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Header @ 4

List View

General Information | [Contact](#) | [Default Values](#) | [Discount](#) | [Document Information](#) | [Clarification Request](#)

Procurement Folder: 755110

SO Doc Code: CEOI

Procurement Type: Central Purchase Order

SO Dept: 0313

Vendor ID: VS0000019973 

SO Doc ID: DEP2100000001

Legal Name: DIEFFENBAUCH & HRITZ LLC

Published Date: 8/14/20

Alias/DBA:

Close Date: 9/3/20

Total Bid: \$0.00

Close Time: 13:30

Response Date: 09/03/2020 

Status: Closed

Response Time: 11:53

Solicitation Description: Addendum No.01 EO1 - Sardis (Saas) Landslide Project

Responded By User ID: DandHLLC 

Total of Header Attachments: 4

First Name: Kerry

Total of All Attachments: 4

Last Name: Westfall

Email: kwestfall@dandengineers.

Phone: 304-985-5555



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

**State of West Virginia
 Solicitation Response**

Proc Folder: 755110
Solicitation Description: Addendum No.01 EOI - Sardis (Saas) Landslide Project
Proc Type: Central Purchase Order

| Solicitation Closes | Solicitation Response | Version |
|---------------------|------------------------------|---------|
| 2020-09-03 13:30 | SR 0313 ESR09032000000001508 | 1 |

VENDOR
 VS0000019973
 DIEFFENBAUCH & HRITZ LLC

Solicitation Number: CEOI 0313 DEP2100000001
Total Bid: 0
Response Date: 2020-09-03
Response Time: 11:53:52
Comments:

FOR INFORMATION CONTACT THE BUYER
 Guy Nisbet
 (304) 558-2596
 guy.l.nisbet@wv.gov

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

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

| Line | Comm Ln Desc | Qty | Unit Issue | Unit Price | Ln Total Or Contract Amount |
|------|---------------------------------|-----|------------|------------|-----------------------------|
| 1 | EOI Engineering Design Services | | | | 0.00 |

| Comm Code | Manufacturer | Specification | Model # |
|-----------|--------------|---------------|---------|
| 81100000 | | | |

Commodity Line Comments:

Extended Description:

*Dates of Service are estimated for bidding purposes only.

QUALIFICATIONS

for the

EOI – WV DEP SARDIS (SAAS) LANDSLIDE PROJECT (CEOI 0313 DEP2100000001)

Harrison County, West Virginia

Prepared for:

**DEPARTMENT OF ADMINISTRATION, PURCHASING DIVISION
2019 Washington Street East
Charleston, WV 25305-0130**



DIEFFENBAUCH & HRITZ

1095 Chaplin Road, Suite 200
Morgantown, West Virginia 26501

September 3, 2020

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.

Herbert L. Parsons III Operations Leader
 (Name, Title)
Herbert L. Parsons III, PE, PS, Operations Leader
 (Printed Name and Title)
1095 Chaplin Road, Suite 200, Morgantown, WV 26501
 (Address)
(304) 985-5555 / (304) 985-5557
 (Phone Number) / (Fax Number)
hparsons@davidengineers.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.

Dreiffenbauch & Hritz
(Company)

Herbert L. Parsons III Operations Leader
(Authorized Signature) (Representative Name, Title)

Herbert L. Parsons III, PE, PS, Operations Leader
(Printed Name and Title of Authorized Representative)

9/3/2020
(Date)

(304) 985-5555 / (304) 985-5557
(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)

- | | |
|--|--|
| <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.

Drefffenbauch & Hritz
Company

[Signature]
Authorized Signature

9/3/2020
Date

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



DIEFFENBAUCH & HRITZ

DIEFFENBAUCH & HRITZ, LLC
1095 Chaplin Road Suite 200
Morgantown, WV 26501
Office: 304-985-5555
Fax: 304-985-5557

September 3, 2020

Mr. Guy Nisbet
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

**RE: EOI – WV DEP Sardis (Saas) Landslide Project
CEOI 0313 DEP210000001**

Dear Mr. Nisbet:

Dieffenbauch & Hritz is pleased to submit our qualification to perform design services in reference to the EOI – WV DEP Sardis (Saas) Landslide Project located in Harrison County, West Virginia. As outlined in our proposal, D&H and its personnel have completed work on several similar projects.

The project will be managed out of our Morgantown, West Virginia office. D&H has several design teams which is more than capable of handling this project (teams consisting of CAD Professionals, Engineers, West Virginia registered engineers and West Virginia registered surveyors) in our office. D&H has several CAD Professionals and Engineers to help support the project in other offices if needed.

Our experienced team is led by Mr. Herbert L. Parsons, III, PE, PS. Mr. Parsons has more than 20 years of related engineering experience and has managed or supported numerous projects for the WVDEP. Mr. Parsons is a registered Professional Engineer and a registered Professional Surveyor in the State of West Virginia. He will be joined by Mr. Michael D. Hritz, PE also a registered Professional Engineer in the State of West Virginia. Mr. Hritz will serve as a project advisor and has managed and supported numerous projects for the WVDEP.

We greatly appreciate this opportunity to provide this proposal and look forward to answering any questions you may have. If you should require any additional information, please contact Mr. parsons at (304) 985-5555.

Sincerely,

Mr. Herbert L. Parsons, III, PE, PS
Project Manager

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ATTACHMENT A: CONSULTANT QUESTIONNAIRE

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

AML CONSULTANT QUALIFICATION QUESTIONNAIRE

Attachment "A"

| | | | |
|---|--|---|--|
| PROJECT NAME Sardis (Saas)Landslide Project | | DATE (DAY, MONTH, YEAR) 03, September, 2020 | FEIN 65-1257247 |
| 1. FIRM NAME Dieffenbauch & Hritz LLC | | 2. HOME OFFICE BUSINESS ADDRESS 1095 Chaplin Road, Suite 200, Morgantown, WV 26501 | 3. FORMER FIRM NAME |
| 3. HOME OFFICE TELEPHONE (304)985-5555 | 5. ESTABLISHED (YEAR) 2005 | 6. TYPE OWNERSHIP Corporation | 6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) NO |
| 7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE 1095 Chaplin Road, Suite 200, Morgantown, WV 26501 / (304) 985-5555 / Michael D. Hritz, PE / (13 AML design personnel - 9 Design Engineers and 4 CADD Professionals) | | | |
| 8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM Mr. Michael D. Hritz, PE - President Mr. John C. Dieffenbauch, PE - Vice President Mr. Herbert L. Parsons III, PE, PS - Operations Leader | | 8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Mr. Roman C. Lawson, PE - Senior Engineering Manager Mr. Eric N. Stewart, PE - Senior Engineering Manager | |
| 9. PERSONNEL BY DISCIPLINE | | | |
| 3 ADMINISTRATIVE — ARCHITECTS 5 BIOLOGIST 13 CADD OPERATORS — CHEMICAL ENGINEERS 11 CIVIL ENGINEERS 5 CONSTRUCTION INSPECTORS 9 DESIGNERS 4 DRAFTSMAN | 5 ECOLOGISTS — ECONOMISTS — ELECTRICAL ENGINEERS 5 ENVIRONMENTALISTS 7 ESTIMATORS 1 GEOLOGISTS — HISTORIANS — HYDROLOGISTS | 1 LANDSCAPE ARCHITECTS 2 MECHANICAL ENGINEERS 2 MINING ENGINEERS 2 PHOTOGRAMMETRISTS — PLANNERS: URBAN/REGIONAL — SANITARY ENGINEERS — SOILS ENGINEERS — SPECIFICATION — WRITERS | — STRUCTURAL ENGINEERS 8 SURVEYORS — TRAFFIC ENGINEERS — OTHER 51 TOTAL PERSONNEL |
| <p>TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: <u>4</u></p> <p>*RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.</p> | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? <input type="checkbox"/> YES <input type="checkbox"/> NO | | | |

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

| | | |
|---|--|---|
| <p>NAME AND ADDRESS: Arm Services, LLC 317 Cleveland Avenue Fairmont, WV 26554</p> | <p>SPECIALTY: Mining & Environmental Permitting and Consulting; Mine Reclamation and Water Treatment</p> | <p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| <p>NAME AND ADDRESS: NGE 650 MacCorkle Avenue West St. Albans, WV 25177</p> | <p>SPECIALTY: Geotechnical Engineers</p> | <p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| <p>NAME AND ADDRESS: Pace Analytical Westover Laboratory 16 Commerce Drive Westover, WV 26501</p> | <p>SPECIALTY: Laboratory Analysis (Water)</p> | <p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| <p>NAME AND ADDRESS: Sturm Environmental Services, INC Brushy Fork Road Bridgeport, WV 26330</p> | <p>SPECIALTY: Laboratory Analysis (Water & Soil)</p> | <p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| <p>NAME AND ADDRESS: Mineral Labs, INC 309 Parkway Drive Salyersville, KY 41465</p> | <p>SPECIALTY: Laboratory Analysis (Coal)</p> | <p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| <p>NAME AND ADDRESS: Test Boring services, INC 181 Beagle Club Road Washington, PA 15301</p> | <p>SPECIALTY: Drilling</p> | <p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| <p>NAME AND ADDRESS: L.J. Hughes & Sons, INC 320 Turnpike Road Summersville, WV 26651</p> | <p>SPECIALTY: Drilling</p> | <p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| <p>NAME AND ADDRESS: Hamon Core Drilling, Inc P.O. Box 366 Craigsville, WV 26205</p> | <p>SPECIALTY: Drilling</p> | <p>WORKED WITH BEFORE</p> <p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> |
| | | |

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

YES Description and Number of Projects:

Over 100 projects; Significant design and implementation experience laying out Surface & Deep Mines, Slurry Impoundments, Refuse Fill Areas, Preparation Plants, and Drainage control and water treatment facilities

B. Is your firm experienced in Soil Analysis?

NO Description and Number of Projects:

All Soil Analysis work is subcontracted to NGE

C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects:

Over 100 projects; Storm Water Runoff Analysis, Sediment Pond and Impoundment facilities, Selenium Treatment Facilities

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

YES Description and Number of Projects:

D&H has over 180 projects that utilized Aerial Photography and Contour 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:

Over 100 projects; Participated and Managed design of hundreds of miles of waterlines for municipalities in multiple states

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

YES Description and Number of Projects:

2 projects; Designed treatment facilities and solutions for the Chicopee Coal Company permits near Jodie, WV and the Cheyenne Project near Hodgesville, WV for WVDEPs Office of Special Reclamation

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|---|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Michael D. Hritz, PE - President | 0 | 20+ | 20+ |

Brief Explanation of Responsibilities

Mr. Hritz has over 20 years of experience in the civil and environmental engineering field. Mr. Hritz has accumulated a broad range of experience in the regulatory, planning, well permitting, location construction, drilling, completing and production phases of the oil & gas industry in the Marcellus Shale. Also, through his career he has gained valuable experience with projects in the transportation, environmental compliance, mining, water resources and commercial site development fields in OH, PA, VA, and WV. Mr. Hritz is responsible for overseeing and assuring the quality of all deliverables and management practices of all disciplines. Mr. Hritz is assigned professional charge on many projects for the engineering and survey departments.

EDUCATION (Degree, Year, Specialization)

BS, 1991, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Marcellus Shale Coalition (MSC)
 West Virginia Natural Gas Association (WVONGA)
 Pennsylvania Independent Oil and Gas Association (PIOGA)

REGISTRATION (Type, Year, State)

Professional Engineer, 1997, Pennsylvania
 Professional Engineer, 1999, West Virginia
 Professional Engineer, 2013, North Carolina
 Professional Engineer, 2015, Ohio

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|--|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. John C. Dieffenbach, PE - Vice President | 0 | 20+ | 0 |

Brief Explanation of Responsibilities

Mr. Dieffenbach has over 20 years of civil engineering and highway design experience in Virginia, West Virginia, Maryland, Ohio, and Pennsylvania. He successfully managed the design for the first ever coal synergy project, King Coal Highway, in Southern West Virginia. This was an 11-mile section of 4-lane divided highway that was built by a coal company using incidental coal as a means for offsetting construction costs. Mr. Dieffenbach used his knowledge, along with his extensive VDOT experience, to assist in the development of Coalfields Expressway in Southwest Virginia.

EDUCATION (Degree, Year, Specialization)

BS, 1992, Civil Engineering
 MBA, 2005, Business Administration

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

Professional Engineer, 1999, Virginia
 Professional Engineer, 2000, West Virginia
 Professional Engineer, 2009, Pennsylvania
 Professional Engineer, 2010, Ohio
 Professional Engineer, 2014, North Carolina

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|--|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Herbert L. Parsons, III, PE, PS Operations Leader | 5 | 20+ | 10+ |

Brief Explanation of Responsibilities

Mr. Parsons has accumulated more than 20 years of project management experience in civil engineering and surveying. As a senior Project Manager, he has developed a broad experience base and extensive project development with public and private sector clients. He has lead teams on complex projects that require coordination of disciplines, technical studies, environmental permitting and multiple agencies and stakeholders. Specific areas of engineering design and surveying include, renewable energy, conventional energy, road design, utilities, hydrologic and hydraulic studies, commercial and residential site planning, erosion and sediment control plans and permit documents. Mr. Parsons is responsible for overseeing and assuring the quality of all deliverables and management practices of all disciplines. Mr. parsons is the Department Leader of the Survey Department and oversees its day to day operations as well as its overall responsible charge. Mr. Parsons has a QC role with engineering department as an independent reviewer and has responsible charge and signature responsibilities for several clients and scopes or work in multiple states.

EDUCATION (Degree, Year, Specialization)

BS, 1994, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Marcellus Shale Coalition (MSC)
West Virginia Natural Gas Association (WVONGA)
Pennsylvania Independent Oil and Gas Association (PIOGA)
West Virginia Society of Professional Surveyors (WVSPS)

REGISTRATION (Type, Year, State)

Professional Engineer, 1999, Virginia
Professional Engineer, 2002, West Virginia
Professional Engineer, 2002, Pennsylvania
Professional Engineer, 2020, Ohio
Professional Surveyor, 2007, Virginia
Professional Surveyor, 2013, North Carolina
Professional Surveyor, 2015, Pennsylvania
Professional Surveyor, 2017, West Virginia

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|--|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Roman C. Lawson, PE, MS - Senior Engineering Manager | 0 | 18+ | 0 |

Brief Explanation of Responsibilities

Mr. Lawson has over 18 years of experience in the civil and environmental engineering field. During that time, he has served as Engineering Manager, managed surface mining operations and construction services and performed structural design of highway bridges for the West Virginia Division of Highways. Mr. Lawson has accumulated a broad range of experience in the regulatory, planning, well permitting, location construction, site development and overall management phases of the oil & gas industry in the Marcellus and Utica Shale. Also, through his career he has gained valuable experience with projects in the transportation, environmental compliance, mining, water resources, construction management and commercial site development fields in OH, PA, VA, and WV.

EDUCATION (Degree, Year, Specialization)
 BS, 2007, Civil Engineering Technology
 MS, 2011, Civil Engineering

| MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS | REGISTRATION (Type, Year, State) |
|--|--|
| | Professional Engineer, 2007, Virginia Professional Engineer, 2009, West Virginia Professional Engineer, 2010, North Carolina |

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|--|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Eric N. Stewart, PE - Senior Engineering Manager | 0 | 16 | 10 |

Brief Explanation of Responsibilities

Mr. Stewart has over 15 years of experience in the civil and environmental engineering field. He has accumulated a broad range of experience in the regulatory, planning, well permitting, location construction, pipeline, and midstream facility of the oil & gas industry in the Marcellus and Utica Shale. Also, through his career he has gained valuable experience with projects in the transportation, environmental compliance, mining, water resources and commercial site development fields in OH, PA and WV. Mr. Stewart is responsible for all aspects of engineering and design. He coordinates procedures as well as works closely with clients and regulatory agencies to ensure the company is at the forefront of design and regulatory adherence. Mr. Stewart is also assigned professional charge on many projects for engineering and construction management departments.

EDUCATION (Degree, Year, Specialization)
 BS, 2003, Civil Engineering

| MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS | REGISTRATION (Type, Year, State) |
|---|--|
| Marcellus Shale Coalition (MSC) West Virginia Natural Gas Association (WVONGA) Pennsylvania Independent Oil and Gas Association (PIOGA) | Professional Engineer, 2008, West Virginia Professional Engineer, 2018, Pennsylvania Professional Engineer, 2018, Ohio |

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|--|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Vincent J. Attardi, MS - Environmental Service Leader | 4 | 39+ | 0 |

Brief Explanation of Responsibilities

Mr. Attardi has over 39 years of experience conducting environmental and ecological investigations throughout the eastern United States. During the course of his career, he has held positions in the government, academic, and private sectors and has founded three ecological consulting firms. He is an aquatic ecologist by training and a leading expert in project permitting under Sections 404 and 401 of the Clean Water Act (CWA). He is proficient in wetland and stream services (delineation, mitigation, restoration, permitting), endangered species habitat assessments, botanical surveys, soil assessments, aerial photo interpretation, NEPA documents, natural resource management plans, and other natural resource investigations. Mr. Attardi is responsible for the development and management of program and personnel that comprises the entirety of Environmental Services offered to clients and in support of Engineering and Construction Service Sectors. Key roles include, development and implementation of the quality assurance program, development of standard operating procedures, scheduling, technical expertise, technical mentoring, personnel management, budgeting, project management, and business development.

EDUCATION (Degree, Year, Specialization)

BS, 1981, Marine Science / Biology
MS, 1992, Biology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Society of Wetland Scientists
Pennsylvania Association of Sewage Enforcement Officers
West Virginia Natural Gas Association Environmental Committee

REGISTRATION (Type, Year, State)

Sewage Enforcement Officer, 2015, Pennsylvania
Certified Erosion Prevention & Sediment Control Inspector, 2016, South Carolina

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|--|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Robyn E. Smith - Construction Services Manager | 0 | 30+ | 0 |

Brief Explanation of Responsibilities

Mr. Smith has over 30 years of experience in the civil, mining, and construction management fields. He has accumulated a broad range of experience in regulatory, planning, design, geotechnical and construction management phases of transportation, mining, environmental compliance, water resources, and commercial site development projects. Mr. Smith has managed our Construction Services group which provides construction observation, certification and routine regulatory monitoring services for natural gas well sites, above ground storage facilities, centralized impoundments, pipelines, and metering facilities for various natural gas companies at locations throughout Pennsylvania, Ohio and West Virginia.

EDUCATION (Degree, Year, Specialization)
BS, 1984, Mining Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
Marcellus Shale Coalition (MSC)
Radiation Safety Officer

REGISTRATION (Type, Year, State)

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|--|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Shawn D. Hornsby - Project Engineer II | 0 | 10+ | 0 |

Brief Explanation of Responsibilities

Mr. Hornsby has over 10 years of experience in the civil, mining, oil & gas, and site construction fields. Mr. Hornsby has accumulated a broad range of experience in the regulatory, planning, site construction, inspection & testing, in many phases of the oil & gas industry in the Utica and Marcellus Shale. Mr. Hornsby has 3 years' experience in construction and underground operations associated with the mining industry. As well as 7 years' experience in layout of erosion and sediment controls, site design and regulatory compliance with the oil & gas industry. Also, throughout his career he has gained valuable experience with projects in the transportation, environmental compliance, mining, water resources, geotechnical and commercial site development fields in OH, PA, and WV.

EDUCATION (Degree, Year, Specialization)
BS, 2010, Civil Engineering Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)

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

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|---|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mrs. April M. Brummage - Environmental Scientist I | 0 | 10 | 0 |

Brief Explanation of Responsibilities

Mrs. Brummage assists field investigations, data collection, and permit application preparation. Mrs. Brummage's experience includes environmental inspections, post-construction inspections, stormwater BMPs, SWPPs, Wetland delineation according to the U.S. Army Corps of Engineers Wetland Delineation Manual and regional supplements, and stream assessments.

EDUCATION (Degree, Year, Specialization)
BS, 2010, Environmental Studies

| | |
|---|---|
| MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS | REGISTRATION (Type, Year, State) |
| | |

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|--|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Michael E. Gray - UAS Pilot / Project Engineer II | 0 | 25+ | 1 |

Brief Explanation of Responsibilities

Mr. Gray has accumulated more than 25 years of design and drafting experience in civil engineering and mining engineering. Specific areas of engineering design and drafting include permitting of pipelines and well pads, assist Survey department in deed matrix and field surveying of well pads and boundaries, Remote Pilot in Command of UAS (Unmanned Aerial System) team, Fly well pads to produce pre-construction, construction phases, As-built maps, updated aerial imagery, video and volumetric calculations, fly Mining sites to produce updated imagery, topography and stockpile volumetric calculations. General responsibilities include developing UAV department, Well Pad design, Pipeline permitting, As-built survey and As-built inspections and GIS support of Engineering, Environmental and Survey departments, and PCSM Notice of Termination (NOT) volumetrics and reporting inadequacies to client.

EDUCATION (Degree, Year, Specialization)
BS, 2013, Civil Engineering Technology

| | |
|---|--|
| MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS | REGISTRATION (Type, Year, State) |
| | UAS Remote Pilot, 2016, USA UAS Commercial Operator, 2018, North Carolina |

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

| NAME & TITLE (Last, First, Middle Int.) | YEARS OF EXPERIENCE | | |
|---|---------------------------------|---|--|
| | YEARS OF AML DESIGN EXPERIENCE: | YEARS OF AML RELATED DESIGN EXPERIENCE: | YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: |
| Mr. Stacy A, Carpenter - Project Surveyor | 6 | 19+ | 0 |

Brief Explanation of Responsibilities

Mr. Carpenter has accumulated more than 19 years of survey experience. As a Survey Crew Leader, he has performed duties as needed from preliminary surveying for topographical needs for site development and design, layout of highways per design, layout and grading of sites for Federal Prisons, multiple AML projects for design and reclamation, multiple Oils and Gas drilling sites for design and construction, and multiple Oil and Gas pipelines for design, construction and As-built. As a Survey Coordinator, Mr. Carpenter has managed multiple survey crews for scheduling, guidance in surveying well sites and multiple pipelines for design, stakeout and As-built. Preparing packages for field work to be done, answering any questions that the crews may have and post processing data after the work is completed, He has also taken on a role of communications with the clients, client leaders and subcontractors to assure that the projects are being completed accurately, efficiently and in a timely manner.

EDUCATION (Degree, Year, Specialization)

| | |
|--|----------------------------------|
| MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS | REGISTRATION (Type, Year, State) |
|--|----------------------------------|

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

Autodesk AEC Software (AutoCAD Map 2020, Civil 3D 2020)

Carlson Software

Microstation V8i Select Series 4

Inroads Select Series 2

Hydrocad

HY8

ESRI Arcmap 10.5

Trimble Business Center

Trimble Path Finder Office

Nitro PDF Creator

Microsoft Office Software

Pix4D

UGCS

Trimble R-6 GPS

Trimble R-8 GPS

Trimble R-10 GPS

Trimble S5 Robotic Total Station

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

Trimble S6 Robotic Total Station

Nicon Total Stations

Topcon Total Stations

Leica Total Stations

Sensefly eBee Plus Fixed Wing UAV

DJI Inspire 2 Multicopter UAV

Parrot Anafi Multicopter UAV

Trimble Geoexplorer GPS

Water Depth Gauge

Flow Meter

Water Quality Meters

Infiltrometer

Troxler 3400 series Nuclear Density Gauges

AMD Treat 5.0 Plus

Ream Slop Stability

| |
|--|
| |
| |
| |

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 |
|---|---|---|-----------------------------|------------------|
| RHL89 Well PAD Natural Gas Well Site Near Graysville Greene County, Pennsylvania | CNX Gas Company LLC 1000 Consol Energy Drive Canonsburg, PA 15317 | Engineering Design, Permitting, Environmental & Surveying | \$700,000 | 20% |
| EQT WV Waterline System Waterline Project Marion & Wetzel County, West Virginia | EQT Production 400 Woodcliff Drive Canonsburg, PA 15317 | Engineering Design, Permitting & Surveying | \$16 Million | 75% Design |
| Hampshire Gas Pipeline Replacement Natural Gas Pipeline Near Romney Hampshire County, West Virginia | Hampshire Gas 114 Hampshire Gas Dr. Romney, WV 26757 | Surveying & Mapping | Unknown | 40% |
| Falcon Land AML Project Near Fenwick Nicholas County, West Virginia | A.J. Burke P.O. Box 118 Horner, WV 26372 | Surveying | Unknown | 40% |
| Mashey Gap Quarry Stone Quarry Near Elkins Randolph County, West Virginia | J.F. Allen Company P.O. Box 2049 Buckhannon, WV 26201 | Surveying & UAV Mapping | Unknown | Unknown |
| Purdy Run Aggregates Stone Quarry Near Adamsville Harrison County, West Virginia | KCS Contracting, LLC P.O. Box 741 Kermit, WV 25674 | Surveying & UAV Mapping | Unknown | Unknown |
| NV13 Well Pad Slip Repair Near Nineveh Greene County, Pennsylvania | CNX Gas Company LLC 1000 Consol Energy Drive Canonsburg, PA 15317 | Engineering Design, Permitting, Environmental & Surveying | \$700,000 | 85% |
| TOTAL NUMBER OF PROJECTS: 7 (Dieffenbauch & Hritz are currently working on several projects in multiple states - For the purpose of the EOI, only a sample of our recent projects are listed) | | TOTAL ESTIMATED CONSTRUCTION COSTS: \$ | | |

| 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) |
| Grand Well Site Natural Gas Well Site Near Middlebourne Tyler County, West Virginia | Antero Resources Corporation 5335 White Oak BLVD Bridgeport, WV 29330 | | 2020 | No |
| Roberts Hill Road Upgrade Road Improvement Project Near Middlebourne Tyler County, West Virginia | Antero Resources Corporation 5335 White Oak BLVD Bridgeport, WV 29330 | | 2020 | No |
| Dry Ridge Compressor Pad Natural Gas Facility Near Cameron Marshall County, West Virginia | CNX Midstream Operating Company LLC 1000 Consol Energy Drive Canonsburg, PA 15317 | | 2020 | Yes |
| WDTN19 Well Site Natural Gas Well Site Near Wadestown Monongalia County, West Virginia | CNX Gas Company LLC 1000 Consol Energy Drive Canonsburg, PA 15317 | | 2020 | Yes |
| Upper Deckers Creek Dam Rehabilitation Near Reedsville Preston County, West Virginia | Triton Construction, Inc 47443 National Road, Suite 3 St. Clairsville, Ohio 43950 | | 2020 | Yes |
| DTE Slip Projects | DTE Midstream 1000 Noble Energy Drive., 5 th Floor Canonsburg, PA 15317 | | 2020 | Yes |
| Bailey Subsidence Stream Survey | Consol Energy, INC 1000 Consol Energy Drive Canonsburg, PA 15317 | | 2017 | N/A |
| Valley Mining AML | A.J. Burke P.O. Box 118 Horner, WV 26372 | | 2020 | Yes |

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 |
|---|--|--|------|-------------------------|----------------------|
| Barrackville Surface Mine Barrackville, West Virginia | American Bituminous Power Partners, L.P. 228 ABPP Drive Grant Town, WV 26574 | \$5,000 | 2019 | NO | Arm Services, LLC |
| PA Legacy Site Operations Flight Mapping Pennsylvania | Consol Energy, LLC 1000 Consol Energy Drive Canonsburg, PA 15317 | \$40,000 | 2019 | Yes | Arm Services, LLC |
| Martinka Complex Flight Mapping Colfax, West Virginia | ERP Environmental Fund LLC P.O. Box 305 Madison, WV 25130 | \$5,000 | 2019 | Yes | Arm Services, LLC |
| Commodore UAV Mapping Commodore, Pennsylvania | Natural Resource Partners, LLC 5260 Irwin Road Huntington, WV 25705 | \$5,000 | 2017 | Yes | WPP, LLC |
| A&G Job #4 UAV Mapping | ACIN, LLC 5260 Irwin Road Huntington, WV 25705 | \$5,000 | 2019 | No | WPP, LLC |
| Rockingham Quarry UAV Mapping Rockingham, North Carolina | BRP, LLC 5260 Irwin Road Huntington, WV 25705 | \$7,500 | 2018 | No | WPP, LLC |

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.

20. The foregoing is a statement of facts.

Signature: 

Title: Operations Leader

Date: 9-3-2020

Printed Name: Herbert L. Parsons, III, PE, PS

**ATTACHMENT B: AML RELATED PROJECT
EXPERIENCE MATRIX**

| AML and RELATED PROJECT EXPERIENCE MATRIX | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|------------------------------------|---------------------------------|----------------------|-----------------------------------|---------------------|----------------------------|-------------------------------------|--------------------------|------------------------|---|------------------------------------|-----------------|-----------------------------|--------------------|------------------------|---|--------------------------------|---------------------|---------------------|----------------|
| PROJECT | Exp. Basis C=Corp. P=Personnel * | Additional Info Provided in Section (s) ** | PROJECT EXPERIENCE REQUIREMENTS | | | | | | | | | | | | | | | PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional | | | | |
| | | | Abandoned Surface Mine Reclamation | Abandoned Deep Mine Reclamation | Portal/Shaft Closure | Hydrologic/Hydraulic Design/Eval. | Remining Evaluation | Mine/Refuse Fire Abatement | Subsidence Investigation Mitigation | Hazardous Waste Disposal | Project Specifications | Water Quality Evaluation/Mitigation/Replacement | Construction Inspection/Management | Water Treatment | Equipment/Structure Removal | Stream Restoration | Geotechnical/Stability | Michael D. Hritz, PE | Herbet L. Parsons III, PE, PLS | Roman C. Lawson, PE | Eric N. Stewart, PE | Robyn E. Smith |
| Stream Surveys | C | | | x | | | | | X | | | | | | | | | | | | C | C |
| Holding Pond Treatment | C | | | | | | | | | | | | X | | X | | | | | | | P |
| Water Sampling Collection | C | | | x | | | | | | | | | X | | X | | | | | | | P |
| Stream Restoration and Monitoring | C & P | | | | | | X | | | | | | | | | X | | | | | | M & P |
| WVDEP AML - Saul's Run Landslide | P | | | | | | X | | | | | | | | | | X | | | | P | |
| WVDEP AML - Tubs Run Highwall and Refuse Phase I | P | | X | | | | X | | | | | | | | | | X | | | | P | |
| WVDEP AML - Sandy Run Highwall and Portals | P | | X | X | X | X | | | | | | | | | | | X | | | | P | |
| WVDEP AML - Pageton Portals | P | | | | | X | X | | | | | | | | | | X | | | | P | |
| WVDEP AML - Hampton No. Four Maintenance | P | | | | | | X | | | | | | | | | | X | | | | P | |
| WVDEP AML - Church Creek/Manown Highwall | P | | X | | | | X | | | | | | | | | | X | | | | P | |
| AMBIT - Barrackville Surface Mine and Refuse Area | C & P | | | | | | X | X | | | | | | X | X | X | | | | | | P |
| Consol - PA Legacy Operations | C & P | | | | | | X | | | | | | X | X | X | | | | | | | P |
| ERP - Martinka Complex | C & P | | | | | | | | | | | | X | X | X | X | | | | | | P |
| EQT - Tuna Nut Well Pad | P | See Below | | | | | | | | X | | | | X | | | | | | | | P |
| EQT - Haymaker Well Pad | P | See Below | | | | | | | | X | | | | X | | | | | | | | P |
| EQT - Taco Cat Well Pad | P | See Below | | | | | | | | X | | | | X | | | | | | | | P |

* List whether project experience is corporate or personnel based or both.
 ** Use this area to provide specific sections or pages if needed for reference.
 *** List Primary Design personnel and their functional capacity for the projects listed.

Attachment "B"

Tuna Nut Subsidence investigation during longwall mining operations beneath well pad and access road.
 Haymaker Subsidence investigation during longwall mining operations beneath well pad and access road.
 Taco Cat Subsidence investigation during longwall mining operations beneath well pad and access road.

ATTACHMENT C: RESUMES

WVDEP - AML

PROJECT ADVISOR
MICHAEL D. HRITZ, PE

PROJECT MANAGER
HERBERT L. PARSONS III, PE, PS

QAQC
ROMAN C. LAWSON, PE

DESIGN CIVIL/MINING ENGINEERING
ERIC N. STEWART, PE
SENIOR ENGINEERING MANAGER

ENVIRONMENTAL
VINCENT J. ATTARDI
ENVIRONMENTAL SERVICE LEADER

SUPPORT SERVICES
ROBYN E. SMITH
CONSTRUCTION SERVICES MANAGER

SHAWN D. HORNSBY
PROJECT ENGINEER

APRIL M. BRUMMAGE
ENVIRONMENTAL SCIENTIST

MICHAEL E. GRAY
PROJECT ENGINEER
UAS PILOT

STACY A. CARPENTER
SURVEY COORDINATOR



Mr. Hritz has over 20 years of experience in the civil and environmental engineering field. During that time, he has served as co-owner of Dieffenbach & Hritz, LLC; Regulatory, Construction and Water Resources Manager for Chief Oil & Gas LLC and Manager at Gannett Fleming, Inc. Mr. Hritz has accumulated a broad range of experience in the regulatory, planning, well permitting, location construction, drilling, completing and production phases of the oil & gas industry in the Marcellus Shale. Also through his career he has gained valuable experience with projects in the transportation, environmental compliance, mining, water resources and commercial site development fields in OH, PA, VA, and WV.

Company Role, Quality Assurance Quality Control:

Responsible for overseeing and assuring the quality of all deliverables and management practices of all disciplines. This includes overseeing critical events, attending client or stockholder meetings. As well as participating in kick-off and milestone meetings, preparing quality control plans and assuring project and client performance.

Project Role, Professional Charge: Mr. Hritz is assigned professional charge on many projects for the engineering and survey departments. A critical key to quality control includes redundant professional reviews. D&H has a Client Leader in charge of projects and a designated Professional will provide independent review of each deliverable. This process assures unbiased results and quality deliverables. Professional charge assignments include permitting, engineering and survey deliverables for a variety of projects.

Experience Prior to Dieffenbach & Hritz, LLC:

Chief Oil & Gas
2009– 2012
Title: Regulatory, Construction and Water Resources Manager

Dieffenbach & Hritz, LLC
2005 - 2009
Title: President/ Co-Owner

Manager, Gannett Fleming, Inc
1993 – 2005
Title: Project Engineer through Regional Office

**DETAILS AND
ACHIEVEMENTS**

Experience

Total: >20 years
With D&H: >13 years
(Founder 2005)

Education:

B.S., Civil Engineering,
The Pennsylvania State
University – 1991

**PROFESSIONAL
REGISTRATION(S):**

1997/PE, PA
1999/PE, WV
2013/PE, NC
2015/PE, OH

**CORPORATE
AFFILIATIONS:**

Marcellus Shale Coalition
(MSC)

West Virginia Natural Gas
Association (WVONGA)

Pennsylvania Independent
Oil and Gas Association
(PIOGA)

Operations Leader

Herbert L. Parsons III, PE, PS



DIEFFENBAUCH & HRITZ

Mr. Parsons has accumulated more than 20 years of project management experience in civil engineering and surveying. As a Senior Project Manager, he has developed a broad experience base and extensive project development with public and private sector Clients. He has lead teams on complex projects that require coordination of disciplines, technical studies, environmental permitting, and multiple agencies and stakeholders. Specific areas of engineering design and surveying include, renewable energy, conventional energy, road design, utilities, hydrologic and hydraulic studies, commercial and residential site planning, erosion and sediment control plans and permit documents.

Quality Assurance Quality Control:

Mr. Parsons is responsible for overseeing and assuring the quality of all deliverables and management practices of all disciplines. This includes overseeing critical events, establishing program protocols, attending client or stockholder meetings, participating in kick-off and milestone meetings, preparing project specific quality control plans and project execution plans. In addition, Mr. Parsons is the Department Leader for the Survey Department and oversees its day to day operations as well as its overall responsible charge. Finally, Mr. parsons has a QC role with engineering department as an independent reviewer and has responsible charge and signature responsibilities for several clients and scopes of work in multiple states.

Technical Competency

- Water Resources (H & H Studies)
- Impoundment Design
- Storm Sewer System
- Storm Water Management
- Water Quality Control (BMP)
- Utility Systems
- Road Design
- Erosion and Sediment Control / NPDES
- Survey Expertise
 - Boundary Survey
 - ALTA / As-built Surveys
 - Aerial Control and Mapping
 - Obstruction Surveys
 - Construction Stakeout
 - Topographic Mapping

DETAILS AND ACHIEVEMENTS

Experience

Total: 25 years

With D&H: Eight Years

Education:

Virginia Military Institute
BS, Civil Engineering 1994

Safety Training

Safeland (PEC)

OSHA 10

RigPass

PROFESSIONAL

REGISTRATION(S):

Professional Surveyor

WV [REDACTED] (2017)

VA [REDACTED] (2007)

PA [REDACTED] (2015)

NC [REDACTED] (2013)

Professional Engineer

WV [REDACTED] (2002)

VA [REDACTED] (1999)

PA [REDACTED] (2003)

OH [REDACTED] (2020)

CORPORATE AFFILIATIONS:

Marcellus Shale Coalition
West Virginia Natural Gas
Association (WVONGA)
Pennsylvania Independent
Oil and Gas Association
(PIOGA)

Mr. Lawson has over 18 years of experience in the civil and environmental engineering field. During that time, he has served as Engineering Manager for Dieffenbach & Hritz, managed surface mining operations and construction services for Alpha Natural Resources and performed structural design of highway bridges for the West Virginia Division of Highways. Mr. Lawson has accumulated a broad range of experience in the regulatory, planning, well permitting, location construction, site development and overall management phases of the oil & gas industry in the Marcellus and Utica Shale. Also, through his career he has gained valuable experience with projects in the transportation, environmental compliance, mining, water resources, construction management and commercial site development fields in OH, PA, VA, and WV.

Summary of Projects:

Coalfields Expressway, Hawksnest Section, Buchanan County, VA, VDOT. Engineering/Construction Manager in charge of the design and construction of the 2-mile, four lane, "Hawksnest" section of the Coalfields Expressway in Buchanan County, VA.

Coalfields Expressway Feasibility Study, Southwest Virginia, VDOT. Engineering/Construction Manager in charge for the preparation of a Feasibility Study for a 30-mile section of the 50-mile CFX corridor which included a detailed analysis of coal reserves located along the corridor.

Coalfields Expressway, Southwest Virginia, VDOT. Engineering/Construction Manager in charge of the Preliminary Design for the Pound Connector and Doe Branch sections of the 50-mile corridor, which included a detailed coal reserve analysis and material handling plan.

Coalfields Expressway, Southwest Virginia, VDOT. Engineering/Construction Manager in charge of the Preliminary Design for the 2-mile Kiwanis Park section of the 50-mile corridor, which included a detailed coal reserve analysis and material handling plan.

Breaks Regional Airport, Buchanan County, VA, Buchanan County Industrial Development Authority. Engineering/Construction Manager of a multi-phased Post Mining Land Use feasibility study for the development of an approximately 500 acre airport and relocation/widening of 5-miles of roadway.

**DETAILS AND
ACHIEVEMENTS**

Experience

Total: 18 + years
With D&H: 8 Years

Education:

B.S., Civil Engineering
Technology, Bluefield State
College

M.S., Civil Engineering, Virginia
Tech.

**PROFESSIONAL
REGISTRATION(S):**

Professional Engineer

Virginia - [REDACTED]
West Virginia - [REDACTED]
Pennsylvania - [REDACTED]
North Carolina - [REDACTED]

Virginia Class A Contractor

Engineering Manager

Eric N. Stewart, P.E.



DIEFFENBAUCH & HRITZ

Mr. Stewart has over 15 years of experience in the civil and environmental engineering field. During that time, he has served as Engineering Manager for Dieffenbach & Hritz, LLC; Roadway and Special Projects Construction Manager for Antero Resources and Project Manager at Williams. Mr. Stewart has accumulated a broad range of experience in the regulatory, planning, well permitting, location construction, pipeline, and midstream facility of the oil & gas industry in the Marcellus and Utica Shale. Also, through his career he has gained valuable experience with projects in the transportation, environmental compliance, mining, water resources and commercial site development fields in OH, PA, and WV.

Company Role, Engineering Manager:

Responsible for all aspects of engineering and design. He coordinates procedures as well as works closely with clients and regulatory agencies to ensure the company is at the forefront of design and regulatory adherence.

Project Role, Professional Charge: Mr. Stewart is assigned professional charge on many projects for the engineering and construction management departments. A critical key to quality control includes redundant professional reviews. D&H has a Client Leader in charge of projects and a designated Professional will provide independent review of each deliverable. This process assures unbiased results and quality deliverables. Professional charge assignments include permitting, engineering, survey and construction management deliverables for a variety of projects.

Experience Prior to Dieffenbach & Hritz, LLC:

Antero Resources Corporation
2016– 2018
Title: Special Projects & Roadway Construction Manager

Williams Companies, Inc.
2009– 2016
Title: Facilities Engineer/Project Manager/Permitting Manager

Dieffenbach & Hritz, LLC
2005 - 2009
Title: Project Manager

Gannett Fleming, Inc.
2003 – 2005
Title: Associate Engineer

DETAILS AND ACHIEVEMENTS

Experience

Total: 16 years
With D&H: 5 years

Education:

B.S., Civil Engineering,
West Virginia University

PROFESSIONAL REGISTRATION(S):

Professional Engineer
WV [REDACTED]
PA [REDACTED]
OH [REDACTED]

CORPORATE AFFILIATIONS:

Marcellus Shale Coalition
(MSC)

West Virginia Natural Gas
Association (WVONGA)

Pennsylvania Independent
Oil and Gas Association
(PIOGA)



Environmental Services Leader

Vincent J. Attardi, M.S.

DIEFFENBAUCH & HRITZ

Mr. Attardi has over 39 years of experience conducting environmental and ecological investigations throughout the eastern United States. During the course of his career, he has held positions in the government, academic, and private sectors and has founded three ecological consulting firms. He is an aquatic ecologist by training and a leading expert in project permitting under Sections 404 and 401 of the Clean Water Act (CWA). He is proficient in wetland and stream services (delineation, mitigation, restoration, permitting), endangered species habitat assessments, botanical surveys, soil assessments, aerial photo interpretation, NEPA documents, natural resource management plans, and other natural resource investigations.

Project Role, Environmental Coordinator:

In his current position, Mr. Attardi is responsible for the development and management of program and personnel that comprises the entirety of Environmental Services offered to our clients and in support of our Engineering and Construction Service Sectors. Key roles include development and implementation of the quality assurance program, development of standard operating procedures, scheduling, technical expertise, technical mentoring, personnel management, budgeting, project management, and business development.

Summary of Projects:

Mr. Attardi has overseen the environmental investigation and permitting of approximately 150 projects during his time at Dieffenbach & Hritz. These investigations were primarily conducted in support of oil and gas projects.

Experience prior to Dieffenbach & Hritz LLC:

Principal, Wetland Services; Copperhead Environmental Consulting, Inc. [2013 – 2014]

Senior Associate; Stantec [2008 – 2012]

Senior Ecologist, Project Manager; FMSM [2005 – 2008]

Senior Ecologist, President; Ecological Planning Group, LLC [2002 – 2005]

Natural Resources Program Manager; Law Engineering and Environmental Services, Inc. [1999 – 2002]

Natural Resources Program Manager; Ogden Environmental and Energy Services, Inc. [1997 – 1999]

DETAILS AND ACHIEVEMENTS

Experience

Total: 39+ years

With D&H: 4+ Years

Education:

M.S., Biology, Rutgers University, 1992

B.S., Marine Science / Biology, University of Tampa, 1981

Safety Training

Safeland

OSHA 10

First Aid / CPR / Blood

Pathogen

PROFESSIONAL

CERTIFICATIONS:

Sewage Enforcement Officer

Pennsylvania – [REDACTED]
(2015)

Certified Erosion Prevention & Sediment Control Inspector

South Carolina – [REDACTED]
(2016)

CORPORATE AFFILIATIONS:

Society of Wetland Scientists
Pennsylvania Association of Sewage Enforcement Officers
WVONGA Environmental Committee

Construction Services Manager

Robyn E. Smith



DIEFFENBAUCH & HRITZ

Mr. Smith has over 30 years of experience in the civil, mining, and construction management fields. He has accumulated a broad range of experience in regulatory, planning, design, geotechnical and construction management phases of transportation, mining, environmental compliance, water resources, and commercial site development projects. Over the past 5 years, Mr. Smith has managed our Construction Services group which provides construction observation, certification and routine regulatory monitoring services for natural gas well sites, above ground storage facilities, centralized impoundments, pipelines, and metering facilities for various natural gas companies at locations throughout Pennsylvania, Ohio and West Virginia.

Project Role, E&S Inspection Services Manager:

Mr. Smith will serve as the Project Manager and point of contact for this project. He will work with our assigned E&S Inspection Coordinator and E&S Inspection Supervisor to ensure the routine and post rainfall event site inspections are completed and the data is compiled and submitted. He will also perform quality assurance and quality control reviews, attend the monthly review meetings, and be in contact with the Project Manager should an item be identified during the inspections that requires immediate attention.

Recent/Relevant Projects:

E&S Inspection Services Manager, Routine E&S Inspections, West Virginia & Pennsylvania. Project Manager responsible for erosion and sediment compliance and post rain inspections for 206 natural gas well sites in multiple counties in West Virginia and Pennsylvania. Duties include oversight of the scheduling of inspectors, rainfall events, review of daily reports, and performing periodic field verifications visits.

E&S Inspection Services Manager, Routine E&S Inspections, Greene County, Pennsylvania. Project Manager responsible for overseeing the routine and post rainfall event E&S inspections and reporting for 47 natural gas well sites located throughout Greene County, PA.

E&S Inspection Services Manager, Routine E&S Inspections, Greene County, Pennsylvania. Project Manager responsible for overseeing the routine and post rainfall event E&S inspections and reporting for approximately 20 miles of natural gas pipeline located throughout Greene County, PA.

DETAILS AND ACHIEVEMENTS

Experience:

Total: 35 years

With D&H: 5 years

Education:

BS, Mining Engineering,
West Virginia Institute of
Technology, 1984

Safety Training:

PEC Training

MSHA US Department of
Labor Certified Surface Mine
Instructor (Code IS)

MSHA US Department of
Labor Certified Underground
Mine Instructor (Code IU)

MSHA US Department of
Labor Certified Impoundment
Inspection Instructor.

WV Certified Surface Mine
Foreman

WV Certified Underground
Mine Foreman

CORPORATE AFFILIATIONS:

Radiation Safety Officer

Project Engineer II Shawn D. Hornsby



DIEFFENBAUCH & HRITZ

Mr. Hornsby has over 10 years of experience in the civil, mining, oil & gas, and site construction fields. Mr. Hornsby has accumulated a broad range of experience in the regulatory, planning, site construction, inspection & testing, in many phases of the oil & gas industry in the Utica and Marcellus Shale. Mr. Hornsby has 3 years' experience in construction and underground operations associated with the mining industry. As well as 7 years' experience in layout of erosion and sediment controls, site design and regulatory compliance with the oil & gas industry. Also, throughout his career he has gained valuable experience with projects in the transportation, environmental compliance, mining, water resources, geotechnical and commercial site development fields in OH, PA, and WV.

Project Role, Project Engineer:

Responsible for the design and permitting activities associated with client's projects. Projects may include but are not limited to oil & gas well pads, fresh and reuse water impoundments, air shaft pad and access road design. Primary role includes; design of oil & gas site development planning and regulatory reporting, including construction permit compliance and as-built review, determining construction sequencing and optimization, and planning, design, permitting, and other permitting and design phase services for water resources, environmental, mining, transportation, and oil and gas services.

Summary of Projects:

Oil & Gas Projects: [2014 – present]

Over the past 6 years, Mr. Hornsby has taken part in the design and permitting for natural gas well sites, gas and water pipelines, above ground storage facilities, centralized impoundments, and metering facilities for various natural gas companies at locations throughout PA, OH and WV.

Experience prior to Dieffenbach & Hritz LLC:

Intern; Engineering & Testing 2000 [2009 - 2009]
Consol Energy – Consolidated Coal Company [2010 – 2012]
Consol Energy – CNX Gas Company [2012 – 2014]

DETAILS AND ACHIEVEMENTS

Experience:

Total: 10 years
With D&H: 6 years

Education:

BS, Civil Engineering
Technology
Bluefield State College, 2010

Safety Training:

OSHA - 40 Hour Safety
Training

WV Certified Underground
Black Hat
WV Certified Surface
Red Hat
VA Certified Underground
Black Hat

Environmental Scientist I

April M. Brummage



DIEFFENBAUCH & HRITZ

Mrs. Brummage is currently an Environmental Scientist I for Dieffenbach & Hritz, LLC (D&H). Mrs. Brummage assists field investigations, data collection, and permit application preparation for D&H projects. Mrs. Brummage's experience includes environmental inspections, post-construction inspections, stormwater BMPs, SWPPs, wetland delineations according to the U.S. Army Corps of Engineers *Wetland Delineation Manual* and regional supplements, and stream assessments.

Project Role, Field of Competence:

- Wetland and Stream delineations
- Erosion and Sedimentation Control Inspections
- Stream Assessment and Monitoring
- PADEP General Permit preparation and review
- Various water sampling methods and procedures
- Phase I Environmental Site Assessments

Summary of Projects:

[July 2018-Present] Mrs. Brummage has delineated many projects for Oil and Gas related customers over her time as an Environmental Scientist I with Dieffenbach & Hritz. Mrs. Brummage has seen these projects through the process of field work and then implementing field findings into various reports that are requested by the client. During her time as a construction inspector she performed weekly inspections on various stages of drilling process.

Experience prior to Dieffenbach & Hritz, LLC:

Construction Inspector, Dieffenbach & Hritz - [2018]
Environmental Resource Technician, Greene County Conservation District – [2016-2018]
Environmental Inspector, Pennoni – [2015-2016]
Environmental Manager, Quality Environmental Services – [2013-2015]
Environmental Scientist I, Wallace and Pancher, Inc. – [2011-2013]

DETAILS AND ACHIEVEMENTS

Experience

Total: 10
With D&H: Two Years

Education:

California University of PA,
BS, Environmental Studies
2010

Safety Training

OSHA 40 Hour Hazwoper
(2016)
Safeland (PEC)
ISONetwork
36 Hour Wetland Delineation
Training (2019)
MSHA 24- Hour Surface Mining
Certification (2016)

Project Engineer II / UAS Remote Pilot

Michael E. Gray



DIEFFENBAUCH & HRITZ

Mr. Gray has accumulated more than 25 years of design and drafting experience in civil engineering and mining engineering. Specific areas of engineering design and drafting include permitting of pipelines and well pads, assist Survey department in deed matrix and field surveying of well pads and boundaries, Remote Pilot in Command of UAS (Unmanned Aerial System) team, Fly well pads to produce pre-construction, construction phases, As-built maps, updated aerial imagery, video and volumetric calculations, fly Mining sites to produce updated imagery, topography and stockpile volumetric calculations. General responsibilities at D&H include developing UAV department, Well Pad design, Pipeline permitting, As-built survey and As-built inspections and GIS support of Engineering, Environmental and Survey departments.

Project Role, Project Engineer II:

Responsible for designing and permitting of Pipelines and well pads, As-built surveys, PCSM Notice of Termination (NOT) volumetrics and reporting inadequacies to client.

Project Role, UAS Remote Pilot:

Responsible for managing, flight planning, acting as primary UAS Pilot in command and project completion for UAS projects.

Summary of Projects:

UAS Projects:

[September 2015 – Present] Mr. Gray has managed over 180 Oil & Gas, Mining & Construction UAS projects in PA, OH, WV, KY & NC.

Experience prior to Dieffenbach & Hritz, LLC:

Engineering Technician/Mining Engineer/ UAS Pilot/ Sr. Environmental Compliance Coordinator, Alpha Natural Resources - [2005 –2015]
Engineering Technician, Bluestone Industries – [2004 – 2005]
Engineering Technician, G.A. Covey Engineering – [2003 – 2004]
Engineering Technician, Britton Engineering – [1998 – 2003]
CAD Technician, McKenzie Engineering – [1995 – 1998]

DETAILS AND ACHIEVEMENTS

Experience

Total: 25 years

With D&H: Five Years

Education:

Bluefield State College,
BS, Civil Engineering
Technology 2013

Safety Training

Safeland (PEC)

ISONetwork

WV Safety Sensitive

PROFESSIONAL REGISTRATION(S):

Remote Pilot

██████████

North Carolina UAS
Commercial Operator

██████████

Public Water System Operator

West Virginia –

██████████

Project Surveyor
Stacy A. Carpenter



DIEFFENBAUCH & HRITZ

Mr. Carpenter has accumulated more than 19 years of survey experience. As a Survey Crew Leader he has performed duties as needed from Preliminary Surveying for topographical needs for site development and design, layout of highways per design, layout and grading of sites for Federal Prisons, Multiple AML projects for Design and Reclamation, multiple Gas and Oil Drilling Sites for design and construction, and multiple Gas and Oil Pipelines for design, construction, and As-built. As a Survey Coordinator Mr. Carpenter has managed multiple survey crews for scheduling, and guidance in surveying Well sites and multiple pipelines for design, stakeout, and As-Built. Preparing packages for field work to be done, answering any questions that the crews may have, and post processing data after the work. He has also taken on a role of communications with the clients, client leaders, and subcontractors to assure that the projects are being completed to the best of our ability.

Working safely and providing quality survey coordination are his major contributions to the survey department.

Project Role, Project Surveyor: Scheduling of multiple crews to multiple projects on a daily basis, doing quality control report of the data collected and checking for proper layout per design, and reviewing daily safety reports.

Summary of Projects:

Mr. Carpenter has overseen over 200 Oil and Gas, Mining & Construction Survey projects in PA, OH, WV, KY, VA, & NC.

Experience prior to Dieffenbach & Hritz, LLC:

Senior Party Chief, Stantec Consulting – [2008-2014]

Party Chief, R. D. Zande and Associates – [2002-2008]

Survey Apprentice, R. D. Zande and Associates – [2000-2002]

**DETAILS AND
ACHIEVEMENTS**

Experience

Total: 19 years

With D&H: 6 ½ Years

Education:

Graduate Buckhannon,

Upshur High School

1989 – 1993

Safety Training

Safeland

RigPass

First Aid-CPR Training

ATTACHMENT D: PROJECT DESCRIPTIONS



RHL 89 WELL PAD

CLIENT: CNX Gas Company LLC

LOCATION: Greene County, Pennsylvania

DURATION: 2020

FEATURES

- Engineering Design & Permitting
- Environmental Delineation
- Environmental Permitting
- Topographic Surveying
- Construction Stakeout
- As-built Surveying
- Construction Management
- Erosion & Sediment Control Inspection
- Compaction Testing

PROJECT DESCRIPTION

In 2020, CNX Gas Company retained Dieffenbach & Hritz to provide Engineering design & permitting, Environmental services and Surveying for a new Oil & Gas well Pad located in Greene County, Pennsylvania, near Graysville. The project consisted of D&H field staff designing an approximately 203 ft long graveled access road from W Roy Furman Highway to an area where a pad will be constructed for the purpose of drilling unconventional gas wells. The proposed access road and well site will involve an environmental assessment of the site and also surveying of construction stakeout and producing a full as-built of the site once it has been completed.



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EQT WATERLINE SYSTEM

CLIENT: EQT Production

LOCATION: Marion & Wetzel Counties, West Virginia

DURATION: 2020

FEATURES

- Engineering Design & Permitting
- Survey Routing
- Construction Stakeout & As-built Surveying

PROJECT DESCRIPTION

In 2020, EQT Production retained Dieffenbach & Hritz to provide Engineering design & permitting, Surveying services for approximately 87,911 LF of waterlines to supply water for hydraulic fracturing on natural gas well pads. Based upon route development data, survey crews and engineering teams finalized waterline routes, and all necessary permits were obtained for the proposed construction. Developed site design including stream and wetland crossings, proposed driveways and waterline road crossings, and stormwater discharge. Erosion and Sediment control plans were developed for each waterline site. The waterline network spans across Marion and Wetzel Counties in West Virginia.





HAMPSHIRE GAS PIPELINE REPLACEMENT

CLIENT: Hampshire Gas | A WGL Company

LOCATION: Hampshire County, West Virginia

DURATION: 2020

FEATURES

- As-Built Survey
- Full Plan set consisting of Plan over Profile Sheets and Pipe data
- GIS Geodatabase

PROJECT DESCRIPTION

In 2020, Hampshire Gas retained Dieffenbach & Hritz to provide as-built survey and mapping services for the replacement of approximately 13,600 LF of gas pipeline located in Hampshire County, West Virginia, near Augusta. The project consisted of D&H field staff to survey the As-built pipeline and recording attribute information for the welds, fittings, overbends, sags, PIs, Trench Plugs, Xray information, any pipe crossings, above piping, natural ground once the pipe was covered up and latitude and longitude locations of each attribute.

Mapping deliverables consisted of line work generation, full plan set consisting of plan view over profiles and data tables with the attribute information that was collected in the field, and amount of cover over the pipeline once it was installed in the ground. Daily ESRI Geodatabases was created to represent each daily as-built survey. Also, a Master Geodatabase was created which consists of the entire project and all attribute data that was collected.



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FALCON LAND AML

CLIENT: A.J. Burke

LOCATION: Nicholas County, West Virginia

DURATION: 2020

FEATURES

- Construction Stakeout Survey
- As-Built Survey
- UAV Mapping

PROJECT DESCRIPTION

In 2020, A.J. Burkes retained Dieffenbach & Hritz to provide construction and as-built survey and UAV mapping services for an AML project located in Nicholas County, West Virginia, near Fenwick. The project consisted of D&H field staff to survey the construction stakeout of modifications to existing ponds, emergency spillways, ditches, manholes, pipes, culverts, sump and construction of a new Limestone Facility. Once the Site has been completed, D&H will return to do a full site As-built survey of all work that was done and provide aerial imagery and finished plan set.



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MASHEY GAP QUARRY UAV MAPPING

CLIENT: J. F. Allen Company

LOCATION: Randolph County, West Virginia

DURATION: 2020

FEATURES

- UAV Mapping & Surveying

PROJECT DESCRIPTION

In 2020, J.F. Allen Company retained Dieffenbach & Hritz to provide UAV Mapping for the Mashey Gap Quarry located in Randolph County, West Virginia, near Elkins. The project consisted of D&H field staff to survey aerial targets and perform a UAV flight to capture aerial imagery to show the progression of the active mining at the quarry. D&H provided Aerial Mapping, contours on 1 ft interval, plan set of the mapping and a Google Earth file of the flight. D&H provides this service to J.F. Allen Company on a quarterly basis to provide updated amount of mining that has commenced since the last flight.





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PURDY RUN QUARRY UAV MAPPING

CLIENT: KCS Contracting, LLC

LOCATION: Harrison County, West Virginia

DURATION: 2020

FEATURES

- UAV Mapping & Surveying

PROJECT DESCRIPTION

In 2020, KCS Contracting retained Dieffenbach & Hritz to provide UAV Mapping for the Purdy Run Quarry located in Harrison County, West Virginia, near Adamsville. The project consisted of D&H field staff to survey aerial targets and perform a UAV flight to capture aerial imagery to show the progression of the active mining at the quarry and to provide volumes of all the stockpiles on site. D&H provided Aerial Mapping, contours on 1 ft interval, plan set of the mapping, a Google Earth file of the flight and a report that gave volumes of each stockpile in cubic yards.. D&H provides this service to KCS Contracting on a monthly basis to provide updated amount of mining that has commenced since the last flight.





NV13 WELL PAD SLIP REPAIR

CLIENT: CNX Gas Company LLC

LOCATION: Greene County, Pennsylvania

DURATION: 2020

FEATURES

- Engineering Design & Permitting
- Environmental Delineation
- Environmental Permitting
- Topographic Surveying
- Construction Stakeout
- As-built Surveying
- Construction Management
- Erosion & Sediment Control Inspection
- Compaction Testing

PROJECT DESCRIPTION

In 2020, CNX Gas Company retained Dieffenbach & Hritz to provide Engineering design & permitting, Environmental services and Surveying for a slip repair for an existing Oil & Gas well Pad located in Greene County, Pennsylvania, near Nineveh. The project consisted of D&H field staff designing the remediation and restoration of a slide area caused by an infiltration berm. Reclaiming the infiltration berm area and re-routing impervious runoff to a new PCSM BMP. Fix a second slip on an existing infiltration basin and converting that infiltration basin to a wet pond. The designed slip repairs will involve an environmental assessment of the site and also surveying of construction stakeout and producing a full as-built of the site once it has been completed.
