



# West Virginia Purchasing Division

2019 Washington Street, East  
Charleston, WV 25305  
Telephone: 304-558-2306  
General Fax: 304-558-6026  
Bid Fax: 304-558-3970

The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.

## Header

List View

General Information | Contact | Default Values | Discount | Document Information

Procurement Folder: 147011

SO Doc Code: CEOI

Procurement Type: Central Contract - Fixed Amt

SO Dept: 0310

Vendor ID:

SO Doc ID: DNR1600000008

Legal Name: TERRADON CORPORATION

Published Date: 10/23/15

Alias/DBA:

Close Date: 11/17/15

Total Bid: \$0.00

Close Time: 13:30

Response Date:

Status: Closed

Response Time:

Solicitation Description:

Total of Header Attachments: 0

Total of All Attachments: 0



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

State of West Virginia  
 Solicitation Response

Proc Folder : 147011

Solicitation Description : Addendum; Wastewater Treatment and Water System Renovations

Proc Type : Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation No	Version
	2015-11-17 13:30:00	SR 0310 ESR11161500000002255	1

**VENDOR**

000000206513  
 TERRADON CORPORATION

**FOR INFORMATION CONTACT THE BUYER**

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

Signature X FEIN # DATE

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Architectural engineering				

Comm Code	Manufacturer	Specification	Model #
81101508			

**Extended Description :** AE Services for Moncove Lake Wastewater Treatment Plant Replacement and Lost River Water System Renovations.



Purchasing Division  
 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: 147011

Doc Description: Addendum; Wastewater Treatment and Water System Renovations

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2015-10-23	2015-11-17 13:30:00	CEOI 0310 DNR1600000008	2

**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, Inc.  
 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 *Thomas G. Keith* FEIN # 55-068-7626

DATE 11/12/15

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

STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

**MANDATE:** 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 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: TERRADON Corporation, Inc.

Authorized Signature: *Thomas G. Kittredge* Date: 10/22/15

State of West Virginia

Putnam

County of \_\_\_\_\_, to-wit:

Taken, subscribed, and sworn to before me this 22nd day of October, 2015.

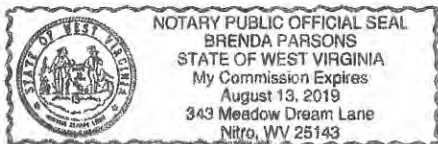
My Commission expires August 13, 2019.

**AFFIX SEAL HERE**

**NOTARY PUBLIC**

*Brenda Parsons*

*Purchasing Affidavit (Revised 08/01/2015)*

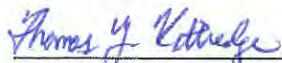


**CERTIFICATION AND SIGNATURE PAGE**

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained 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, Inc.

\_\_\_\_\_  
(Company)

 Thomas Y. Kittredge, President  
\_\_\_\_\_  
(Authorized Signature) (Representative Name, Title)

304-755-8291 304-755-2636 10/22/15  
\_\_\_\_\_  
(Phone Number) (Fax Number) (Date)

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application\* is hereby made for Preference in accordance with West Virginia Code, §5A-3-37. (Does not apply to construction contracts). West Virginia Code, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the West Virginia Code. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

- 1. Application is made for 2.5% vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% vendor preference for the reason checked: Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.
7. Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules. Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: TERRADON

Signed: Thomas G. Kethledge

Date: 10/22/15

Title: President



ADDENDUM ACKNOWLEDGEMENT FORM  
SOLICITATION NO.:

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

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

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

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

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

TERRADON Corporation, Inc.  
Company

*Thomas G. Kithred*  
Authorized Signature

11/12/15  
Date

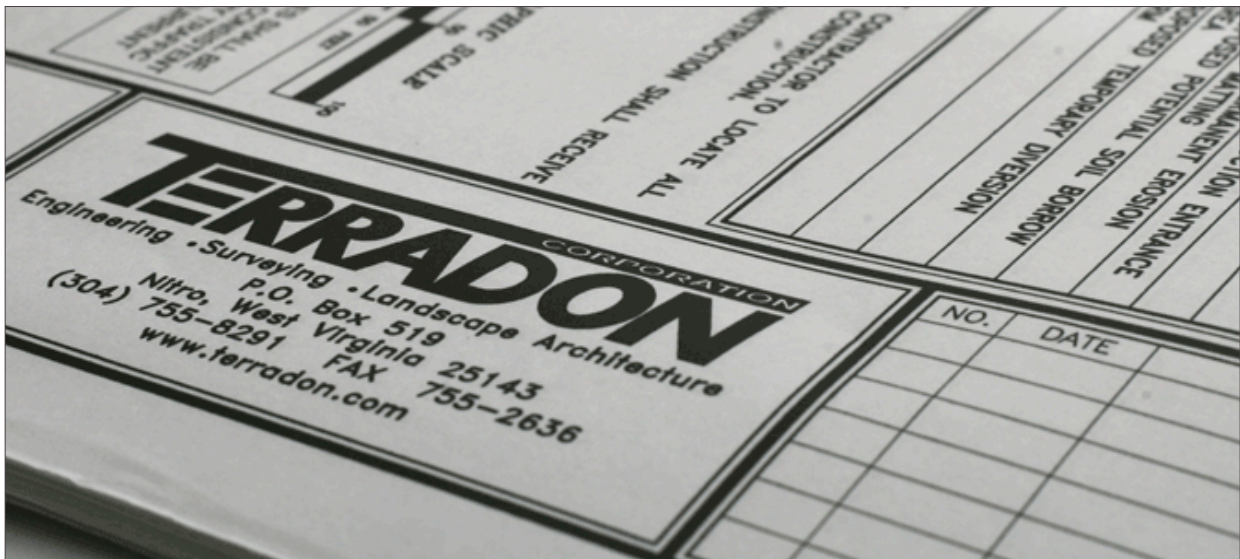
NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

Engineering . Planning . Surveying . Environmental . Inspection

STATEMENT OF QUALIFICATIONS FOR  
*DNR 1600000008*  
*AE SERVICES FOR MONCOVE LAKE WASTEWATER TREATMENT PLANT  
REPLACEMENT AND LOST RIVER WATER SYSTEM RENOVATIONS*

*Presented to:*  
DIVISION OF NATURAL RESOURCES  
PARKS & RECREATION-PEM SECTION  
324 4TH AVE  
SOUTH CHARLESTON WV25305

November 17, 2015



Corporate Office  
409 Jacobson Dr.  
Poca, WV 25159  
304-755-8291

Greenbrier Valley, WV  
425 North Jefferson St.  
Lewisburg, WV 24901  
304-645-4636

Jackson County  
101 North Court Street  
Ripley WV, 25271  
304.532.4909

Fayette County, WV  
P.O. Box 307  
Charlton Heights, WV 25040  
304-541-7655

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## I. QUALIFICATIONS



TERRADON Corporation offers a multi-faceted approach to design engineering and consulting services. For the past 25 years TERRADON staff has provided a wealth of engineering solutions blanketing the Appalachian and Mid-Atlantic region with successful projects. The company built its reputation on expert personnel and quality, time-sensitive service. Those same founding principles hold true today.

The second-generation, family-owned business has built a strong reputation by providing flexible, cost effective design solutions and maintaining the highest level of customer service. 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 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.

TERRADON is the largest woman-owned engineering firm in West Virginia. TERRADON is a certified Women's Business Enterprise as defined by the Women's Business Enterprise National Council and the National Women Business Owners Corporation.



### Locations

TERRADON maintains four WV locations: headquarters near Charleston, WV and offices in Lewisburg, WV, Ripley, WV and Charlton Heights, WV. With offices located in these four locations, TERRADON is equipped to meet any engineering design needs for this project.

## I. QUALIFICATIONS

### Wastewater, Water, Stormwater

Since 1989, TERRADON has provided planning, design and construction administration for millions of dollars worth of civil engineering projects including wastewater, water and stormwater improvement projects. Project experience is varied in both size and scope, ranging from small on-site systems to meet the requirements of schools and single-user site office buildings, to upgrades of major municipal facilities involving both new construction and the renovation of existing facilities. Key staff have more than 100 years of combined experience and have designed systems for both private clients and municipalities.



#### Wastewater

- Utility Planning and Layout
- Wastewater Treatment, Flow Equalization, Collection and Pumping
- Decentralized Sewer System Planning and Design/On-Site Wastewater System Design
- System Mapping
- Sewer System Infiltration and Inflow (I/I) and Sewer System Evaluation Surveys (SSES)
- Sewer System Rehab Design
- Operation and Maintenance Manuals
- Industrial Waste Treatment
- Sanitary Sewer Overflow (SSO) Abatement
- Asset Management Planning
- Combined Sewer Overflow (CSO) Compliance
- Hydraulic Modeling
- Mixing Zone Studies
- Permitting



#### Water

- Utility Planning and Layout
- Water Treatment, Storage and Distribution
- System Mapping
- System Modeling
- Drinking Water Backflow Prevention and Testing Programs
- Operation and Maintenance Manuals
- Source Water Protection Plans
- Asset Management Planning
- Permitting
- Backflow Prevention Programs



#### Stormwater

- Planning and Layout
- Stormwater Management Design
- System Mapping and Modeling
- Erosion and Sediment Control Plans
- MS4 Plans
- Stormwater Protection Plans
- Best Management Practices Design
- Permitting

## I. Qualifications

### Key Project Staff

#### **William S. Thornton, PE, PS    Project Manager**

William S. Thornton, PE, PS is the former owner of Balance Consulting and has 20 years of managing various civil and transportation engineering projects. He will serve as primary point of contact for all work regarding this project and will attend all meetings of regarding this project once it begins and will continue to attend the meetings and provide status reports until all services are completed and the project is meeting all performance criteria.

#### **Mike Pyles, PE                                  Senior Project Engineer**

Mike Pyles serves as a Senior Project Engineer for various civil and environmental engineering projects in the public and private sectors with emphasis on water and wastewater projects. He is responsible for engineering studies, design, contract documents, engineering analysis, computer modeling, regulatory compliance and permitting with emphasis on public utility systems. Pyles has served as Project Engineer on civil and environmental projects for State, County and City government clients since 1972. His keys areas of expertise include wastewater treatment plants, conventional and alternative sewer collection systems, water distribution systems, bridge scour analysis, hydraulic stream modeling, stormwater system design, construction plan/specifications preparation and state/federal permitting.

#### **Jim Nagy, PE                                  Project Engineer**

Jim Nagy performs Civil Engineering related to water and wastewater projects at TERRADON. He specializes in the design of water treatment and distribution systems. He has more than 25 years of hands-on experience providing engineering for the largest private water company in West Virginia. He earned a B.S. in Civil Engineering from West Virginia University. His primary focus is on project management of water and wastewater projects. He also performs design work related to water distribution systems and sewage collection systems.

#### **Lee Hale, PE                                  Civil Engineer**

Lee Hale serves as a junior Project Engineer for TERRADON wastewater and water projects. Hale has provided design support on some of TERRADON's largest and most recent projects. Working under the direction of senior leadership, Hale has provided design engineering for The Summit Bechtel Reserve, a 12,000-acre site with decentralized sewer and more than 100 miles of utilities. He is currently pursuing a Master of Science in Engineering with an emphasis in Environmental Engineering from Marshall University. Lee is proficient with computer modeling of water and wastewater systems using WaterCAD and designing stormwater management systems using SedCAD. He is also a skilled Civil 3D and Microstation user.

#### **Robert Thaw, PS                                  Survey and Mapping**

Robert Thaw, Vice President of Survey and Mapping, oversees all TERRADON Survey services. TERRADON's survey group serves a diverse range of projects in support of seven TERRADON service groups in addition to managing survey-specific clients. Thaw manages a staff of Professional Surveyors and Computer Aided Drafting (CAD) designers who provide mapping, construction layout, ALTA survey, topographic survey and boundary survey services.

Thaw's leadership has been instrumental in TERRADON's prioritization of the use of modern technology, ensuring clients the most efficient and accurate results. Additionally, he is responsible for in-house design of commercial property sites, parking and utility easements, and review of project plans and base mapping creation. Thaw's group also provides as-built surveys, utility identification surveys and deformation monitoring of design features such as retaining walls and dams.

## II. TECHNICAL EXPERTISE

**TERRADON's team of qualified professionals routinely provide professional services for various public and private utilities to plan develop, design and construct water and wastewater system projects. TERRADON employs more than 50 Professional Engineers, technicians, surveyors and support staff at its WV locations.**

### **The WV Registered Professional Engineers are:**

- Joe Saunders, PE (Transportation and Structural)
- Jim Nagy, PE (Utilities)
- John James, PE (Geotechnical)
- Mike Pyles, PE (Hydraulic Design, Wastewater Treatment Process Design, Utility Design)
- Robert Simmons, PE (Civil)
- Ashley Lioi, PE (Civil)
- Lee Hale, PE (Civil Engineering)
- Will Thornton, PE, PS (Civil)
- Phil Reed, PE, LEED Ap (Civil)
- Kristen McClung, PE (Hydrology and Erosion/Sediment Control)
- Jennifer Casey, PE (Civil)
- V. Grant Martin, PE (Civil, Transportation)

**Additionally, TERRADON maintains in-house staff for ancillary engineering-related tasks. Key personnel and their specialties include:**

- Robert Thaw, PS (Survey and Mapping)
- Randy Melton, PS (Survey and Mapping)
- Dave Brown, PS (Right-of-Way, Survey and Mapping)
- Brian Bakanas, PS (Right-of-Way, Survey and Mapping)
- Bill Hunt, PG, LRS (Environmental Planning)
- Greg Fox, ASLA, LEED Ap (Grading and Site Design)

### **Software and Technology**

TERRADON maintains the latest office management and design software available. The firm also utilizes a state-of-the-art secured network tied directly to the internet through a Metro E connection. For site design, civil and planning projects, the firm utilizes AutoCAD Civil 3D 2014 along with Land Desktop Companion 2014. For highway, roadway and structural projects, the firm uses Bentley MicroStation, Bentley InRoads, SAP2000, and MDX. This is the West Virginia Division of Highways preferred format. TERRADON's library of design software also includes SedCad & Pond Pack for erosion/sediment control, StormCAD & HydraFlow for drainage, WaterCAD for water distribution and management and FlowMaster for hydraulic calculations.

TERRADON makes a significant investment in computers and related hardware. Our systems are consistently upgraded or replaced to maintain highly efficient CAD stations. HP8000 laser printers located conveniently to the design stations provide quick 11x17 proof plots for designers. TERRADON uses the latest HP Design Jet plotters to provide the highest quality prints of plans available. TERRADON Corporation also implements the use of a proprietary software call TEAM CENTER, allowing its engineers to efficiently share project documents with clients through secure FTP access with strict security access. Clients are invited to view the project repository through a hyperlink provided in an email. In a two-step process, clients simply click the link provided in the email, create a username and password and they enjoy access to drawings and related projects materials within seconds.

## II. TECHNICAL EXPERTISE

### CONSTRUCTION INSPECTION & MONITORING

TERRADON offers construction inspection and monitoring, and materials testing 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.

#### Materials Testing & Inspection Services Include:

- 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 (AASHTO-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

The following is a short listing of construction inspection experience:

- Montgomery Sewer and Wastewater Treatment Plant Upgrades (3 projects)
- National Park Service: Nuttallburg Town Reconstruction
- Brookfield - Hawks Nest Dam stabilization
- West Virginia American Water Company - Various waterline extension and replacement projects throughout West Virginia
- CRH#8 Housing project – sanitary line installation inspection
- ECA Office building sanitary line installation inspection
- Summit Bechtel Family Reserve -
  - Multi-shift construction observation and compaction testing for soil placement and excavation activities
  - Concrete testing
  - Drainage installation Construction Observation
  - Gradation Testing and Construction Observation for Stone Placement
  - Utility Installation Construction Observation
  - On-site Sewage Holding and Disposal Systems Inspection
  - Road Construction Inspection and Testing
  - 2009 IBC Special Inspections at the Logistics Center Warehouse, Treehouse, Visitor's Center and Zip Lines
  - Northern Wayne County PSD Sewage Force Main Replacement Project





## II. TECHNICAL EXPERTISE

### UTILITY DESIGN, CONSTRUCTION MONITORING AND INSPECTION, LAND DEVELOPMENT/SITE DESIGN

#### The Summit Bechtel National Scout Reserve

TERRADON Corporation was heavily involved in the development of the Summit as a consultant to Trinity Works. The Summit is a 10,600+ acre outdoor adventure center owned by the Boy Scouts of America and located near Mt. Hope, WV. From the initial site selection to surveying, planning, infrastructure design and inspection, TERRADON was a key player in creating one of the highest-profile design and construction endeavors in West Virginia. Working under tight specifications and time restrictions, TERRADON spearheaded the delivery of quality results.

- Initial Site Selection/Conceptual Designs
- Site Planning/Grading
- Erosion and Sediment Control
- AML Reclamation for use as the main site access road system
- Survey/Mapping
- All Environmental Permitting
- Geotechnical Engineering
- Materials Testing and Construction Monitoring
- Utility Design (Water and Wastewater)
- 60+ miles of underground utilities including electrical conduit and natural gas
- 550,000 tons of aggregate produced by on-site rock crushing 600 acres of clearing, grubbing and rough grade operations
- 3 million cubic yards of excavation
- 600 acres of fine grading and revegetation
- 28 miles of drainage swales, including erosion and sediment control
- 14 miles of new roads (grade and drain)
- 4 earthen dams
- 80,000 seat lawn amphitheater
- Construction Observation and QA/QC testing.

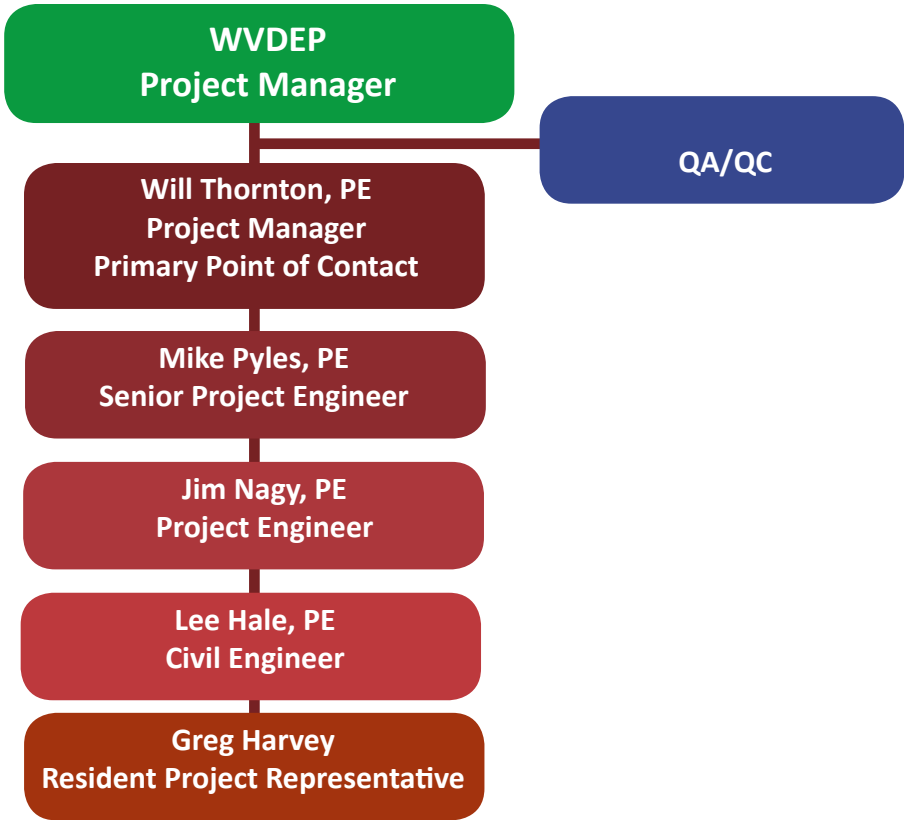


### III. MANAGEMENT & STAFFING CAPABILITIES

TERRADON Corporation maintains sufficient full-time staff in order to complete quality projects in an efficient and timely manner. The company maintains staffing protocols in order to supplement staff should project demands increase. At present time, TERRADON has adequate staff in-house to manage and complete project tasks in relation to this contract.

TERRADON engineers have numerous resources within the company to draw on, such as surveying, geotechnical engineering, environmental engineering, landscape architecture, materials testing, and construction monitoring. This allows the project manager to control all phases of the design process, from initial site reconnaissance through construction.

#### Proposed Organizational Chart



## IV. REFERENCES

### **City of Montgomery**

304-442-5181

Contact: Michael Giannini, General Manager

Contact: James F. Higgins, Jr., Mayor

### **Northern Wayne PSD**

304-523-1070

Contact: Ron Terry, Chairman

Contact: Blaine Cyrus, General Manager

### **West Virginia American Water**

304-340-2974

Contact: Brett Morgan, P.E., Engineering

### **Putnam County Commission**

304-586-0201

Contact: Brian Donat, County Manager

### **Boy Scouts of America**

304-646-2312

Contact: Rob Ridgeway, Project Director

## V. PRIOR EXPERIENCE

### Wastewater Treatment Process Design Experience

The proposed TERRADON Team includes highly experienced wastewater treatment process design engineers and technicians with a broad experience in wastewater treatment system design. The Team experience ranges from wastewater treatment plants of less than 10,000 gallons per day to serve a single school, to a 14 million gallons per day wastewater treatment facility that serves 24,500 customers. The proposed TERRADON Team has designed numerous wastewater treatment plant projects. The latest project involved the upgrade of the City of Montgomery wastewater treatment plant to include improved sludge digestion/holding tank, a belt filter press building and press, and the addition of a fine screen at the head of the plant.

Mike Pyles, PE will lead the process design team assisted by Jim Nagy, PE and Lee Hale, PE. The following is a brief summary of the wastewater treatment plant projects designed by this proposed Team:

Mike Pyles, PE

Wastewater Treatment Plant Experience:

City of Charleston, Kanawha County, WV

Design Engineer for a 14 MGD Pure Oxygen wastewater treatment plant upgrade in two phases. The project received the 2005 Gold Award for Phase I and the 2008 Gold Award for Phase II from the WVACE.



City of Montgomery, Fayette County, West Virginia

Design Engineer for a 0.5 MGD innovative technology oxidation ditch treatment plant. The design included a stainless "boat" clarifier design, separate fine bubble aeration, and submersible mixers to allow control of dissolved oxygen and mixing independently.



City of Philippi, Barbour County, WV

Design Engineer for an oxidation ditch wastewater treatment plant consisting of screening and grit removal, an oxidation ditch with three surface brush aerators, two circular secondary clarifiers, chlorine contact tank, sludge decant tank and sludge drying beds.



## V. PRIOR EXPERIENCE

### City of Logan, Logan County, WV

Design Engineer for an innovative oxidation ditch wastewater treatment plant consisting of screening and grit removal, an oxidation ditch with three surface aerators, a stainless steel boat clarifier, chlorine contact tank, Sludge decant tank, and a belt filter press.



### Town of Blacksville, Monongalia County, WV

Design Engineer for a small package wastewater treatment plant to serve a single commercial facility.



### City of Ravenswood (Modification), Jackson County, WV

Design Engineer for improvements to the existing City of Ravenswood wastewater treatment lagoon system. The improvements included a new chlorine disinfection system to treat the effluent prior to discharge to the river.



### City of Parsons, Tucker County, WV

Design Engineer for an aerated lagoon wastewater treatment system to serve the City of Parsons. The design included two aerated lagoon cells separated by curtain walls and a final detention cell prior to disinfection with chlorine.



## V. PRIOR EXPERIENCE

### Flatwoods-Canoe Run PSD Braxton County, WV

Design Engineer for an orbital oxidation ditch wastewater treatment plant. The design included a screen and grit removal system, and oxidation ditch with concentric channels, three secondary clarifiers, a chlorine disinfection system, and sludge drying beds. The plant serves the Towns of Sutton and Gassaway.



### Union PSD - Cross Lanes, Kanawha County, WV

Design Engineer for the upgrade of two existing activated sludge wastewater treatment plants to serve the Cross Lanes areas near Nitro, WV. Upgrades included the conversion of one treatment plant from conventional activated sludge to contact stabilization and the construction of a sludge belt filter press system.



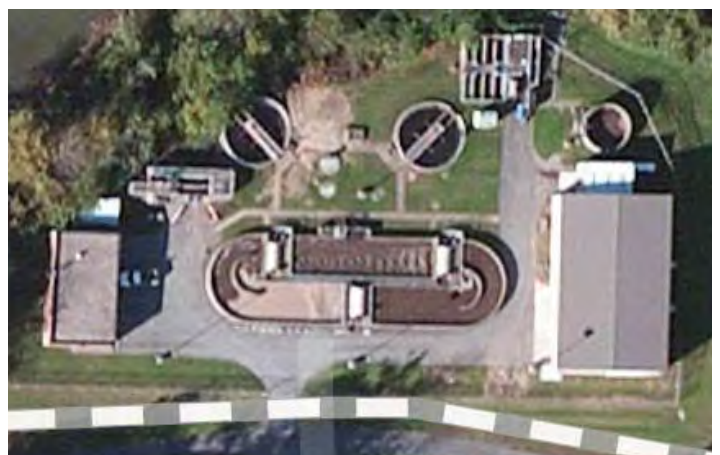
### Lumberport PSD, Harrison County, WV

Served as design Engineer for a two cell aerated wastewater lagoon treatment system. The project included two separate pond cells, one aerated, and a disinfection system.



### Shinnston PSD, Harrison County, WV

Design Engineer for an oxidation ditch treatment plant to serve Shinnston, WV. The design included screening and grit removal, an oxidation ditch with three surface aerators, two secondary clarifiers, a chlorine contact tank for disinfection, a sludge decant/holding tank and a belt filter press system.



## V. PRIOR EXPERIENCE

### Infiltration and Inflow Removal/Sewer System Evaluation Surveys

The TERRADON Team routinely provides engineering and technical services to municipalities and Public Service Districts to locate, evaluate, and remove sources of infiltration and inflow (I/I). The TERRADON Team has been involved in numerous projects that included mapping sewer systems, conducting flow metering with portable flow meters, smoke testing to locate sources of inflow, rainfall simulation using dyed water testing to confirm sources of inflow and infiltration, physical inspections of the sewer system to document manhole conditions and pipe conditions, and the development of plans for rehabilitation of the sewer system.

The typical approach taken by the TERRADON Team is to conduct a study to determine the condition of the sewer system, locate the sources of I/I, and determine the volume of I/I experienced under various conditions, such as dry weather and wet weather, and determine what portion of I/I can be cost-effectively removed and which portion, if any, is more cost-effective to continue to transport and treat. This approach provides the municipality with the lowest cost and least impact on sewer rates.



The following is a brief description of the TERRADON Team's experience in I/I and SSES Projects:

Towns of Sutton and Gassaway I/I Study. This study was conducted for the Flatwoods Canoe Run Public Service District as part of a regional wastewater collection and treatment project. Both the Town of Sutton and the Town of Gassaway were evaluated to locate sources of inflow and infiltration. Services included smoke testing, dyed water testing, flow metering, and manhole inspections to document the condition of the manholes. A report was prepared documenting areas that required rehabilitation which would, in turn, reduce the I/I that would be treated at the new wastewater treatment plant.

The City of Montgomery I/I and SSES Studies. The City of Montgomery did not have a composite sewer map of its system. This project included mapping the sewer system, dividing the sewer system into sub-drainage areas for flow metering, and conducting smoke testing and dye water testing to confirm sources of inflow. A cost-effective analysis was conducted to determine which portions could cost-effectively be removed and which portions should continue to be treated, which was followed by an SSES Study including closed-circuit television inspection of the sewer system and a sewer separation and rehabilitation plan was developed.

City of Montgomery I/I Continuing Study. TERRADON conducted smoke testing and a physical inspection of the western portion of the City to develop a sewer separation plan to remove inflow. This plan resulted in sewers being separated on Madison and Monroe Streets.

City of Smithers I/I Study. TERRADON conducted smoke testing and flow metering to locate potential sources of inflow in the Smithers sanitary sewer system to assist Smithers with compliance with its NPDES permit. The smoke testing project included a smoke testing report, a photo log documenting the location of each plume of smoke, and a map which was keyed to the photograph. Smithers continues to use these documents in removal of inflow sources located on private property.

## V. PRIOR EXPERIENCE

Northern Wayne County Public Service District I/I Study. TERRADON conducted smoke testing and physical inspections of five subdivision sewer systems connected to the Northern Wayne County PSD collection system. The I/I study documented the condition of the existing sewer systems with photographs and maps, and set forth the basis for a rehabilitation plan, which was also developed by TERRADON. NWCPSD pumps all of its wastewater to the City of Huntington for treatment and disposal and pays for treatment for all water passing through a master meter at the Huntington wastewater treatment plant. Thus, removal of I/I saves NWCPSD thousands of dollars per year in treatment costs.



## Sewer System Design Projects

The members of the TERRADON Team have been designing sewer line projects of all types for nearly 40 years. The projects designed by the Team vary in size and range from a large sewer systems with approximately 55 miles of sewer, to relatively short sewers serving small neighborhoods or schools. The most recent of these sewer system design projects was the Summit Bechtel Reserve wastewater collection system serving Fayette County's new home of the Boy Scout Jamboree. This project alone included the design of more than 92,700 linear feet of sewer system.

While TERRADON uses the latest computer-aided design software to assist with the design of sewer systems, the Team still approaches design "the old-fashioned way" by conducting extensive field investigations and walking the proposed route to make sure the sewer system is constructable. Preparing "desk-top" designs alone are not an acceptable design practice at TERRADON.

The Sewer System Design Team Leader will be Will Thornton, PE, PS. Thornton was retained by the Fayette County Commission to conduct a preliminary study of the cost of extending sewers from Ansted into Ames Heights, Chestnutburg Road, Gaymont Road, Hopewell, Russell Road, Shade Creek, and Turkey Creek and has already completed the preliminary general layouts for sewers in these areas and has provided the County with a head-start on work needed for a Preliminary Engineering Report to meet funding agency requirements for funding the sewer system extensions into these areas.

A brief listing of some of the TERRADON Team's extensive sewer system design experience is as follows:

### **City of Montgomery Sanitary Board, Morris Creek Sewer Extension Project**

TERRADON engineers designed a sewer extension project which included approximately 12,000 linear feet of 8" gravity sewer to the City's landfill to collect leachate from the landfill following its closure. The project included a master metering manhole to meter the leachate flowing into the sewer. Approximately 35 homes were added to the City's system with this sewer extension project.

### **City of Montgomery Sewer Separation Project**

This purpose of this project was to eliminate sources of inflow along Madison and Monroe Streets. TERRADON engineers designed a new sanitary sewer on Madison Street and the existing combined sewer was converted to a storm sewer. On



## V. PRIOR EXPERIENCE

Monroe Street a new 30 inch diameter storm sewer was designed and the existing storm water catch basins were disconnected from the combined sewer system and connected to the new storm sewer, thus, eliminating the inflow originating from these two street and greatly reducing the inflow to the sewage treatment plant during periods of rain.

### **Summit Bechtel Family Reserve Wastewater Collection System**

TERRADON engineers designed this alternative sewer system which is designed to serve 50,000 Boy Scouts and 50,000 visitors each day during the National Boy Scout Jamboree at the Summit Bechtel Family Reserve in Fayette County, West Virginia. The project was comprised of approximately 92,700 feet of sewer pipe and 125 large (6,000 gallons each) septic tanks, and 23 septic tank effluent pumping stations to convey the wastewater to an on-site sewage treatment facility designed by others. The sewer system collects the wastewater through a variable grade sewer system, while the septic tanks provide primary treatment of the wastewater.

### **Northern Wayne County Public Service District Sewage Force Main Collection Project**

Northern Wayne County Public Service District discovered that their main sewage conveyance force main connecting them to the City of Huntington had deteriorated from hydrogen sulfide attack. TERRADON engineers designed an emergency by-pass pumping system to pump around the section of line to be replaced and designed a new 2,000 feet section of 16" sewage force main to replace the section that was deteriorated.

### **Sewer Line Extension Study, Fayette County, West Virginia**

TERRADON and Balance Consulting teamed to conduct a preliminary sewer study for extending sewer service to the Ames Heights area, Turkey Creek area, Gaymont Road area, Chestnutburg Road area, Hopewell area, and Russell Road area of Fayette County with conveyance of the wastewater by gravity sewer to the City of Ansted. This preliminary study presented the preliminary construction cost to serve over 400 new potential customers. This information was then presented to the Infrastructure and Jobs Development Council (IJDC) to show feasibility for making the sewer extensions and to establish the need for a regional sewer project.

### **Charleston Renewal Housing (CRH #2 to CRH #5) Sewers**

TERRADON Engineers designed the sanitary sewers to serve urban renewal projects scattered throughout the City of Charleston, West Virginia. A developer razed the dilapidated existing housing and constructed new, modern townhouses to provide an urban update to these subsidized housing units. TERRADON provided the utility design, including sanitary sewers, for sites #2 through #5, each meeting the requirements of the City of Charleston and the City of Charleston Sanitary Board for connection to the city sewer system.

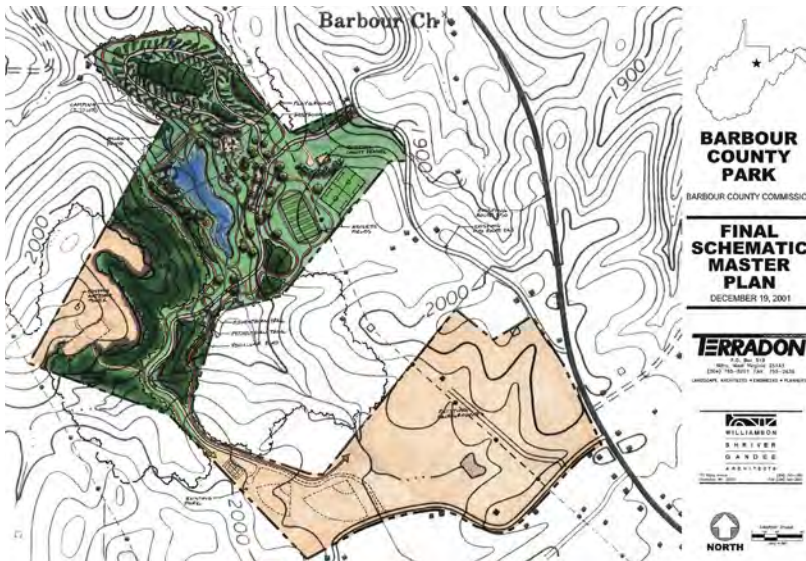
## V. PRIOR EXPERIENCE

# Little Beaver State Park Design

TERRADON was responsible for the design of a campground expansion that doubled the number of existing full-service RV spaces, a new bathhouse and a trail system to the bathhouse. TERRADON was also responsible for preparation of plans and specifications for a septic tank effluent gravity (STEG) system at the park. DNR Parks and Recreation had started the project using force account method of construction, but was unable to complete the project. Terradon designed the project to utilize materials already purchased and delivered to the site. The project consisted of septic tanks, one (1) grinder sewage pumping station, and small diameter gravity sewer (SDGS) with connection to the local PSD for treatment.



# Barbour County Park - Master Planning



As a subconsultant, TERRADON created a Final Schematic Master Plan for Barbour County Park.

Relevant Project Tasks Included:

- Survey and Mapping
- Land Planning
- Utility Design
- Grading and Drainage Design
- Access Road Design
- Construction Drawings

## Professional Resumes

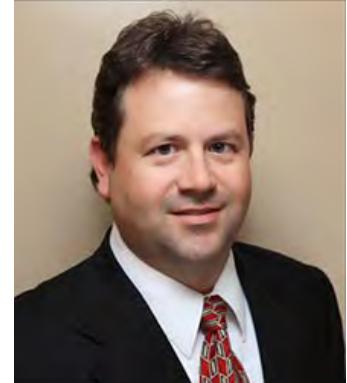
### William S. Thornton, PE, PS Project Manager

For this project, William S. Thornton, PE, PS, will serve as Project Manager. Thornton is an experienced project manager and design engineer for civil/transportation engineering design projects. He joined TERRADON in January 2014. Thornton has more than 15 years of experience with other consulting engineering firms in West Virginia, 5 years with the WVDOH as a Project Manager in the Consultant Review Section of the Engineering Division, and three years with a construction firm performing major concrete paving projects in West Virginia, Pennsylvania, and Ohio. Thornton also spent three summers with the WVDOT, Division of Highways, Right of Way Section, during college.

The major design tasks in which Thornton has been involved include: 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 including streets, drainage, sidewalks, buildings, and traffic along with other safety improvements.

### Relevant Project Experience

- **Valley Park Wave Pool Liner – Putnam County Parks and Recreation, Putnam County Commission**  
Construction plans and specifications were developed to install a liner over the deteriorating existing marcite concrete finish. Construction is expected to be complete by opening day 2016.
- **I-77 North Camden Interchange to Staunton Avenue Interchange-Wood County, WV.** Design included replacement and widening of an interstate bridge over the Little Kanawha River and the replacement and widening of the bridge over Staunton Avenue. The roadway work included 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 over 8million 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.
- **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 over 10 million cubic yards of earthwork, two interchanges, and a stream relocation.
- **U.S. 19 Corridor L Upgrade near Muddelty in 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.
- **WVDOH Master (On-Call) Engineering Services.** Managed various highway, bridge, and related engineering services at locations throughout the state including: Lavallette to Huntington Road Widening, Spencer Center Turn Lane, Church Street in Ripley Center Turn Lane, WV 14 and WV 15 Intersection Upgrade.



#### Education

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

#### Work Experience

TERRADON Corporation  
2014

City Engineer, City of  
Montgomery

City Engineer, City of Smithers

#### Registrations

Professional Engineer in WV, OH, VA

Professional Surveyor in WV

*\*Indicates project performed while working for another firm.*

## Professional Resumes

### Kristen Stinson McClung, PE, MBA Civil Engineer

Kristen Stinson McClung serves as a Civil Engineer for TERRADON Corporation and is based in the Lewisburg, WV office. She brings more than 17 years of engineering practice to public and private sector clients. From conception through acceptance of projects, Stinson McClung offers experience in civil, environmental, land development, streetscapes, survey, permitting, water, wastewater, paving, storm drainage, transportation and erosion-sedimentation control.

#### Relevant Project Experience

- **Valley Park Wave Pool Liner – Putnam County Parks and Recreation, Putnam County Commission**  
Construction plans and specifications were developed to install a liner over the deteriorating existing marcite concrete finish. Construction is expected to be complete by opening day 2016.
- **Betchel Summit Reserve As-Built Drawings** - As project manager for the as-built portion of this landmark project, responsible with TERRADON's survey team for capturing all the as-built data for the large amount of underground utilities installed during the construction phase of this historic project.
- **Eastwood Elementary School Additions & Renovations, Morgantown, WV** - Responsible for the Hydrology Study and Storm Water Detention design associated with this project.
- **John Marshall High School Additions & Renovations, Glen Dale, WV** - Responsible for the Hydrology Study and Storm Water Retention design associated with this project.
- **Beaver Coal Property, Beckley, WV** - Worked in conjunction with TERRADON's landscape architecture department to develop the preliminary storm water drainage and hydrology associated with the early Preliminary Planning stages of this project.
- **Rainelle Medical Center, Rainelle, WV** - Responsible for the Hydrology Study and Storm Water Detention design associated with this project.
- **Access Ohio Office Building: Columbus, OH** - Responsible for the Hydrology Study and Storm Water Detention design associated with this project.
- **Veterans Administration Parking Deck, Beckley, WV** - Responsible for designing the MS4 storm water requirements associated with this project, which includes first flush requirements associated with storm water runoff.
- **Cedar Creek Elementary School, Glenville, WV** - Responsible for the Hydrology Study and Storm Water Detention design associated with this project.
- **Fairmont Federal Credit Union, Fairmont, WV** - Responsible for designing the MS4 storm water requirements associated with this project, which includes first flush requirements associated with storm water runoff.
- **Deepwater Flyash Landfill, Dixie, WV** - Responsible for designing the new stormwater collection system to replace the failed system, which had created a large sink hole within the wasted flyash.
- **West Virginia School of Osteopathic Medicine New Entrance Road, Lewisburg, WV** - Responsible for the civil-site design associated with the O-school's proposed new entrance road off WV State Route 219. The proposed entrance road will bisect an existing greenspace and provide visibility to the front of the school from 219. Design responsibilities included site grading, storm water drainage design, permitting of the project through the WVDOH, and the production of construction drawings.
- **The Greenbrier - Tennis Stadium, White Sulphur Springs, WV** - Served as the project manager for this project, a 2500 seat outdoor tennis stadium and the historic Greenbrier Resort. Responsibilities included site grading to accommodate the bowl stadium, which required over 30,000 cy of fill material. McClung also sized and designed the storm water drainage system, sanitary sewer system, and water distribution system for the project.

#### Education

M.B.A., University of Georgia  
M.S. Civil Engineering,  
Auburn University  
B.C.E. (Civil Engineering),  
Auburn University

#### Work Experience

2010-Present  
TERRADON Corporation

2009—2010  
Preston Testing & Engineering

2002-2008  
Stantec Consulting Services

1999-2002  
Carter and Sloope

1997-1999  
Thomas & Hutton Engineering

#### Registrations

Professional Engineer:  
WV, GA, AL

NCEES Council Record

#### Certifications

Georgia Soil & Water  
Conservation Commission,  
Level II Certified Design  
Professional

## Professional Resumes

### Jim Nagy, PE Senior Engineer

As a Senior Engineer at TERRADON, Jim Nagy's primary focus is on designing civil engineering projects for public and private development projects throughout West Virginia. Nagy specializes in the design of water distribution systems as well as sewage collection systems. Nagy offers decades of hands-on experience and has previously provided design engineering services for schools, commercial developments, residential developments, public utilities and more. He earned a B.S. in Civil Engineering from West Virginia University and is a Professional Engineer in the State of West Virginia.

#### Relevant Project Experience

- **School Projects**  
Responsible for layout, design, and permitting of water and sewer lines for numerous school projects in WV. Projects entailed coordination with PSDs, municipal water and sewer departments, State and Federal regulatory agencies for design of facilities. Schools include: Blue Ridge Community and Technical College, Blue Ridge K-12, Burnsville Elementary, Flatwoods Elementary, Davis Elementary, Sutton Elementary, Little Birch Elementary, Frametown Elementary, Buffalo High School, Clay-Battelle High School, Confidence Elementary, Jefferson Elementary, East Hardy High School, Eastwood Elementary, Flinn Elementary, Geary Elementary, Gilbert High School, Greenbrier West high School, Hampshire High School, Harpers Ferry High School and 19 additional schools.
- **Commercial Developments**  
Responsible for layout, design, and permitting of water and sewer lines for numerous commercial developments in WV. Projects entailed coordination with PSDs, municipal water and sewer departments, State and Federal regulatory agencies for design of facilities. Developments include: Fairmont Federal Credit Union, Allegheny Energy Union (Fairmont), First Ward (Clendenin) Apartments, Milton Crossing, Tri-State Hotel and multiple convenience store sites throughout WV.
- **Charleston Replacement Housing**  
Utility design, primarily water, sewer and stormwater, and coordination of overall site activities with the project developer for multi-unit housing development. Each phase entailed the design and layout of several hundred feet of water, sewer and stormwater line, including multiple connections with the utility providers, i.e., the Charleston Sanitary Board and West Virginia American Water, and applicable permit applications. Also responsible for construction monitoring and provision of as-built drawings as required by the respective utility providers.
- **Cathcart – Devonshire Development, Scott Depot, WV**  
Designed sanitary sewer and water distribution system to serve more than 900 housing units in this private development.
- **Washington Woods Subdivision, Ravenswood, WV**  
Designed more than 9,000 feet of water and sewer line and a 500 gpm fire pump water booster station to serve a 150 lot subdivision.
- **Sawmill Village, Snowshoe, WV**  
Designed approximately 2,800 feet of 8" water line and sanitary facilities to serve the Sawmill Village development project in Snowshoe, WV.
- **Cabell County Water Main Extension Project**  
Worked on design and layout of approximately 46,000 feet of water main for the Salt Rock PSD/WVAW. Responsible for bidding, contract award, and project management.
- **Putnam County Water Main Extensions**  
Worked on design and layout of approximately 63,000 feet of water main and a booster pumping station for the Putnam County Commission/WVAW. Responsible for bidding, contract award, and project management.
- **Manila Ridge Water Main Extension Project**  
Worked on design and layout of approximately 38,000 feet of water main for the Putnam County Commission/WVAW. Project has not received funding yet. However, will be responsible for bidding, contract award, and project management.



#### Education

B.S. Civil Engineering  
West Virginia University

#### Work Experience

TERRADON Corporation  
2007-Present

WV American Water  
1991-2007

AWW SC  
1984-1991

WV DNR  
1982-1984

VTN, Inc. Consulting  
Engineers  
1978-1982

J.H. Milam Consulting  
Engineers  
1977-1978

WV DNR  
1976-1977

WV Department of  
Highways  
1975-1976

#### Registration

Professional Engineer: WV

## Professional Resumes

### Philip Reed, PE

Senior Civil Engineer

Philip Reed serves as a Senior Civil Engineer and provides services to clients for Quality Control, Materials Testing and Engineering Design. Reed provides technical direction on a variety of civil engineering markets including commercial and industrial developments, housing, energy and infrastructure. Reed is responsible for engineering analysis and modeling, design, regulatory compliance and permitting, in addition to quality control and assurance. He has created numerous residential subdivision designs with roadways and drainage.

#### Relevant Project Experience

- **Sporting Club, Creekside Apartments**  
Responsible for surface drainage remediation and rehab for the Sporting Club, Creekside Apartments, White Sulphur Springs, WV.
- **West Virginia School of Osteopathic Medicine**  
Evaluated the stormwater system and designed a sink hole underground injection system for the WVSOM in Lewisburg, WV.
- **Greenbrier Valley Medical Center**  
Evaluated the stormwater system and designed a sink hole underground injection system for the medical center in Ronceverte, WV.
- **City of Alderson**  
Evaluated drainage issues and made remediation recommendations for the City of Alderson, WV.
- **Triana Energy Fresh Water Impoundment**  
Responsible for site design, construction certification, and bi-weekly inspections for 15 acre-feet freshwater impoundment in Northern, WV. Responsible for oversight of construction monitoring inspectors, reporting and permit compliance.
- **Summit Bechtel Reserve**  
Provided Engineering Support for a 10,600-acre+ site development in Fayette County, WV. Oversaw site layout, grading, and survey support for one of the largest infrastructure projects in West Virginia. Oversaw all QC services and provided project direction of 20 inspectors and technicians during installation of more than 100 miles of utilities and nearly 50 miles of roadway construction. Additional inspection and monitoring activities included vertical construction of three buildings and an iconic wingtip pedestrian bridge.
- **Gordy Oil**  
Provided survey and design for 5 natural gas pads and support for freshwater impoundments.
- **HAM Landfill**  
Designed and oversaw construction of municipal waste disposal cells. Performed environmental permitting for landfill construction. Responsible for Geotechnical investigation and study for landfill expansion. Provided construction certification and inspection for clay-lined asbestos cells and composite lined municipal solid waste cells.
- **Environmental Permitting**  
Managed environmental permitting of rock quarries (RBS Inc., ALTA Sand Quarry, and Muddy Creek Mountain Stone) to include air pollution control permits and water quality permits. Study includes traffic data collection, traffic analysis, safety analysis, intersection stopping and sight distance studies, geometric review, traffic modeling, environmental reviews, alternatives development and public involvement for a 3 mile corridor. The preliminary engineering phase will analyze widening the roadway section and bridge over Alum creek to 5 lanes, as well as development of needed turn lanes at the Africa Road intersection on all approaches. Complete street concepts such as a multi-use trail will also be considered. This study will investigate multiple alignment alternatives in order to react to a proposed reconfiguration of the E. Powell road intersection by other agencies. Once a preferred alternative is established our team will begin the detailed design phase.



#### Education

B.S. Civil Engineering Virginia Polytechnic Institute and State University

#### Affiliations

- 2005 – Present  
TERRADON Corporation
- 1999 – 2005  
Engineering & Testing 2000, Inc.
- 1991 – 1997  
Brackenrich & Associates, Inc.
- 1990 – 1991  
Cornerstone Land Surveying
- 1988 – 1990  
Norfolk Southern Railway

#### Affiliations

Professional Engineer: West Virginia, Virginia

American Concrete Institute

#### Certifications

- WVDOH Certified Portland Cement Concrete Technician
- WVDOH Certified Compaction Technician

## Professional Resumes

### Mike Pyles, PE Civil Engineer

Pyles is a Civil Engineer for various civil and environmental engineering projects with emphasis on transportation, water, and sewer projects. He is responsible for engineering studies, design, contract documents, engineering analysis, computer modeling, regulatory compliance, and permitting with emphasis on public water and sewer systems.

#### Relevant Project Experience

- **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.
- **US Route 35 Relocation, near Buffalo, WV\*** – Design Engineer for a scour analysis of the piers and abutments on three new bridges for a WVDOH project. Design Engineer for the storm water system and culverts on a WVDOH four lane divided highway project for the relocation and upgrade of approximately 3 miles of US 35 to a four-lane divided highway.
- **New River Bridge, Hinton, WV\*** – Design Engineer for a scour analysis of the piers and abutments on an existing bridge for a WVDOH project.
- **Greenbrier River Bridge, Hinton, WV\*** – Design Engineer for a scour analysis of the piers and abutments on an existing bridge for a WVDOH project.
- **Forks of Cacapon Bridge, Forks of Cacapon, WV\*** – Design Engineer for a scour analysis of the piers and abutments on a replacement bridge for a WVDOH project.

*\*These projects were completed by Mike Pyles, PE while working for another consultant.*



#### Education

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

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

M.S. Engineering,  
Marshall University

#### Work Experience

TERRADON Corporation  
2009-Present

HNTB Consulting Engineers  
1997-2009

Kelley Gidley Blair & Wolfe, Inc.,  
Consulting Engineers  
1986-1997

WV Department of  
Natural Resources  
1978-1986

WV Department of Highways  
1973-1978

#### Registrations

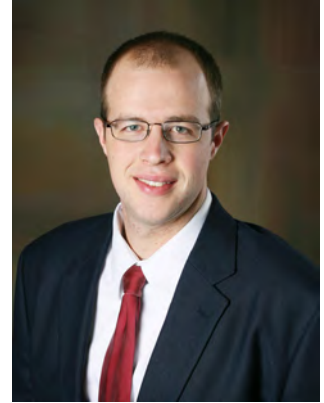
Professional Engineer,  
West Virginia

## Professional Resumes

### Lawrence E. "Lee" Hale, PE Civil Engineer

Lee Hale serves as a junior Project Engineer for TERRADON civil projects. Hale has provided design support on some of TERRADON's largest and most recent projects. Working under the direction of senior leadership, Hale has provided design engineering for The Summit Bechtel Reserve, a 12,000-acre site with decentralized sewer and more than 100 miles of utilities.

Additionally, Hale has provided value engineering services for highway projects including design for the construction of multiple twin bridges on 1-77 near Tupper's Creek, WV. He is currently pursuing a Master of Science in Engineering with an emphasis in Environmental Engineering from Marshall University.



#### Relevant Project Experience

- **The Summit Bechtel Family Reserve**  
Tasks performed included water distribution system design, wastewater collection and pumping design, storm-water management design, WVDEP environmental permitting, wetland mitigation design, AutoCAD Civil 3D design team management, initial utilities start up disinfection plan, and field inspection of utility installation.
- **Brown and Brown Law Firm**  
Tasks performed included field sampling and report writing for Phase II Environmental Site Assessment.
- **Goodwin & Goodwin, Attorneys at Law**  
Tasks performed included several Phase I Environmental Site Assessments.
- **T-Shirt International**  
Tasks performed included wastewater discharge sampling and permitting.
- **Matheny Motors**  
Task performed included Phase II Environmental Site Assessment monitor well installation and ground water sampling.
- **Catfish-Man-of-the-Woods Bridge, Cabell County, WV**  
Served as a design engineer for the design on the replacement of the bridge. Tasks included assisting with the layout of the new bridge and roadway alignment, design of cantilever wing walls, drilled shaft foundations, semi-integral abutments, reinforced elastomeric bearings, spread prestressed box beams, concrete deck reinforcement, distribution factor calculations, and drafting.
- **6th Avenue Pump Station Design, Montgomery, WV**  
Tasks performed included site layout, new pressure and gravity sewer line design, pump design, back-up pump design (Dri-prime system), drafting, and the redesign of existing infrastructure.
- **Portsmouth Bypass, Portsmouth, OH**  
Served as Design Engineer for two bridges 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, prestressed bulb "T" beams, and a 35' tall cap and column pier.
- **City of Montgomery Wastewater Treatment Plant Improvements**  
Design of overhead crane and pulley system for pump repair and installations.
- **Corridor H Drainage Design**  
Drainage Design for four-lane highway, including culvert and inlet sizing, flow calculations.
- **Putnam County Commission**  
Field Survey and Public Outreach for utility extension projects.

#### Education

B.S., Civil Engineering,  
West Virginia University  
Institute of Technology, 2010

Pursuing a M.S.E.,  
Environmental Engineering,  
Marshall University

#### Work Experience

TERRADON Corporation  
May 2009—Present

#### Registrations

Professional Engineer: WV

#### Affiliations

ASCE Charleston Branch  
2014 President



## Professional Resumes

### Robert Thaw, PS Survey and Mapping

With more than 22 years of experience in a wide range of surveying projects, Robert Thaw serves as head of TERRADON's Survey and Mapping department. He organizes and supervises survey crews, reviews project plans, and creates base mapping for various projects including noise barriers, interchanges, connectors, bypasses, sidewalks, bike paths, and bridges. Thaw oversees all TERRADON survey activities, including: preparation of Right-Of-Way plans; the development of GPS static networks for aerial mapping in the design of roadways; identification of existing utilities and property lines; base image development and control placement for construction projects; and drafting of legal descriptions for ROW parcels.

Thaw has been directly responsible for survey and mapping services, including Right-Of-Way, on a number of notable transportation projects including:

- **Laurel Fork Campground Bridge**  
TERRADON provided surveying and design engineering on a USDA Forest Service project in Randolph County, West Virginia. Surveyors led by Thaw provided Right-Of-Way services, including courthouse research, construction easements, and location of alignments. Additionally, provided topographic mapping, project control for construction, hydraulic cross sections, and stream profiles.
- **Sedalia Arch Bridge**  
Thaw oversaw survey services for the replacement of an existing concrete arch bridge with a 72' single span bridge. The bridge consisted of adjacent concrete prestressed box beams with a cast-in-place concrete deck. Survey services consisted of a topographic survey, ROW plans, construction control, and legal description creation. Roadway design consisted of new bridge approaches and a designed detour. Drainage, maintenance of traffic, and right-of-way plans were included in the scope of work.
- **Sleeth's Run Bridge**  
Thaw provided Right-Of-Way services during the design for the replacement of an existing truss bridge in Lewis County, WV. The project included the design of a new 200' structure and approaches. Survey services consisted of a topographic survey, ROW plans, construction control, and legal description creation.
- **Grade Road**  
Thaw oversaw Right-Of-Way services for the new construction of two lanes adjacent to an existing two-lane roadway. Right-Of-Way services included Right-Of-Way Plans, legal descriptions, and questionnaires for take parcels.
- **St. Mary's Bypass**  
Working for the WVDOT, Thaw led transportation survey services for the relocation of WV 16 in Pleasants County, from Pleasants County Route 18 to WV 2 in Saint Mary's, West Virginia for approximately two miles of highway. The project included topographic mapping, survey control mapping, right-of-way and utility cost estimates, and inventories.



#### Education

A.S., Survey Technology, 1981,  
West Virginia University Institute  
of Technology

B.S., Surveying, 1985,  
West Virginia University Institute  
of Technology

#### Work Experience

TERRADON Corporation  
1994-Present

Bowman Land Surveying  
1992-1994

Dunn Engineers  
1990-1992

Kelley Gidley Blair and Wolf  
1988-1990

Pierson & Whitman  
Architects and Engineers  
1984-1986

#### Registration

Professional Surveyor,  
West Virginia

## Professional Resumes

### Dave Brown, PS Surveying/Right of Way

Since joining TERRADON in 1999, Dave Brown has been involved in highway design/right of way projects and many surveying projects in West Virginia and surrounding states. Mr. Brown is responsible for conducting and supervising ALTA/ACSM surveys, boundary surveys, GPS surveys, control surveys, topographical surveys, highway right of way projects, and detailed site/utility surveys for various geotechnical, environmental, and civil projects.

#### Relevant Project Experience

Mr. Brown's responsibilities include survey project management, GPS networks, control surveys, development of highway right of way plans, boundary solutions, reports, courthouse research, drafting, construction staking, survey data reduction, and preparation of surveying cost estimates and proposals.

- WVDOH Corridor L Right of Way Project-Summersville, WV
- The Summit Bechtel Reserve- Glen Jean, WV
- Black Diamond Subdivision(1656 Acres)-Craig County, VA
- John Amos Plant Industrial Landfill Bill's Creek, Putnam County, WV
- Beech Ridge Wind Tower Project-Greenbrier County, WV
- Allegheny Energy Pleasants County Power Station ALTA Survey, St. Mary's, WV
- The Woodlands Subdivision- Summersville, WV
- Liberty Square Boundary/Topographic, Teays Valley, WV
- Utility Survey- Winfield, WV

#### Education

B. S Engineering Technology/  
Surveying  
West Virginia University  
Institute of Technology

#### Work Experience

1999 to Present  
TERRADON Corporation

1997 - 1999  
Trans-Ash

1997 - 1997  
Summit Engineering

1996 - 1997  
USGS

#### Registrations

Professional Surveyor  
West Virginia

### Brian P. Bakanas, PS Survey Crew Manager

Mr. Bakanas' responsibilities include survey crew manager, boundary solution, courthouse research, survey data reduction, and construction stakeout data preparation.

#### Relevant Project Experience

- **U.S. Route 9 Upgrade** - Right of Way monumentation, courthouse research, R/W Questionnaire.
- **Ford Electronics Facility** - Construction - Dublin Twp, Pennsylvania. Stakeout for site grades, roads, storm and sanitary sewers, and detention basins.
- **Rorer Pharmaceutical Plant** - Collegetown, Pennsylvania, Stakeout horizontal and vertical control, and column lines.
- **Chief Logan State Park Dam Project** - Logan, West Virginia. Stakeout dam, riser, road and parking lots, and clearing limits. Electronic data collection of road, dam, and borrow area sections. Analysis and plotting of field data.
- **Hansford AML Reclamation** - Surface Mines - West Virginia. Electronic data collection of sections on slide and reclamation of slide.
- **Smithers, West Virginia** - Appalachian Mining Permits, Topographic and G.P.S. survey of roads, ponds, and gas well locations
- **Monsanto Armour Creek Site, Nitro, WV** - Site Assessment - Horizontal/Vertical S/O and location of monitoring wells at landfill. Topographic survey for drainage assessment.

#### Education

A.S. Land Surveying  
Glennville State College

#### Work Experience

1995 - Present  
TERRADON Corporation

1991-1994  
Dunn Engineers, Inc.

1988-1991  
Czop/Spector, Inc

1986-1988  
V & I Associates

#### Registrations

Professional Surveyor  
West Virginia, Pennsylvania