permitting.

##### **First Exchange Bank - Fairmont, Omni Architects, Fairmont, WV**

**Role:** Project Engineer

Project engineer for site design and permitting for an office building near Fairmont, WV. Project required site design and grading, storm water design, utility coordination, and local/state permitting.

##### **First United Bank - Oakland, First United Bank, Oakland, MD\***

**Role:** Project Engineer

Project engineer for site design and permitting for a drive-thru and administrative building for bank operations. Project required redesign and layout of an existing grocery store lot, grading, storm water design, utility coordination, and local permitting.

##### **MVB Bank - Whitehall, MVB Bank, Whitehall, WV\***

**Role:** Project Engineer

Project engineer for site design and permitting for a bank building near Whitehall, WV. Project required site design and grading, storm water design, utility coordination, and local/state permitting.

##### **Clear Mountain Bank, Clear Mountain Bank, Oakland Garrett, MD\***

Project engineer for a Clear Mountain Bank in McHenry, MD. Project included design of parking, utilities, stormwater management, E&S, and permitting.

##### **First United Bank, First United Bank & Trust, Keyser, WV\***

Project engineer for a First United Bank in Keyser, WV. Project included design of access, parking, utilities, stormwater management, E&S, and permitting.

*\* Work performed prior to joining CEC*



## C. Ryan Haws, E.I.T.

### Project Manager III



#### 17 YEARS OF EXPERIENCE

#### EDUCATION

B.S., Civil Engineering, West Virginia University, 2005

MBA, Business Administration, University of Phoenix, 2014

#### REGISTRATIONS

Engineer in Training  
• WV 8541

Mr. Haws is an engineer with more than 15 years of experience in civil engineering, project management, and government relations. Mr. Haws is experienced in the various aspects of land development, including large-scale residential subdivision design, grading and earthwork analysis, drainage design, water, sewer, and storm water system design, and commercial/multi-family site design, including the construction management of large public/private site development projects. Mr. Haws has also worked with NPDES permitting, Asset Management Plan preparation, Abandoned Mine Land projects, Above Ground Storage Tank permitting and removal, and preliminary site evaluations.

#### PROJECT EXPERIENCE

##### Abandoned Mine Land (AML)

###### McAlpin Portals and Drainage, WVDEP, Bridgeport Harrison County, WV

Project Engineer. Ryan was responsible for responding to comments from the WVDEP on a previous submittal. This included adding additional ditches, ditch crossings, project estimates, quantities, and updating the Calculation Brief and all associated documents..

##### Above Ground Storage Tanks (AST)

###### Above Ground Storage Tank Closures, Multiple, Bridgeport Multiple County, WV

Project Engineer. Ryan developed an Above Ground Storage Tank Closure report for several Oil & Gas Companies including sample collection and agency coordination.

##### Public Sector

###### Asset Management Plans, Multiple, Bridgeport Harrison County, WV, USA\*

**Role:** Project Engineer

Ryan was responsible for the creation of an Asset Management Plan in coordination with several water utilities. This involved evaluating system processes and data, working to create a method of tracking and monitoring system assets, planning for capital improvement projects, and tracking and performing appropriate O&M tasks.

###### Comprehensive Plan Update, City of Bridgeport, Bridgeport Harrison County, WV\*

Project Engineer. Ryan participated in the creation of the most recent update to the Comprehensive Plan for the City of Bridgeport. He assisted with public meetings, stakeholder meetings, and narratives to be included in the plan update.

###### County-Wide Water Study, Doddridge County Public Service District, West Union Doddridge County, WV\*

Client Liaison. Ryan was responsible for coordinating with the Doddridge County Public Service District Board for the completion of a county-wide water study. This included participating in public meetings and outreach and field verifying information to determine current water service and evaluate future service areas throughout the county.

###### Martinsburg Public Works Expansion, City of Martinsburg, City of Martinsburg, WV

**Role:** Project Manager



## **C. Ryan Haws, E.I.T.**

### **Project Manager III**

Project engineer for the design, permitting, and construction of a new public works building for the City of Martinsburg.

#### **Public Utility**

##### **Belasco Waterline Project, City of Bridgeport, Bridgeport, WV**

**Role:** Project Manager

Ryan was the project manager for this project which included the upgrade of existing water mains and services lines for the Belasco Trailer Park project. Ryan worked closely with the City of Bridgeport and the trailer park owner to identify areas of concern and to design the best options for replacing existing water mains and service lines while minimizing resident impacts due to construction and water availability. CEC developed plans and specifications and assisted the City of Bridgeport with construction bidding services.

##### **Town of Grant Town – Water Project, Grant Town, WV**

**Role:** Project Manager

Ryan is responsible for overseeing this water system update project from preliminary design and funding application submittal through final design and construction. This project includes the replacement of various size water lines, upgrades to existing booster pump stations, and construction of an additional water storage tank. CEC worked closely with the Town to identify project priorities, develop system upgrades to address system deficiencies, and to identify and review potential funding opportunities. A funding application is currently being prepared for submittal to the USDA.

##### **Summit Park PSD Sanitary Sewer Evaluation Survey, Summit Park PSD, Clarksburg, WV**

**Role:** Project Manager

Ryan was the project manager for this Sanitary Sewer Evaluation Survey (SSES) project, which included flow meter equipment installation and monitoring, smoking testing, pump station evaluations, and manhole visual inspections. Ryan was also responsible for developing templates for tracking and reporting findings from the various aspects of the SSES process. CEC worked closely with Summit Park PSD staff to identify areas of greatest concern and to capture sufficient data through the SSES process to confirm sources of I&I and provide recommended system improvements.

##### **MUB Flow Monitoring , Morgantown Utility Board, Morgantown, WV**

**Role:** Project Manager

Ryan was the project manager for this flow monitoring project which included simultaneous monitoring of 69 sanitary sewer locations over a 6-month period. CEC assisted with the onsite review of each location to evaluate safety, installation, and data collection suitability. Ryan was responsible for managing staff, ensuring the accurate capture of flow data, and problem solving issues related to site conditions or large storm event damage. Flow meter installation and monitoring was completed in the Fall of 2021.

##### **Hutchinson CWA - Water System Upgrades, Hutchinson Community Water Association, Worthington, WV**

**Role:** Project Manager

Project manager overseeing the design, permitting, and construction of a new water line to include a new river crossing, upgrade line size, and installation of fire hydrants.

#### **Site Development**

##### **Charles Pointe Crossing, Genesis Partners, Limited Partnership, Bridgeport Harrison, WV, U.S.A**

Ryan was the project manager for Charles Pointe Crossing which involved moving 3.5 million cubic yards of earth and rock to create 67+ acres of pad-ready development sites along I-79. This project also included the design and construction of approximately 3,500 LF of water, 8,400 LF of sewer, and 7,300 LF of storm infrastructure along with 2,750 LF of roadway improvements, including curb and gutter, asphalt, sidewalk, and street lights. His responsibilities included utility planning and coordination, budget review, addendum preparation, and overall project management.

##### **Bridgeport Indoor Sports & Recreation Complex, City of Bridgeport, Bridgeport Harrison, WV**

This project involved the design for a 125 acre indoor/outdoor sports and recreation complex. Mr. Haws was responsible for managing this project from design, utility/regulatory coordination, permitting, bidding, and construction management/administration.

##### **Bridgeport Indoor Sports & Recreation Complex - Earthwork Phase, City of Bridgeport, Bridgeport, WV**

**Role:** Project Manager



## **C. Ryan Haws, E.I.T.**

### **Project Manager III**

#### **Charles Pointe Crossing - Site Development, Genesis Partners, Limited Partnership, Bridgeport, WV**

**Role:** Project Manager

#### **Bridgeport Indoor Sports and Rec Complex , Omni Associates - Architects, Bridgeport, WV**

**Role:** Project Manager

The purpose of this project is to provide site development design, geotechnical engineering, construction administration, and construction observation services for the proposed IS&RC to be located adjacent to the existing Bridgeport Recreation Complex. The City of Bridgeport has asked that the site development design and bidding documents be completed to allow for construction to commence on Contract #1 – (Earthwork) in June of 2018.

#### **Sports and Recreation Complex Feasibility Study, City of Bridgeport, Bridgeport Harrison County, WV\***

Project Engineer. Ryan was the engineering representative on the team responsible for a feasibility study commissioned by the City of Bridgeport for a future Sports and Recreation Complex. Ryan performed preliminary earthwork calculations for multiple options, analyzed existing utilities, reviewed existing Geotechnical reports and traffic studies, reviewed existing stormwater management pond capacity, and created engineering estimates for all site work related to the proposed facility. He was responsible for compiling a narrative for all engineering related issues related to the site development and construction of the Bridgeport Sports and Recreation Complex.

#### **Charles Pointe Mitigation , Genesis Partners, Limited Partnership, Bridgeport Harrison County, WV, USA**

Project Engineer. Ryan coordinated with Ecological Services to complete the submittal of the 404(B)(1) permit. This included determining Limits of Disturbance, development areas, impacts exhibit creation, and client coordination.

#### **Commercial Center Redesign , Multiple, Phoenix Maricopa County, AZ\***

Project Engineer. Ryan was the design lead for a commercial center redesign including ADA compliance, and parking lot and drainage design.

#### **Residential Site Development , Multiple, Phoenix Maricopa County, AZ, USA\***

Design Lead. Ryan worked as the design lead for several 100+ acre residential subdivisions. He worked on all aspects of the design including site layout, grading, drainage, water and sewer, stormwater, roadway, and paving and striping plans

#### **Rural Site Development , Multiple, Mesa Maricopa County, AZ\***

Project Lead. Ryan was responsible for the overall design of a subdivision with significant offsite drainage concerns. His work included low-water crossing design, culvert and hydraulic analysis, and agency coordination.

#### **Smart Storage, Ann's Run Limited Liability Company, Bridgeport Harrison County, WV**

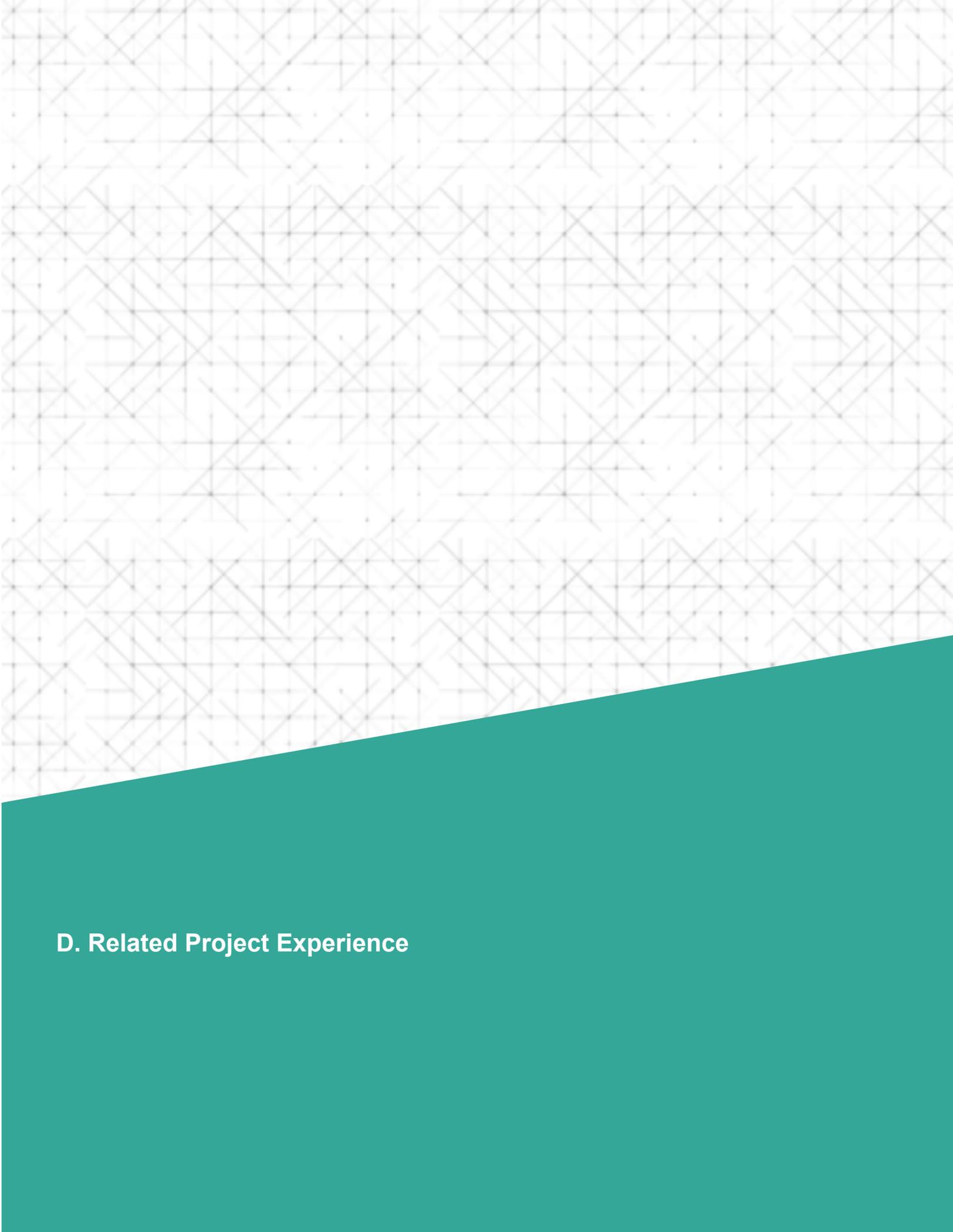
Project Engineer. Ryan performed an analysis of the existing stormwater pond storage versus the ultimate capacity of the pond. This analysis was used to help the developer determine the remaining developable property.

*\* Work performed prior to joining CEC*

#### **PROFESSIONAL AFFILIATIONS**

American Society of Civil Engineers





## **D. Related Project Experience**

# FRANCIS DRAINAGE MAINTENANCE

## OWNER/CLIENT

West Virginia Department of Environmental Protection, Abandoned Mine Lands

West Virginia Department of Environmental Protection Agency

## LOCATION

Harrison County, WV

## CEC SERVICES

Erosion & Sedimentation Control/NPDES Permitting

Site Grading/Earthwork Analysis

Site Infrastructure Maintenance/Rehabilitation

Wetland AMD Treatment

Wetlands & Waters Delineations

Detailed Design

Hydrogeologic Site Investigations

Stormwater Piping and Culvert Inspections

LiDAR Surveys – Short and Long Range

## OWNER OBJECTIVE

This project was on the site of a relic Acid Mine Discharge (AMD) remediation project previously designed and constructed in the 1990's. This passive AMD treatment project was originally constructed to mitigate AMD coming from the old Francis Mine which was previously abandoned, resulting in unstable coal refuse, erodible soils with poor vegetation, and problematic mine drainage from acid-producing materials. The passive treatment facility was coming to the end of its useful service life and required significant maintenance to continue use. Additionally, a change in land ownership resulted in the new property owner expressing a desire to completely remove the large facility and repurpose the land for agricultural purposes. The West Virginia department of Environmental Protection, Abandoned Mine Lands (WVDEP-AML) saw an opportunity to re-design the existing AMD treatment facility using modern day analysis and design techniques to significantly reduce footprint of the passive treatment facility while maintaining a satisfactory level of AMD treatment efficacy.

## CEC APPROACH

Civil & Environmental Consultants, Inc. (CEC) was contracted by the WVDEP-AML to evaluate the existing treatment facility and make recommendations for re-design while reducing the overall treatment footprint. CEC performed a forensic evaluation of the historic data provided by the WVDEP-AML to determine the in-situ treatment efficacy of the system to be re-designed. CEC's geochemists also performed field testing to validate the findings from the historical data. Armed with this baseline data, CEC prepared several rounds of conceptual designs informed by the treatment parameters to provide to both the WVDEP-AML and the landowner for consideration. The final design was composed of a series of stepped, long, and narrow treatment cells consisting of oxidation beds, polishing wetlands, and a flushable limestone bed. A Fluid Dynamics siphon encased in a concrete vault was utilized to provide a completely passive and automated flushing limestone bed component to the system. The proposed treatment facility was designed against the side of the landowner's property to maximize the space available for livestock grazing. A construction sequencing plan was prepared that allowed the contractor to divert the constant inflow of AMD around the site while construction on the proposed system was taking place. A demolition plan was developed that allowed that provided detail as to how to decommission the existing treatment system during construction of the new system. A revegetation/seeding plan was tailored to the landowner's desire to have a meadow to graze livestock. CEC also provided a balanced site in such a manner that the contractor could utilize multiple sources of borrow material depending on the WVDEP-AML's and Landowners desires during construction.

CEC delivered preliminary design plans complete with survey and subsurface investigation under an accelerated timeline of 60 days from receiving Notice to Proceed. This project is anticipated to be constructed in Fall of 2023.



# LEMONT EXPANSION FOUNDATION RECOMMENDATIONS AND MINE STABILIZATION

## OWNER/CLIENT

Mt. Washington Realty

## LOCATION

Pittsburgh, PA

## CEC SERVICES

Topographic & Boundary Survey

Subsurface Investigation

Mine Stabilization Plan

Construction Phase Services

## OWNER OBJECTIVE

Mt. Washington Realty, the owner of LeMont restaurant located on Grandview Avenue in the Mt. Washington section of the City of Pittsburgh, planned an addition to the restaurant and needed a geotechnical investigation to be performed, as the restaurant is situated on a steep hillside that overlooks the rivers and the City.

## CEC APPROACH

CEC was retained by the restaurant owner to perform a geotechnical investigation for the addition to the restaurant. Due to the steep topography, drilling for the addition was challenging. A crane and other specialized equipment was needed to access the location of the addition. The geotechnical investigation also included researching past mining activities in the area.

CEC performed mine map and coal resources data research to investigate the occurrence of deep mining of the Pittsburgh Coal seam below the site. The research confirmed that the coal had been deep mined, and CEC presented recommendations to the owner to reduce the risk of future structural damage to the new addition by grouting the mine. Mine grouting entails drilling 6 to 8 inch-diameter hole to the mine level and pumping a mixture of cement, fly ash and water into the mine to fill the voids and stabilize the mine. The owner elected to undertake a mine stabilization program to reduce the risk of future subsidence, and CEC prepared a mine stabilization plan and specifications for the work, and provided full-time construction monitoring during the project. CEC also performed a site topographic and boundary survey for the project.



# GEOTECHNICAL INVESTIGATION FOR FIRST EXCHANGE BANK

## OWNER

First Exchange Bank

## CLIENT

Omni Associates

## LOCATION

Fairmont, WV

## CEC SERVICES

Geotechnical Engineering

Deep Mine Stabilization Plan

## OWNER OBJECTIVE

First Exchange Bank is a commercial bank with six branch offices in the local region. It was planning a new headquarters building and needed a geotechnical investigation to be performed, as the site is situated on a steeply sloping hillside. First Exchange Bank engaged Omni Associates for the project, and Omni Associates engaged CEC to perform a geotechnical investigation for the proposed structure.

## CEC APPROACH

CEC performed a deep mine map and coal research through readily available web sources to investigate the occurrence of deep mining in the area, as nearby structures were known to have had subsidence prevention efforts undertaken prior to construction. Research confirmed that Pittsburgh Coal had outcropped near the front property boundary and that deep mines were present beneath much of the site. CEC planned a boring program to confirm coal seam depths across the site as well as to check for signs of past subsidence events. CEC presented recommendations to First Exchange Bank to reduce the risk of future structural damage to the planned structures (building and retaining walls) by offering an over-excavation and replacement option along with a mine grout option.

First Exchange Bank elected over-excavation and removal for the planned building, as it was to be placed in a location near the coal outcrop where old mine works are shallow. Remaining portions of the site, where the depth to old mines is greater, are to be stabilized by a mine stabilization program. CEC prepared a mine stabilization plan and specifications for the work. The project was constructed and is complete.



# CRAFTS CREEK STREAM FLOW RESTORATION PROJECT

## OWNER/CLIENT

CNX Resources Corporation

## LOCATION

Morris Township, Washington County, PA

## CEC SERVICES

Natural Stream Channel Design

Liner Design

Hydrology and Hydraulic Analysis

Erosion and Sediment Control Design

Construction Monitoring

Construction Quality Assurance

## OWNER OBJECTIVE

CNX Resources Corporation was looking to restore and maintain flow of Crafts Creek, overlaying the E18 Enlow Fork Mine longwall mining panel, to a stable and ecologically functional stream channel. The Pennsylvania Department of Environmental Protection (PADEP) is requiring flow be restored to the streams' pre-mining condition.

## CEC APPROACH

CEC was hired to perform a stream flow restoration project on an approximately 1,000 feet section of Crafts Creek. A stable stream channel was designed utilizing geosynthetics, geotextiles, an alluvial amendment method, and natural stream channel design principles to seal the underlying fractured bedrock and thus help restore and maintain stream flow.

The stream channel grading plan was designed with reference reach data collected along Sawhill Run in East Finley Township, Washington County, Pennsylvania as well as using regional curve equations for stable stream channel characteristics such as drainage area; bankfull depth, width, and cross-sectional area; meander length; radius of curvature; and floodprone area width. The stream bankfull capacity was designed for a 2-year storm event.

The geosynthetic stream liner system utilized a geosynthetic clay liner (GCL) overlain by a Geoweb cellular confinement system to provide a barrier to infiltration into the underlying fractured bedrock. The stream liner system was designed to resist erosion from a 100-yr storm event and was installed in the upstream section of the stream restoration reach. A detailed hydrologic and hydraulic analysis was performed to determine the velocities, shear stress and stream power in order to confirm the natural channel and stream liner design geometry and stability.

The alluvial amendment method used the addition of bentonite to the subsurface alluvium and soils to create a more cohesive and lower permeable substrate soil that can improve stream flow conveyance. This method was used in the downstream section of the stream restoration reach.

An erosion and sediment control design, that minimized the impacts to water quality during construction, was provided in compliance with PADEP Chapter 102 requirements for the project. Construction monitoring and quality assurance was performed to ensure the restoration activities were built in accordance with the construction drawings and specifications. Final planting was completed in 2013.

A detailed stream restoration compliance monitoring program, which included regular field visits for five years to document the progression of the stream back to a naturally functioning and stable stream channel, was performed for the stream restoration reach following construction.



# LOWER DEMPSEY STREAM MITIGATION BANK

## OWNER/CLIENT

Ecosystem Investment Partners, LLC  
Canaan Valley Institute, Inc.

## LOCATION

Logan County, WV

## CEC SERVICES

Stream & Wetland Delineation  
Stream Assessment and Valuation Metric Computation  
Mitigation Prospectus, Banking Instrument, Plan, and Permit  
Construction Drawings and Specifications  
Construction Oversight

## OWNER OBJECTIVE

The Lower Dempsey Stream Mitigation Bank is located in Logan, West Virginia and demonstrates an innovative approach to restoration of abandoned mine lands and silvicultural practices. With over 700 acres of conservation and 8 miles of streams, Ecosystem Investment Partners, LLC (EIP) sponsored this stream mitigation bank to provide mitigation credits for unavoidable impacts in the Upper and Lower Guyandotte, Coal, Twelvepole, Tug, and Upper and Lower New watersheds. This stream mitigation bank was developed by EIP in partnership with Canaan Valley Institute (CVI) and Civil & Environmental Consultants, Inc. (CEC).

The restoration at Lower Dempsey Stream Mitigation Bank includes: restoration of streams across highwall mine benches; mine access roads built in the stream or its floodplain; failing or "hanging" pipe culverts; and severe erosion and down-cutting. Some project challenges included restoration of steeply sloping headwater streams, reclamation of mined landscapes and valleys, the construction of alluvial fans, and surface and subsurface hydrological improvement.

## CEC APPROACH

CEC was retained to provide ecological planning, assessment, plan production, and permitting services. CEC performed the stream and wetland delineations and conducted a jurisdictional determination site visit with the Interagency Review Team (IRT). CEC also performed water quality, benthic macroinvertebrate sampling and habitat scoring of streams to determine baseline conditions for credit computations using the WV Stream and Wetland Valuation Metric. CEC produced construction-level design drawings (with support from CVI) for the mitigation plans with its custom stream design application using AutoCAD® Civil 3D® software, which enables rapid design adjustments to stream grading plans. CEC assisted EIP and CVI in preparing the prospectus, MBI, and mitigation plans and with agency negotiations for the Clean Water Act 404 and 401 permits.

The Lower Dempsey Stream Mitigation Bank was completed in 2016 and is exceeding the goals and objectives of the project.



*Before Restoration*



*After Restoration*

# LOWER DEMPSEY STREAM MITIGATION BANK

## OWNER/CLIENT

Ecosystem Investment Partners, LLC  
Canaan Valley Institute, Inc.

## LOCATION

Logan County, WV

## CEC SERVICES

Stream & Wetland Delineation

Stream Assessment and Valuation Metric  
Computation

Mitigation Prospectus, Banking Instrument,  
Plan, and Permit

Construction Drawings and Specifications  
Construction Oversight

## DATES OF SERVICE

2013 to 2016

## ENGINEERING FEES

\$568K

## CONSTRUCTION FEES

\$6.1M

## CONTACT

Mr. Nick Dilks

Ecosystem Investment Partners, LLC  
5550 Newbury Street, Suite B  
Baltimore, MD 21209  
443-921-9441

## OWNER OBJECTIVE

The Lower Dempsey Stream Mitigation Bank is located in Logan, West Virginia and demonstrates an innovative approach to restoration of abandoned mine lands and silvicultural practices. With over 700 acres of conservation and 8 miles of streams, Ecosystem Investment Partners, LLC (EIP) sponsored this stream mitigation bank to provide mitigation credits for unavoidable impacts in the Upper and Lower Guyandotte, Coal, Twelvepole, Tug, and Upper and Lower New watersheds. This stream mitigation bank was developed by EIP in partnership with Canaan Valley Institute (CVI) and Civil & Environmental Consultants, Inc. (CEC).

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## CEC APPROACH

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The Lower Dempsey Stream Mitigation Bank was completed in 2016 and is exceeding the goals and objectives of the project.



After Restoration

# BEAVER CREEK PASSIVE AMD TREATMENT

## OWNER/CLIENT

Friends of the Cheat, Inc.

## LOCATION

Kingwood, WV

## CEC SERVICES

Site Grading/Earthwork Analysis

Clean Water Act, Section 401/404  
Permitting

Ecosystem Restoration

Water Quality & Sediment Surveys

Wetland AMD Treatment

Wetlands & Waters Delineations

NPDES Permitting Support

Construction Quality Assurance

Erosion & Sediment Control Design and  
Inspection

Watershed Planning and Restoration

Horizontal & Vertical Control Surveys

Topographic Surveys

Construction Management

GPS/GIS Services

## OWNER OBJECTIVE

Friends of the Cheat, Inc. (FOC) is a non-profit watershed association with the mission to restore, preserve, and promote the outstanding natural qualities of the Cheat Watershed. FOC has been recognized repeatedly over the years for unrelenting dedication and measurable success to improve the Cheat Watershed. FOC works with community stakeholders and technical experts to understand and revitalize brownfields in the lower Cheat River watershed to spur economic growth, protect public health, and promote environmentally-friendly redevelopment. Since 1995, FOC and its partners have implemented 15 acid mine drainage (AMD) treatment systems on abandoned mine lands in the lower Cheat River watershed.

The Beaver Creek AMD project site resides on pre-Surface Mining Control and Reclamation Act (SMCRA) Abandoned Mine Land (AML) of the upper Appalachian plateau. Pre-SMCRA mining had no reclamation requirements and extraction of high sulfur coal has contaminated a local watershed with high acidity, iron, and aluminum concentrations. The contaminants absolutely inhibit establishment of aquatic ecosystem and associated riparian buffer.

## CEC APPROACH

The engineering design utilizes an existing, but ecologically barren delineated waterway under the jurisdiction of the United States Army Corps of Engineers (USACE). The bulk of construction will utilize onsite fill material requiring appropriate geotechnical engineering methods. Treatment system components will utilize bell siphons and plumbing requiring tight tolerances on elevations.

CEC completed topographic surveying and biological assessment of the terrestrial and aquatic species at the site. Water quality and hydrologic data was collected specifically to drive the engineering design. Calculations and bench testing were utilized to assess contaminant loads, acid neutralization rates, metal oxidation rates, appropriate reagent tonnages, and best management practice (BMP) sizing. CEC made substantial contributions to surface stabilization and erosion and sediment (E&S) control design including the use of fill compaction keys and turf reinforcement materials.

CEC balanced a combination of treatment efficacy with BMP sizing to determine the optimal cost-benefit scenario. Reduced contaminant loads will elicit establishment of aquatic habitat and benefit a downstream trout fishery. A diverse planting plan of native grasses, hardwoods, and evergreens will stabilize the site and provide healthy riparian ecosystem. Overall the project will work toward achieving Total Maximum Daily Load (TMDL) thresholds, which is a Clean Water Act Title 319 funding objective.



Existing acid-iron conditions of UNT to  
Beaver Creek.

Header Photo: Existing acid-aluminum AMD seep discharging into pond

# LOWER DEMPSEY STREAM MITIGATION BANK

## OWNER/CLIENT

Ecosystem Investment Partners, LLC  
Canaan Valley Institute, Inc.

## LOCATION

Logan County, WV

## CEC SERVICES

Stream & Wetland Delineation

Stream Assessment and Valuation Metric  
Computation

Mitigation Prospectus, Banking Instrument,  
Plan, and Permit

Construction Drawings and Specifications

Construction Oversight

## OWNER OBJECTIVE

The Lower Dempsey Stream Mitigation Bank is located in Logan, West Virginia and demonstrates an innovative approach to restoration of abandoned mine lands and silvicultural practices. With over 700 acres of conservation and 8 miles of streams, Ecosystem Investment Partners, LLC (EIP) sponsored this stream mitigation bank to provide mitigation credits for unavoidable impacts in the Upper and Lower Guyandotte, Coal, Twelvepole, Tug, and Upper and Lower New watersheds. This stream mitigation bank was developed by EIP in partnership with Canaan Valley Institute (CVI) and Civil & Environmental Consultants, Inc. (CEC).

The restoration at Lower Dempsey Stream Mitigation Bank includes: restoration of streams across highwall mine benches; mine access roads built in the stream or its floodplain; failing or "hanging" pipe culverts; and severe erosion and down-cutting. Some project challenges included restoration of steeply sloping headwater streams, reclamation of mined landscapes and valleys, the construction of alluvial fans, and surface and subsurface hydrological improvement.

## CEC APPROACH

CEC was retained to provide ecological planning, assessment, plan production, and permitting services. CEC performed the stream and wetland delineations and conducted a jurisdictional determination site visit with the Interagency Review Team (IRT). CEC also performed water quality, benthic macroinvertebrate sampling and habitat scoring of streams to determine baseline conditions for credit computations using the WV Stream and Wetland Valuation Metric. CEC produced construction-level design drawings (with support from CVI) for the mitigation plans with its custom stream design application using AutoCAD® Civil 3D® software, which enables rapid design adjustments to stream grading plans. CEC assisted EIP and CVI in preparing the prospectus, MBI, and mitigation plans and with agency negotiations for the Clean Water Act 404 and 401 permits.

The Lower Dempsey Stream Mitigation Bank was completed in 2016 and is exceeding the goals and objectives of the project.



*Before Restoration*



*After Restoration*



# RECLAMATION OF FOUR BOND FORFEITURE SITES

## OWNER/CLIENT

Stantec, Inc.

## LOCATION

Northern West Virginia

## CEC SERVICES

Site Grading/Earthwork Analysis

Stormwater Management/BMP Design

Hydrogeology and Groundwater Modeling

Groundwater/Surface Water Remediation Systems

Coal Refuse and Pavement Neutralization

Landowner Negotiations

Topographic Surveys

Calculation Brief

Construction Plans and Specifications

Bid Estimate and Engineer's Cost Estimate

## OWNER OBJECTIVE

Stantec, Inc. is an international professional services company in the design and consulting industry that has more than 400 locations in North America and 7 locations internationally. Stantec was seeking assistance with reclamation projects at five bond forfeited sites in northern West Virginia. The sites include three RobLee Coal Company mines, one Energy Marking Company mine and one Buffalo Coal Company mine.

## CEC APPROACH

Stantec awarded CEC the contract to develop reclamation plans for the five bond forfeited sites. CEC began the project by obtaining rights-of-entry from 12 different landowners as well as having those landowners sign waivers for access roads and ponds constructed by the mine operations. In addition, CEC was tasked with developing and implementing subsurface investigations, obtaining aerial photography with field control surveys, supplementing aerial photography with onsite field surveys, obtaining soil and refuse analyses, and reclamation design.

CEC performed topographic surveying and generated construction plans and specifications for the five project sites prior to construction. Improvements to 2.5 miles of access roads also had to take place before construction could begin.

The projects involved the design of approximately 1,080,000 cubic yards of balanced earthwork, three mine seals, rock toe drains, and approximately 3,500 feet of subsurface drains. During remediation, approximately 23,500 feet of ditches were constructed, 13 sediment control ponds with outlet structures were re-constructed, and approximately 830 feet of piping was installed. CEC also managed the revegetation of approximately 165 acres.

Three of the sites have been built successfully. The fourth site is currently under construction.



# SHINNS RUN PORTAL

## OWNER/CLIENT

West Virginia Department  
of Environmental Protection

## LOCATION

Shinnston, WV

## CEC SERVICES

Site Grading/Earthwork Analysis

Stormwater Management/BMP Design

Hydrogeology and Groundwater Modeling

Groundwater/Surface Water  
Remediation Systems

Topographic Surveys

Calculation Brief

Construction Plans and Specifications

Bid Estimate and Engineer's Cost Estimate

## OWNER OBJECTIVE

The West Virginia Department of Environmental Protection (WVDEP) was seeking assistance with the reclamation design of the Shinns Run Portals Abandoned Mine Lands located near Shinnston in Harrison County, West Virginia. Past deep mining operations have captured stream flows, impacted Harrison County Route 13, and resulted in the formation of fifteen open, partially collapsed, or totally collapsed mine openings. The deep mined Pittsburgh coal seam is located in close proximity to several area homes, within the right-of-way of Harrison County Route 13, and within four vertical feet of Shinns Run Stream.

## CEC APPROACH

CEC was awarded the contract to perform engineering services for the reclamation design of the Shinns Run Portals project. CEC performed field surveying tasks to complement aerial mapping supplied by the WVDEP; developed and implemented a subsurface investigation to quantify and qualify impounded mine pools; and performed a detailed preliminary investigation to include public and private records. The preliminary investigation obtained available deep mine maps, interviewed affected landowners, evaluated construction and drill access, and evaluated sources for materials to be used in reclamation of the project.

The project involved submittal and approval of an Army Corps of Engineers permit and a Hydraulic Engineering Center-River Analysis System (HEC-RAS) hydrologic evaluation of Shinns Run to determine potential flood impacts to residents' homes from installation of low water crossings in order to successfully seal all mine openings. CEC developed plans to seal two streambeds now flowing into the abandoned mine works through subsidence features. In addition, CEC led boring and jacking operations to place a pipe beneath Harrison County Route 13 and provide hydraulic relief to an area home. Approximately 900 linear feet of ditches, 1,000 linear feet of subsurface drains, 450 linear feet of stream bank protection, and 75 feet of roadbed protection were designed by CEC.

CEC performed topographic surveying; generated construction mapping; analyzed soil test results to determine soil amendments for vigorous vegetative growth; performed hydraulic and hydrologic studies and designed ditches and pipes; developed preliminary and final design construction plans and specifications; designed mine pool dewatering operations and mine drainage treatment plans; developed an engineer's cost estimate, bid schedule, and calculation brief; attended initial on-site, preliminary design, and final design meetings.

This project is currently under construction.





# ARLINGTON (GAIN) HIGHWALL

## OWNER/CLIENT

West Virginia Department of Environmental Protection

## LOCATION

Arlington, West Virginia

## CEC SERVICES

Site Grading/Earthwork Analysis

Stormwater Management/BMP Design

Hydrogeology and Groundwater Modeling

Groundwater/Surface Water Remediation Systems

Topographic Surveys

Calculation Brief

Construction Plans and Specifications

Bid Estimate and Engineer's Cost Estimate

## OWNER OBJECTIVE

The West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands oversees and facilitates the resolving of public safety issues as mine fires & subsidence, hazardous highwalls, mining-impacted water supplies, open shafts and portals, and other dangers resulting from mining before 1977. Such practices were established by the Surface Mining and Control Act and the creation of the Office of AML&R in 1981. The Office of Surface Mining provides oversight to the Office of AML&R.

The WVDEP, Office of Abandoned Mine Lands requested proposals to provide design services to eliminate falling/entrapment hazard from a previous reclamation operation.

## CEC APPROACH

CEC performed a field visit to identify the problem area and make recommendations for elimination of the hazard. CEC provided GPS field survey tasks to map the problem area.

The project involved 570 linear feet of sediment control; 210 feet of ditches; 260 feet of pipes; 130 linear feet of subsurface drains; one manhole; one drop inlet; one headwall; one acre of Revegetation; topographic surveying to generate project mapping; hydraulic studies and design for ditches and pipes; sediment control design; revegetation plan; preliminary and final design; construction plans and specifications; engineers cost estimate, bid schedule, and calculation brief; initial on-site, preliminary design, pre-bid meeting; monthly reports and invoicing.

The project was completed in June 2015.

# McALPIN PORTALS

## OWNER/CLIENT

West Virginia Department of Environmental Protection

## LOCATION

Bridgeport, WV

## CEC SERVICES

- Geotechnical Engineering
- Site Grading/Earthwork Analysis
- Slope Stability/Retaining Structure Design
- Stormwater Management/BMP Design
- Hydrogeology and Groundwater Modeling
- Soil/Groundwater Remediation Systems
- Topographic Surveys
- Calculation Brief
- Construction Plans and Specifications
- Bid Estimate and Engineer's Cost Estimate
- Landslide Remediation

## OWNER OBJECTIVE

The McAlpin Portals Abandoned Mine Lands, located near Bridgeport in Harrison County, West Virginia, consisted of approximately 3,400 linear feet of high wall ranging from 30 to 50 feet in height, and ten collapsed mine entries, five of which were discharging acid mine drainage. The uncontrolled mine drainage runs over the hill causing further slope instability and threatening five homes located downhill.

## CEC APPROACH

CEC was awarded a contract by the West Virginia Department of Environmental Protection (WVDEP) to perform engineering services for the reclamation design of the abandoned mine lands. CEC designed and implemented a drilling program to define slip limits and testing of spoil properties for slope stability. CEC also supplemented WVDEP mapping with field surveys of important project features such as seep, slip, coal refuse boundaries, and collapsed portal locations.

CEC provided Retaining Wall/Earth Moving Design Alternatives for four slips; reclamation design with 42,000 cubic yards of excavation; 9,200 linear feet of erosion and sediment control; 5,325 linear feet of ditches; 247 linear feet of pipes; 1,317 linear feet of subsurface drains; one manhole; a Gabion Basket Retaining Wall; subsidence hole mitigation; stream bank protection; five mine seals; 23 acres of revegetation; topographic surveying to supplement existing mapping; soil physical properties testing for slope stability; hydraulic studies and design for ditches and pipes; sediment control design; revegetation plan; preliminary and final design; construction plans and specifications; dewatering and AMD Treatment Plan.

This project is currently in the final review/approval stage with the WVDEP and will be let for bid in 2018.





# HODGESVILLE (WRIGHT) MINE BLOW-OUT

## OWNER/CLIENT

West Virginia Department of Environmental Protection

## LOCATION

Hodgesville, WV

## CEC SERVICES

Site Grading/Earthwork Analysis

Stormwater Management/BMP Design

Hydrogeology and Groundwater Modeling

Groundwater/Surface Water Remediation Systems

Topographic Surveys

Calculation Brief

Construction Plans and Specifications

Bid Estimate and Engineer's Cost Estimate

## OWNER OBJECTIVE

The West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands oversees and facilitates the resolving of public safety issues as mine fires & subsidence, hazardous highwalls, mining-impacted water supplies, open shafts and portals, and other dangers resulting from mining before 1977. Such practices were established by the Surface Mining and Control Act and the creation of the Office of AML&R in 1981. The Office of Surface Mining provides oversight to the Office of AML&R.

The WVDEP, Office of Abandoned Mine Lands requested proposals to provide design services to mitigate problems associated with an unexpected mine blow-out. This project was deemed an emergency project with a very short time frame for document submittal and awarding of the construction contract. The problem area was located approximately 300 feet behind a residence. On or about March 17, 2015 a mine blowout sent uncontrolled high flows of mine water down an existing ditchline. The uncontrolled flow sent mud, debris, and sediment down the ditchline plugging an existing drop inlet and pipe beneath US Route 20 and submerging US Route 20 beneath 10 inches of water for a period of time causing the road to be closed to traffic. After the initial surge, a 25-foot diameter pool approximately three feet deep developed directly adjacent to US Route 20 with the overflow directed down the east road ditchline. The West Virginia Department of Highways had removed debris from atop the drop inlet and re-established flow through the road pipe. The outlet end of the road pipe is submerged with mud and debris with water conveyed by the road pipe welling-up out of the ground and sheet flowing into nearby ditches.

## CEC APPROACH

CEC's reclamation design included 12,500 cubic yards of excavation; two wet mine seals; 1,900 linear feet of sediment control; 531 linear feet of ditches; 116 feet of pipes; 355 linear feet of subsurface drains; one manhole; four acres of revegetation; topographic surveying to develop project mapping; soil testing; hydraulic studies and design for ditches and pipes; sediment control design; revegetation plan; preliminary and final design; construction plans and specifications; dewatering and AMD Treatment Plan; engineers cost estimate, bid schedule, and calculation brief; initial on-site, preliminary design, pre-bid meeting; monthly reports and invoicing.

The project was completed in November 2015.



# ARKWRIGHT SLURRY IMPOUNDMENT

## OWNER/CLIENT

CONSOL Energy, LLC/CNX Land  
Resources (Owner)  
Mon-View LLC. (Client)

## LOCATION

Monongalia County, WV

## CEC SERVICES

Cone Penetrometer Testing  
Geotechnical Investigation  
Settlement Evaluation  
Flood Routing  
Site Grading Analysis  
Closure Plan  
Revegetation  
Construction Support

## OWNER OBJECTIVE

After the closure of the Arkwright mining complex near Morgantown, West Virginia, CONSOL Energy, LLC (CONSOL) opted to develop the site for commercial use. CONSOL contracted CEC to generate a closure plan for an inactive fine coal refuse (FCR) slurry impoundment. FCR is material contained within a slurry generated by the coal preparation process that settles and consolidates over time.

## CEC APPROACH

CEC performed a geotechnical investigation and analysis, and provided a closure plan for the inactive FCR slurry impoundment. Piezo-Cone Penetrometer Testing (CPTU) was performed in the impoundment to assess the stability and compressibility of the FCR materials, and piezometers were installed within the impoundment and embankment.

CEC's investigation and analysis of the CPTU data determined that the impoundment and FCR was well-drained and that the FCR materials would compress up to 3.5 feet under the backfill placed during the closure of the impoundment. Consequently, no specialized treatments (such as grouting or wick drains) were needed to stabilize the FCR materials prior to development. Some areas, depending on the postdevelopment use, received fill surcharges to induce settlements prior to development. Settlement monitoring data was collected and analyzed in these areas prior to surcharge removal and final site development activities.

Closure of the impoundment entailed a complete breach of the embankment, and excavation and placement of approximately 1,300,000 cubic yards of fill. At completion, the site provided approximately 40 acres of level development area within the former mine waste disposal facility, of which approximately 30 acres were purchased by Wal-Mart Stores, Inc. for the construction of a new Wal-Mart Supercenter and Sam's Club.

# BEECH HOLLOW POWER PROJECT COAL REFUSE MINING AND RECLAMATION DESIGN AND PERMITTING

## OWNER/CLIENT

Champion Processing, Inc.

## LOCATION

Robinson Township, Pennsylvania

## CEC SERVICES

Geotechnical and Civil Engineering

Coal Refuse Reclamation and Ash  
Disposal Permitting

Geologic and Hydrogeologic  
Characterization



## OWNER OBJECTIVE

Champion Processing, Inc. required a geotechnical and civil engineering analysis for adding a co-generation power plant facility to their 600-acre coal refuse disposal facility to reclaim coal refuse for fuel and disposal of ash back on the Champion coal refuse disposal area.

## CEC APPROACH

CEC performed detailed geotechnical and civil engineering analyses for a 300 mW co-generation power plant facility, which included coordinating, performing and managing all aspects of the investigation, subsurface exploration, laboratory testing, development of soil and rock design parameters, foundation and construction design recommendations, slope stability analyses, retaining wall design, and road design.

Concurrently, CEC performed the coal refuse disposal permit modification for the existing 600-acre Champion Processing, Inc. (Champion) coal refuse disposal facility. CEC services included the design and permitting of the coal refuse reclamation and ash disposal operations, preparation of all permit application forms, acquisition of all necessary geologic and hydrogeologic data required for the application, developing coal refuse and ash strength properties and performing interim and long-term slope stability analyses, erosion & sedimentation and storm water management facility design, and coordination of the permit submittal and review process with the Pennsylvania Department of Environmental Protection.

# MARRIOTT HOTEL MINE GROUTING

## OWNER/CLIENT

Marriott International, Inc.

## LOCATION

Morgantown, WV

## CEC SERVICES

ADA Accessibility Analysis

Erosion & Sedimentation Control/NPDES Permitting

Landscape Architecture/Land Planning

Predevelopment Site Investigations

Site Grading/Earthwork Analysis

Stormwater Management/BMP Design

Sustainability Planning/Design

Utility Design

NPDES Permitting Support

Low Impact Development Design

Stormwater BMP Design and Inspections



## OWNER OBJECTIVE

Marriott International, Inc. is a public, worldwide hospitality corporation with more than 6,500 properties. Marriott was looking to construct a new hotel at the University Town Center in Morgantown, West Virginia. However, since underground coal mining was previously performed beneath the site, Marriott wanted to ensure the site was stable for construction of the new building.

## CEC APPROACH

To decrease the risk of mine subsidence, Marriott decided to grout the mine present beneath the site. CEC was selected to provide a mine grouting plan, mine grouting stabilization specifications, and construction quality control services for the grouting operations. CEC's mine grouting plan showed the drilling and grouting locations, and specifications included requirements for the materials, procedures, and testing.

CEC also provided on-site daily inspection of the grouting and testing of the materials used. A summary letter was provided, after the grouting was complete, stating that the project was performed in general accordance with CEC's plans and specifications.

This work was completed in 2015.





## **E. Certificates of Authorization**

# 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*

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**  
**C02231-00**

*Engineer in Responsible Charge: STEVEN A. CAIN - WV PE 015264  
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, 2022 - December 31, 2023**

*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.

*Scott E. Thomas Jr.*  
BOARD PRESIDENT

WEST VIRGINIA BOARD OF PROFESSIONAL SURVEYORS



**Certificate of Authorization**

Civil & Environmental Consultants, Inc.

Bridgeport, WV



**CERTIFICATE OF AUTHORIZATION # 23-5847**

This certificate is issued by the West Virginia Board of Professional Surveyors in accordance with W.Va. 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 01, 2023 through December 31, 2023**

*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 01 day of January 23

**2023**

Sefton R. Stewart, P.S., Chairman  
Lantz G. Rankin, P.S., Member



James T. Rayburn, P.S., Secretary  
Gary Facemyer, P.E., P.S., Member

Douglas C. McElwee, Esq.

Public Member



## F. Miscellaneous Forms

ABANDONED MINE LANDS (AML) CONTRACTOR INFORMATION FORM

You must complete this form for your AML contracting officer to request an eligibility evaluation from the Office of Surface Mining Reclamation and Enforcement (OSMRE) to determine if you are eligible to receive an AML contract. This requirement can be found under OSMRE's regulations at 30 CFR 874.16. **NOTE:** This form must be signed and **dated within 30 days** of submission to be considered for a current bid.

**Part A: General Information**

Business Name: Civil & Environmental Consultants, Inc.  
Tax ID #: 25-1599565  
Address: 120 Genesis Boulevard  
City, State, & Zip: Bridgeport, WV 26330  
Phone Number: 304-933-3119  
Email Address: info@cecinc.com

**Part B: Obtain an Organizational Family Tree (OFT) from the Applicant Violator System (AVS)**

If you plan to certify the existing AVS information or submit updates under Part C, you must include an OFT. Instructions for downloading an OFT from the AVS can be found at: <https://www.osmre.gov/sites/default/files/2022-02/OMB%201029-0119%20instructions.pdf>. If you require assistance you may contact the AVS Office by phone at: 800-643-9748, or by email at: [avshelp@osmre.gov](mailto:avshelp@osmre.gov).

**Part C: Certifying and updating information in the AVS**

Select one of the options, follow the instructions for the selected option, sign, and date below.

I, Steven Cain, have express authority to certify that:  
(Print Name)

- 1. Our business is listed in the AVS. The information is accurate, complete, and up to date. (If you select this option, you must attach an Entity OFT from the AVS to this form). Do not complete Part D.
- 2. Our business is in the AVS. The information needs to be updated. (If you select this option, you must attach an Entity OFT from the AVS to this form). Complete Part D to provide the missing or corrected information.
- 3. Our business is not listed in the AVS. The information needs to be added. Complete Part D to provide the information.

08/29/2023  
Date

Steven A. Cain  
Signature

Vice President  
Title

ADDENDUM ACKNOWLEDGEMENT FORM

SOLICITATION NO.: CEOI 0313 DEP2400000005

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.

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Company



Authorized Signature

08/29/2023

Date

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

**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.

(Printed Name and Title) JOSEPH ROBINSON, VICE PRESIDENT

(Address) 120 GENESIS BOULEVARD, BRIDGEPORT, WV 26330

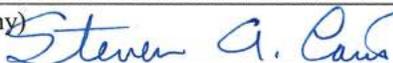
(Phone Number) / (Fax Number) 304-933-3119

(Email address) JROBINSON@CECINC.COM

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract 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/Contract 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 this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; 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.

*By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.*

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

(Company) 

(Signature of Authorized Representative)  
STEVEN CAIN, VICE PRESIDENT

(Printed Name and Title of Authorized Representative) (Date)  
304-933-3119

(Phone Number) (Fax Number)  
SCAIN@CECINC.COM

(Email Address)



Civil & Environmental  
Consultants, Inc.

120 Genesis Boulevard | Bridgeport, WV 26330 | [www.cecinc.com](http://www.cecinc.com)