TERRADON

terradon.com

Corporate:
PO. Box 519
Nitro, WV 25143
Tel: 304-755-8291

September 08, 2020

Subject: WVDEP2100000001, EOI – Engineering Design Services
Kempton Refuse Rehabilitation Project, Tucker & Preston County, WV

Attn: Guy Nisbet
Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, WV 25305

Dear Mr. Nisbet and members of the Selection Committee:

TERRADON is pleased to submit the enclosed package to provide engineering design services for the Kempton Refuse Rehabilitation project, located on the border of Tucker and Preston County, WV. The included package details the TERRADON team's qualifications, expertise, management and staffing capabilities, prior experience related to the proposed, and required documentation for consideration.

The TERRADON Team will be the Department's partner through every phase of the conceptual design and planning of the proposed projects. As your consulting team, our goal is to provide the full realm of engineering services that the Division needs to successfully complete these projects. TERRADON has more than 35 years similar experience and is capable of performing site and subsurface investigations, hydrologic and hydraulic analyses, stream assessment and design, and all other project services.

TERRADON is a full-service engineering firm headquartered in Poca, WV with offices in Lewisburg, WV and Fayetteville, WV as well as Clarksburg, WV and Washington, PA. TERRADON maintains qualified geotechnical engineers and designers as well as ancillary services including, transportation engineering, natural and cultural resource services, environmental services, and construction management and inspection services.

The TERRADON Team plans to lead these projects under the management of Jason Asbury, ASLA, CESSWI, and the lead design services of Joe Carte, PE. Both Asbury and Carte have many years of experience completing quality landslide reclamation projects throughout West Virginia.

Upon your review of the enclosed, please do not hesitate to contact me at 304-755-8291 with any questions or concerns. I look forward to hearing from you soon.

Sincerely,

Ryan Wheeler
TERRADON Corporation

Purchasing Divison
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

State of West Virginia
Centralized Expression of Interest
02 — Architect/Engr

Proc Folder: 764170
Doc Description: CEOI - Kempton Refuse Rehabilitation Project
Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2020-08-12	2020-09-10 13:30:00	CEOI 0313 DEP2100000002	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Name, Address and Telephone Number:

TERRADON CORPORATION
409 JACOBSON DRIVE
POCA, WV 25159
304-755-8291

FOR INFORMATION CONTACT THE BUYER

Guy Nisbet
(304) 558-2596
guy.l.nisbet@wv.gov

Signature X [signature] **FEIN #** 55-0687626 **DATE** 9-8-2020

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

ADDITIONAL INFORMATION:

Expression of Interest
(WV DEP Kemton Refuse Project

In accordance with West Virginia Code: 5A-3 and WV Code 5G-1-3, The West Virginia Purchasing Division is soliciting Expression(s) of Interest for the Agency, The WV. Department of Environmental Protection (WVDEP) from qualified firms to provide architectural/engineering services. The anticipated contract will be for "full service" A/E design. Aspects of the design are to include, but not be limited to; Civil, Geological and Hydrological.

The successful A/E Firm will be responsible for Design of the following:

. Access or accesses as required.
. Geotechnical analysis.
. Stabilize landslide.
. Hydrologic and hydraulic analyses.
. AMD Passive Treatment System.
. Natural Stream Design.
. Clear and grub affected areas.
. Regrade as necessary.
. Install drainage channels, underdrains, and/or other controls to safely convey water off-site.
. Condition and Revegetate all disturbed areas.
. Obtain required permits as determined at the Pre-Design Meeting.

and other related professional services to design and specify for construction as well as provide construction contract administration, per the bid requirements, specifications and terms and conditions as attached hereto.

INVOICE TO	SHIP TO
ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV25304 US	ENVIRONMENTAL PROTECTION OFFICE OF AML&R 601 57TH ST SE CHARLESTON WV 25304 US

Line	Comm Ln Desc	Qty	Unit Issue
1	EOI Engineering Design Services		

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description :

*Dates of Service are estimated for bidding purposes only.

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.

RYAN WHEELER - DIRECTOR OF BUSINESS DEVELOPMENT
(Name, Title)

(Printed Name and Title)
409 JACKSON DRIVE, POCA, WV 25159
(Address)
304-755-8291 304-755-2636
(Phone Number) / (Fax Number)
RYAN.WHEELER@TERRADON.COM
(email address)

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

TERRADON CORPORATION
(Company)

RYAN WHEELER, DIRECTOR OF BUSINESS DEVELOPMENT
(Authorized Signature) (Representative Name, Title)

(Printed Name and Title of Authorized Representative)

9-8-2020
(Date)

304-755-8291 304-755-2636
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.:

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

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

Addendum Numbers Received:
(Check the box next to each addendum received)

- ☐ Addendum No. 1
- ☐ Addendum No. 2
- ☐ Addendum No. 3
- ☐ Addendum No. 4
- ☐ Addendum No. 5
- ☐ Addendum No. 6
- ☐ Addendum No. 7
- ☐ Addendum No. 8
- ☐ Addendum No. 9
- ☐ 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.

TERRADON CORPORATION
Company

Authorized Signature

9-8-2020
Date

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

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

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

DEFINITIONS:

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

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Ferrelgas Corporation

Authorized Signature: [signature] Date: 9-8-2020

State of West Virginia

County of Putnam, to-wit:

Taken, subscribed, and sworn to before me this 8th day of September, 2020.

My Commission expires August 13, 2024, 2024.

AFFIX SEAL HERE

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
Brenda Parsons
343 Meadow Dream Lane
Nitro WV 25143
My Commission Expires August 13, 2024

NOTARY PUBLIC Brenda Parsons

TERRADON

SUBMITTED BY
TERRADON Corporation
409 Jacobson Drive
Poca, WV 25159
304-755-8291

P.O. Box 603
Clarksburg, WV 26302

PROJECT MANAGER & POINT OF CONTACT
Will Thornton, PE, PS
VP Civil Engineering
Will.thornton@terradon.com
304-729-9164

STATEMENT OF QUALIFICATIONS

WVDEP2100000002
EOI - Engineering Design Services
Kempton Refuse Rehabilitation
Tucker & Preston County, WV

Attn: Guy Nisbet
Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, WV 25305

Table of Contents

TERRADON

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TERRADON Services Overview | 1

Corporate Profile

TERRADON

FOUNDED: 1989

EMPLOYEES: 95

LOCATIONS:
Poca, WV
Clarksburg, WV
Washington, PA
Lewisburg, WV
Fayetteville, WV

SERVICES:
Civil Engineering
Environmental Engineering
Environmental Inspection
Testing & Inspection
Construction Monitoring
Construction Administration
Geotechnical Engineering
Transportation Engineering
Structural Engineering
Cultural Resources
Archaeological Assessment
Geotechnical Engineering
Land Planning & Design
Survey & Mapping
Water & Utility Design

Certified WBENC Women's Business Enterprise

CERTIFIED Women Business Enterprise
National Women Business Owners Corporation

TERRADON is the largest, woman-owned engineering firm in West Virginia and is a certified Women's Business Enterprise.

TERRADON Corporation offers a multi-faceted approach to design engineering and consulting services. For more than 30 years TERRADON staff has provided a wealth of engineering solutions blanketing West Virginia and surrounding states with successful projects. The company built its reputation on expert personnel and quality, time-sensitive service. Those same founding principles hold true today.

The firm has been recognized through numerous awards from professional organizations and agencies including the American Society of Civil Engineers, State Highway Departments, the Department of Environmental Protection and the American Institute of Architects.

TERRADON's diverse team of professionals work together on projects to offer a wide range of services in house to keep project centrally focused. By providing this range of services, TERRADON is able to work completely as a team to offer clients the most rewarding design.

TERRADON maintains professionally registered engineers, landscape architects, and surveyors as well as a competitive team of highly certified inspectors and environmental specialists.

TERRADON has experience working on projects funded by various agencies. Because of the variety of funding options for projects, TERRADON offers client support to help make funding projects easier.

TERRADON's corporate culture promotes innovation and progressive thinking. Project leaders strive to sustain customers through a wide-range of engineering offerings. TERRADON employees understand the purpose behind their services and work to cultivate lasting relationships with clients through honest, hard work.

Geotechnical Services

TERRADON

TERRADON offers some of the most experienced staff in the region for local geotechnical expertise. This team of experts brings a distinctive, specialized understanding of the difficult soil and groundwater conditions found in the Ohio Valley and Appalachian Regions of the United States. The Geotechnical group has provided investigations associated with earthen dams, mining, waste disposal, new building construction, landslides analysis and remedial design, cell and high mast towers, landfill permitting and cap design, flexible/rigid pavement design, and environmental remediation.

Services

- Test Borings
- Test Pit Excavations
- Monitoring Well and Piezometer Installation
- Soil and Rock Logging, Sampling & Testing
- Landslide Analysis and Remedial Design
- Stability Analysis
- Retaining Structure Design
- Earthen Dams
- Foundation Design
- Municipal and Industrial Landfills
- Flexible and Rigid Pavement Design
- Complete Removal for Landslide Repair
- Buttressing and Regrading
- Subsurface Drainage
- Structural Corrections
- Retaining Walls
- MSE Walls and Other Gravity Walls
- H-Piles and Lagging
- Anchors (Rock or Soil Nailing)
- Geotechnical Design

TERRADON Corporation has provided design, analysis, and construction inspection on more than 300 slip repair projects across the Appalachian Region. TERRADON is well versed in providing test boring services to slip projects and also provides other methods of slip analysis and design.

TERRADON is qualified to provide Ground Penetrating Radar (GPR) and Resistivity testing to evaluate landslides and ascertain information such as: potential failure surface, mapping bedrock, locating subsurface voids, determining the amount of displacement, subsurface anomalies, locating groundwater, and determining stratigraphy layering.

TERRADON personnel are also experienced in various hand sampling techniques such as hand auguring, dynamic and static cone penetrometer tests, and hand dug test holes. These sampling and testing techniques are beneficial for determining subsurface stratigraphy, locating groundwater, collecting soil samples for laboratory analysis, locating failure surface, and determining the landslides boundary.

Transportation & Structural Services

TERRADON

TERRADON's Roadway and Bridge Design group is one of the most respected in the region. The department is well-known for its structural design capabilities and expert knowledge in bridge erection planning. Whether the job requires project planning, preliminary engineering studies or detailed roadway design, TERRADON maintains the resources needed to successfully complete transportation projects. Success on each project is achieved by using advanced technology to produce innovative, pragmatic design. TERRADON engineers are among leading professionals experienced in an array of transportation and quality & assurance measuring services.

TERRADON's certified staff is trained to work under unique and changing task orders and to maintain quality work to clientele that creates a maintained respected relationship between TERRADON and it's client.

TERRADON provides a diverse staff of professionals capable of providing project planning and preliminary engineering services, as well as final roadway and bridge designs (plans, specifications, and estimates). The firm's transportation engineers and technicians apply the latest technology to innovative, award-winning projects. TERRADON's transportation staff has a wide range of experience that includes preparing maintenance of traffic plans, signing and pavement marking plans, utility coordination, drainage design, and right-of-way plans.

TERRADON's Transportation sector has enjoyed a long-standing relationship with several states' Departments of Transportation including the WVDOT. TERRADON has performed successful engineering design for the agency for more than 20 years. The group is led by an experienced transportation engineer and includes veteran staff with demonstrated experience.

TERRADON routinely works on transportation projects, including survey, right-of-way, utilities, and specification design and review with WVDOT personnel. Additionally, TERRADON has been recognized for outstanding engineering work on several occasions with engineering excellence nominations and awards.

Services

- Structural Engineering
- Bridge Design
- Roadway Planning & Review
- Structural Planning & Review
- Roadway Design
- Maintenance of Traffic
- Traffic Analysis
- Right of Way Plans
- Grading Studies
- Survey
- Materials Testing
- Construction Inspection
- Materials Certification

Constantly changing federal and state environmental requirements are difficult to track and can have a serious impact on businesses and other organizations. TERRADON offers a strong environmental services team to manage issues in a complex environment. Staff is well-versed on environmental permitting processes and regulations as well as site assessment and reporting.

TERRADON closely follows environmental activities on the local, state and federal levels. TERRADON has a thorough understanding of state and federal environmental permitting processes and regulations. This expertise applies to both the initial permit preparations, as well as subsequent negotiations affecting the permit. The firm's strength in addressing environmental issues is built on the diversity of its staff with credentials in chemistry, civil engineering, geotechnical engineering and geology.

SERVICES

- Environmental Inspections
- Phase I ESA
- Phase II ESA
- Phase III ESA
- Hazardous Waste Management
- Wastewater Management
- Storm Water Planning
- Air Permitting
- Risk Management Plans
- Wetland Delineation
- Tier II Reporting
- Emergency Response Plans
- Environmental Audits
- Environmental Remediation
- NEPA Compliance
- Asbestos and Lead Inspection
- Underground Storage Tanks
- Above Ground Storage Tanks
- Impoundment Stabilization & Closure
- SPCC Planning
- BMP Planning

TERRADON's experienced environmental staff routinely performs Environmental Site Inspections during construction, as well as post rainfall events to ensure compliance with current WVDPE construction stormwater NPDES Permits. TERRADON provides Waters of the US determinations, wetland delineations, Nationwide Permits as well as Individual 404/401 Permits with the Army Corps of Engineers and West Virginia Department of Environmental Protection (WVDEP). TERRADON has performed hundreds of wetland delineations using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Corps, 2012).

Construction Services

TERRADON



TERRADON offers materials testing and construction monitoring services to document compliance with project design specifications and regulatory requirements. The firm provides construction monitoring for utility, highway, and commercial construction projects. TERRADON also provides laboratory and field testing of construction materials. Engineers and technicians at TERRADON are West Virginia Department of Highways certified in Portland Cement Concrete, Hot-mixed Asphalt, Compaction and Aggregates.

Additionally, TERRADON proved Construction Management services including construction oversight, documentation, and safety procedure implementation. TERRADON has more than 35 qualified and certified construction inspectors and more than 5 qualified construction management representatives. TERRADONs team also includes environmental field inspectors, geotechnical inspectors, and geological field inspectors.

TERRADON Corporation Construction Testing and Inspection Department maintains a full service laboratory testing facility on site at the Poca, WV office. The laboratory is and staffed by qualified and certified construction inspection technicians.

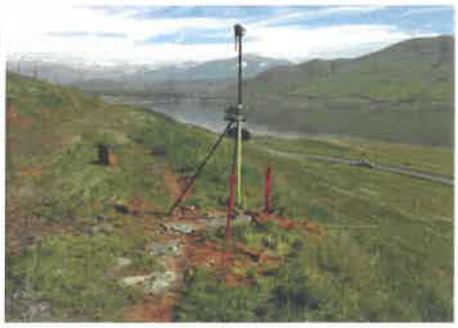
Services

- Slump of Portland Cement Concrete (AASHTO-T119)
- Air Content of Freshly Mixed Concrete (AASHTO-T196 and T152)
- Unit Weight and Yield (AASHTO-T121)
- Making and Curing of Concrete Test Specimens (AASHTO-T23)
- Compressive Strength of Concrete Specimens (AASHTO-T22)
- Fine and Course Aggregate Gradations (AASHTO-T11 and T27)
- Specific Gravity of Aggregates (AASHTO-T84 and T85)
- Atterberg Limits (ASSHTO-T89 and T90)
- Moisture Content of Soil (ASTM-D2216)
- Nuclear Compaction Testing of Soil, Stone, and Hot Mixed Asphalt
- Preparation of Certification Forms and Construction Reports
- Welder Certification
- Agency Compliance
- Floor Flatness Testing
- Fireproofing
- Masonry Testing
- Structural Steel Inspection Certified
- Welding Inspection
- Dye Penetrant Testing
- Bolt Testing
- Project Safety Monitoring
- FAA Eastern Regional Laboratories
- Steel Institute AST Inspections

Surveying & Mapping Services

TERRADON





TERRADON has been a leader in West Virginia and the surrounding region for the land surveying industry since 1989. The team has developed an extensive resume of successful surveying and mapping projects performed for a diverse group of repeat private and public sector clients. TERRADON's experienced staff of licensed professional surveyors and mappers bring expertise and proficiency to every project task.

The company is committed to staying ahead of the industry's pace by investing in state-of-the-art equipment and technology. That commitment enables TERRADON to overcome unique and challenging project conditions or obstacles, and efficiently provide the most accurate and complete information available to clients.

TERRADON has a long history of providing design and construction survey services for numerous transportation projects. Efficient and accurate results are ensured by prioritizing the use of modern technology, including state of the art GPS and robotic total stations, with the latest design software.

TERRADON maintains full-time Professional Surveyors on staff. The firm services projects through the use of in-house field survey crews who are backed by corporate staff members, including an experienced team of CAD designers. TERRADON's transportation survey group is experienced in preparing highway right-of-way plans, including courthouse research and right of way questionnaires, and writing legal descriptions for right of way take parcels, temporary construction easements and permanent drainage easements.

Services

- Mapping
- Construction Layout
- ALTA survey
- Topographic Survey
- GPS Network Control Surveys
- Aerial Mapping
- LiDAR Mapping
- Ground Penetrating Radar
- 3D Mapping

2 Staff Qualifications

Key Personnel

TERRADON

Key Staff	Education	Slip Repair Experience	Years Experience	Recent Projects	Certifications
Joe Carte, PE *Senior Geotechnical Engineer*	B.S. Mining Engineering	+ 600	36	• Huntington, WV Slip Repairs • Clarksburg, WV Slips	• Professional Civil Engineer
Chris Hancock *Geotechnical Project Manager*	B.S. Civil Engineering, Geotechnical Emphasis, WVU Tech	+50	8	• Huntington, WV Slip Repairs • Clarksburg, WV Slips	• OSHA 10 HR • APNGA Nuclear Gauge Safety
John James, PE *Senior Geotechnical Engineer*	B.S. Civil Engineering, WVU Tech	+400	53	• Huntington, WV Slip Repairs • Clarksburg, WV Slips	• Professional Civil Engineer
Warren Friend *Field Services Project Manager*	B.S. Geology, WVU	+15	5	• Clarksburg WV Slip Repairs • Confidential Client Slip Repairs	• OSHA 8, 30 & 40 HR • TWIC • SafeLand USA
Josh Holderer *Geotechnical/ Field Services Technician*	B.S. Geology, WVU	+15	5	• Clarksburg WV Slip Repairs • Confidential Client Slip Repairs	• OSHA 10 HR • TWIC • PA G.I.T • APNGA Nuclear Gauge Safety • ACI Concrete
Joe Saunders, PE *Civil Engineer*	B.S. Civil Engineering, WVU Tech	+50	35	• City of Huntington Slips, FEMA Flood Wall Slip Repairs	• Professional Civil Engineer
Will Thornton, PE, PS *Civil Engineer*	B.S. Civil Engineering, WVU Tech	+50	40	• Verizon Williamson Slip Repair • Babcock Sewell Slip Repair	• Professional Civil Engineer
Ben Prior, PE *Civil Engineering Designer*	B.S. Civil Engineering, WVU	+10	10	• Verizon Williamson Slip Repair • Babcock Sewell Slip Repair	• Professional Civil Engineer

3 References

Similar Experience Project References | 12

Mr. Jim Insco, Director of Public Works
City of Huntington, WV
800 Fifth Avenue, Huntington, WV 25701
304-696-5540
inscoj@huntingtonwv.gov

Project: Landslide Repairs & Various City Engineer Repair Projects
Location: Huntington, WV
Project Details: TERRADON provided civil engineering and design services for the improvement and repairs from various flooding and harsh weather events on roadways and hillsides in Huntington, WV.

C. Elwood Penn IV, PE, Director
WV Division of Highways, Planning Division
304-558-9629
Elwood.c.penn@wv.gov

Project: Various slip repair, sidewalk, streetscape, and recreational trail projects
Location: Statewide, West Virginia
Project Details: TERRADON provided civil engineering and design services for the various slip repair, sidewalk, streetscape, and recreational trail projects throughout West Virginia. Projects include the development of planning studies, cost estimates and construction plans for the rehabilitation and upgrades for ADA compliance of existing sidewalks and new recreational trails.

Raymond J. "R.J." Scites, PE
Director, WV Division of Highways - Engineering Division
1334 Smith Street, Charleston, WV 25301
Raymond.j.scites@wv.gov

Project: Various slip repair, highway, roadway, bridge, truss, sidewalk, streetscape, and recreational trail projects
Location: Statewide, WV
Project Details: TERRADON provided civil engineering and design services for the various slip repair, highway and roadway, bridge and truss, sidewalk, streetscape, and recreational trail projects throughout West Virginia. Projects include the development of planning studies, cost estimates and construction plans for the design services needed for each project. Ancillary services were provided in-house.

4 Staffing Plan

Proposed Key Staff Management Plan | 12

WVDEP

Project Owner / Management

TERRADON

Will Thornton, PE, PS
Project Manager

Civil Engineering
Will Thornton, PE, PS
Dakota Smith, EIT
Andrew Wagner, EIT
Ben Prior, PE
Phil Reed, PE
Kristen McClung, .PE
Clayton Gue

Structural Engineering
Joe Saunders, PE
Jamal Shanaa, PE
Robert Simmons, PE
Andrew Brenner, EIT
Rana Mutashar, EIT, PhD

Kevin Huffman
Steve Chapman
Shannon Stephens
Matt Brenner

Geotechnical Engineering
Joe Carte, PE
John James, PE
Chris Hancock
Brittany Beckwith

Surveying & Mapping
Robert Thaw, PS
Dave Brown, PS
Brian Bakanas, PS
Robert Fuller, PS
Mark Shamblin, PS

Environmental Consulting & Engineering
Jason Asbury, ASLA, CESSWI
Bill Hunt, PG, LRS
Mike Pickens
Morgan Jackson
Cristin Dolan, EIT
Katy Lavender

5 Project Approach

The TERRADON Team will approach this project with geotechnical engineering as the first order of business. Our experienced geotechnical engineers will develop and execute a boring plan based on observed site conditions. Mr. Carte, the former Geotechnical Engineer for the West Virginia Department of Transportation, will oversee this effort. Mr. Carte has performed slip remediation design all over the state, with more than 600 slip repairs performed over his career.

After the boring program is executed, we will analyze the results from two perspectives:
1) What is the correct remediation for this particular site?; and 2) Where should the repair be implemented?

After the geotechnical phase is complete, the TERRADON Team will develop construction plans and the technical specifications to rehabilitate the project property known as Kempton Refuse.

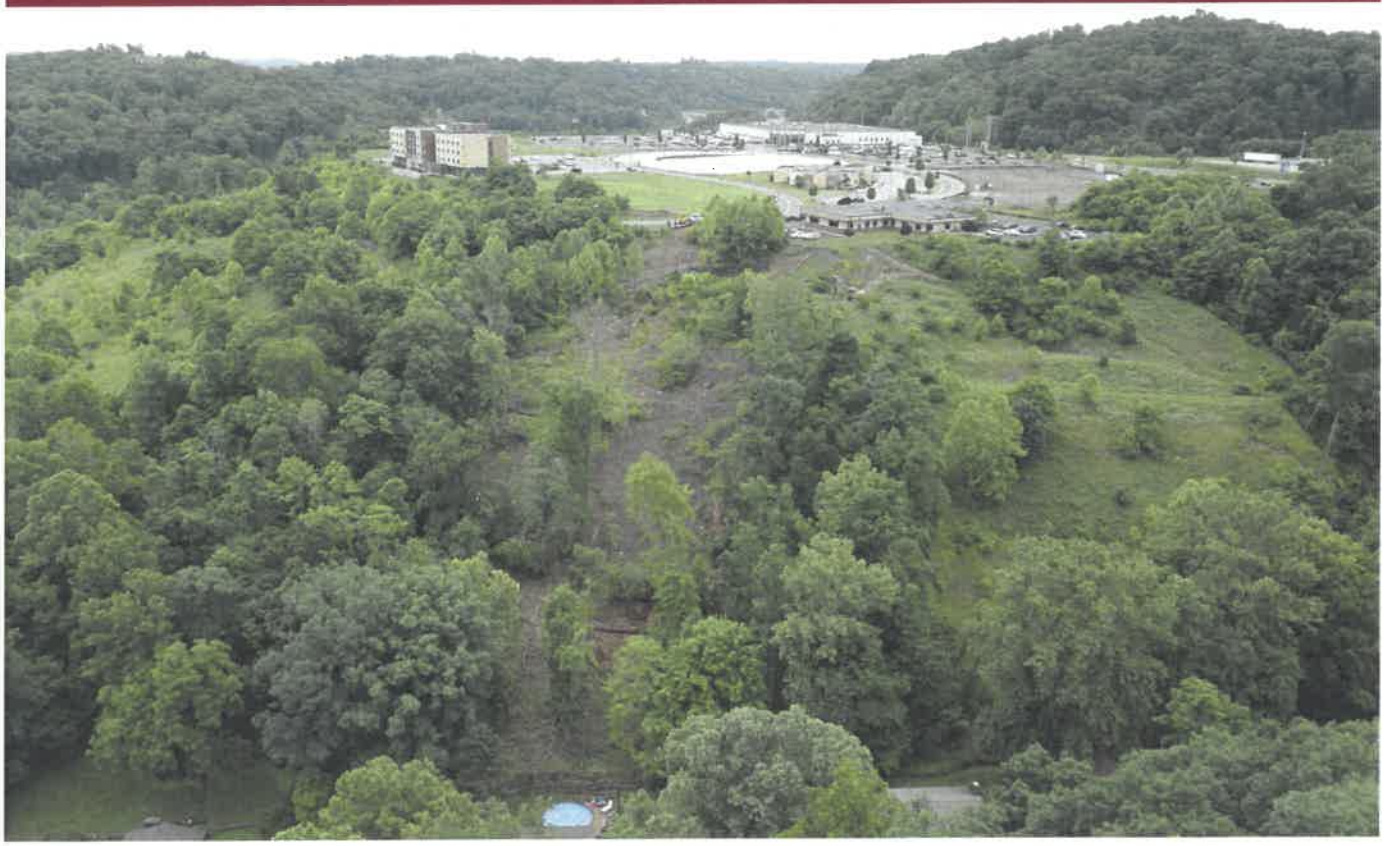
Our design plans and specifications will be developed to control any associated water with the site. Our design plans and specifications will identify the limits of disturbance, storm water controls, and will develop and detail the Sediment and Erosion Control prevention features necessary to complete the job with details to protect the environment at the forethought of the design. All disturbed areas will be regraded and revegetated, and plan quantities will be developed for the excavation and erosion and sediment control design features. Our design plans and specifications will be developed for all conditions encountered on the project site.

Consistent with the RFP, our design will be responsible for:
- Access or accesses as required
- Geotechnical analysis
- Landslide stabilization
- Hydrologic and hydraulic analyses
- AMD Passive Treatment System
- Natural Stream Design
- Clearing and grubbing of affected areas
- Regrading as necessary
- Installation of drainage channels, underdrains, and or other controls to safely convey water off -site
- Conditioning and revegetating of all disturbed areas
- Obtaining required permits as determined at the pre-design meeting
- Any other issues that arise during our project site visits as related to the remediation of slides and required BMP's for environmental controls

As demonstrated in this statement of qualifications, the TERRADON Team has all the experience and service offerings needed on this project in-house and is prepared to offer design and develop plans and specifications for all aspects of the Kempton Refuse Rehabilitation project.

6 Similar Experience

Similar Project Experience | 12



EQT Slip Repair Monitoring

TERRADON provided professional opinion throughout the landslide and pipeline repair along the pipeline right-of-way. TERRADON representatives serve as the compaction specialist for both the landslide repair and the roadway projects in both West Virginia and Pennsylvania. Staff provided real-time field management support for project engineers and project managers. Environmental professionals provided environmental monitoring including sediment and erosion control.

Jacksonburg, WV—
Wetzel & Doddridge Counties, WV
Slip 130
Slip 63
Slip 116
Slip 126
Slip 153

Cranberry Township, PA
H-157 Franklin Road/Cumberland Road
D-494 Warrendale Road
D-494 Warrendale Road 2
D-494 Pinkerton Road
D-494 English Road

King Coal Highway Waste Stability Design, *Mercer County, WV*

TERRADON Corporation was contracted by the prime contractor, Kanawha Stone Company, to provide geotechnical engineering design and review on the King Coal Highway project in Mercer County, WV.

The proposed toe area of waste fill for the project was located within the flood area from the Green Valley Lake located near Princeton, WV and was inundated as much as 10-feet from the Probable Maximum Precipitation (PM) event. TERRADON performed two test pit samples to determined laboratory testing for ground stability. The unique site layout of the project posed significant geotechnical and foundation concerns for construction and settlement. TERRADN Corporation was responsible for remedying the stability threat by designing a waste area for excess excavation material to withstand a flood event. The project included more than 2,000,000 cubic yards of excavation on an approximate 200 foot slope.

The waste fill for the project consisted primarily of excavated rock material from the nearby road cut. Additionally, durable sandstone was placed in the waste fill at the toe area and within the potential flooded area below elevation 2514 feet. TERRADON's design using conservative parameters was designed to resist rapid drawdown.

AEP Slide Repairs, *Logan County, WV*

TERRADON is currently providing geotechnical design services for Appalachian Electric Power (AEP) for a slide in Logan, WV. The area of the slide consists of 100' of riverbank and the adjacent areas, due to erosion from high water and river movement. Performed the geotechnical investigation study and slide repair recommendations. Currently installing slide repair and 200 ft. of riverbank rip rap.



Orchard Drive Slip Repair - FEMA, *Barboursville, WV*
TERRADON recently completed a study of alternatives and is currently working on the design of correction for a geotechnical slide on Orchard Drive in Barboursville, WV. This slide is approved for assistance from FEMA.

Chesapeake Energy Hamlin Slide Repair, *Logan County, WV*
TERRADON provided Geotechnical services to Chesapeake Energy - Hamlin on the slide project located at Chapmanville in Logan County, West Virginia. TERRADON provided a Nationwide (13) permit for stream bank stabilization through the Corps of Engineers. The project scope was designing the repair to the landslide that impacted, filled in 350 linear feet of stream, and filing the permit to restore the stream.

Gerath Slide Repair, *Lewis County, WV*
The Gerath Landslide project is located adjacent to the Weston/Buckhannon exit off Interstate 79 near Weston, in Lewis County, West Virginia. The site is accessed by turning left (if coming from Charleston) from the exit ramp onto U.S. Route 33. The project area consisted of three landslides: one above the access road to RPM Salvage and two below. The two slides below the road were blocking the stream below and threatening the stability of the access road. The slide above the road was being addressed in this project. The remedial measures for this project included establishing positive drainage around the landslide, removal of the landslide material to a waste area, installing underdrains and riprap buttresses, revegetating all disturbed areas, and resurfacing the existing road in the project area after construction is completed.

FEMA Flood Damage Slide Repairs, *Wayne & Lincoln County, WV*
TERRADON completed engineering consulting services for the repair of thirteen (13) FEMA-Approved slides for the West Virginia Department of Transportation. Projects involved the preparation of construction contract plans and related documents, surveying, geotechnical evaluations and utility coordination and other related work as required for slide repairs. The projects were located on various roads throughout Wayne and Lincoln County, West Virginia. TERRADON completed plans for embankment failures, damaged asphalt pavement, eroded shoulder stone and silt filled ditches. The work on these projects included various sized piling walls with concrete lagging, maintenance of traffic, repair of asphalt and stone shoulder, cleaning of ditches and guardrails.

WVDOH Emergency Flood Repairs, *Kanawha County, WV*
TERRADON Corporation was responsible for engineering design for nine emergency flood relief efforts by the WVDOT in the summer of 2016. The projects were completed in response to massive flooding near Clendenin, WV in June of 2016. TERRADON served as a subconsultant to the contractor performing emergency relief and tasks were completed in a design-build fashion in order to expedite the relief efforts. Bridge Design The projects included the design of two, adjacent box beam, one-lane bridges approximately 15' wide; East Porter Creek Bridge and West Porter Creek Bridge. TERRADON performed hydraulic analysis and designed both bridges to



current WVDOT standards. The bridges were not in-kind replacements. West Porter Creek Bridge was nearly 39' long and East Porter Creek Bridge was 77' long. Piling Walls TERRADON designed five pile and lagging walls along Queen Road in order to correct landslides that occurred as part of the flood. The projects all utilized predrilled pile and lagging structures to correct the slips. Culvert Crossings TERRADON's engineers also designed two culvert crossings in the Clendenin area. Crossing one utilized a reinforced concrete box culvert approximately 40' long. Crossing two utilized an HDPE culvert and was also approximately 40' long. Each culvert crossing included hydraulic studies and engineering design that met current WVDOT standards. The projects in whole began in early July of 2016 and were completed in January of 2017.

VA Medical Center Slip Repair, *Huntington, WV*

This Project involved the evaluation, exploration, and design remediation of a slip that has been observed at the Huntington VA Medical Center, Located at Spring Valley Drive, Huntington, WV. TERRADON performed Geotechnical investigation for the 1300 cubic yards of soil that involved drilling seven borings to assess the subsurface and rock conditions, we also performed a Topographic survey to include the location of the geotechnical borings and generated a Topographic Map of the site area. Using this information, TERRADON developed a design, which involved working drawings and specification, and construction bid Documents.

Confidential Energy Client, Ground Penetrating Radar (GPR) Surveys

TERRADON provided geophysical services on multiple midstream oil and gas projects for a confidential client located in West Virginia, Pennsylvania and Ohio. TERRADON laid out and collected GPR profiles in the field with the scope of disclosing any anomalies such as unmarked pipelines, utilities or voids present within the project areas. Any anomalies disclosed were marked out in the field in accordance with the client's specifications. Upon completion of the field work the data was post processed and reviewed. A detailed letter report and location sketch were submitted to the client.

FEMA Flood Damage Slide Repairs, *Wayne & Lincoln Counties, WV*

TERRADON completed engineering consulting services for the repair of thirteen (13) FEMA-Approved slides for the West Virginia Department of Transportation. Projects involved the preparation of construction contract plans and related documents, surveying, geotechnical evaluations and utility coordination and other related work as required for slide repairs. The projects were located on various roads throughout Wayne and Lincoln County, West Virginia.

TERRADON completed plans for embankment failures, damaged asphalt pavement, eroded shoulder stone and silt filled ditches. The work on these projects included various sized piling walls with concrete lagging, maintenance of traffic, repair of asphalt and stone shoulder, cleaning of ditches and guardrails.

57 Edgemont Road, Retaining Wall Repair, *Huntington, WV*

TERRADON contracted with the City of Huntington office of Public Works to provide plans for

the replacement of a collapsed retaining wall that supported Edgemont road. The replacement wall was a cast in place concrete cantilever on spread footings, and was over 105' long, with heights varying from 6.5' to 10.8'. A layer of AASHTO #57 stone was placed behind the wall for a minimum of 2' thick for the full height. The pavement section was then repaired in the area of work. All work was specified in accordance with WVDOT requirements.

Honeysuckle Lane Slip Remediation, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Honeysuckle Lane. The remediation consisted of a 3' thick rip rap blanket that extended from the edge of existing pavement to the existing drainage ditch below, or approximately 22' for approximately 33' along the roadway.

Crestmont Drive Slip Remediation, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Crestmont drive. The remediation consisted of the installation of an 88' long pile and concrete lagging retaining wall and the installation of rip rap blankets. The retained height was 6', with piles socketed into rock. The rip rap blanket consisted of a 3' blanket that extended from the edge of pavement to a natural bench below, or approximately 70' for approximately 80' along the roadway. A new concrete moment slab was installed in the area of the rip rap blanket for additional edge stability. The asphalt pavement was repaired along the entire length of the project. All work was specified in accordance with WVDOT requirements.

Altamont Drive Slip Remediation, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Altamont drive. The remediation consisted of the installation of a 60' long pile and concrete lagging retaining wall. The retained height was 8', with piles socketed into rock. A new concrete moment slab was installed behind the wall for additional edge stability. The asphalt pavement was repaired along the entire length of the project. All work was specified in accordance with WVDOT requirements.

Foster Road (#1) Slip Remediation, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Foster Road. The remediation consisted of the installation of a 52' long pile and concrete lagging retaining wall. The retained height was 6', with piles socketed into rock. The wall was installed on the uphill side of the road in order to prevent debris from the active slip from entering the roadway. All work was specified in accordance with WVDOT requirements.

Fern Street Slip Remediation, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans and specifications for a project to be let as a design-build project for slip remediation along Fern Street. The proposed limits of remediation were approximately 180' long, and required a pile and concrete lagging retaining wall with an approximate height of 24', with piles socketed into rock. Asphalt repair in the area of the slip was anticipated. All work was specified in accordance with WVDOT requirements.

3.5 Alley Improvements, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for the milling and asphalt pavement overlay for two blocks of 3.5 alley. The intent of the project was to improve drainage, and remove areas of standing water along the project limits.

Riverfront Park Improvements, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for the repair of a 30' long test section of the ailing seawall. Remediation consists of removal of the

existing concrete sidewalk and excavation of the top 5' of soil for sheet pile inspection. Upon verification of sheet pile integrity, a waler is to be installed on the back face of the sheet piling along with the installation of helical tie backs. After installation, the work area is to be restored and monitored for performance to insure long term durability of the repair. Once the repair has been verified as suitable, the repair will be installed on the full length of the wall.

McCoy Road Slip Remediation, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Foster Road. The remediation consisted of the installation of a 112' long pile and concrete lagging retaining wall. The retained height was 12', with piles socketed into rock. The wall was installed on the downhill side of the road in order to stabilize the roadway and prevent further movement if the slip below the wall persists. The asphalt roadway section in the area of the wall was then reconstructed. All work was specified in accordance with WVDOT requirements.

South Park Drive Slip Remediation, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Foster Road. The remediation consisted of the installation of a 40' long pile and concrete lagging retaining wall. The retained height was 6', with piles socketed into rock. The wall was installed on the downhill side of the road in order to stabilize the roadway and prevent further movement if the slip below the wall persists. The asphalt roadway section in the area of the wall was then reconstructed. All work was specified in accordance with WVDOT requirements.

Foster Road (#2) Slip Remediation, *Huntington, WV*
TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Foster Road. The remediation consisted of the installation of a 92' long pile and concrete lagging retaining wall that tied to the existing wall for cosmetic considerations. The retained height was 6', with piles socketed into rock. The wall was installed on the uphill side of the road in order to prevent debris from the newly formed slip from entering the roadway. All work was specified in accordance with WVDOT requirements.

WVDOH Emergency Flood Repair Bridge Design, *Kanawha County, WV*
TERRADON Corporation was responsible for engineering design for nine emergency flood relief efforts by the WVDOT in the summer of 2016. The projects were completed in response to massive flooding near Clendenin, WV in June of 2016. TERRADON served as a subconsultant to the contractor performing emergency relief and tasks were completed in a design-build fashion in order to expedite the relief efforts. Bridge Design The projects included the design of two, adjacent box beam, one-lane bridges approximately 15' wide; East Porter Creek Bridge and West Porter Creek Bridge.

TERRADON performed hydraulic analysis and designed both bridges to current WVDOT standards. The bridges were not in-kind replacements. West Porter Creek Bridge was nearly 39' long and East Porter Creek Bridge was 77' long. Piling Walls TERRADON designed five pile and lagging walls along Queen Road in order to correct landslides that occurred as part of the flood. The projects all utilized predrilled pile and lagging structures to correct the slips.

TERRADON's engineers also designed two culvert crossings in the Clendenin area. Crossing one utilized a reinforced concrete box culvert approximately 40' long. Crossing two utilized an HDPE culvert and was also approximately 40' long. Each culvert crossing included hydraulic studies and engineering design that met current WVDOT standards. The projects in whole began in early July of 2016 and were completed in January of 2017.

Shabbyroom Hollow Complex, *McDowell County, WV*

The Shabbyroom Hollow project was an approximately 10 acre complex located along Shabbyroom Branch in McDowell County, West Virginia, near the community of Roderfield. The site consisted of two coal refuse piles and several mine portals in various conditions, including collapsed portals, open portals and draining mine portals. Both refuse piles had areas of steep, unstable and barren slopes and were the primary source of high sediment loads to Shabbyroom Branch. The subsequent sediment deposits in Shabbyroom Branch resulted in a significant reduction of the flow carrying capacity of Shabbyroom Branch, and if the refuse piles collapsed into the adjacent stream, significant flooding would have occurred. The open mine portals were easily accessible and represented a significant life safety hazard from roof falls, potentially deadly gases and other hazards. The draining mine portals were in danger of collapsing and stopping the dewatering of the mine openings, potentially leading to catastrophic blowouts and subsequent downstream flooding. Several residents were also using the draining portals as their primary water source.

The purpose of this reclamation program was to regrade the refuse piles to stable slopes, provide proper stabilization with vegetative cover and permanent drainage channel improvements, and safely seam the open and draining mine portals. Generally, refuse piles were regraded to stable slopes and permanent drainage patterns were established. A 60" pipe was necessary to carry the creek at one of the refuse piles to regrade the refuse pile in-place, as opposed to hauling material to a waste area off site. Where refuse piles toe into the creek, stream bank protection was provided. All mine portals were closed with an appropriate mine seal. Bat gates were also installed in all of the open mine portals. Underdrains and mine drain systems were installed to alleviate wet areas in several residents' yards. Several cisterns were installed to enable residents to continue to utilize the mine water as their primary source of water where necessary. All disturbed areas were revegetated or otherwise stabilized with structural methods.

Gains Highwall Project, *Harrison County, WV*

The Gains Highwall project consisted of three sites located in Harrison County, West Virginia, near the city of Clarksburg. The site occupied approximately 17 acres of conglomerate land area. The purpose of this reclamation program was to regrade the refuse pile and highwall to stable slopes, provide proper stabilization, with vegetative cover and permanent drainage channel improvements and safely seal the open draining and surcharging mine portals. Generally, the refuse pile was regraded to stable slopes and permanent drainage patterns were established. The highwall was regraded to a stable slope by breaking down the top of the highwall and encapsulating the weathered shale strata to prevent further weathering and collapse of the sandstone strata above. Permanent drainage patterns were established. The slip area was regraded to stable slopes and permanent drainage patterns were established. The mine portal contributing the saturation of the slip area was allowed to dewater by installing a horizontal bore. All mine portals were closed with an appropriate mine seal and several horizontal bores were installed to provide permanent and controlled dewatering and permanent drainage patterns were established. Bat gates were also installed in all of the open mine portals. Underdrains, drop inlets and Mine drain systems were installed to alleviate wet areas in several residents' yards. The subsidence area was repaired and a stable drainage channel was provided to alleviate surcharging of the mine workings. Several areas of scattered refuse were soil covered and seeded. All disturbed areas were revegetated or otherwise stabilized with structural methods.

Lilbern Pritt High Walls, *Barbour County, WV*

The Lilbern-Pritt Highwall Project is located in Barbour County, West Virginia, near the town of Junior. The site consists of a total of six highwalls, and in the initial design phase, areas of wetlands had to be delineated in order to avoid disturbance of any wetland area. Several wetland areas were defined in the project, and as a result, a significant portion of highwall 1 was left un-reclaimed, along with all of highwall 2, highwall 4, and highwall 5.

Additional work included a gabion basket retaining wall, along with ditch design to carry mine conveyance to eliminate a foundation problem at a nearby residence at highwall 1, and soil cover over mine refuse leading to a large wetland at highwall 5.

For the gabion basket retaining wall, a design study was performed to investigate several alternatives to reclaim a very difficult site immediately behind a residence. Alternatives included soil nails, rock anchors, wire net draping, reinforced concrete retaining walls, and gabion basket retaining walls. Considerations for the study were cost, constructability, and future maintenance. The gabion basket retaining wall proved to be the best overall solution for the site.

After work was begun in the area of highwall 3, an existing county route was discovered which runs along the bench in front of highwall 3. The county route location was not clearly defined, but according to deeds for the properties adjacent to the county route, the county route served as a property boundary. Reclaiming the refuse and correcting steep slopes on the refuse in the vicinity of the wall was going to require disturbing the county route, and possibly relocation, and as a result the correct location of the county route had to be determined in order to re-establish property lines at the conclusion of the project.

Mallory (Gibson) Portals, *Logan County, WV*

The Mallory (Gibson) Portals project was located in Logan County, near the town of Mallory. This project consisted of 57 portals that needed to be sealed, two of which were draining and required ditch design to carry the mine drainage to a stream below the mine portals. Many of the mine portals appeared to be shallow openings which may have originally been used for house coal, but more than half of the portals were deep. Nearly all the mine portals received mine seals with bat gates, but a few of the very shallow portals received mine seals without bat gates.

In addition to the mine seals, two gas lines had to be relocated to allow access to the project site. Below the portals, in the town of Mallory, underdrain was installed to correct wet areas on residences properties. Also in the town of Mallory two major culverts were designed to replace existing pipes that were collapsed or filled with sediment. In order for the culverts to be replaced, existing waterline had to be relocated and guardrail had to be installed on either end or the two major culverts.

At the beginning of the design, a drainage study was performed to compare culverts against open channel reconstruction for a portion of the watercourse through the town. In the existing condition, two culverts were used to carry the stream under two roads. Our scope of services included replacing the two pipes, but there was an area between the two pipes that was an open channel. The drainage study compared alternatives and costs of the for the area between the two culverts.

The Garden Ground Highwalls, *Fayette County, WV*

Phase 1 and 2 projects were located in Fayette County, West Virginia, near the Community of Glen Jean. The projects contained several sites occupying approximately 433 acres of conglomerate land area consisting of approximately 12 miles of dangerous highwall. The highwalls ranged in height from 20 to 70 feet. The slopes were steep and property owners were concerned about the possibility of falling debris. The sites also consisted of several coal refuse piles and in excess of 100 mine portals in various conditions, including collapsed portals, open portals and draining mine portals. The refuse piles had areas of steep, unstable and barren slopes that were a primary source of high sediment load to the surrounding streams. The open mine portals were easily accessible and represented a significant life safety hazard from roof falls, potentially deadly gases and other hazards. The draining mine portals were in danger of collapsing and stopping the dewatering of the mine openings potentially leading to catastrophic blowouts and subsequent downstream flooding. Dangerous mine structures also existed on several of the sites. Several dangerous impoundments also existed on the sites. These dangerous

impoundments could potentially collapse leading to catastrophic downstream flooding. The purpose of the reclamation program was to regrade the highwalls to a stable slope by using the available mine spoil that existed on the adjacent strip benches or by breaking down the highwall where available mine spoil quantities were insufficient. Very few highwalls had to be broken down as the available mine spoil was of sufficient quantity in most cases. Proper stabilization, with vegetative cover and permanent drainage channel improvements were provided. Generally, the refuse piles were regraded to stable slopes, soil was covered and seeded and permanent drainage patterns were established. All of the dangerous impoundments were drained in a controlled manner and the soft bottom material was mucked out and allowed to dry. A rock blanket was then provided in the bottom of the impoundments and the dried material was then utilized in the backfilling of the impoundments and highwalls. All mine portals were closed with an appropriate mine seal. Bat gates were also installed in all of the open mine portals. Underdrains and Mine drain systems were installed to alleviate wet areas, impoundments and further saturation of highwall backfill areas. The dangerous mine structures were removed and disposed of at an approved landfill. Several barren areas of scattered refused were also soil covered and seeded. All of the required erosion and sediment control measures were installed prior to construction. Additional erosion and sediment control measure were installed and maintained during construction. All erosion and sediment control structures were removed after construction, once vegetation was reestablished. All disturbed areas were revegetated or otherwise stabilized with structural methods.

Morgan Run PA #2, *Preston County, WV*
The Morgan Run PA #2 project consisted of 2 sites that are located in Preston County, West Virginia, near the community of Albright. The two sites were separated by Morgan's Run. The project occupied approximately 8 acres of conglomerate land. Two refuse piles had areas of steep, unstable and barren slopes and sediment from the piles was being washed into adjacent road side ditches. The project also has 19 mine portals in various conditions, including collapsed portals, open portals and draining mine portals. The open mine portals were easily accessible and represented a significant life safety hazard from roof falls, potentially deadly gases and other hazards. The draining mine portals were in danger of collapsing and stopping the dewatering of the mine openings potentially leading to catastrophic blowouts and subsequent downstream flooding. Several drainage culverts on the project were severely eroded by the AMD discharging from the draining portals and would need to be replaced. An artesian well, discharging low pH AMD also exists on the project. Several areas of scattered refuse exist on the project. Old abandoned building ruins are present on site and present a hazard to the local population also. Areas of scattered trash and debris exist on the project as well.

The purpose of the reclamation program was to regrade the two coal refuse piles to stable slopes, provide proper stabilization with vegetative cover and permanent drainage channel improvements, and safely seal the open and draining mine portals. Generally, the refuse piles were regraded to stable slopes and permanent drainage patterns were established. On site soil borrow areas were utilized to obtain the necessary soil cover material required. Access to the site isolated by Morgan's run was achieved by installation of a temporary stream crossing. The stream crossing was removed after construction activities were completed. All mine portals were closed with an appropriate mine seal and several wet seals were installed to provide permanent and controlled dewatering and permanent drainage patterns were established. Bat gates were also installed in all of the open mine portals. A sloping bat gate was installed in one of the mine portals in a 10 to 15 foot deep depression.

The artesian well was stabilized and the low PH AMD was treated with a limestone blanket surrounding the well. All trash and debris were disposed of at an approved landfill. Several areas of scattered refuse were soil covered and seeded. Abandoned building ruins were demolished and disposed of at an approved landfill. Some of the Stone building material was able to be disposed of on site in a rubble disposal area. All of the required erosion and sediment control

measures were installed prior to construction. Additional erosion and sediment control measure were installed and maintained during construction. All erosion and sediment control measures were removed after construction, once vegetation was reestablished. All disturbed areas were revegetated or otherwise stabilized with structural methods.

Harris Branch, *McDowell County, WV*

The Harris Branch site was located in McDowell County, West Virginia, near the community of Havaco. The project contained a coal refuse pile and is approximately 2 acres in size. The refuse pile had areas of steep, unstable and barren slopes that were a source of sediment load to the adjacent Tug Fork River. The main concern of the project was to eliminate the refuse encroachment on the fence and property of an adjacent land owner. Various items of trash and debris existed on the site as well.

The refuse pile was regraded to stable slopes, soil was covered and seeded and permanent drainage patterns were established. The refuse pile was removed from the adjacent property owner and the existing collapsed fence was removed and replaced. An off-site soil borrow area was utilized to obtain the necessary soil required for the soil cover and seeding. Riprap bank protection was utilized to prevent future washout and undercutting of the refuse pile as well as further erosion and sedimentation into the Tug Fork River. All trash and debris were disposed of at an approved landfill. All of the required erosion and sediment control measures were installed prior to construction. Additional erosion and sediment control measure were installed and maintained during construction. All erosion and sediment control measures were removed after construction, once vegetation was reestablished. All disturbed areas were revegetated or otherwise stabilized with structural methods.

Venus (Hamilton) Drainage, *McDowell County, WV*

In the community of Venus, McDowell County, on a steep mountain side, mine drainage was discharging from a collapsed portal. The amount of water flowing from this portal changes from time to time throughout the year. This mine water discharges down the mountain side, on the surface of the ground and also through underground voids, causing damage to the homes and property of the approximate seven (7) homeowners living down slope of this discharge. A wet seal was designed at the open portal and the drainage from this mine was conveyed into a pipe across the gas well road. A grouted rip rap drainage channel was designed to carry all flow away from the property owners, down the hillside to a point of discharge near the railroad.

A

Key Staff Resumes

Appendix A: Key Staff Resumes

WILLIAM S. THORNTON, PE, PS

VP Civil Engineering

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Thornton is an experienced project manager and design engineer for civil engineering design projects. Thornton has more than 15 years of experience with consulting engineering in West Virginia, and three years with a construction firm performing major concrete paving projects in West Virginia, Pennsylvania and Ohio. Thornton also provided consultant review for the WVDOT, Division of Highways.

The major design projects with which he has been involved included roadway design, drainage design, site design, mine land reclamation, permitting, property surveys, airport design, Right-of-Way Services, maintenance of traffic and construction administration and oversight. He provides analysis and design on the construction and rehabilitation of a variety of infrastructure utilities (water, wastewater and storm water), including streets, drainage, sidewalks, buildings, and traffic and other safety improvements.

Project Experience

Schoenbaum Tennis Courts Asphalt and Drainage Rehabilitation, City of Charleston Parks and Recreation, Charleston, WV
Management of design and renovation of an 8 court tennis complex located in the Kanawha City area of Charleston, WV. Subsurface drainage problems were solved by the installation of an open graded drainage layer under the courts. The entire court are was repaved with a construction cost of $500,000.

Verizon Clemtown Slide Remediation, Taylor County, WV
Management of the remediation of a slide blocking access and threatening nearby property of a Verizon cell tower site in Taylor County, WV.

WVA Manufacturing Raw Material Retaining Wall
Management during the design of a new retaining wall at the Raw Material Railroad loadout at the WVA Manufacturing Alloy, WV site. The proposed wall will be approximately 450 linear feet and range rom 3 to 10 feet tall.

Grayson Lake Boundary Survey, US Army Cops of Engineers, Grayson Lake, KY
Management of the inspection of 151 miles of fee boundary line along the Grayson Lake project.

Ravenswood Downtown Revitalization 2010, Ravenswood Development Authority, Ravenswood, WV
Management of the bidding, construction administration, inspection and material testing for the sidewalk rebuilding, lighting and ADA improvement project. Took over project after design was completed by another consultant. When the project bids came in over original estimate, we helped secure additional funding from WVDOH.

Golden Corral Pipe Collapse Repair, Cross Lanes, WV
Management of the professional services related to surveying, design, and analysis for the existing pope collapse issue at the Golden Corral restaurant on Goff Mountain Road in Cross Lanes, WV.

Hammer Strait Bridge, Pendleton County, WV
Management of bridge replacement over Trout Run in Pendleton County, WV.

Education

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

Certifications

WDOH Portland Cement Concrete Technician

WVDOT Asphalt Pavement Technician

Registration

Professional Engineer: WV, OH, VA

Professional Surveyor: WV

Total Years Experience

30

District 2 Slides, Statewide, WV
Project Manager for the development of construction plans for 10 separate slide projects caused by April 2015 flooding events.

Waterloo Bridge, Mason County, WV
Management of bridge replacement and related design tasks for replacement of a bridge over Thirteen Mile Creek in Mason County, WV.

I-77 North Camden Interchange to Staunton Avenue Interchange, Wood County, WV
Design included replacement and widening of interstate bridge over the Little Kanawha River and the replacement and widening of the bridge over Staunton Avenue. The roadway work includes widening of I-77 to eight lanes from Camden Avenue to Staunton Avenue.

Corridor H Section 7—Forman to Moorefield, Grant County, WV
Design and management included five miles of new mainline four-lane highway, several side road connectors, truck brake check area, truck escape ramp, and a wetland overlook area including more than 8 Million cubic yards of earthwork.

I-79 Bridgeport to Meadowbrook, Harrison County, WV
Included the widening of I-79 from two lanes North Bound and South Bound to four lanes North Bound and South Bound from Bridgeport to Meadowbrook Road including two sets of bridges.

Corridor H Davis to Bismark, Section 01, Tucker County, WV
Included design and management for upgrade of approximately two miles of WV 93 between Davis and Bismarck to a four-lane highway.

ODOT-Ashtabula Grade Separation, OH
Design and management of a grade separation over two sets of railroad tracks with related approaches and utility relocation.

U.S. 52 Kermit Bypass, Mingo County, WV
Included design and management of four miles of a new alignment four-lane expansion of U.S. 52 near Kermit, West Virginia. Design included more than 10 Million cubic yards of earthwork, two interchanges and a stream relocation.

U.S. 19 Corridor L Upgrade near Muddelty, Nicholas County, WV
Design and management of approximately four miles of the expansion of U.S. 19 from 2 lanes to 4 lanes in Nicholas County. This fast track project was completed in nine months.

Meadowbrook Road (U.S. 19 End), Harrison County, WV
Design and management of new alignment of two miles of Meadowbrook Road in Harrison County. This four lane divided highway included a bridge over the West Fork River and an intersection with U.S. 19.

Mon-Fayette Expressway, Monongalia County, WV
New four lane section of the Mon-Fayette expressway in Monongalia County.

WVDOH Master (On-Call) Engineering Services, WV
Managed various highway, bridge, and related engineering services at locations throughout the state including: Lavalette to Huntington Road Widening, Spencer Center Turn Lane, Church Street in Ripley Center Turn Lane, WV 14, WV 15 Intersection Upgrade.

WILLIAM S. THORNTON, PE, PS

VP Civil Engineering

TERRADON

Bridge and Roadway projects for which Thornton provided Project Management and QA/QC while at WV DOH Engineering Division, Consultant Review Section, are listed below. Typical services included project scheduling and tracking, plan review for adherence to AASHTO and DOH standards and ensuring the project stays with in scope.

Ohio River Bridge, Weirton, WV
Design study for a new Ohio River crossing near Weirton WV. Project included alignment studies, preparation of and Environmental Assessment document and coordination with stakeholders including local governments, public, US Corps of Engineers, FHWA offices in Ohio and WV, Ohio DOT

I-79 Morgantown Interchange, Morgantown, WV
Design study for a new Interchange on I-79 in Morgantown. This fast track project included the preparation of an Environmental Assessment as well as developing alignments for a new interchange on I-79.

Mineral Wells to Pettyville, Pettyville, WV
Design Study and Environmental Assessment for the extension of four lane roadway from Mineral Wells to Pettyville. Typical services included project scheduling and tracking, attending public meetings, plan review for adherence to AASHTO and DOH standards and ensuring the project stays with in scope.

Nutter Farm Bridge Road
Construction plans for new roadway and intersection with US 50 to allow the removal of the existing Nutter Farm bridge.

Blandville Bridge
Construction plans for the replacement of existing bridge and approach roadway.

Camp Creek Bridge, Clay County, WV
Design Study to replace the existing bridge in Clay County.

Burlington Mill Creek Bridge
Design study to select preferred option to replace the existing bridge.

US 220 Passing Lane
Construction plans for the addition of a passing lane on US 220. Typical services included project scheduling and tracking, plan review for adherence to AASHTO and DOH standards and ensuring the project stays with in scope.

Bartley Branch Bridge
Construction plans for the extension of new roadway alignment to allow the removal of a structure.

Hartland Bridge
Construction plans for the replacement of existing bridge over the Elk River and approach roadway.

Fourth Street Bridge, Fairmont, WV
Design Study and Construction plans to replace the existing Fourth Street bridge with a new structure and roadway at Third Street in Fairmont. This project included coordination with City of Fairmont officials as well as the local public.

WILLIAM S. THORNTON, PE, PS

VP Civil Engineering

TERRADON

Jefferson Avenue Bridge, Point Pleasant, WV
Construction plans for the replacement of existing bridge in Point Pleasant.

Jefferson Avenue Extension Bridge, Moundsville, WV
Construction plans for the replacement of existing bridge in Moundsville.

Monument Place Bridge
Design Study for the rehabilitation of the oldest stone arch bridge in WV.

Pleasantview Bridge
Construction plans for the replacement of existing bridge.

Swago Bridge, Pocahontas County, WV
Construction plans for the replacement of existing bridge in Pocahontas County.

VA Hospital Bridge, Clarksburg, WV
Construction plans for the replacement of existing bridge in Clarksburg.

JOE SAUNDERS, PE
VP Transportation

TERRADON

Joe Saunders is a Professional Engineer, licensed in West Virginia, Ohio, Virginia, North Carolina, Kentucky, Maryland, Alabama and Nevada. Saunders offers a wealth of experience through projects performed for the West Virginia Department of Transportation and Ohio Department of Transportation and related to engineering design and plan development for structures and roadways.

As Lead Designer for Transportation at TERRADON Corporation, Saunders is responsible for the development of construction plans for transportation, including bridge replacements and rehabilitations, roadway and highway design, right-of-way plans, and ancillary design. Additional responsibilities include preliminary design and reports, construction plans and specifications, construction estimates, contracts and bidding review, and construction engineering.

Saunders directs the highway design team for hydrology and hydraulic calculations. Saunders also works with the highway design team to schedule manpower and capacity for design projects and provides daily coordination of project tasks with clients/owners. With 28 years of experience as a designer and almost a decade of additional experience in highway and bridge construction, Saunders is experienced with all critical elements required of this contract.

Saunders has provided Project Management and design experience on numerous highway and bridge projects in Ohio, West Virginia, Indiana, Pennsylvania, and North Carolina.

Project Experience

Conley Branch (Whitt) Landslide (WVDEP)
Served as Project Manager and Lead Design Engineer for this WVDEP-AML project located in Logan County, WV. Responsible for all project tasks and coordination with the client.

Pierpont Refuse Pile (WVDEP)
Served as Project Manager and Lead Design Engineer for this WVDEP-AML project. Responsible for all project tasks and coordination with the client.

Mallory (Gibson) Portals (WVDEP)
Served as Project Manager and Lead Design Engineer for this WVDEP-AML project located in Logan County, WV. Responsible for all project tasks and coordination with the client.

Lilbern-Pritt Highwall Project (WVDEP)
Served as Project Manager and Lead Design Engineer for this WVDEP-AML project located in Fayette County, WV. Responsible for all project tasks and coordination with the client.

Shabbyroom Hollow Complex (WVDEP)
Served as Project Manager and Lead Design Engineer for this WVDEP-AML project located in McDowell County, WV. Responsible for all project tasks and coordination with the client.

Robinette Refuse Pile (WVDEP)
Served as Project Manager for this WVDEP-AML Project. While not initially involved as design engineer, Saunders oversaw any remaining work on the project, including engineering support for the client and contractor, and inspection services.

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

Certifications
Registered Professional Engineer: WV, OH, VA, NC, KY, NV, MD

Total Years Experience
28

U.S. 35 Design and Construction Plans, Mason County, WV
Structural Engineer: Overall QA/QC. Involved in checking and reviewing roadway geometry, drainage and quantities. Responsible for the design of box culverts.

AEP Building Expansion, Ashland, KY
TERRADON was contracted by AEP to design a new exterior ramp enclosure. The building extension projected from an existing maintenance facility, and the building extension was used to enclose an existing ramp to protect the ramp and traffic on the ramp from the weather. Saunders was the engineer of record for this project.

Toyota Office Expansion , Buffalo, WV
TERRADON was contracted by TMMNA to design and oversee construction of a 6000sf expansion at the manufacturing facility in Buffalo, WV. Saunders was the engineer of record for this project.

Toyota Waste Water Tank Farm , Buffalo, WV
TERRADON was contracted by TMMWV to design a new tank farm for the existing manufacturing facility in Buffalo, WV. As part of the project, TERRADON also designed a secondary containment system for the tank farm. Saunders was the engineer of record for this project.

Toyota Stair Tower, Buffalo, WV
TERRADON was contracted by TMMWV to design a new exterior stair tower to provide roof access to the existing motor manufacturing plant in Buffalo, WV. Saunders was the engineer of record for this project.

Toyota Various Plan Review, Buffalo, WV
TERRADON was contracted by TMMWV to act as an independent plan reviewer providing oversight and plan review comments on plans prepared by other consultants. TERRADON reviewed plans and provided comments to the owner. Saunders was the engineer of record for this project.

Bluestone Dam Structural Design & Inspection, Summers County, WV
Saunders has served as the Lead Project Structural Engineer of Record for the Bluestone Dam Phase IV Construction team working for Heeter Construction under the direction of the USACE. Designs included structural cantilevered steel framing anchored to the sloped downstream face of the dam that supports drilling operations for anchor installation and a 150 ton crane. The cantilevered platform extends 32' from the face of the dam, with supports spaced up to as much as 15'. This spacing provides main support members to accommodate the full weight of the 150 ton crane and support vehicles, and requires a detailed examination of fatigue prone members for the design service life of the project. All members below ordinary high water level were designed to support full loadings and force effects from water and debris collisions. Project Engineer responsibilities include providing professional and technical leadership and expertise on structural design and inspection to professional staff.

AEP Gavin Power Plant, Mercury Reduction Basin Design, Kanawha County, WV
Served as Project Manager and Lead Designer to design a Mercury Reduction Basin. The project was created as a Mercury (Hg) Reduction effort to comply with EPA requirements. The Mercury Reduction Facility was created to reduce the mercury effluent level at the storm water discharge at the Gavin Power Plant. The facility was created be designing a concrete sump where chemicals could be added to the storm water that would cause the mercury to precipitate where it could be mechanically removed. The sump was constructed of reinforced concrete walls that

acted as both load bearing structures as well as earth retaining structures. The sump had a vertical divider to create two separate chambers, which allowed one chamber to be in service for the treatment of the effluent while the other chamber was being serviced or cleaned. A complicated valve mechanism was designed to control effluent flow to the desired chamber.

Noise Wall Design, Montgomery County, OH
Structural Design Engineer for the design of drilled shaft foundations, FAA aeronautical clearance requirements, and plan review of the free standing noise wall located adjacent to I-75 near Dayton, OH.

American Electric Power John E. Amos Plant Haul Road Project, Putnam County, WV
Engineer of Record for the haul road and bridge for the John E. Amos Power Plant. The project consisted of approximately 0.75 miles of new roadway alignment along with a 3-span continuous steel bridge crossing WV817. Prior to building this project, trucks hauling ash from the coal fired power plant travelled along WV817 to reach the land fill. AEP desired to remove this truck traffic from WV817 as part of a community outreach program. Saunders was responsible for all aspects of the project, including roadway geometry, design of the bridge, design of an MSE wall, and permitting. The roadway geometry had to be worked to avoid interference with transmission towers, a helipad, and various other geometric constraints along the corridor. The bridge design was performed using custom loads provided by AEP. The power plant desired to build a bridge that could handle loads that were nearly double the design legal limit, which would allow the plant to use overloaded trucks to reduce the number of cycles to the landfill. The bridge was located in a tight radius curve with three radial supports and one severely skewed abutment. The curvature of the bridge along with the skew created very complicated geometry and load paths. In addition to the complicated geometry, Saunders devised an erection scheme for the project that would allow the bridge superstructure to be erected without the need for shoring towers. Under normal erection procedures for curved girder bridges, intermediate towers are erected to prevent the curved girders from rolling over during erection, and the towers can also be used to jack the girders into place. The erection scheme devised by Saunders eliminated the potential for roll over while at the same time eliminating the need for the girders to be jacked into place. This scheme offered significant cost and time savings to the owner over conventional erection procedures.

MacArthur Bridge, Raleigh County, WV
The project was scoped to rehabilitate the MacArthur Bridge (WV Route 16) over I-77 ramps near Beckley, WV. Wagner performed drafting and digitization of field inspection notes for bridge repair.

Harper Road Bridge Rehab, Beckley WV
The project was scoped to rehabilitate the Harper Road Bridge (WV Route 3) over I-77 in Beckley, WV. Wagner performed drafting and digitization of field inspection notes for bridge repair.

Mossy Bridge, Mossy WV
The project consisted of the design and preparation of contract plans and related documents for the replacement of the existing Mossy Interchange Bridge, which carries WV 612 over Paint Creek in Fayette County. Wagner served as a Project Designer and performed a site visit and assisted with collecting field data for hydraulics analysis, assisted with hydraulics analysis and drafting of a bridge hydraulics report, delineated drainage area for Paint Creek for drainage calculations, consulted on roadway and super elevation design for the proposed alignment to satisfy DOH requirements, and developed construction phasing and maintenance of traffic schemes.

JASON ASBURY, ASLA, CESSWI

VP Geo-Environmental & Field Services

TERRADON

Jason Asbury is the Vice President of Geotechnical, Environmental and Field Services at TERRADON. Additionally, Asbury is a Geo-Environmental Project Manager and serves as an Environmental Agency Coordinator. Acting as regulatory liaison/coordinator, Asbury provides critical project support for specialized permitting and erosion and sediment control planning, as well as conducting field work for wetland assessment/ delineation projects and Section 404/401 permitting. Asbury is also responsible for scheduling and coordinating field service teams for Construction QA/QC services. Asbury also provides site grading, landscape and utility plans, site detailing and erosion sediment control plans and permitting for energy, commercial, and educational projects.

Project Experience

Above Ground Storage Tank Inspections (WV SB 37 Compliance)
Served as Regulatory Coordinator and Project Manager for Approximately 1,800 Above Ground Storage Tank Inspection across the State of West Virginia. Task included inspections of AST's, certification of tanks, submitting certifications to WVDEP for compliance. Inspections of the AST's included a visual inspection to determine if the tank was structurally sound and fit for service. Inspection and certification of secondary containment was also conducted to determine if proper spill prevention, control, and countermeasures were in place.

West Virginia American Water Above Ground Storage Tank Inspections
Served as Regulatory Coordinator and Project Manager for Approximately 33 Above Ground Storage Tank Inspection across the State of West Virginia. Task included coordination and review of inspections of AST's, certification of tanks, submitting certifications to WVDEP for compliance. Inspections of the AST's included a visual inspection to determine if the tank was structurally sound and fit for service. Inspection and certification of secondary containment was also conducted to determine if proper spill prevention, control, and countermeasures were in place.

Tanyard Station Commercial Development
Served as Project Manager and Regulatory Coordinator for a 50 Acre mixed use commercial development located in Barboursville, WV acting as the primary contact with the WVDEP, US Army Corps of Engineers, US Fish and Wildlife, as well as the Village of Barboursville. The Tanyard Station project was a collaborative design effort between TERRADON and SITE Incorporated from Knoxville Tennessee. The site design included removing 956 linear feet of Tanyard Branch a Perennial Stream and re-routing the existing stream through a new 6'x8' concrete box culvert. Task included, conducting field assessments to determine quality of existing Tanyard Branch, preparation of sediment and erosion control plans and obtaining NPDES Permit Approval from West Virginia Department of Environmental Protection, coordination of habitat analysis study, coordination of FEMA Flood Study for Tanyard Branch, coordination of structural design of proposed box culvert, coordination of sanitary sewer and water design as well as health department permitting, coordination of all utility and access permits required from West Virginia Department of Highways.

Education

B.S. Landscape Architecture
West Virginia University

Certifications

Certified Erosion Sediment Storm Water Inspector

38 Hour USACE Wetland Delineation Training

30 Hour OSHA Construction Safety & Health Certification

40 Hour OSHA HAZWOPER Certification

OSHA Confined Space Entry Trained

OPEC SafeLandUSA

WVDOT TRETCNO Level 5

Total Years Experience

15

The Bechtel Summit National Scouting Reserve
Served as Regulatory Coordinator for a 10,600+- acre recreational development in Fayette County, WV, acting as the primary contact with the WVDEP on behalf of all contractors and consultants, for more than 50 site permits. Task included NDPES design and permitting, including erosion and sediment control, for multiple contractors/consultants with the WVDEP. Also coordinated monthly site inspections with representatives from the WVDEP and numerous on-site contractor representatives. The project included 550,000 tons of aggregate, 600 acres of grading activities, 28 miles of drainage swales, 14 miles of new road construction, 4 earthen dams, and more than 60 miles of new utility installation.

Columbia Pipeline Group
Served as Regulatory Coordinator and Site Designer for a compressor station site that routinely flooded. Project included hydraulic analysis on existing drainage structures. Designed approximately 500-foot of pipe replacement to alleviate runoff. Tasks included storm water calculations, grading plan, and storm water design and handled all agency contact for the submittal and approval of the project permits.

Chesapeake Energy - Trace Fork Slip
Served as Regulatory Coordinator and Project Manager for erosion repair design for a 175' x 40' wide slip for a Chesapeake Energy site located in Lincoln County, West Virginia. The project included the redesigned of an existing storm water channel that constantly eroded preventing permit closure of the facility from WVDEP. Upon the completion of the design, construction, and final stabilization of the site a notice of termination was filed with WVDEP. Tasks included the redesign of an existing stormwater channel, preparation of grading, and sediment and erosion control plans. Also coordinated all agency contact for the submittal and approval of all necessary construction permits.

Marathon Petroleum Corporation Utica Access Road Slip
Served as Project Manager and Regulatory Coordinator for erosion and sediment control design to repair a slip along an access road at the Catlettsburg Refinery in Ashland, Kentucky. Tasks included preparation of grading, and sediment and erosion control plans for a slip mitigation along a site access road.

Chesapeake Energy Aquatic Resource Assessments/Wetland Delineation
Served as Qualified Individual and Regulatory Coordinator to assess approximately 350 well pad sites across the State of West Virginia. Task included conducting field survey for wetland indicators (soil, plants, and hydrology) in accordance with US Army Corps of Engineers methodology, flagging wetland boundaries for survey and preparation of reports with detailed field activities and findings for USACE. Also was responsible for determining and obtaining appropriate Nationwide, Office of Land and Stream and WV DOH permits when project conditions warranted permitting.

Culloden WV Commercial Development Aquatic Resource Assessment/Wetland Delineation
Served as Qualified Individual and assessed a small commercial site located in Culloden, West Virginia. Task included conducting field survey for wetland indicators (soil, vegetation, and hydrology) in accordance with US Army Corps of Engineers methodology, flagging and surveying wetland boundaries and preparation of report detailing filed activities and findings for USACE.

Eplin Aquatic Resource Assessment/Wetland Delineation
Served as Qualified Individual and assessed a 7 acre site located along the Ohio River in Mason County, West Virginia. Task included conducting field survey for wet-land indicators (soil, vegetation, and hydrology) in accordance with US Army Corps of Engineers methodology, flagging and surveying wetland boundaries and preparation of report detailing filed activities and

findings for USACE. Also was responsible for determining and obtaining appropriate Nationwide Permit for construction activities.

JMK Summersville Development Aquatic Resource Assessment/Wetland Delineation
Served as Qualified Individual and assessed a 28 acre site located in Summersville, West Virginia. Task included conducting field survey for potential stream jurisdiction-al determination as well as wetland indicators (soil, vegetation, and hydrology) in accordance with US Army Corps of Engineers methodology, flagging and surveying wetland and stream boundaries and preparation of report detailing filed activities and findings for USACE. Also was responsible for determining and obtaining appropriate Nationwide Permit for construction activities.

Sam Black Solar Aquatic Resource Assessment/Wetland Delineation
Served as Qualified Individual and assessed a 16 acre site located along Route 60 in Greenbrier County, West Virginia. Task included conducting field survey for wetland indicators (soil, vegetation, and hydrology) in accordance with US Army Corps of Engineers methodology, flagging and surveying wetland boundaries and preparation of report detailing filed activities and findings for USACE. Also was responsible for coordinating jurisdictional determination with US Army Corps of Engineers as well as West Virginia Department of Environmental Protection and determining appropriate mitigation requirements for the disturbance within the identified emergent wetland.

Superior Marine Aquatic Resource Assessment/Wetland Delineation
Served as Qualified Individual and assessed a 2.5 acre site located along the Ohio River in South Point, Ohio. Task included conducting field survey for wetland indicators (soil, vegetation, and hydrology) in accordance with US Army Corps of Engineers methodology, flagging and surveying wetland boundaries and preparation of report detailing filed activities and findings for USACE. Also was responsible for determining and obtaining appropriate Nationwide Permit for construction activities.

Whitt Property Aquatic Resource Assessment/Wetland Delineation
Served as Qualified Individual and assessed a 0.32 acre site located along Woodbend Cove in Putnam County, West Virginia. Task included conducting field survey for wetland indicators (soil, vegetation, and hydrology) in accordance with US Army Corps of Engineers methodology, flagging and surveying wetland boundaries and preparation of report detailing filed activities and findings for USACE.

Eplin Mitigation Design and Implementation
Served as Project Manager and Regulatory Coordinator for the offsite mitigation design of approximately 2 acres of proposed wetlands for a site located along the Ohio River in Mason County, West Virginia. The mitigation design was needed to offset the impact of 0.15 acres of existing emergent wetlands for the construction of a new site access road. Task included preparation and submission of a Compensatory Mitigation Plan, preparation and submission of an Alternative Analysis, design and preparation of bid set drawings for the construction of the proposed wetlands, oversaw the construction and implementation of the approved mitigation design.

Tanyard Station Offsite Mitigation Design
Served as Project Manager and Regulatory Coordinator for the offsite mitigation design of approximately 2,220 linear feet of stream located on the grounds of Barboursville Park in in Barboursville, WV acting as the primary contact with the WVDEP, US Army Corps of Engineers, US Fish and Wildlife, as well as the Village of Barboursville. Approximately 956 linear feet of Tanyard Branch a Perennial Stream was impacted during the design and permitting of the Tanyard Station Commercial Development, to offset that impact 2,220 linear feet of stream was enhanced on the

grounds of Barboursville Park. Task included, conducting field assessments to determine quality of existing streams at Barboursville Park, preparation and submission of a Compensatory Mitigation Plan, preparation and submission of an Alternative Analysis, design and preparation of bid set drawings for the construction of the stream enhancement, obtaining Individual 401 and 404 Permit approval from the US Army Corps of Engineers and State of West Virginia.

Hoot Owl Housing Development Mitigation Monitoring
Served as an Environmental Project Manager for stream mitigation project located in Grundy, Virginia. Task included yearly field inspections of approximately 1,200 linear feet of mitigated stream for a waste site, preparation of detailed field re-port and submittal to Virginia Department of Environmental Quality.

Putnam County Development Authority Wetland Mitigation Re-Grading
Served as an Environmental Project Manager for a 2.5 acre constructed wet-land mitigation project located in the Putnam Business Park in Putnam County, West Virginia. Task included preparation of all bid documents, bidding of the job, awarding the contract, and overseeing all construction activities at the site.

Gilmer Elementary School/Waco Oil Company Property Phase 1 Assessment
Served as an Environmental Project Manager for a Phase 1 Environmental Site Assessment for a proposed elementary school in Gilmer County, West Virginia. Task included conducting field survey and soil sample collection at potential identifiable contaminated areas at the site, processing collected samples through a chain of custody and sending to a laboratory for analysis, and preparation of report de-tailing field and laboratory results to determine environmental risk assessment for the site.

Greenbrier Street Pipe Inspection
Served as an Environmental Project Manager for a confined space entry inspection of a failing storm pipe for a site located in Kanawha County, West Virginia. An existing storm pipe collapsed along a private site access road, a confined space inspection was needed to determine the extent of the pipe failure. Task included conducting a confined space entry to evaluate the pipe, preparing a detailed inspection report that provided proper repair alternatives.

Terraquip Environmental Compliance Audit
Served as an Environmental Project Manager for a facility audit of the Terraquip Manufacturing Plant located in Kanawha County, West Virginia. Task included conducting a facility audit of the plant facility and grounds for compliance to all applicable state and federal permits, and preparation of a detailed compliance manual and report for the facility.

JOE CARTE, PE
Senior Geotechnical Engineer

TERRADON

Joe Carte's role at TERRADON Corporation is to provide senior-level review, training, and assists with the day-to-day tasks and geotechnical decisions. Carte brings 35 years of diverse geotechnical experience and is a registered Civil Engineer. Carte has provided heavy foundation design for bridges, towers, and tanks throughout his career. Cartes experience as the Geotechnical Group Leader with the WVDOH Materials Division gives him insights into the state's guidelines, the LRFD Code, and the statewide geology.

Some of Cartes accomplishments while at the WVDOH include standardizing the estimation of bearing resistance for bridges, developing the PSSLOPE software, training staff, revising the piling specification, and championing the GRS-IBS abutments for the FHWA Every Day Counts initiative. Carte has routinely volunteered for the West Point Bridge Contest and enjoys training children in the use of the software in schools. Carte co-invented a soil bolting system (patented) for correcting landslides.

Project Experience

WVDOH -Engineering Division Assistance
As Geotechnical Group Leader, reviewed and help prepare bridge and roadway investigation reports for hundreds of transportation projects. Some significant project involvement includes: the Ohio River Crossing design-build project, Wellsburg, WV; the Hughes Creek Landslide reverse -batter driven piling wall design near Hugheston, WV; and Corridor H Design-Build Criteria, Karnes to Parson, WV,

WVDOH - Legal Division Assistance
As the Geotechnical Expert Witness for the WVDOH, Mr. Carte has investigated and developed expert reports and testimony for numerous cases, both for the defense and the plaintiff.

WVDOH – Traffic Division Assistance
As the Geotechnical Group Leader, developed standard designs for high-mast Lighting towers. Managed large drilling project of 100+ miles of medium for cable guardrail.

WVDOH – Maintenance Division Assistance
While the WVDOH, assisted in the development of specification/contract documents for open-ended maintenance contracts for both landslide (soil nailing) and rockfall clean-up and repairs. Provided geotechnical reports for various headquarters, maintenance, salt-sheds, and rest area facilities.

WVDOH – District Assistance
The Geotechnical Group provided assistance with innumerable landslide repairs and with various rock fall projects, some of which were on an emergency basis.

WVDEP LCAP – Landfill Closures
As a design engineer Carte developed two innovative gravity-powered wetland systems for leachate treatment at the ERO landfill. Prepared closure plans for the Buckhannon, Mingo, and the ERO landfills.

Education
B.S. Mining Engineering, WV Institute of Technology

Certifications
Registered Professional Engineer: WV, OH

Total Years Experience
+35

JOE CARTE, PE (Cont.)
Senior Geotechnical Engineer

TERRADON

WVDEP - Solid Waste Landfill Design
As a design engineer Carte prepared complete plans and permit documents for the Sycamore, Prichard, and the Morehead landfills. Provided consulting service to the Meadowfill Landfill, and the Tucker County WV, and Gallia County, Ohio landfills.

WVDEP- Hazardous Waste Landfills Design
As a design engineer Carte provided a closure plan for the Holtz Impoundment in South Charleston, WV. Developed plans and permit documents for the potential development of a "dry impoundment," Sistersville, WV. Prepared closure plans and permit documents for impoundments and landfills at Sistersville, WV and Marietta, OH. Provided HELP modeling service for the Goff Mountain Landfill, Institute, WV.

WVDEP – Dam Control Projects
As a Geotechnical Engineer, Carte assisted with the development of construction plans and permit documents for the Lake Chaweva, WV dam replacement project. Preformed dam-break analysis and blasting monitoring for the Horton Dam. Bluefield, WV. Analyzed highway embankments at the Smithfield Lake near, West Union, WV.

WVDEP – AML
As a Geotechnical Engineer, Carte developed designs, cost estimates, and bid packages for various reclamation projects. Relevant projects include the Red Jacket Mine Fire, and the Coal City and Jenkin Jones reclamation projects.

Cellular Towers
As a Geotechnical Engineer, Carte provided numerous geotechnical reports and foundations design for much of the cell towers in central West Virginia. Provided designs for drilled shafts, mat and special steel foundations.

Civil and Infrastructure
As a design engineer, Carte designed storm and sanitary sewers, watermains and storage tanks, and streets and pavements. Project of significant relevance includes portions of South Ridge Center development and the Century Volga Watermain Extension projects.

CHRIS HANCOCK

Geotechnical Project Manager

TERRADON

Christopher Hancock is a Geotechnical Project Manager at TERRADON. Hancock's skills and abilities include AutoCAD, foundation design, designs using Geosynthetic Materials, MSE wall design, and groundwater and seepage control. As an Geotechnical Engineer and Geo/ Environmental team member, Hancock applies environmental and geologic skills to engineering uses; on-site geotechnical drilling representative, interprets various borehole data (e.g., bulk density, groundwater monitoring, gamma ray, etc.); and collects various field data; lab testing experience. He is proficient in various software programs related to scientific study, including Civil3D

Project Experience

Kinetic Park Landslide, Huntington, WV
Project Technician-Assisted in the management of the subsurface drilling investigation. An emergency slip posing immediate danger to a stream and homeowners below the site. Part of the slip remediation included a subsurface investigation to give insight on the extent, location and probable origin of the slope failure displayed along with recommendations to control potential future slips. The subsurface investigation included 4 borings drilled with each boring logged as it progressed with visually described soil types and recorded layer depths along with the classification of rock.

Monroe County Schools, Monroe County, WV
Served as an on-site geotechnical drilling representative during subsurface investigation. On-site requirements included: visual classification on rock and soil, sample collection, percolation testing, mapping boring locations, coordinated with drill team. Also completed the Geotechnical Investigation Report that detailed the results of the drilling operation. The report also included: foundation recommendations, site development specifications, asphalt and concrete pavement recommendations, seismic design considerations, and laboratory testing results.

Seneca Medical Warehouse, Kanawha County, WV
Served as a qualified individual to ensure Quality Assurance and Quality Control (QA/QC) by performing and inspecting: foundation bearing capacity, concrete testing, welding inspection, compaction testing, 1 & 5 point proctor, reinforcing steel inspection, rammed aggregate pier inspection. Completed and submitted reports daily to the project manager.

Clendenin Flood Relief
Served as an on-site geotechnical drilling representative during subsurface investigation for two replacement bridges and eleven retaining walls after the summer flood of 2016. Performed: visual classification on rock and soil, sample collection, mapping boring locations, creating boring logs, laboratory testing, and coordinated with drill teams. Provided CAD support to design team and seinor CAD technicians during the design of the structures.

Education

B.S. Civil Engineering—Geotechnical Emphasis, West Virginia University Institute of Technology

Certifications

APNGA Portable

USDOT Hazmat

Nuclear Gauge Safety

Years Experience

+7

Earl M. Vickers Memorial Bridge
Served as a qualified individual to perform bridge inspection. This entailed: super & sub structure inspection of steel and concrete. Visual inspection of steel components included: girders, stringers, floor beams, joints, and bearings. Concrete components were sounded then spalls and delamination's were sketched. A final report was created to show all defects and rehabilitation strategies.

SHEETZ, Parkersburg, WV
Served as an on-site geotechnical drilling representative during subsurface investigation. On-site requirements included: visual classification on rock and soil, sample collection, environmental testing with photoionization detector, mapping boring locations, MS4 percolation test, coordinated with drill team. Also completed the Geotechnical Investigation Report that detailed the results of the drilling operation. The report also included: foundation recommendations, site development specifications, asphalt and concrete pavement recommendations, seismic design considerations, and laboratory testing results.

On-Site Geotechnical Drilling Representative
Served as an on-site drilling representative during geotechnical drilling. Tasks include: performing visual soil and rock classification and collecting samples, mapping out boring locations, creating boring logs, and performing necessary lab testing.

McCoy Road Slip Remediation, Huntington, WV
Served as a geotechnical project manager. TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Foster Road. The remediation consisted of the installation of a 112' long pile and concrete lagging retaining wall. The retained height was 12', with piles socketed into rock. The wall was installed on the downhill side of the road in order to stabilize the roadway and prevent further movement if the slip below the wall persists. The asphalt roadway section in the area of the wall was then reconstructed. All work was specified in accordance with WVDOT requirements.

South Park Drive Slip Remediation, Huntington, WV
Served as a geotechnical project manager. TERRADON contracted with the City of Huntington office of Public Works to provide plans for slip remediation along Foster Road. The remediation consisted of the installation of a 40' long pile and concrete lagging retaining wall. The retained height was 6', with piles socketed into rock. The wall was installed on the downhill side of the road in order to stabilize the roadway and prevent further movement if the slip below the wall persists. The asphalt roadway section in the area of the wall was then reconstructed. All work was specified in accordance with WVDOT requirements.

WARREN FRIEND

Project Manager, Clarksburg Office Manager

TERRADON

Warren Friend is a Project Manager at TERRADON Corporation. Friend is responsible for scheduling and coordinating field service teams for Construction QA/QC services. Friend has previously served, within TERRADON Corporation, as a Project Geologist and Construction Inspector. Friend applies environmental and geotechnical knowledge and skills to engineering, construction, and project management. Friend has experience in construction management, administration, and inspection including safety and construction oversight. Friend also has experience in geologic and geotechnical map making, ground water sampling, environmental remediation, ground well installation, landscaping and hardscaping. Friend was a staff geologist on numerous piezometer installations and was responsible for all soil logging and installation of appropriate screen intervals per specifications. Friend also provided continuous oversight of drilling processes and ensured wells were installed to meet the engineered design on various projects. Friend has been responsible for oversight of various inspection and construction services including concrete pours, concrete strength testing, asphalt testing, water line installation, drainage installation, MEP installation, asbestos testing and sampling, fireproofing testing, and other construction services.

Project Experience

Confidential Energy Client, Landslide Repairs

TERRADON provided professional opinion throughout the landslide and pipeline repair along the pipeline right-of-way. TERRADON representatives serve as the compaction, design, and general specialist for both the landslide repairs on the pipeline as well as roadway projects in West Virginia, Pennsylvania, and Ohio. Staff provided real-time field management support for project engineers and project management. Environmental professionals provided environmental monitoring including sediment and erosion control.

City of Clarksburg Slip Repairs

Served as Project Manager for the geotechnical analysis of a Slip adjacent to a roadway in the city of Clarksburg, WV. Tasks included coordinating, directing, and documenting test borings to identify the causes of the slide.

Toyota Motor Manufacturing, Buffalo, WV

Friend's responsibilities included concrete pours, concrete strength testing, reporting, contractor communication and oversight, implementation of data to server, daily reports, and construction plan review.

Road Relocation Projects

Friend's responsibilities included asphalt testing and reporting, compaction testing, contractor communication and oversight, implementation of data to server, daily reports and construction plan review.

Waterline Installation, WV

Friend is responsible for the oversight of contractors, compaction testing and construction plan review.

Education

B.S. Geology
West Virginia University

Certifications

30 Hour OSHA Construction Safety & Health Certification

40 Hour OSHA HAZWOPER Certification

8 Hour OSHA HAZWOPER Refresher

WVDOT TRET (Level 3)

U.S. Department of Homeland Security TWIC

OPEC SafeLandUSA

CPR Certified

CH2M Site Safety Coordinator

Total Years Experience

2

WARREN FRIEND

Project Manager, Clarksburg Office Manager

TERRADON

Drainage Installation, WV
Friend is responsible for the oversight of contractors, compaction testing and construction plan review.

DOW Chemical, WV
Friend served as a site geologist and site safety coordinator during the installation of sub surficial remediation systems in order to control and/or eliminate contamination. Friend was responsible for logging soil from drilling, analyzing results and determining the correct build for each location per engineered specifications, working/communicating/overseeing contractors constantly, and determining the path forward for hazardous waste removal. Friend is site safety coordinator trained through CH2M, OSHA 40HR HAZWOPER trained, OSHA 30HR trained, and has U.S. Department of Homeland Security TWIC access.

Mylan Pharmaceuticals GPR Survey, Morgantown, WV
Served as Project Manager for a geophysical survey at the Mylan pharmaceuticals located in Morgantown, WV with the scope of disclosing the location of an electrical duct bank for renovations. Tasks included planning, laying out and completing field survey, interpreting field data, and submitting a detailed report to the client.

Blue Ridge Community and Technical College Sinkhole and Karst Study, Martinsburg, WV
Served as Project Manager for multiple geophysical surveys at the Blue Ridge Community and Technical College located in Martinsburg, WV with the scope of disclosing any voids in the subsurface. Tasks included planning, laying out and completing field survey, interpreting field data, and submitting a detailed report to the client.

WESLEY WARD
Project Geologist

TERRADON

Wesley (Wes) Ward is a Project Geologist/Environmental Inspector and Technician for TERRADON Corporation. Ward is responsible for quality control testing and inspection for oil & gas, environmental, commercial, and residential construction projects throughout the Appalachian Region. He interfaces with site owners (public and private) and contractors to complete testing and inspection projects. Ward is responsible for monitoring contractor's work for conformance to the design plans, specifications and general permit requirements; experience tracking daily quantities, completing daily inspection reports, reviewing payment requisitions and maintaining field sketchbooks and as-built drawings.

Project Experience

City of Clarksburg Slip Repairs, Clarksburg, WV
Ward will act as the Environmental and Construction QA/QC manager for the geotechnical analysis and investigation of multiple slip repair projects for the City of Clarksburg, WV. The structural slides throughout the city range in scale. Ward will be responsible for the on-site construction inspection of the slip repairs including field testing and documentation.

Confidential Energy Client, Slide Repairs
TERRADON provided professional opinion throughout the landslide and pipeline repair along the pipeline right-of-way. TERRADON representatives serve as the compaction, design, and general specialist for both the landslide repairs on the pipeline as well as roadway projects in West Virginia, Pennsylvania, and Ohio. Staff provided real-time field management support for project engineers and project management. Environmental professionals provided environmental monitoring including sediment and erosion control.

Various Construction Projects, Pennoni Associates, Bethlehem, PA
Ward was responsible for daily QA/QC and inspection services on-site of oil & gas, commercial, environmental, and development projects. Wards responsibilities included concrete and rebar inspection, nuclear density testing, soil testing, asphalt testing, geotechnical analysis & investigation, Electro Resistivity testing, infiltration testing, micro-pile installation inspections, and other QA/QC inspection services.

Locust Valley Infiltration Survey
Served as Project Geologist. Directed the excavation of test pits for soil classification and performed double ring infiltration tests to aid in the stormwater management study for the future development of the site. Tasks included coordinating, directing and documenting field work, as well as assisting with drafting a detailed geotechnical report.

NJ Home Depots
Served as QA/QC inspector. Wards responsibilities included concrete inspection, asphalt inspection and installation and maintenance of BMPS.

Education
B.S. Geology
West Virginia University

Certifications
OSHA 10 HR

DOT Commercial Motor Vehicle Health Certification

Articulated Off-Road Truck Training

Earth Moving Equipment Training

Fall Protection Training

Confined Spaces Training

Flagger Training

APNGA Nuclear Density Gauge Safety

ACI Concrete Field Testing Technician

Total Years Experience
4

JOSHUA HOLDERER
Lead Environmental Inspector

TERRADON

Joshua Holderer is a Lead Environmental Inspector at TERRADON. Joshua has performed project roles in the fields of, QA/QC, geology, engineering geology, geotechnical engineering and geophysics. Joshua provides services on oil & gas, commercial, environmental, and development projects.

Project Experience

Confidential Energy Client, Environmental Inspector
Served as Environmental Inspector, provided professional opinion and environmental oversight throughout pipeline installation, reclamation and termination particularly with regard to erosion and sediment control. Provided real-time field management support and coordination with project managers to keep projects in compliance.

Confidential Energy Client, Landslide Repairs
Served as QA/QC inspector and soils technician, provided professional opinion throughout the landslide and pipeline repair along the pipeline right-of-way. Served as the compaction, design, and general specialist for both the landslide repairs on the pipeline as well as roadway projects in West Virginia and Pennsylvania. Provided real-time field management support for project engineers and project management. Provided environmental monitoring and documentation.

City of Clarksburg Slip Repairs, Clarksburg, WV
Served as Project Geologist for the geotechnical analysis of a Slip adjacent to a roadway in the city of Clarksburg, WV. Tasks included coordinating, directing, and documenting test borings to identify the causes of the slide.

Mylan Pharmaceuticals GPR Survey, Morgantown, WV
Served as Project Geologist for a geophysical survey at the Mylan pharmaceuticals located in Morgantown, WV with the scope of disclosing the location of an electrical duct bank for renovations. Tasks included planning, laying out and completing field survey, interpreting field data, and submitting a detailed report to the client.

Blue Ridge Community and Technical College Sinkhole and Karst Study, Martinsburg, WV
Served as Project Geologist for multiple geophysical surveys at the Blue Ridge Community and Technical College located in Martinsburg, WV with the scope of disclosing any voids in the subsurface. Tasks included planning, laying out and completing field survey, interpreting field data, and submitting a detailed report to the client.

Toyota TMMWV GPR Surveys, Buffalo, WV
Served as Project Geologist for multiple geophysical surveys at the Toyota Motor and Transmission Manufacturing Facility in Buffalo, WV with the scope of disclosing any anomalies in the subsurface. Tasks included planning, laying out and completing field survey, interpreting field data, and submitting a detailed report to the client.

Education
B.S. Geology
West Virginia University

Certifications
OSHA 10 Hour

TWIC

PA G.I.T.

ACI Concrete Field Testing Technician

APNGA Portable Nuclear Density Gauge Safety

WVDOH TRET Level 3 Applicant

Total Years Experience
4

West Virginia State Fairgrounds Sinkhole, Lewisburg, WV
Served as Project Geologist for a geophysical survey at the West Virginia State Fairgrounds located in Lewisburg, WV with the scope of disclosing the extents of the sinkhole. Tasks included planning, laying out and completing field survey, interpreting field data, and submitting a detailed report to the client.

Marathon Substations, Catlettsburg, KY
Served as a Project Geologist for a geophysical survey at the Marathon Refinery located in Catlettsburg, Kentucky. The scope of the project included Completing a GPR and Electrical Resistivity Survey. Tasks included Tasks included planning, laying out and completing field survey, interpreting field data, and drafting a detailed report to submit to the client.

Tioga Marine Terminal Settlement Evaluation, Philadelphia, PA
Served as a Graduate Geologist for a geophysical and geotechnical evaluation at Tioga Marine terminal located in Philadelphia, PA. The scope of the project was to evaluate a void that had opened up in the unloading area for container ships. Tasks included planning, laying out and completing field survey, interpreting field data.

SEPTA Ivy Ridge Renovation, Manayunk, PA
Served as a Graduate Geologist for a geotechnical site evaluation at SEPTAS Ivy Ridge station located in Manayunk, PA. Tasks included coordinating with SEPTA for safe access to railway areas, directing and documenting the drilling of test borings, and assisting with drafting a detailed report.

Bayer Facility Expansion, Cleveland, TN
Served as a Graduate Geologist for a geotechnical site evaluation at Bayer pharmaceuticals Cleveland, TN plant. Tasks included directing and documenting the drilling of test borings, and assisting with drafting a detailed report.

ANDREW WAGNER, EIT
Project Designer

TERRADON

Andrew Wagner is a Project Designer and Engineer in Training at TERRADON Corporation. Wagner is responsible for design on civil and highway projects. Wagner has a background in mine engineering as well as oil and gas drilling and completions operations management and has served as the drill site manager in the Gulf of Mexico while with another firm. Wagner has experience in highway design and drainage design and has provided relevant services on various projects throughout West Virginia.

Project Experience

Mingo Logan Coal (Blair Slip), Logan, WV
The project was an emergency slip repair on CR 17. Approximately 1530 feet of roadway was realigned to locate the route on stable bedrock. Wagner served as Lead Designer on the project and consulted on selection of an appropriate and cost-effective long-term solution for stabilization of the length roadway in question. Wagner designed horizontal geometry, vertical geometry and typical section of the realignment, utilized geotechnical drilling reports to design a cut slope for the realigned roadway, performed drainage calculations to design the roadside ditch and drop inlets, and performed modeling and drafting work to produce a plan set for construction.

Twin Branch (Twin Branch Box Culverts), Twin Branch, WV
The project consisted of the study, design, and preparation of construction contract plans for the replacement of two bridges with two box culverts in Twin Branch near Davy, WV. Wagner served as a Project Designer and assisted with drafting and structural detailing of the box culvert designs, developed steel reinforcing schedules for the box culverts, drafted roadway plans, created a maintenance of traffic plan showing road closures, detours, and required signage, and calculated roadway and bridge quantities.

MacArthur Bridge, Raleigh County, WV
The project was scoped to rehabilitate the MacArthur Bridge (WV Route 16) over I-77 ramps near Beckley, WV. Wagner performed drafting and digitization of field inspection notes for bridge repair.

Harper Road Bridge Rehab, Beckley WV
The project was scoped to rehabilitate the Harper Road Bridge (WV Route 3) over I-77 in Beckley, WV. Wagner performed drafting and digitization of field inspection notes for bridge repair.

Mossy Bridge, Mossy WV
The project consisted of the design and preparation of contract plans and related documents for the replacement of the existing Mossy Interchange Bridge, which carries WV 612 over Paint Creek in Fayette County. Wagner served as a Project Designer and performed a site visit and assisted with collecting field data for hydraulics analysis, assisted with hydraulics analysis and drafting of a bridge hydraulics report, delineated drainage area for Paint Creek for drainage calculations, consulted on roadway and super elevation design for the proposed alignment to satisfy DOH requirements, and developed construction phasing and maintenance of traffic schemes.

Education
B.S. Mining Engineering, Virginia Polytechnic Institute & State University
Blacksburg, VA

Certifications
Engineer In Training (EIT)

Total Years Experience
7

ANDREW WAGNER, EIT (Cont.)
Project Designer

TERRADON

311 Bridge, Greenbrier County, WV
The project consisted of the design and preparation of contract plans and related documents for the rehabilitation of the existing 311 Bridge, which carries WV 311 over I-64 in Greenbrier County. The rehabilitation consisted of deck replacement, conversion of abutments to semi-integral abutments, repair of cracking and delaminated concrete at abutments and piers, repair of the approach railing, repair of the approach slab, clean and paint superstructure, and the construction of a pier protection system. Wagner served as a Project Designer and calculated & check calculations of roadway quantities, developed steel reinforcing schedule for pier protection system, and designed super elevation transitions and profile corrections on 311.

Chelyan to Montgomery, Kanahwa County, WV
The Route 60 Design Study, following WVDOH guidance, divided approximately 12 miles of highway into 3 sections, with each section containing multiple study sites. A total of twelve sites were studied. Improvements studied included a roadway realignment, adding turning lanes, and slope stabilization. For each alternate at each site, roadway geometry, right-of-way impacts, environmental impacts, earthwork volumes, construction cost, etc. were assessed in order to recommend a preferred alternate. Wagner served as Design Team Lead for the design study, coordinating and managing work for all study sites. Wagner developed two alternates for realignment at "Site 1A" near Shrewsbury, WV. This included preliminary design of roadway geometry, cut and fill slopes, construction cost estimation, major drainage requirements, and assessment of right of way impact and utility relocation requirements. Wagner was responsible for a preliminary design and cost estimate for a pile and lagging wall to fix a slip at "Site 1AA" near Shrewsbury, WV.

I-79 US 50, Clarksburg, WV
The project is a Phase I PIE Design study for improving the I-79/US 50 Interchange in Clarksburg, WV. The study consists of three alternates for interchange modification: Diverging Diamond, Bypass A, and Bypass B. Wagner produced design study plans for Bypass A involving two interchange bypass bridges and a ramp flyover bridge. This included the development of new roadway geometry, preliminary span arrangements for the three bridges, major drainage requirements, earthwork calculations, construction cost estimates, and an assessment of the alternate's impact and overall feasibility. Wagner also contributed to modeling and drafting of the other two alternates.

Pipestem Zipline Design, Pipestem, WV
The project consists of design and construction inspection of a zipline at Pipestem State Park. Wagner participated in pre-construction site meetings to inspect the site and discuss design alternatives and construction planning with the client. Wagner prepared the bid document for zipline construction vendors to bid on the job. Wagner provided LiDAR mapping in the vendor's requested CAD format for zipline layout and modeling, and reviewed the vendor's plans for construction.

City of Huntington – Fern Street, Huntington, WV
The project is a retaining wall in Huntington, WV. Wagner used CAD to create an alignment for stationing reference on the existing Fern Street.

City of Huntington – Kinetic Park Landslide, Huntington, WV
The project involves an emergency landslide at Kinetic Park in Huntington, WV. The large landslide impacted houses below and threatened to close an unnamed tributary. Wagner performed a drainage area delineation and peak discharge calculation at the site for NPDES permitting purposes.

DAKOTA SMITH, EIT
Project Designer

TERRADON

Dakota Smith is a project designer for TERRADON Corporation. Smith provides engineering design services on various projects ranging from land slips to deck replacements. Smith has performed various tasks from drafting in Microstation, to preparing calculations for different structural components, to using modeling software to analyze bridge superstructures.

Project Experience

Amherst Coal Pad, Amherst, PA
Smith served as a staff designer for the design of a coal pad in Amherst, PA. The job included investigation of a site by the river that would require a large excavator to unload large amounts of material from barges. Smith performed the calculations and analysis to determine what (if anything) needed to be added to the foundation to be able to support the large equipment that would be unloading material for an extended period of time.

Bonds Creek Bridge Replacement, Ritchie County, WV
Smith performed calculations to verify the crane capacity for the crane the contractor was using for their erection scheme. Smith analyzed shop drawings from the manufacturer of the new girders and analyzed moment capacities.

US35, Mason County, WV
Smith served as a staff designer for the US35 Bridge Replacement. Smith performed calculations for the shore towers that would be temporarily supporting the girders during the time of erection. Smith verified what the wind load on the shore towers would be and that the cables on the towers were large enough to support the loads that would be applied to them.

Mingo Logan Coal (Blair Slip), Logan County, WV
Smith served as a staff designer for the Mingo Logan Coal (also referred to as the Blair Slip) project in Blair, WV. She performed quantity calculations for various materials on the job including pavement markings, excavation quantities, and guardrail quantities.

Twin Branch Culverts, McDowell County, WV
Smith served as a staff designer for the Twin Branch Culverts design in Twin Branch, WV. The design included replacing the current culverts with improved, up to date culverts. Smith assisted in the preparation of drawings for the culverts.

Harper Road Bridge, Raleigh County, WV
Smith served as a staff designer for the Harper Road Bridge Rehabilitation in Beckley, WV. The rehabilitation included changing the abutments to semi-integral, and rehabilitating the existing pier. Smith assisted in the inspection of an abutment on the bridge, and assisted in the preparation of the plan set.

MacArthur Bridge, Raleigh County, WV
Smith served as a staff designer for the MacArthur Bridge Rehabilitation in Beckley, WV. The rehabilitation included repairs to the substructures, and changing the abutments to semi-integral.

Education
B.S. Civil Engineering, Virginia Polytechnic Institute & State University, Blacksburg, VA

Certifications
Engineer in Training (EIT)

Level II Erosion & Sediment Control NCDOT

WVDOT TRET Level III

Total Years Experience
3

BEN PRIOR, PE
Project Engineer

TERRADON

Ben Prior is a staff engineer at TERRADON Corporation. Mr. Prior is responsible for a variety of tasks for civil engineering projects. He inspects, evaluates, designs and coordinates installation of structural systems. Much of his experience is in modification, improvement, and retrofitting for coal and railroad clients.

Project Experience

311 Bridge Rehabilitation, WVDOH, Greenbrier County, WV
311 Bridge Rehabilitation consisted of the following; concrete deck replacement with lightweight concrete to achieve desired load rating using "Traditional" deck design, converting the abutments to semi-integral, and an adjustment to the normal cross-slope. Prior was part of the structural design team assisting with deck design and designing connection dowels for seismic loading per AASHTO.

Route 60 Roadway Design Study Chelyan to Montgomery, WVDOH, Kanawha County, WV
The Route 60 Design Study, following WVDOH guidance, divided approximately 12 miles of highway into 3 sections, with each section containing multiple study sites. A total of twelve sites were studied. Improvements studied included a roadway realignment, adding turning lanes, and slope stabilization. For each alternate at each site, roadway geometry, right-of-way impacts, environmental impacts, earthwork volumes, construction cost, etc. were assessed in order to recommend a preferred alternate.

Port Perry Bridge Rehab, West Mifflin, PA
While at another firm, Prior Inspected 1,600' plus railroad bridge. Inspection was performed by climbing with fall protection and by utilizing a specialized pontoon boat with extendable boom. Developed plans for railroad bridge rehab. Worked with bridge owner to prioritize needed repairs.

Railroad Retaining Wall, Maidsville, WV
While at another firm, Prior designed and acquired permits for (4) retaining wall for railroad company. The walls were approximately 100' to 250" long cantilevered and tie-back solider pile wall. Coordinated with railroad and state DOT on right-of-way locations.

Railroad Retaining Wall, Shamrock, PA
While at another firm, Prior designed and acquired permits for a retaining wall for railroad company. The wall was approximately 250' long cantilevered solider pile wall. Designed maintenance of traffic plan while coordinating with state DOT officials.

General Railroad Infrastructure, Various Locations East of Mississippi
While at another firm, Prior designed fueling platforms, jib crane foundations, stairs, sand silo foundations, underground concrete vaults, and other facility structures for a railroad company. Most of these projects were retrofitting and rehabilitation designs. These designs required creative solutions that both fulfilled the owner's need and fit into the significant constraints of limited space and cost effectiveness. Loading and analysis included wind, gravity, buoyancy, and seismic when applicable.

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

Certifications
Registered Professional Engineer: WV

Total Years Experience
8

ROBERT SIMMONS III, PE
Senior Engineer

TERRADON

Robert Simmons serves as a Project Engineer at TERRADON Corporation. He offers a background in structural, highway, geotechnical, and hydraulic design, as well as material testing and inspection. He has provided services on a number of projects throughout West Virginia, Virginia, Kentucky, and Ohio.

Project Experience

Bluestone Dam Phase IV, Summers County, WV
Simmons was a Senior Design Engineer for the Bluestone Dam Phase IV Construction team. Designs have included structural cantilevered steel framing anchored to the sloped downstream face of the dam that is able to support not only the drilling operations for anchor installation, but also a 150 ton crane. The cantilevered platform extends 32' from the face of the dam, with support spacing in excess of 15'. The design required not only that each main support member was able to accommodate the full weight of the 150 ton crane and supply vehicles, but also required a detailed examination of fatigue prone members for the design service life of the project. An additional design concern was that all members below high water level had to be designed to support full loadings, along with force effects from water and debris collisions.

Catfish Man of the Woods Bridge, Cabell County, WV
Simmons was a Senior Design Engineer for the design of the replacement of the Catfish-Man-of-the-Woods-Bridge. Tasks included assisting with the layout of the new bridge and roadway alignment, design of cantilever wing walls with up to 18 foot heights, drilled shaft foundations, semi-integral abutments, reinforced elastomeric bearings, spread pre-stressed box beams, and reinforced concrete deck. He also provided technical assistance to junior staff.

Portsmouth Bypass Design/Build, Scioto County, OH
Simmons was a Senior Design Engineer for the design of two bridge for the proposed Portsmouth Bypass Design Build project. Tasks included assisting with the layout of new bridges, driven pile foundations, integral abutments, reinforced and un-reinforced elastomeric bearings, pre-stressed bulb "T" beams, and a 35' tall cap and column pier. He also provided technical assistance to junior staff.

Noise Wall Design, Montgomery County, OH
Simmons was a Design Engineer assisting in the design of the drilled shaft foundations, FAA aeronautical clearance requirements, and plan review of the free standing noise wall located adjacent to I-75 near Dayton, OH.

Value Engineering Sections 3 & 5 of Corridor "H", Tucker County, WV
Simmons aided in the design of roadway drainage, super elevations, and vertical geometry. He also provided assistance with plan and cross section review and quantities.

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

Certifications
Registered Professional Engineer: WV

Total Years Experience
11

ANDREW BRENNER, EIT
Project Designer

TERRADON

Andrew Brenner serves as a Project Engineer at TERRADON Corporation. He offers a background in bridge inspecting, steel design, and bridge design. Brenner has provided services on various projects throughout West Virginia.

Project Experience

Twin Branch, McDowell County, WV
Served as a hydraulic designer for two culverts by using bridge modeling programs: TR-55, HY-8, and HEC-RAS and developed a hydraulic design report. Brenner also checked roadway and bridge calculations and calculated vertical curve geometry.

I-79/US50 Interchange, Harrison County, WV
Brenner checked MDX bridge models and load calculations.

Harper Road Bridge Rehabilitation, Raleigh County, WV
Brenner was the lead structural inspector of fracture critical and fatigue prone details. All areas inspected were documented using photographs and notes as required.

MacArthur Bridge Rehabilitation, Raleigh County, WV
Brenner was the lead structural inspector of fracture critical and fatigue prone details. All areas inspected were documented using photographs and notes as required.

Mossy Interchange Bridge, Fayette County, WV
Brenner was the lead structural inspector of fracture critical and fatigue prone details. All areas inspected were documented using photographs and notes as required. Brenner was tasked with designing parapets, approach slabs, sleeper slabs, abutments, and the reinforcement that goes along with each of these. Brenner was also tasked with checking MDX modeling and load calculations. Brenner was also tasked with doing Bridge and Roadway quantities and creating the tables that go with them.

WV 311 Bridge Rehabilitation, Greenbrier County, WV
Brenner was the lead structural inspector of fracture critical and fatigue prone details. All areas inspected were documented using photographs and notes as required. Brenner drilled four 2" diameter concrete cores on each of the piers. Brenner was tasked with using TAEG to do an overhang design. Brenner was tasked with designing parapets, approach slabs, sleeper slabs, abutments, and the reinforcement that goes along with each of these. Brenner also checked crash wall, abutment, and wing wall reinforcing. Brenner was also tasked with checking MDX modeling and load calculations. Brenner was also tasked with calculating and checking Bridge and Roadway quantities and creating the tables that go with them. Brenner also assisted with populating beam camber and deflection tables.

Earl Vickers Montgomery Bridge, Kanawha County, WV
Brenner was the lead structural inspector of fracture critical and fatigue prone details. All areas inspected were documented using photographs and notes as required. Load ratings and distributed and concentrated loads were also calculated for the stringers and girders in order for inputs to be put into programs.

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

Certifications
Engineer In Training: WV

OSHA 10 HR

OSHA 40 HR

WVDOH Level III TRET

Aerial Operator Certified

Total Years Experience
5

JAMAL SHANAA, PE
Lead Structural Engineer

TERRADON

Jamal Shanaa, PE serves as a Lead Project Engineer at TERRADON Corporation. He offers a background in bridge inspecting, steel design, and bridge design. Shanaa has provided services on various projects throughout West Virginia.

Project Experience

US 35 Over Upper Nine Mile Creek & Middle Nine Mile Creek, WV
Prepared final design plans for two culverts. Reviewed final design calculations for the foundations. One culvert has an 80 feet span over Upper Ninemile Creek founded on spread footings. The second culvert has a 42 feet span over Middle Ninemile Creek founded on footing on steel piles. Design calculations were prepared in conformance with AASHTO LRFD specifications.

Central Avenue Bridge Rehabilitation, City of South Charleston, WV
Performed preliminary design for a three-span steel girder bridge, 74'-96'-74', in conformance with AASHTO LRFD specifications. Checked adequacy of steel piles for the cantilevered abutments

Duhring Bridge Study, Mercer County, WV
Reviewed calculations for final design of reinforced concrete bridge deck. Also reviewed design of concrete diaphragm for future jacking forces.

Fairmont Gateway Connector, WVDOT, WV
Reviewed calculations for the contractor's erection plan of an arch bridge.

Mill Creek Bridge, WVDOT, Jackson County, WV
Reviewed final bridge detailed design and construction plans for a superstructure replacement of a dual 4-span steel plate girder bridge, 258 feet long, 43'-67'-82'-66', Substructures were rehabilitated including partial removal of abutments and one of the piers. Abutments were converted into semi-integral.

Twin Branch, WVDOT, McDowell County, WV
Lead Bridge Engineer responsible for the delivery of the final construction plans of two skewed box culverts 12.5' X 5.5' and 19.5' X 6'. Soldier pile retaining walls were used due to the restrictions due to the close proximity of exiting railroad abutments. Moment slabs were used to minimize the load on the soldier pile walls.

Harper Road Bridge, WVDOT, Raleigh County, WV
Lead Bridge Engineer for the rehabilitation of a 2-span steel plate girder bridge, 98'- 98', over the Turnpike. Ultra-High-Performance Concrete was used for the pier cap repair, while conventional concrete repair with fiber reinforced polymer wrap was used for the pier column. Electrochemical Chloride Extraction was used for the abutments.

Education
B.S. Civil Engineering

Certifications
Registered Professional Engineer: WV, OH, PA, IN

Total Years Experience
+35

MIKE PYLES, PE
Senior Engineer

TERRADON

Michael is a Senior Engineer at TERRADON Corporation and is responsible for designing storm water drainage systems for highways & bridges, bridge/culvert hydraulics and scour analysis, hydrology & hydraulic studies, erosion & sedimentation control, storm water management, maintenance of traffic & right-of-way plans, site development, utility relocations, water distribution systems, wastewater treatment, collection & pumping systems, and preparing analysis models for hydrology, hydraulics, scour, and water distribution systems.

Project Experience

311 Bridge, White Sulphur Springs, WV
Design Engineer for maintenance of traffic plans for a bridge deck replacement for an existing bridge over I-64 in Greenbrier County for a WVDOH project.

Mossy Interchange Bridge, Mossy, WV
Design Engineer and Cad Drafter for hydraulic & scour analysis and report, bridge deck drainage analysis, and right-of-way acquisition plans on a replacement bridge over Paint Creek on Fayette WV 612 for a WVDOH project.

Twin Branch Culverts , Twin Branch, WV
QA/QC Reviewer for a hydraulic analysis and report for two (2) box culverts that replaced the existing culverts for Twin Branch and Lower Twin Branch (tributaries of the Tug Fork) on McDowell CR 7/05 for a WVDOH project.

Mill Creek Bridge, Ripley, WV
Design Engineer and Cad Drafter for bridge deck drainage analysis and drainage pipe system design on bridge deck replacements and maintenance of traffic plans for two (2) existing bridges over Mill Creek on I-77 in Jackson County for a WVDOH project.

Waterloo Bridge, Waterloo, WV
Design Engineer and Cad Drafter for hydraulic and scour analysis, bridge deck drainage analysis, right-of-way acquisition plans, and maintenance of traffic plans on a replacement bridge over Thirteenmile Creek on Mason CR 31 for a WVDOH project.

2016 Clendenin Flood Relief, Clay County, WV
Design Engineer for a hydraulic and scour analysis of the abutments on two (2) replacement bridges over Porter Creek on Clay CR 2 for a WVDOH emergency project.

Morrow County Structures over Otter Creek, Denmark, OH
Design Engineer and Cad Drafter for hydraulic & scour analysis and report, waterline relocation, quantities, right-of-way acquisition plans, and maintenance of traffic plans for a 3-sided arch culvert that replaced an existing bridge over Otter Creek on SR-95 for an ODOT project located west of the City of Denmark, Morrow County, Ohio.

4th Street Drainage, Fairmont, WV
Design Engineer for the storm water system on a WVDOH project for the relocation and upgrade of 4th Street for Fox Engineering.

Education

A.S. Mining Engineering Technology
West Virginia Institute of Technology

B.S. Civil Engineering
West Virginia Institute of Technology

M.S. Engineering,
Marshall University

Certifications

Registered Professional Engineer: WV

Total Years Experience

+45

MIKE PYLES, PE (Cont.)
Senior Engineer

TERRADON

Hammer Strait Bridge, Franklin, WV
Design Engineer for a scour analysis of the abutments on a replacement bridge over Trout Run on Pendleton CR 33 for a WVDOH project.

Catfish Man of the Woods Bridge, Gwinn, WV
Design Engineer and Cad Drafter for the design of the erosion & sediment control, storm water management, bridge deck drainage analysis, right-of-way acquisition plans, 404 permit application, and hydraulic & scour analysis on a replacement bridge over Spurlock Creek on Cabell CR 1 for a WVDOH project

Fairmont Gateway Connector, Fairmont, WV
Design Engineer for the storm water system on a WVDOH project for the relocation and upgrade of WV 273 to a four-lane divided highway and a new interchange with I-79.

Corridor H – Davis to Bismarck Section 3, Tucker County, WV
Design Engineer for the revised storm water ditch design on a WVDOH project for Corridor H – Davis to Bismarck Section 3.

Corridor H—Davis to Bismarck Section 5, Tucker County, WV
Design Engineer for the revised storm water ditch design on a WVDOH project for Corridor H – Davis to Bismarck Section 5.

Huntington Mall Road, Cabell County, WV
Design Engineer for the storm water system and culverts on a WVDOH project for the upgrade of US Rt. 60, Mall Road, and Ring Road, and the new road crossing over I-64 from US Rt. 60 to Ring Road to better accommodate Mall traffic.

Culloden I/C, Cabell & Putnam Counties, WV
Design Engineer of the storm water system on a WVDOH project for the I-64 interchange and modifications of Route 60/21.

North Mineral Wells Relocated WV 14, Mineral Wells, WV
Design Engineer for the storm water system and culverts on a WVDOH four lane divided highway project for the relocation and upgrade of approximately 1.5 miles of WV 14.

Pleasant Valley I/C to WV Route 310 I/C, Marion County, Fairmont, WV
Design Engineer for the storm water system on a WVDOH project for the widening of approximately 1.5 miles of I-79 from a 4-lane road to an 8-lane road.

Harsh Sugar Camp Bridge, WV
Design Engineer for a scour analysis of the piers and abutments on a replacement bridge for a WVDOH project.

Fort Seybert Bridge, WV
Design Engineer for a scour analysis of the piers and abutments on a replacement bridge for a WVDOH project.

RANA MUTASHAR, PhD, EIT

Project Engineer

TERRADON

Rana Mutashar serves as a bridge designer at TERRADON Corporation. Mutashar provides experienced engineering services on various projects throughout West Virginia. She offers a background in bridge design, steel design, concrete design, finite element modeling, nonlinear analysis, model analysis, soil investigation, and soil structure interaction.

Project Experience

Bluestone Dam, Mercer County, WV
Mutashar provided design assistance for varies elements of the drill rig platform at Bluestone Dam. Mutashar designed the spacer angles to make sure they could handle the applied load. Structural steel design was performed in accordance with AASHTO LRFD 8th edition.

Pine Creek Dam
Mutashar designed the Catwalk Spacers at the Pine Creek Dam to ensure they could handle the applied load. Structural steel design was performed in accordance with AASHTO LRFD 8th edition and United State Army Corp. of Engineers EM-385, as required by project specifications.

Ridgewood Road, Huntington, WV
Mutashar helped design a retaining wall for a slip above Ridgewood Road in Huntington, WV. The designed wall is a pile and lagging structure designed to protect the roadway from damage from potential slip occurrence.

Harper Road Bridge, Raleigh County, WV
Mutashar provided design assistance for the rehabilitation of Harper Road Bridge in Beckley, WV. The project included a pier concrete rehabilitation utilizing a carbon fiber wrap and epoxy coating. Mutashar modeled the bridge using MDX software to investigate the load that transferred from superstructure to pier, and analyzed the existing pier using RC-pier software to investigate the causes. Mutashar assisted in the calculation to evaluate if carbon fiber wrap is sufficient to repair the deteriorating pier. The root of cracks was addressed by adding stirrups and using UHPC material around the pier. Mutashar assisted in preparation of drawings for the bridge.

MacArthur Bridge Rehabilitation, Raleigh County, WV
Mutashar provided design assistance for the rehabilitation of MacArthur Bridge in Beckley, WV. The project included a pier concrete rehabilitation utilizing a carbon fiber wrap and epoxy coating. Mutashar modeled the bridge using MDX software to investigate the load that transferred from superstructure to pier, and analyzed the existing pier using RC-pier software to investigate the causes. Mutashar assisted in the calculation to evaluate if carbon fiber wrap is sufficient to repair the deteriorating pier. The root of cracks was addressed by adding stirrups and using UHPC material around the pier. Mutashar assisted in preparation of drawings for the bridge.

Twin Branch Bridge, Twin Branch, WV
Mutashar was a staff designer for the Twin Branch culverts design in Twin Branch, WV. The design included replacing the current culverts with improved, up-to-date culverts. Mutashar assisted in the preparation of drawings for the culverts.

Education

B.S. Civil Engineering, Basrah University, Iraq

M.Sc. Civil Engineering Basrah University, Iraq

Ph.D Civil Engineering, Ohio University, Athens, OH

Total Years Experience

+18

I-79 & US-50 Interchange Design Study, Harrison County, WV
Rana Mutashar served as a project designer for the I-79 US 50 interchange Design Study in Harrison County, WV. For the design study, eight options were originally proposed by the West Virginia Department of Highways (WVDOH) and three options were selected out of the eight. Mutashar work in one option. Her work includes analysis of the proposed bridge using MDX model. She setup MDX models for bridge and modified the existing geometry to meet the current criteria required for the bridge design.

Mill Creek Bridge, Jackson County, WV
Mutashar provided engineering design for the construction of the Mill Creek Bridge . Design included removal of the existing pier and designing a new pier. The first stages included the removal of half of the existing bridge pier, and closing one lane above the demolition pier of the bridge. The plans for this construction process required adding temporary support to the remainder of the existing pier. Mutashar did nonlinear 2-dimension and 3-dimensions finite element analysis to investigate the axial force on the temporary support. She accounted for the construction stages in modeling. She models about 20 modeling to consider the effect of the of different support conditions and the cross-section of the support.

WV 311 Deck Replacement, Greenbrier County, WV
Mutashar provided engineering design for the WV311 Deck Replacement. The existing WV 311 bridge passes over I-64 and turns into an entrance ramp for I-64 westbound. It is a four-span bridge consisting of two abutments and three piers. Mutashar assisted in modeling the bridge using MDX-software and performed multiple calculations including the deck reinforcement design.

Mossy Bridge, Fayette County, WV
Mutashar provided engineering design for Mossy Bridge project in Fayette County, WV. The project consisted of
building a new bridge in upstream of the existing bridge. Mutashar designed a new bridge using MDX software. She set up MDX models for different girder alternatives to find a design that had a good rating. Mutashar designed deck and cross frame, and oversaw the development of the plan set.

Kenneth Shadrick Bridge, Wyoming County, WV
Mutashar provided engineering design for the Kenneth Shadrick Bridge including plans to remove the existing pier, pier 6, and replace with a proposed new pier. Mutashar, designed the pier wall using the RC-pier model. Mutashar carried out calculations to check the stability of the proposed pier including sliding, overturning, and uplift, and assisted in the preparation of drawings for the bridge.

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B AML Consultant Qualification Questionnaire

Appendix B: (RFP Attachment A - AML CQQ)

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C AML Related Project Experience Matrix

Appendix C: (RFP Attachment B - AML RPEM)

D Certificates of Authorization

Appendix D: Certificates of Authorization & Applicable Certifications

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

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
WVDEP - Kempton Refuse Rehabilitation	09/10/2020	55-0687626

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
TERRADON Corporation	409 Jacobson Drive, Poca, WV 25159	N/A

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
304-755-8291	1989	Individual X - Corporation Partnership Joint-Venture	YES X - NO

7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
409 Jacobson Drive, Poca, WV 25159 / 304-755-8291 / Bill Hunt, President / 100 Personnel (40 AML/Project Specific Design)

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
Virginia King, Owner & CEO Ashley Lioi, Principal & Engineer of Record Bill Hunt, President	Will Thornton, PE, PS - VP Civil Engineering Joe Saunders, PE - VP Transportation & AML Jason Asbury, ASLA, CESSWI - VP Environmental, Geotechnical & Construction Services

9. PERSONNEL BY DISCIPLINE

10 ADMINISTRATIVE	— ECOLOGISTS	4 LANDSCAPE ARCHITECTS	3 STRUCTURAL ENGINEERS
— ARCHITECTS	— ECONOMISTS	— MECHANICAL ENGINEERS	**10 SURVEYORS**
2 BIOLOGIST	— ELECTRICAL ENGINEERS	**1 MINING ENGINEERS**	— TRAFFIC ENGINEERS
5 CADD OPERATORS	4 ENVIRONMENTALISTS	— PHOTOGRAMMETRISTS	— OTHER
— CHEMICAL ENGINEERS	— ESTIMATORS	— PLANNERS: URBAN/REGIONAL	
12 CIVIL ENGINEERS	**6 GEOLOGISTS**	— SANITARY ENGINEERS	
25 CONSTRUCTION INSPECTORS	— HISTORIANS	2 SOILS ENGINEERS	
15 DESIGNERS	— HYDROLOGISTS	— SPECIFICATION WRITERS	100 TOTAL PERSONNELL
5 DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 12
***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".		
NAME AND ADDRESS: DL Martin P.O. Box 494 Scott Depot, WV 25560	SPECIALTY: Drilling Operations	WORKED WITH BEFORE __X__ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No

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

YES Description and Number of Projects: 35 Projects for WVDEP/AML&R

NO

B. Is your firm experienced in Soil Analysis?

YES Description and Number of Projects:
25 WVDEP/AML&R projects included some soil analysis. TERRADON provides geotechnical engineering on a wide variety of projects including slip repairs, roadway and highway projects, bridges and structural projects, etc.

NO

C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects:
25 WVDEP/AML&R projects included hydrology and hydraulics. Additionally, TERRADON has completed various roadway and highway projects with hydrology and hydraulic studies completed.

NO

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

YES Description and Number of Projects:

NO
TERRADON routinely provides photo control surveys and field edits the mapping provided. TERRADON does utilize subcontractor services for aerial photography when needed (Tuck Mapping).

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:
10 WVDEP/AML&R projects included the evaluation of aquifer degradation as a result of mining. TERRADON has also designed hundreds of miles of waterline for various projects, including projects for WV American Water, throughout West Virginia.

NO

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

YES Description and Number of Projects:
5 WVDEP/AML&R projects included acid mine drainage evaluation and abatement. Additionally, TERRADON was one of only two firms evaluating and designing AMD abatement of special reclamation projects in the 1990's.

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		
Will Thornton, PE, PS	YEARS OF AML DESIGN EXPERIENCE: 10	YEARS OF AML RELATED DESIGN EXPERIENCE: 10	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 35

Brief Explanation of Responsibilities

Will Thornton is the Vice President of Civil Engineering services at TERRADON. With more than 40 years' experience on various civil engineering projects including waterline design, utility design, slip repair design, AML design, stormwater design, and more.

EDUCATION (Degree, Year, Specialization)
B.S. Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	WV Professional Engineer WV Professional Surveyor

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		
Joe Saunders, PE	YEARS OF AML DESIGN EXPERIENCE: 30	YEARS OF AML RELATED DESIGN EXPERIENCE: 30	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 15

Brief Explanation of Responsibilities

Joe Saunders is the Vice President of Transportation and AML services at TERRADON Corporation. With more than 35 years' experience, Saunders has provided civil design engineering services for a number of projects including AMLR projects, slip repair designs, highway and roadway designs, bridge and structural designs, and more.

EDUCATION (Degree, Year, Specialization)
B.S. Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	WV Professional Engineer

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.) Joe Carte, PE	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 40	YEARS OF AML RELATED DESIGN EXPERIENCE: 40	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 20
Brief Explanation of Responsibilities Joe Carte is a Senior Geotechnical Project Manager for TERRADON. Carte is responsible for the project management, design review, construction drawings and specifications, constructability review, etc. on various geotechnical design projects including AML design, slip repair design, etc.			
EDUCATION (Degree, Year, Specialization) B.S. Civil Engineering			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State) Registered Professional Engineer: WV, OH		

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.) Andrew Wagner, EIT	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE: 5	YEARS OF AML RELATED DESIGN EXPERIENCE: 5	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: N/A
Brief Explanation of Responsibilities Andrew Wagner is an Engineer Designer (EIT) at TERRADON. Wagner's background in Mining Engineering has lending design expertise for various slip repair, AML, and transportation projects throughout West Virginia.			
EDUCATION (Degree, Year, Specialization) B.S. Mining Engineering, Virginia Polytechnic Institute & State University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State) Engineer in Training (EIT) - WV		

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

Software
Autodesk 2007 Land Development Desktop with Civil and Survey Design Modules
SedCad 4 - Erosion Control and Hydrology Software
Haested Method Flowmaster Software for Channel Design
Haested Methods - Water CADD (Pipe Network Analysis)
Slope Stability -
PC Stable
REAME
SBSLOPE
WinStable and WinStable 2003
Piling Walls, Anchors and Reinforced Earth Walls -
Lpile
HeliCAP
Anchor 400
KeyWall 2004
TR 55, TR 20, TR 66 (Sites) - Hydrology
Hec-1, Hec HMS 2.22, Hec R As 3.1.2 - Hydrology
LC 58 + RP 61 - Structural (wall)
Microstation V8

Surveying Equipment
Trimble 4700 modular, RTK Global Positioning Total Station
Trimble Geomatics Office Software
Topcon Total Stations (3)
SMI Data Collectors (3)

Printing/Plotting/Reproduction
HP DesignJet 1050C Plotter
HP DesignJet 759C Plotter
HP LaserJet 8000 Printer (2)
HP Color LaserJet 3700
Sharp AR-550 Copier/Printer (2)
Sharp AR-C150 Full Color Copier/Printer
Océ 7056 Engineering Size Copier

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
I79-US 50 Interchange Study Harrison County, WV	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	Engineering Design	$100 Million	90%
US 60 - Chelyan to Montgomery PIE Study Kanawha County, WV	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	Engineering Design	$15 Million	80%
311 Bridge Greenbrier County, WV	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	Engineering Design	$3.5 Million	99%
Harper Road Bridge Rehabilitation Raleigh County, WV	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	Engineering Design	$1.5 Million	99%
Macarthur Bridge Rehabilitation Raleigh County, WV	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	Engineering Design	$10 Million	99%
Twin Branch Box Culverts McDowell County, WV	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	Engineering Design	$1.5 Million	99%
WV Statewide Engineering Design Planning	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	Engineering Design	$1 Million	50%

TOTAL NUMBER OF PROJECTS:	TOTAL ESTIMATED CONSTRUCTION COSTS: $

16. 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

17. 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)
Earl M. Vickers Memorial Bridge	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston, WV 25305	$5 Million	2018	
Verizon Lee Terrace, Charleston, WV	Verizon Wireless 18 Abele Road Bridgeville, PA 15017	$200,000	2016	Yes
Verizon Wireless Cell Tower Nitro, WV	Verizon Wireless 18 Abele Road Bridgeville, PA 15017	$200,000	2016	Yes
Verizon Wireless Cell Tower Goldtown, WV	Verizon Wireless 18 Abele Road Bridgeville, PA 15017	$200,000	2016	Yes
Hammer Strait Bridge Cabell County, WV	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	$250,000	2016	Yes
Waterloo Bridge Waterloo, WV	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	$400,000	2016	Yes
Verizon Lee Terrace, Charleston, WV	Verizon Wireless 18 Abele Road Bridgeville, PA 15017	$200,000	2016	Yes
Montgomery 6th Ave. Pump Station Montgomery, WV	Sanitary Board Of Montgomery 706 Third Avenue Montgomery, WV 25136	$500,000	2018	

18. 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

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

TERRADON has extensive experience in both wet and dry mine seals, with or without bat gates. Our experience with Stonecoal creek had over two dozen mine seals. In addition, we have done regrading on numerous other refuse piles and highwalls including Jenkin Jones, Micajah, Linger, Camp Mahonegan, Cedar Creek, and Tuppers Creek and Gerath Landslides. Additionally, the TERRADON team has provided design services for landslide repairs on more than 600 combined projects throughout West Virginia.

20. The foregoing is a statement of facts.

Signature: Will Thornton Title: VP Civil Engineering

Printed Name: Will Thornton, PE, PS

Date: 09/01/2020

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/Managem ent	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability						
Mallory Gibson Portals	both			X	X						X	X			X			M=100	P=100				
Lilburn Pritt	both		X								X							M=100	P=100				
Robinette	both		X			X					X							M=100	P=100				

* 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 "B"

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

TERRADON CORPORATION
C00901-00

Engineer in Responsible Charge: ASHLEY L. LIOI - WV PE 020507

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, 2020 - December 31, 2021

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.

STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS
STATE OF WEST VIRGINIA
CHARLESTON

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

BOARD PRESIDENT

WEST VIRGINIA BOARD OF PROFESSIONAL SURVEYORS

Certificate of Authorization

Terradon Corporation

Poca, West Virginia

CERTIFICATE OF AUTHORIZATION # 20-5430

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 1, 2020 through December 31, 2020

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 31st day of December 2019

2020

Sefton R. Stewart, P.S., Chairman

Lantz G. Rankin, P.S., Member

James T. Rayburn, P.S., Secretary

Gary D. Facemyer, P.E, P.S., Member

Douglas C. McElwee, *Esq.*, Public Member

CONTRACTOR LICENSE

Authorized by the

West Virginia Contractor Licensing Board

Number: WV005801

Classification:

GENERAL BUILDING
GENERAL ENGINEERING

TERRADON CORPORATION
DBA TERRADON CORPORATION
PO BOX 519
NITRO, WV 25143-0519

Date Issued	Expiration Date
SEPTEMBER 20, 2019	SEPTEMBER 20, 2020

Authorized Company Signature

Chair, West Virginia Contractor Licensing Board

WEST VIRGINIA CONTRACTOR LICENSING BOARD

This license, or a copy thereof, must be posted in a conspicuous place at every construction site where work is being performed. This license number must appear in all advertisements, on all bid submissions and on all fully executed and binding contracts. This license cannot be assigned or transferred by licensee. Issued under provisions of West Virginia Code, Chapter 21, Article 11.

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
TERRADON CORPORATION
401 JACOBSON DR
POCA, WV 25159-9691

BUSINESS REGISTRATION ACCOUNT NUMBER: **1040-5251**

This certificate is issued on: **06/11/2010**

This certificate is issued by the West Virginia State Tax Commissioner in accordance with W.Va. Code § 11-12.

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

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

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.1
L1398692608

Earl Ray Tomblin
Governor

State of West Virginia
Office of Miners' Health, Safety & Training

Class: 07 Surface Coal Miner

Certification No: [redacted]

UNDERWOOD, ADAM L.

[redacted]

DOB: [redacted]

SSN: [redacted]

DOI: 05-21-2002

DOE: N/A

Reg 9 - Charleston

[redacted]

DUP

STATE OF WEST VIRGINIA
OFFICE OF MINERS' HEALTH, SAFETY & TRAINING

CLASS 07 SURFACE COAL MINER

NAME STEPHEN CHAPMAN

DATE OF ISSUE	DATE OF EXPIRATION
12/20/2006	N/A
[redacted]	[redacted]
CERTIFICATE NUMBER	SOCIAL SECURITY NUMBER

[redacted]

CERTIFYING OFFICIAL

Shelia Propst
VERIFYING OFFICIAL