



Engineering Planning Surveying

ORIGINAL

## Expression of Interest

Presented To:

West Virginia Department of  
Environmental Protection  
Office of AML & R  
601 57th Street SE  
Charleston, WV 25304

Attn: Mr. Frank Whittaker, Senior Buyer  
Acquisitions Unit, WV Purchasing Division  
for the WVDEP

**RFQ DEP 16073**

**Grafton #4 Refuse & HW Design  
Taylor County, WV**

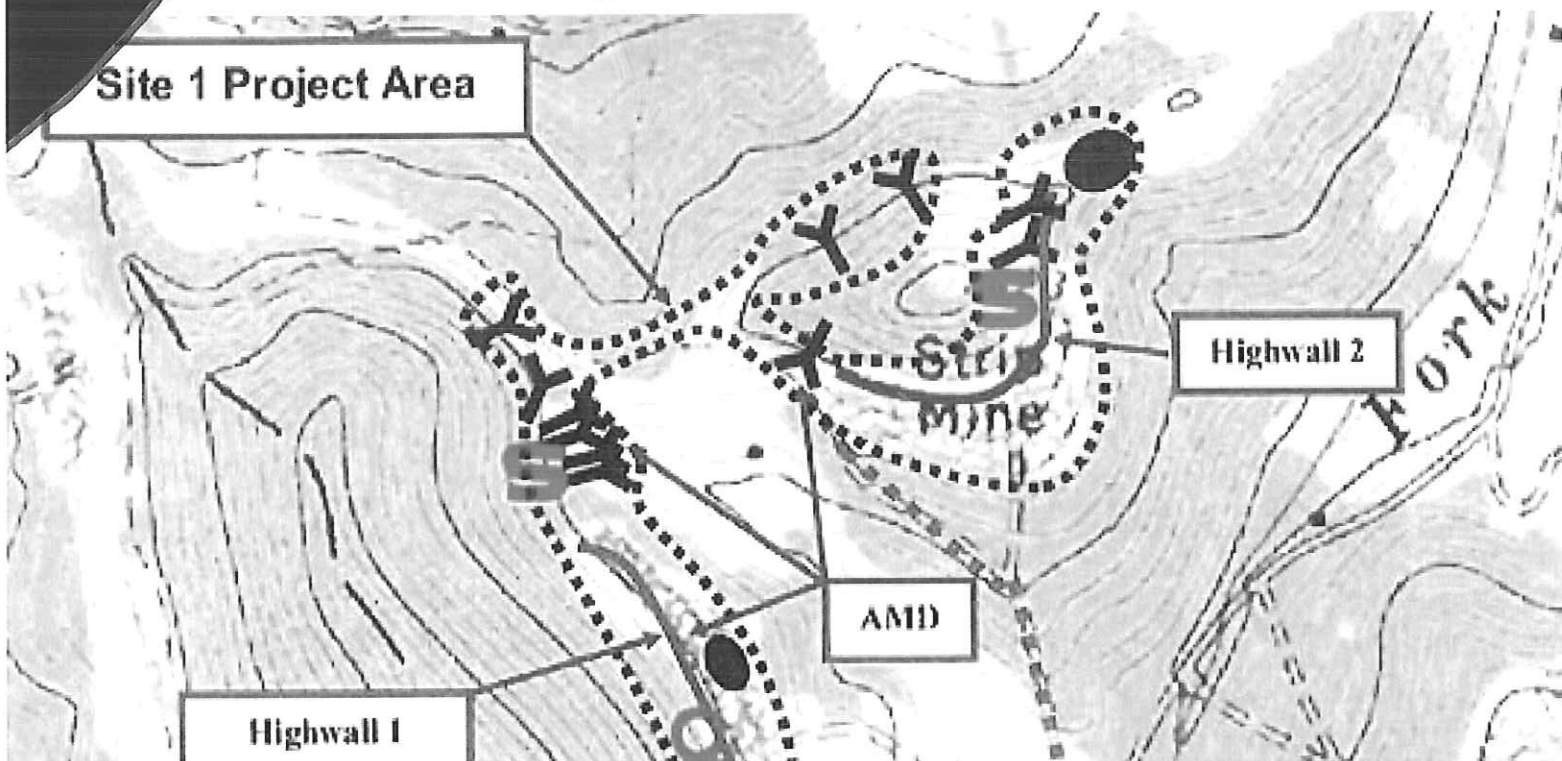
A Proposal for Professional Engineering  
Design Services and Construction Monitoring  
Services at the Grafton #4 Refuse & HW  
Design, Taylor County, WV

January 29, 2013

Submitted By:

TERRADON Corporation  
401 Jacobson Drive  
Poca, WV 25159  
304-755-8291  
terraddon.com

01/29/13 01:00:17 PM  
West Virginia Purchasing Division





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

**Solicitation**

NUMBER
DEP16073

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
FRANK WHITTAKER 304-558-2316

RFQ COPY  
 TYPE NAME/ADDRESS HERE

VENDOR

**Terradon Corporation**  
**P O Box 519**  
**Nitro, WV 25143**

SHIP TO

ENVIRONMENTAL PROTECTION  
 DEPARTMENT OF  
 OFFICE OF AML&R  
 601 57TH STREET SE  
 CHARLESTON, WV  
 25304 304-926-0499

**ORIGINAL**

DATE PRINTED
12/20/2012

BID OPENING DATE: 01/29/2013 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29		
		GRAFTON #4 REFUSE & HW		DESIGN		
		EXPRESSION OF INTEREST				
		THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING EXPRESSIONS OF INTEREST FOR PROFESSIONAL ENGINEERING DESIGN SERVICES AND CONSTRUCTION MONITORING SERVICES AT THE GRAFTON #4 REFUSE & HW PROJECT IN TAYLOR COUNTY, WEST VIRGINIA PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS.				
		***** THIS IS THE END OF RFQ DEP16073 ***** TOTAL:				

SIGNATURE <i>Muhammad U. Riaz</i>	TELEPHONE 304-705-8291	DATE 1-24-13
TITLE President	FEIN 55-0687624	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**ADDENDUM ACKNOWLEDGEMENT FORM**

**SOLICITATION NO.:** DEP16073

**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 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

Company

Muhammad U. Riaz

Authorized Signature

1-24-13

Date

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

CERTIFICATION AND SIGNATURE PAGE

By signing below, 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 or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

TERRADON Corporation  
(Company)

Muhammad U. Riaz  
(Authorized Signature)

Muhammad Riaz, President  
(Representative Name, Title)

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

1-24-13  
(Date)



TERRADON CORPORATION  
P.O. Box 519  
Nitro, WV 25143  
Tel: 304-755-8291  
Fax: 304-755-2636  
www.terraddon.com

TERRADON CORPORATION  
PO Box 1635  
Lewisburg, WV 24901  
Tel: 304-645-4636  
Fax: 304-645-7614  
www.terraddon.com

January 25, 2013

Mr. Frank Whittaker, Senior Buyer  
Acquisitions Unit, WV Purchasing Division  
for the West Virginia Department of Environmental Protection  
Office of AML & R  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

Subject: Expression of Interest  
DEP16073 Grafton #4 Refuse & HW Design

Mr. Whittaker:

TERRADON is pleased to provide you with the following Expression of Interest to provide professional engineering services to the WV Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation (WVDEP/AML).

TERRADON has a long-standing history of providing quality design and construction services to the WVDEP/AML. Our diverse staff can provide complete services for any issue that may be included in this project. TERRADON welcomes the opportunity this project offers.

I look forward to an opportunity to interview for this project, and hope to be the State's preferred consultant. Should you have any questions regarding the submittal or TERRADON, please do not hesitate to contact me at 304-755-8291.

Sincerely,

Ryan Wheeler  
TERRADON Corporation



Engineering Planning Surveying

## Expression of Interest

Presented To:

West Virginia Department of  
Environmental Protection  
Office of AML & R  
601 57th Street SE  
Charleston, WV 25304

Attn: Mr. Frank Whittaker, Senior Buyer  
Acquisitions Unit, WV Purchasing Division  
for the WVDEP

**RFQ DEP 16073**

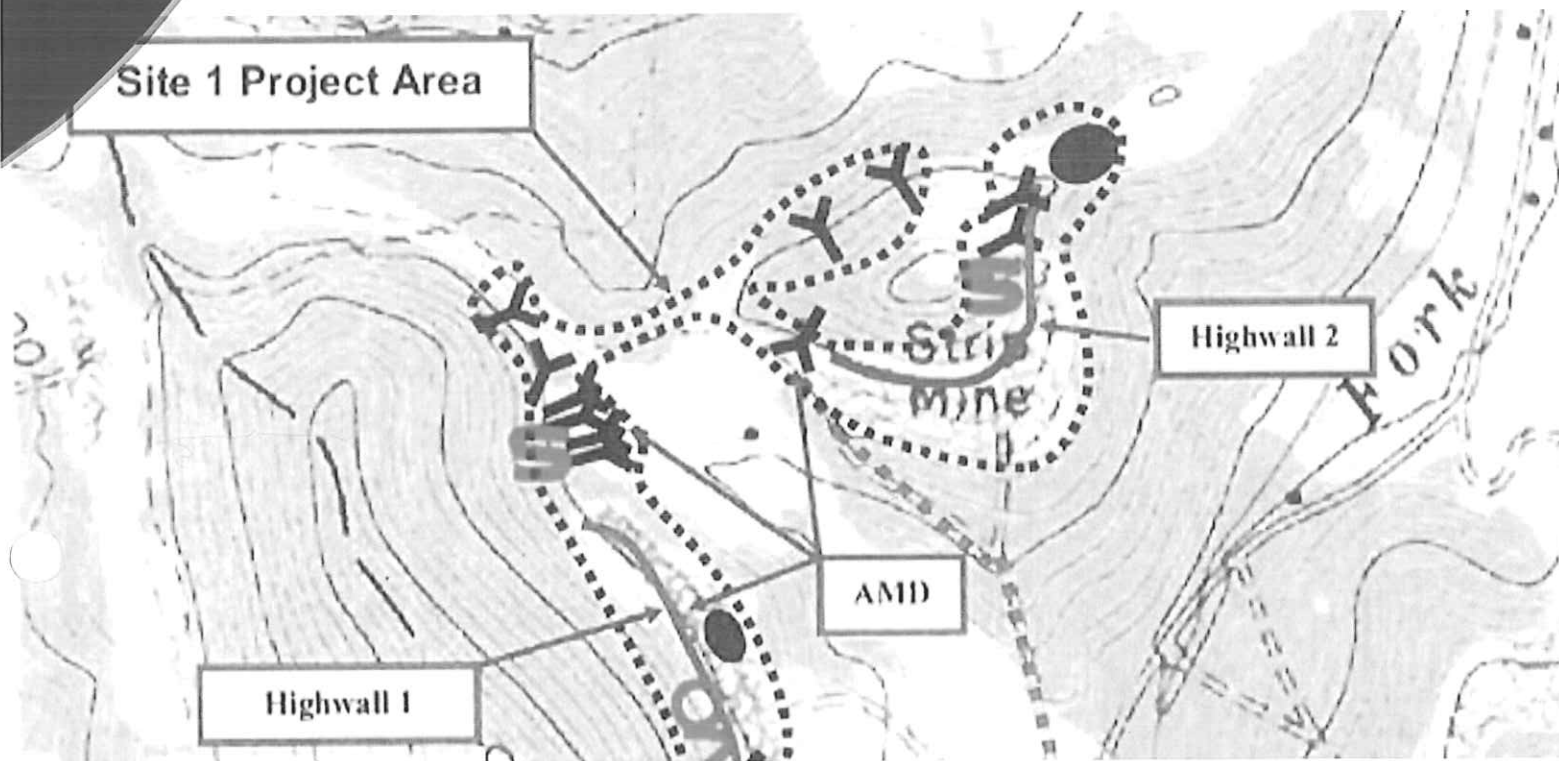
**Grafton #4 Refuse & HW Design  
Taylor County, WV**

A Proposal for Professional Engineering  
Design Services and Construction Monitoring  
Services at the Grafton #4 Refuse & HW  
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January 29, 2013

Submitted By:

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401 Jacobson Drive  
Poca, WV 25159  
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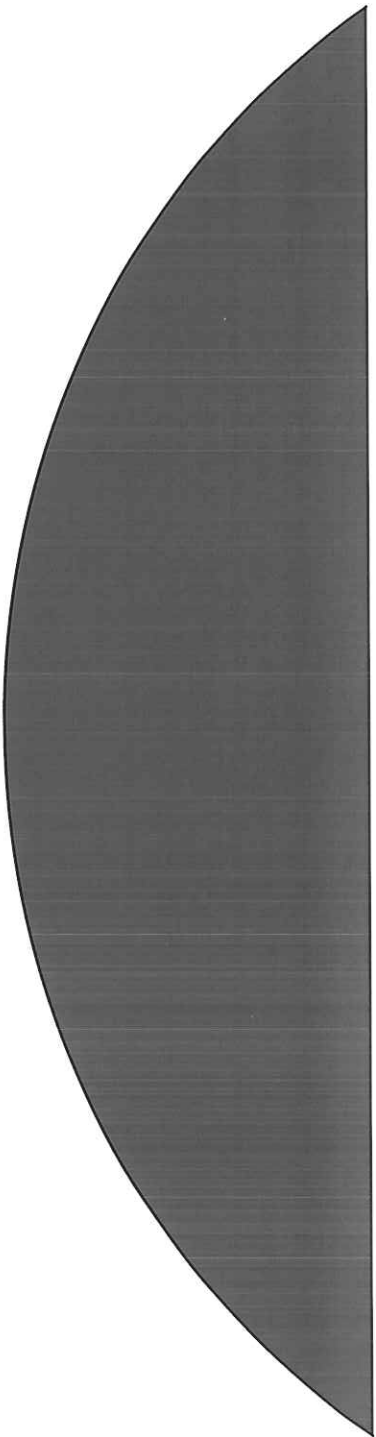


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# Corporate Overview







# Corporate Overview

TERRADON Corporation offers a multi-faceted approach to design engineering and consulting services. For more than 20 years TERRADON staff have provided a wealth of engineering solutions blanketing West Virginia and the Appalachian region with successful projects. The company built its reputation on expert personnel and quality, time-sensitive service. Those same founding principles hold true today.

Staff includes engineers, landscape architects, surveyors, planners, environmental scientists, designers, technicians and LEED Accredited Professionals.

## Service Offerings Include:

- Land planning & site design
- Surveying & Mapping
- Civil Engineering
- Geotechnical investigations
- Materials testing & construction monitoring
- Environmental
- Roadway & Bridge Design
- Energy services

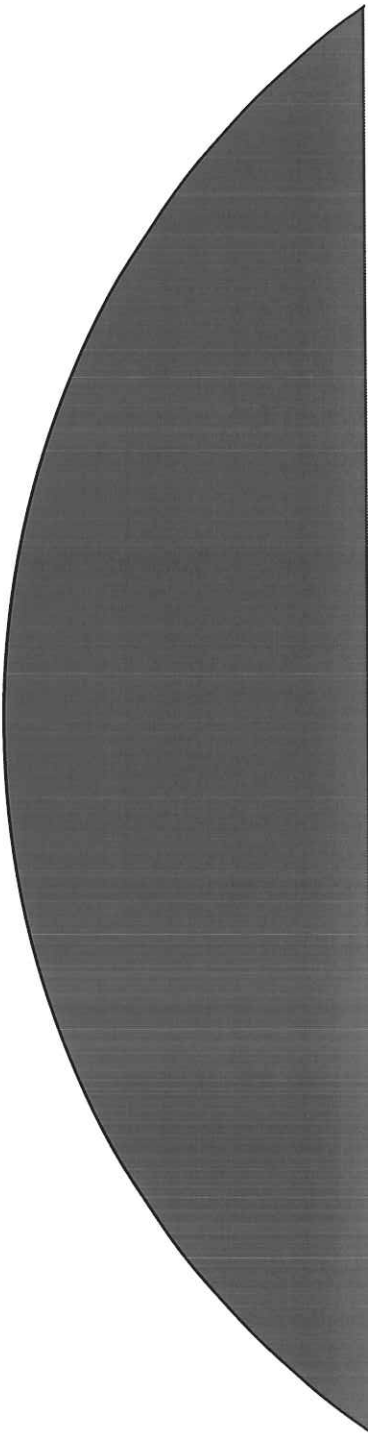
The family-owned business has built its strong reputation by providing flexible, cost effective design solutions and maintaining the highest level of customer service. The firm has been recognized through numerous awards from professional organizations and agencies for excellence in engineering.

TERRADON is particularly suited to design engineering within the mountainous areas of West Virginia and the Appalachian Region. The firm has been recognized through numerous awards from professional organizations and agencies including the West Virginia Division of Highways, Department of Environmental Protection and the West Virginia Chapter of American Institute of Architects.

TERRADON maintains approximately 52 leading-edge staff selected to service particular client needs. Its offices sustain customers through a wide-range of engineering offerings. Seven departments work cohesively to provide turn-key solutions that strive to exceed client expectations.

TERRADON's corporate culture promotes innovation and progressive thinking. Its employees understand the purpose behind their services and work to cultivate lasting relationships with clients through honest, hard work.

○ **Expression of Interest**



# Expression of Interest

***TERRADON Corporation has prepared the materials of this expression of interest in accordance with the Request for Quotation (RFQ) issued by the State of West Virginia. For convenience, the following pages are arranged in order of the evaluation criteria listed in the RFQ.***

TERRADON offers a professional and experienced staff to perform the tasks required for this project. TERRADON has been responsible for all aspects of numerous successfully completed Abandoned Mine Lands (AML) projects in recent years.

TERRADON maintains seven West Virginia Registered Professional Engineers in its Primary Charleston-area office and two in its Lewisburg-based office. Additionally, the firm maintains a registered Professional Engineer in its Columbus, Ohio office.

Total number of WV Registered Professional Engineers (Civil or Mining) in the Primary Office:

- Joe Saunders, P.E.  
Project Manager/Engineer
- Davis Fennell, P.E.  
Project Engineer
- Muhammad Riaz, P.E.  
Project Engineer
- Robert Simmons, P.E.  
Project Engineer
- John James, P.E.  
Project Engineer
- Jim Nagy, P.E.  
Project Engineer
- Mike Pyles, P.E.  
Project Engineer

Total number of WV Registered Professional Engineers (Civil or Mining) in the Secondary Office:

- Phil Reed, P.E.  
Project Manager/Engineer
- Kristen McClung, P.E.  
Project Engineer

# Reclamation Engineering Design Experience as It Relates to Project Problem Areas

TERRADON has extensive experience in both wet and dry mine seals, with or without bat gates. Our recent experience with Stonecoal Creek had more than two dozen mine seals, and Morgan Run had more than twenty as well.

In addition, TERRADON has provided regrading services on numerous refuse piles and highwalls including Jenkin Jones, Micajah, Linger, Camp Mahonegan, Cedar Creek, Roaring Creek and Morgan Run. TERRADON has also provided regrading services on Tupper's Creek, Gerath and Drews Creek Landslides. TERRADON also regraded more than 14 miles of highwall on the Garden Ground site in Fayette County.

TERRADON has experience with all facets of drainage associated with the majority of projects we have completed over the years, from acid mine drainage to basic conveyance of water from problem areas via channels, ditches and pipes. Our years of experience with AML problem areas, coupled with our quick response time to WVDEP/AML needs, makes TERRADON an excellent fit for any project.

## Recent Portal and Refuse Experience

- » MALLORY GIBSON PORTALS & REFUSE
- » SHABBY ROOM
- » GAINS
- » GARNER GROUNDS
- » LILBURN-PRITT PORTALS
- » ROARING CREEK
- » MORGAN RUN #2
- » HARRIS BRANCH
- » STONECOAL CREEK
- » DREW'S CREEK "A" HIGHWALL
- » JENKIN JONES
- » MACAJAH REFUSE
- » CEDAR CREEK
- » CARSWELL HOLLOW
- » LOWER BURNING CREEK
- » SARAH ANN (VANCE)
- » VENUS
- » GRASS RUN REFUSE
- » SPRING CREEK REFUSE
- » BLACK WOLFE REFUSE
- » ROARING CREEK
- » TUPPERS CREEK
- » GERATH
- » NORTH VIEW MINE DRAINAGE
- » HIGHLAND AVENUE
- » MORGAN RUN

# Available WV AML Design Teams

TERRADON Corporation maintains the following personnel available to assign to the project. All personnel listed have previous design or inspection experience on AML projects.

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.

## Project Manager

Joe Saunders, PE

## Project Engineers

- » Joe Saunders, PE
- » John James, PE
- » Jim Nagy, PE
- » Bill Hunt, PG
- » Mike Pyles, PE
- » Robert Simmons, PE
- » Phil Reed, PE
- » Kristen McClung, PE

## Engineering Technicians

- » Mark Clutter

## CAD Designers

- » Bill Gerencir
- » Kevin Sarrett
- » Kevin Garnes
- » Lee Hale, EI
- » Andy Nutter, EI
- » Early Oldham

## Surveyors

- » Robert Thaw, PS
- » Brian Bakanas, PS
- » Randy Melton, PS
- » David Brown, PS

# AML Consultant Qualification Questionnaire

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

Attachment "B"

PROJECT NAME <b>Grafton #4 Refuse &amp; HW Design</b>		DATE (DAY, MONTH, YEAR) <b>January 24, 2013</b>	FEIN <b>55-0687626</b>
1. FIRM NAME <b>TERRADON Corporation</b>		2. HOME OFFICE BUSINESS ADDRESS <b>401 Jacobson Drive, Poca, WV 25159</b>	3. FORMER FIRM NAME
4. HOME OFFICE TELEPHONE <b>(304) 755-8291</b>	5. ESTABLISHED (YEAR) <b>1989</b>	6. TYPE OWNERSHIP Individual <input type="checkbox"/> Corporation <input checked="" type="checkbox"/> Partnership <input type="checkbox"/> Joint-Venture <input type="checkbox"/>	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE <b>401 Jacobson Drive, Poca, WV 25159/ (304) 755-8291 / Muhammad Riaz, P.E., President/ 40 persons</b>			
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM <b>Muhammad Riaz, P.E., President</b> <b>Virginia L. King, CEO</b>		8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS	
9. PERSONNEL BY DISCIPLINE			
<b>10</b> ADMINISTRATIVE	— ECOLOGISTS	<b>3</b> LANDSCAPE ARCHITECTS	<b>1</b> STRUCTURAL ENGINEERS
— ARCHITECTS	— ECONOMISTS	— MECHANICAL ENGINEERS	<b>5</b> SURVEYORS
<b>1</b> BIOLOGIST	— ELECTRICAL ENGINEERS	— MINING ENGINEERS	<b>1</b> TRAFFIC ENGINEERS
<b>3</b> CADD OPERATORS	<b>3</b> ENVIRONMENTALISTS	— PHOTOGRAMMETRISTS	<b>41</b> OTHER
— CHEMICAL ENGINEERS	— ESTIMATORS	<b>2</b> PLANNERS: URBAN/REGIONAL	
<b>5</b> CIVIL ENGINEERS	<b>1</b> GEOLOGISTS	<b>2</b> SANITARY ENGINEERS	
<b>3</b> CONSTRUCTION INSPECTORS	— HISTORIANS	<b>2</b> SOILS ENGINEERS	
<b>4</b> DESIGNERS	<b>2</b> HYDROLOGISTS	— SPECIFICATION WRITERS	<b>60</b> TOTAL PERSONNEL
— DRAFTSMEN			
<p>TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: <b>7</b></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			





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

YES Description and Number of Projects: 50 Projects for WVDEP/AML&R

NO

B. Are your firm's personnel experienced in Soil Analysis?

YES Description and Number of Projects: 35 WVDEP/AML&R projects included some soil analysis. TERRADON provides geotechnical engineering on a wide variety of projects, including dams, highways, bridges, etc.

NO

C. Are your firm's personnel experienced in hydrology and hydraulics?

YES Description and Number of Projects: 35 WVDEP/AML&R projects included hydrology and hydraulics.

NO

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

YES Description and Number of Projects: \_\_\_\_\_

NO We routinely provide photo control surveys and field edit the mapping provided.

E. Are your firm's personnel experienced in domestic waterline design? (Include any experience in evaluation of aquifer degradation as a result of mining.)

YES Description and Number of Projects: 9 WVDEP/AML&R projects included the evaluation of aquifer degradation as a result of mining. Four of those projects have been designed and constructed. TERRADON has also designed

NO hundreds of miles of waterline in the last 5 years.

F. Are your firm's personnel experienced in Acid Mine Drainage Evaluation and Abatement Design?

YES Description and Number of Projects: 5 WVDEP/AML&R projects included acid mine drainage evaluation and abatement. In addition, TERRADON was 1 of only 2 firms evaluating and designing AMD abatement of special

NO reclamation projects in 1992, 1993 and 1994.

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:
James, John W. P.E. Senior Geotechnical Engineer	11	33	9

Brief Explanation of Responsibilities

Geotechnical Project Manager for TERRADON Corporation. Responsible for contract administration and project management; peer review of design, construction drawings and specifications; constructability review and construction cost estimates.

EDUCATION (Degree, Year, Specialization)

B.S., 1968, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers (Past President, WV Section)

REGISTRATION (Type, Year, State)

P.E., 1973, WV

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:
Saunders, William "Joe", P.E.	2	21	21

Brief Explanation of Responsibilities

Primary Project Manager for and Engineer. Responsible for project oversight and overall delivery. Will be design engineer for all elements of the project and ensure compliance with all local, state and federal requirements.

EDUCATION (Degree, Year, Specialization)

B.S., 1998, Civil Engineering, West Virginia Institute of Technology

ACEWV

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

P.E., 2001, West Virginia P.E., 2005, North Carolina  
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:
Gerencir, William Senior CAD Designer	20	23	20

Brief Explanation of Responsibilities

Mr. Gerencir is responsible for CAD design, including site layout, grading, stream alignments. Plan, cross section, and detail sheet preparation. Quantity Takeoffs, Calculation Briefs and additional design related tasks.

EDUCATION (Degree, Year, Specialization)

A.S., 1989, Civil/Surveying Engineering Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

N/A

REGISTRATION (Type, Year, State)

N/A

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:
Brown, David A., P.S. Professional Surveyor	9	15	7

Brief Explanation of Responsibilities

Responsible for all aspects of surveying, including photogrammetry control, if required, field editing of mapping, topographic mapping, establishment of survey control monuments and establishing base lines for construction layout and quantity measurement. Also, tax map overlays and detailed property clarifications.

EDUCATION (Degree, Year, Specialization)

B.S., 1996, Engineering Technology

West Virginia Association of Land Surveyors

P.S., 2003, WV

P.S., 2008, TN

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

Software:	Autodesk 2010 Civil 3D
	SedCad 4 - Erosion Control and Hydrology Software
	Haested Method Flowmaster Software for Channel Design
	Haested Method - Water CADD (Pipe Network Analysis)
	Slope Stability -
	PC Stable
	REAME
	SBSLOPE
	WinStable and WinStable 2003
	Piling Walls, Anchors and Reinforced Earth Walls -
	Lpile
	HeliCAP
	Anchor 400
	KeyWall 2004
	TR 55, TR 20, TR 66 (Sites) - Hydrology
	Hec-1, Hec HMS 2.22, HEC R As 3.1.2 - Hydrology
	LC 58 + RP 61 - Structural (wall)
	Microstation V8
Surveying Equipment:	Trimble 4700 modular, RTK Global Positioning Total Station
	Trimble Geomatics Office Software
	Topcon Total Stations (3)
	SMI Data Collectors (3)
Printing/Plotting/Reproduction:	HP DesignJet T1120
	HP DesignJet 1050C Plotter (2)
	HP LaserJet 8000 Printer (2)
	HP Color LaserJet 3700
	HP Color LaserJet 5500
	Sharp AR-550 Copier/Printer (2)
	Sharp AR-C150 Full Color Copier/Printer
	Oce 7056 Engineering Size Copier

15. PRESENT ACTIVITIES ON WHICH YOU ARE THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Manila Ridge Extension Engineering Poca, WV	Putnam County Commission 3389 Winfield Road Winfield, WV 25213	104,000.00	100%
Manila Ridge Extension Inspection Poca, WV	Putnam County Commission 3389 Winfield Road Winfield, WV 25213	90,000.00	0%
WV Air National Guard Design/Inspection Charleston, WV	WV American Water Shared Services Center P.O. Box 5609 Cherry Hill, New Jersey 08034	201,615.00	98%
Lilbern Pritt Highwall Design Junior, WV	WVDEP/AML&R 601 57th Street SE Charleston, WV 25304	141,855.00	70%
Mallory (Gibson) Portals Design Mallory, WV	WVDEP/AML&R 601 57th Street SE Charleston, WV 25304	70,844.00	95%
Montgomery 6th Ave. Pump Station Montgomery, WV	Sanitary Board Of Montgomery 706 Third Avenue Montgomery, WV 25136	162,200.00	0%
Ham Sanitary Landfill - Peterstown WV	HAM Sanitary Landfill P.O. Box 576 Peterstown, WV 24963	157,500.00	80%
Northern Wayne County PSD Engineering Wayne, WV	Northern Wayne County PSD P.O. Box 775 Lavallette, WV 25535	29,500.00	80%
Upper Glade Creek Dam Improvements	Beckley Water Company Po Box 2400 Beckley, WV 25802-2400	35,000.00	85%

TOTAL NUMBER OF PROJECTS: 9

TOTAL ESTIMATED CONSTRUCTION COSTS: \$

16. PRESENT ACTIVITIES ON WHICH YOU ARE ASSOCIATED WITH OTHERS

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
Project Arrow Glen Jean, WV	Utility Design	Trinity Works, LLC 411 Main Street Suite 210 Mount Hope, WV 25880			889,250.00
Project Arrow Glen Jean, WV	Summit Center Utilities Design	Trinity Works, LLC 411 Main Street Suite 210 Mount Hope, WV 25880			55,000.00
Project Arrow Glen Jean, WV	Construction Phase Engineering Services	Trinity Works, LLC 411 Main Street Suite 210 Mount Hope, WV 25880			285,000.00
Project Arrow Glen Jean, WV	AT&T Cell Tower Conduit	Trinity Works, LLC 411 Main Street Suite 210 Mount Hope, WV 25880			55,000.00
Moorefield High School Moorefield, WV	Site Design	Williamson Shriver Architects 717 Bigley Avenue Charleston, WV 25302	2014		1,000,000.00
East Hardy High School	Site Design	Williamson Shriver Architects 717 Bigley Avenue Charleston, WV 25302	2014		1,000,000.00
Fairmont Office Building	Site Design	OMNI Associates 1543 Fairmont Avenue Suite 201 Fairmont, WV 26554	2014		1,500,000.00
Advanced Technology - Advantage Valley South Charleston, WV	Site Design	E.T. Boggess 101 Rockledge Avenue Princeton, WV 24740	2014	15,000,000.00	1,000,000.00
WV Northern ATC	Site Design	E.T. Boggess 101 Rockledge Avenue Princeton, WV 24740	2014	15,000,000.00	1,000,000.00

17. COMPLETED WORK WITHIN LAST 10 YEARS ON WHICH YOU WERE THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Diana Extension Webster Springs, WV	WV American Water Shared Services Center P.O. Box 5609 Cherry Hill, New Jersey 08034	262,000.00	2009	Yes
Putnam County 2007 Extensions Putnam County, WV	Putnam County Commission 3389 Winfield Road Winfield, WV 25213	438,000.00	2007	Yes
Derricks Creek Ridge Extension Sissonville, WV	WV American Water Shared Services Center P.O. Box 5609 Cherry Hill, New Jersey 08034	142,000.00	2008	Yes
Montgomery WWTP Upgrade – Bidding Montgomery, WV	Sanitary Board Of Montgomery 706 Third Avenue Montgomery, WV 25136	211,000.00	2008	Yes
KCRDA 2009 Construction Phase Sissonville, WV	WV American Water Shared Services Center P.O. Box 5609 Cherry Hill, New Jersey 08034	282,000.00	2010	Yes
Pedestrian Bridge-Freyssinet Glen Jean, WV	Freyssinet, Inc. 44880 Falcon Place Suite 100 Sterling, VA 20166	210,052.95	2012	Yes
Sleethes Run Bridge Replacement Lewis County, WV	WV Division of Highways 1900 Kanawha Boulevard, East Charleston, WV 25305	284,254.00	2007	Yes
Beckley - New Roadway Beckley, WV	International Coal Group 300 Corporate Centre Drive Scott Depot, WV 25560	187,000.00	2007	Yes
City Beer Bridge on I-77 Bridge Replacement Project Wood County, West Virginia	WVDOT Building 5, Room A-110 1900 Kanawha Blvd. East Charleston WV 25305	6,000,000.00	2011	Yes
AEP-Gavin Plant Sed Pond #2 Expansion Cheshire, WV	American Electric Power 1530 Winfield Road Winfield, WV 25213	188,000.00	2011	Yes

Walgreens – Hurricane Hurricane, WV	Ed Street Company 2513 Wesley Street, Suite 4 Johnson City, TN 37601	129,000.00	2007	Yes
Black Diamond Ranch New Castle, VA	Hunter Company of WV 471 B&O Overpass Road Hedgesville, WV 25427	135,000.00	2007	Yes
Walgreens – Charleston Charleston, WV	NU Rental, LLC 2513 Wesley Street, Suite 4 Johnson City, TN 37601	136,500.00	2007	Yes
Beech Ridge Energy Design & Surveying Williamsburg, WV	White Construction, Inc. P.O. Box 249 Clinton, IN 47842	264,000.00	2009	Yes
Sarah Ann (Vance) Drainage Logan County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	600,000.00	2009	Yes
Venus (Hamilton) Drainage AML Reclamation Design McDowell County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	200,000.00	2011	Yes
Drews Creek Highwall AML Reclamation Design Raleigh County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	500,000.00	2011	Yes
Kingwood Route 7 Highwall AML Reclamation Project Preston County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	350,000.00	2011	Yes
Robinette Branch Refuse Pile AML Reclamation Design Logan County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	814,000.00	2011	Yes
Garden Ground AML (Phase 1) AML Reclamation Design Fayette County, WV	WVDEP/AML&R 601 57th Street SE Charleston, WV 25304	573,000.00	2009	Yes
Garden Ground (Phase 2) AML Reclamation Project Fayette County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	7,200,000.00	2009	Yes
Harris Branch Refuse Pile Design AML Reclamation Project McDowell County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	150,000.00	2010	Yes
Shabbyroom Hollow Complex AML Reclamation Project McDowell County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	750,000.00	2010	Yes
Gains Highwall AML Reclamation Project Harrison County, WV	WVDEP/AML&R 601 57 <sup>TH</sup> Street SE Charleston WV 25304	450,000.00	2011	Yes



18. COMPLETED WORK WITHIN LAST 10 YEARS ON WHICH YOU WERE ASSOCIATED WITH 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
WVARNG Eleanor Access Road Surveying & Roadway Design Eleanor, West Virginia	WV Army National Guard 1740 Coonskin Drive Charleston WV 25311	\$300,000	2009	Yes	Williamson Shriver Architects
Project Arrow - Shower House Utility Rev Glen Jean, WV	Trinity Works 2128 Mistletoe Boulevard Fort Worth, Texas 76110	230,000.00	2011	Yes	Arrow WV, Inc.
Project Arrow - Construction Phase Engineering Services Glen Jean, WV	Trinity Works 2128 Mistletoe Boulevard Fort Worth, Texas 76110	285,000.00	2011	Yes	Arrow WV, Inc.
Project Arrow - Logistics Center/Welcom Center Utility Design Glen Jean, WV	Trinity Works 2128 Mistletoe Boulevard Fort Worth, Texas 76110	146,800.00	2011	Yes	Arrow WV, Inc.
Pikeview Middle School Site/Civil, Survey Mercer County, West Virginia	Mercer County Public Schools 1403 Honaker Avenue Princeton, WV 24740	\$5,000,000	2009	Yes	E.T Boggess Architects
Fairmont State University Campus Improvements Fairmont, West Virginia	Fairmont State University 1201 Locust Avenue Fairmont, WV 26554	\$1,000,000	2007	Yes	Omni Associates
Moorefield Intermediate School Moorefield, West Virginia	Hardy County BOE 510 Ashby Street Moorefield, WV 26836	\$12,000,000	2008	Yes	Williamson Shriver Architects
Mountain View Elementary Scott Depot, West Virginia	Putnam County BOE Winfield, WV 25213	\$2,000,000	2008	Yes	Williamson Shriver Architects
Project Arrow - NPDES Glen Jean, WV	Trinity Works, LLC 411 Main Street Suite 210 Mount Hope, WV 25880	350,000.00	2010	Yes	Arrow WV, Inc.

Sawmill Village CD's Snowshoe, WV	Summit III, LLC 234 Seven Farms Drive Charleston, SC 29492	177,000.00	2007	Yes	Bennett Hofford Construction Company The Rice Mill Building 17 Lockwood Drive Charleston, SC 29401
Allegheny Energy - Fairmont, WV	First Energy Corp. 2800 Pottsville Pike Reading, PA 19605	159,000.00	2008	Yes	OMNI Associates
Mingo Central High - 2 Matewan, WV	Mingo County BOE Sycamore Street Williamson, WV 25661	127,000.00	2008	Yes	Williamson Shriver Architects
Jefferson Elementary Parkersburg, WV	Wood County Board of Education 1210 13th Street   Parkersburg, WV 26101	107,000.00	2008	Yes	Williamson Shriver Architects
Pikeview Middle School Princeton, WV	Mercer County Public Schools 1403 Honaker Avenue Princeton, WV 24740	114,500.00	2008	Yes	E.T. Boggess
WV GSA Office Complex Fairmont, WV	State Of West Virginia	311,612.50	2009	Yes	OMNI Associates
Greenbrier West High (LD) Charmco, WV	Greenbrier County Schools 202 Chestnut Street Lewisburg, WV 24901	267,000.00	2009	Yes	E.T. Boggess
Downtown Hotel Charleston - LD (Courtyard) Charleston, WV	Various Clients	105,000.00	2010	Yes	VIM, Inc.
Project Arrow - Mill Creek Parking Lot Glen Jean, WV	Trinity Works 2128 Mistletoe Boulevard Fort Worth, Texas 76110	108,000.00	2011	Yes	Arrow WV, Inc.

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 Division of Highways.

20. The foregoing is a statement of facts.

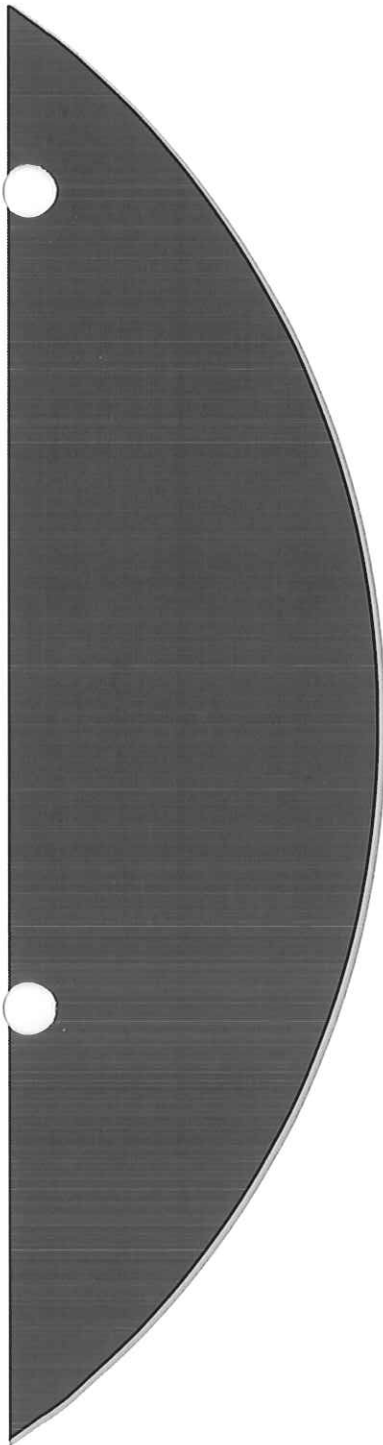
Signature: Muhammad U. Riaz

Title: President

Date: 1-24-13

Printed Name: Muhammad Riaz

# AML and Related Project Experience Matrix



## Grafton #4 Refuse HW Design

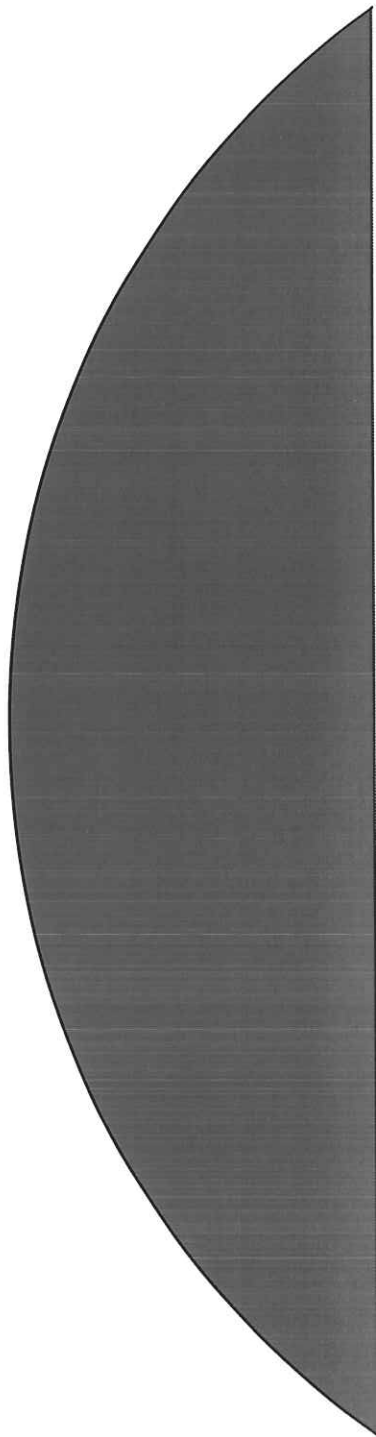
TERRADON AML and RELATED PROJECT EXPERIENCE MATRIX																					
PROJECT NAME	Exp. Basis C=Corp. P=Personal *	Additional Info Provided in Section (s) **	PROJECT EXPERIENCE													PRIMARY STAFF PARTICIPATION/CAPACITY M=Management P=Professional ***					
			Abandoned Surface Mine Reclamation	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	Joe Saunders, PE	John James, P.E.	Bill Gerencir	Dave Brown, P.S.
Mallory Gibson Portals	C/P	yes						X			X			X		X	M/P	M/P	P	P	P
Roaring Creek #4	C	yes	X					X			X				X	X		P	P	P	P
Stonecoal Creek Complex	C	no		X	X	X					X			X	X	X		P	P	P	
Stonecoal Creek Complex #2	C	no		X	X	X					X			X	X	X		M/P	P		
Stonecoal Creek Complex #3	C	no		X	X	X					X			X	X	X		M/P	P		
Jenkin Jones	C	no	X	X	X	X	X				X				X	X		M/P	P	P	
Micajah Refuse Pile	C	no	X	X	X	X	X	X			X	X			X	X			P	P	
Carswell Hollow (Smith) Refuse	C	no		X		X					X	X		X	X				P	P	
Cedar Creek Refuse	C	no		X	X	X	X				X			X		X			P	P	
Spring Branch Burning Refuse Pile	C	no		X		X	X	X			X					X			P	P	
Grass Run Refuse (Award Winner)	C	no	X	X	X	X	X				X	X	X	X	X	X			P	P	
Black Wolfe Refuse	C	no		X	X	X	X				X	X		X	X	X			P	P	
Lower Burning Creek Refuse	C	no		X	X	X	X				X	X		X	X	X			P	P	
Morgan Run PA #2	C	no	X		X	X		X			X			X		X			P	P	P
Drews Creek "A" Highwall	C	no	X		X	X					X					X			P	P	P
Venus (Hamilton, R) Drainage	C	yes	X		X	X					X								P	P	P
Sara Ann (Vance) Drainage	C	yes	X		X	X					X			X		X			P	P	P
Garden Ground Highwall 1	C	yes	X	X	X	X					X			X		X			P	P	P
Garden Ground Highwall 2	C	yes	X	X	X	X					X			X		X			P	P	P
Harris Branch Refuse Pile	C	yes	X		X						X			X		X			P	P	P
Kingwood Rt. 7 Highwall	C	yes	X	X	X	X					X			X		X			P	P	P
Shabbyroom Hollow Complex	C	yes	X	X	X	X					X			X		X			P	P	P
Robinette Branch Refuse	C	yes	X	X	X	X					X			X		X			P	P	P
Gains Highwall	C	yes	X	X	X	X					X			X		X			P	P	P
Lillbern-Pritt	C	yes	X			X					X	X				X	M/P	P	P	P	P

\* List whether project experience is corporate or personal 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.

# Relevant Project Examples



# Relevant Project Examples

## Shabbyroom Hollow Complex

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

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

## Gains Highwall Project

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

# Relevant Project Examples

## Lilbern Pritt High Walls

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

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

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

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

## Mallory (Gibson) Portals

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

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

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



## Garden Ground Highwalls – Phase 1 and 2

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

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

### Sarah Ann (Vance)

Sarah Ann (Vance) was a project located along Conley Branch near Sarah Ann in Logan County. The site was comprised of open and collapsed draining portals, as well as an area that consisted of a slide. TERRADON provided additional surveying to include the new slide that had developed on the site. The company identified 24 portals: 8 that required wet or dry seals, along with 9 bat gate dry seals, 6 rip rap chutes and 3 cisterns. The project was completed during the summer of 2011.

### Roaring Creek #4

The site consisted of surface mine spoil material that was cast to the outslope and not reclaimed to the original contour. Large areas of unvegetated spoil were found throughout the site. Also, large erosion gullies had developed in several areas, which caused spoil and fines to wash into Roaring Creek. The landowner, Marshall Walls, raised horses and he was very concerned about the highwalls and spoil areas. One horse broke its leg and had to be destroyed. Mr. Walls has two small children, and he was concerned about their safety on the areas of the farm that was mined.

The 63 acre site was graded in the design phase to remove the highwalls and revegetation was included in the design. In addition, all drainage on the site was directed to new channels and conveyed away from the problem areas. Underdrain was also utilized in the design.



# Relevant Project Examples

## Morgan Run PA #2

The Morgan Run PA #2 project was located in Preston County and contained more than twenty (20) open portals, gob piles and drainage associated with open draining portals on Site 1. This site also contained a partially graded gob pile on the opposite side of the road.

Site 2 consisted of one (1) deep mine portal with a borehole at stream level. The borehole was discharging at 5gpm and the associated drainage was running into a creek. A large depression was also located behind the deep mine portal.

The project area was analyzed and a design was completed to correct the problems on both sites. Wet and dry mine seals were designed to close all open portals, and the drainage was conveyed away from the homes below the site into a channel. All gob piles were regraded as well. A mine seal was designed for the deep mine portal at Site 2 and the open borehole drainage was conveyed into a newly designed channel. Both sites were designed to keep all drainage away from the property and homes below the site.

## Venus

In the community of Venus, McDowell County, on a steep mountain side, mine drainage was discharging from a collapsed portal. The amount of water flowing from this portal changes from time to time throughout the year. This mine water discharges down the mountain side, on the surface of the ground and also

through underground voids, causing damage to the homes and property of the approximate seven (7) homeowners living down slope of this discharge. A wet seal was designed at the open portal and the drainage from this mine was conveyed into a pipe across the gas well road. A grouted rip rap drainage channel was designed to carry all flow away from the property owners, down the hillside to a point of discharge near the railroad.

## Harris Branch

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

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

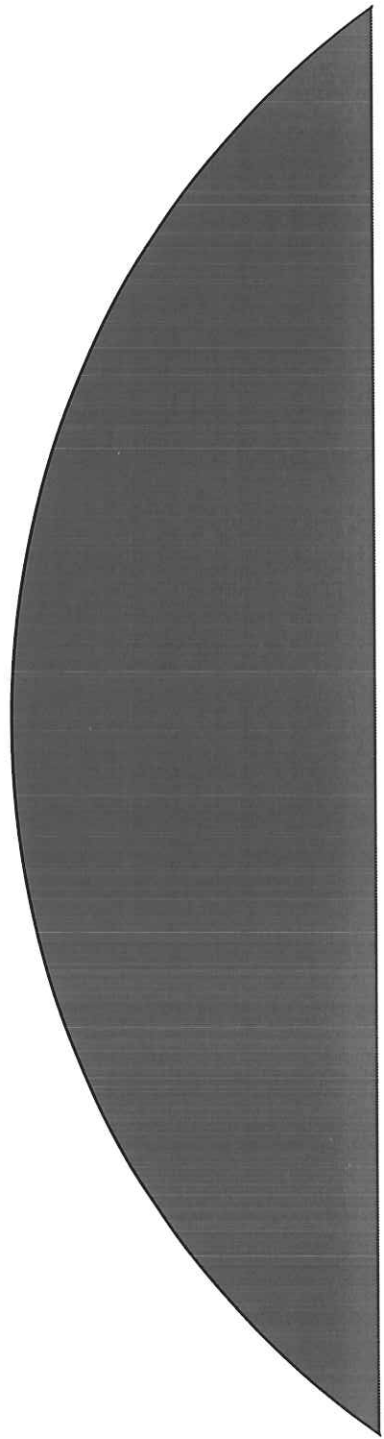
# Relevant Project Examples

## Morgan Run PA #2

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

The purpose of the reclamation program was to regrade the two coal refuse piles to stable slopes, provide proper stabilization with vegetative cover and permanent drainage channel improvements, and safely seal the open and draining mine portals. Generally, the refuse piles were regraded to stable slopes and permanent drainage patterns were established. On site soil borrow areas were utilized to obtain the necessary soil cover material required. Access to the site isolated by Morgan's run was achieved by installation of a temporary stream crossing. The stream crossing was removed after construction activities were completed. All mine portals were closed with an appropriate mine seal and several wet seals were installed to provide permanent and controlled dewatering and permanent drainage patterns were established. Bat gates were also installed in all of the open mine portals. A sloping bat gate was installed in one of the mine portals in a 10 to 15 foot deep depression. The artesian well was stabilized and the low PH AMD was treated with a limestone blanket surrounding the well. All trash and debris were disposed of at an approved landfill. Several areas of scattered refuse were soil covered and seeded. Abandoned building ruins were demolished and disposed of at an approved landfill. Some of the Stone building material was able to be disposed of on site in a rubble disposal area. All of the required erosion and sediment control measures were installed prior to construction. Additional erosion and sediment control measure were installed and maintained during construction. All erosion and sediment control measures were removed after construction, once vegetation was reestablished. All disturbed areas were revegetated or otherwise stabilized with structural methods.

# Key Personnel Resumes



# William "Joe" Saunders, PE

## AML-Highways Department Head

As lead designer for TERRADON Corporation, Mr. Saunders is responsible for design engineering for AML and Highways projects. Responsibilities include preliminary design and reports, construction plans and specifications, construction estimates, contracts and bidding review, and construction engineering. Mr. Saunders has more than 14 years similar experience as a designer.

Mr. Saunders directs the in house AML and Highways design teams by QA/QC checking and reviewing, and hydrology and hydraulic calculations. Mr. Saunders also works with the design team to schedule manpower.

### Education

» B.S. Civil Engineering, 1998  
West Virginia University Institute  
of Technology

### Work Experience

» 2012-Present  
TERRADON Corporation

» 2003-2012  
ms consultants

» 1998-2003  
Buchart Horn

» 1990-1998  
Laborers Union

### Registrations

» Professional Engineer in WV, NC

### Recent AML Project Experience Highlights

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

» **Lillbern-Pritt Highwall Project (WVDEP)** Serves as Project Manager and Lead Design Engineer for this WVDEP-AML project located in Logan County, WV. Responsible for all project tasks and coordination with the client.

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

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

» **U.S. 35 Design and Construction Plans, West Virginia Dept. of Transportation, Mason County (WVDOH)**

Structural Engineer: Overall QA/QC. Involved in checking and reviewing roadway geometry, drainage and quantities. Responsible for the design of box culverts.

» **U.S. Route 35, Review of Shop Drawings, West Virginia Dept. of Transportations, WV (WVDOH)**

Tech Resp Staff reviewed and approved shop drawings for two-span, curved bridge crossing WV County Route 38 and Lower Ninemile Creek.

» **Duhring Bridge Study, Design and Preparation of Replacement Plans, WV (WVDOH)** Senior Structural Engineer and Technical Manager. Detailed the study of several alternates for a replacement bridge for a structure constructed in the 1930s.

## William Gerencir

### Auto CAD Designer/Technician

Mr. Gerencir has nearly 20 years of experiences in the engineering related fields including more than 13 years CAD design expertise for a broad scope of projects. He has been with TERRADON for most of those years where he is responsible for design, drafting, quantity

#### Work Experience

» 1993 - Present

TERRADON Corporation

» 1992-1993

ERM-Midwest, Inc.

» 1990-1992

The H.C. Nutting Company

#### Certifications

» West Virginia DOT Certified Portland Cement/Concrete Inspector

» West Virginia Certified Compaction Inspector

» WVDOH Certified Agg. Sampler

» Fairmont State College Engineering Technician/Technologist Certification Program #2356 Level III -

estimates, site design and is also capable of managing a project and corresponding CAD files properly.

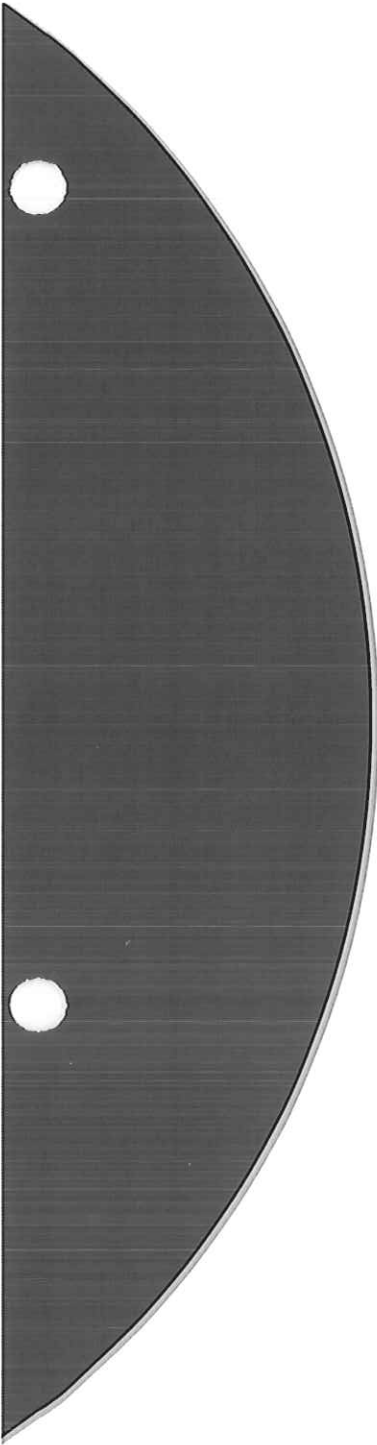
#### Recent AML Project Experience Highlights

**Robinette Refuse Pile– 2010** Regraded a 5 acre refuse pile and restored 2,100 LF of stream that was being encroached on by said refuse pile as well as design all necessary surface water conveyance channels. Served as lead CAD Designer on project responsible for site layout, grading. Regraded refuse pile in a manner to maintain the current location of an existing stream so as not to add length to the US Army Corps of Engineers permit process as well as avoid disturbing residents property in the area adjacent to the stream. Ensured balancing of earthwork, drainage layout and design. Also plan sheet preparation, profiles sheet preparation, cross section sheet preparation and detail sheet preparation. Responsible to coordinate CAD work and other design tasks with other CAD designers on the project. Generate quantity takeoffs on the project for the contractors bid form and the engineers cost estimate. Prepare the calculation brief

on the project, perform quality control checks on the construction plan sheets. Produce the final deliverable including plans, contractors bid form, engineers and cost estimate.

Administered conceptual design meeting with WVDEP on this project. Participated in field reconnaissance and field investigation necessary for completion of the project.

» **Gain Highwall– 2010** Served as lead CAD Designer on this project responsible for site layout, grading, balancing of earthwork, drainage layout and design. Also plan sheet preparation, profiles sheet preparation, cross section sheet preparation and detail sheet preparation. Coordinate CAD work and other design tasks with other CAD Designers on the project. Generate quantity takeoffs on the project for the contractors bid form and the Engineers cost estimate. Prepared the calculation brief on the project as well as performed quality control checks on the construction plan sheets. Produced the final deliverable including plans, contractors bid form, engineers cost estimate, and calculation brief. Ran conceptual design meeting with WVDEP . Participated in field reconnaissance and field investigation necessary for the completion of the project.



» **Shabby Room Hollow Complex– 2010** Served as lead CAD Designer on project responsible for site layout, grading, and balance of earthwork (regarded and balanced both refuse piles 1 and 2 which had very little room, on site as to not require removal of any refuse to another location on site of to an offsite waste area., drainage layout and design. Plan sheet preparation, profiles sheet preparation, cross section sheet preparation, detailed sheet preparation. Also coordinate CAD work and other design tasks with other CAD designers on the project. Generate quantity takeoffs on the project for the contractors bid form and the engineers cost estimate.

» **Harris Branch Refuse Pile - 2010** Served as lead CAD Designer on project responsible for Site layout, Grading and balancing of earthwork, Drainage layout and design also plan sheet preparation, profiles sheet preparation, cross section sheet preparation and detail sheet preparation, also to co-ordinate CAD work and other design tasks with other Cad designers on the project, Generate quantity take-offs on the project for the contractors bid form and the Engineers cost estimate. Also prepare the calculation brief on the project. perform quality control checks on the construction plan sheets. Produce the final deliverable including plans, contractors bid form, engineers cost estimate and calculation brief. Also run conceptual design meeting with wvdep on project. Also participate in field reconnaissance and field investigation necessary for completion of the project.

» **Kingwood Rt. & Highwall - 2010** Served as lead CAD Designer on project responsible for Site layout, Grading and balancing of earthwork, Drainage layout and design also plan sheet preparation, profiles sheet preparation, cross section sheet preparation and detail sheet preparation, also to co-ordinate CAD work and other design tasks with other Cad designers on the project, Generate quantity take-offs on the project for the contractors bid form and the Engineers cost estimate. Also prepare the calculation brief on the project. perform quality control checks on the construction plan sheets. Produce the final deliverable including plans, contractors bid form, engineers cost estimate and calculation brief. Also run conceptual design meeting with the WCDEP on project. Also participate in field reconnaissance and field investigation necessary for completion of the project.

## Kevin Sarrett

### CAD Designer

Kevin Sarrett is a veteran CAD Designer for TERRADON Corporation. Sarrett offers more than 18 years of industry experience. Sarrett has extensive experience in roadway, drainage and grading design, having provided services on numerous projects to the West Virginia Department of Transportation and the Department of Environmental Protection.

#### Education

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

#### Work Experience

» 2006 – Present TERRADON Corporation

» 1998-2006 Neff Longest & Beam

» 1994-1998 Woolpert Consultants

#### Relevant Project Experience

» **Robinette Branch Refuse Pile** Field reconnaissance to assess site conditions. Miscellaneous CAD drafting to set up sheets, details, profiles and cross sections. Designed all drainage for pipes, channels, and aprons. Prepared calculations brief with all supporting documentation, NPDES permit, SWPPP and MM109 permits. Worked with the WVDEP throughout the project in meetings, site visits, emails, and phone calls.

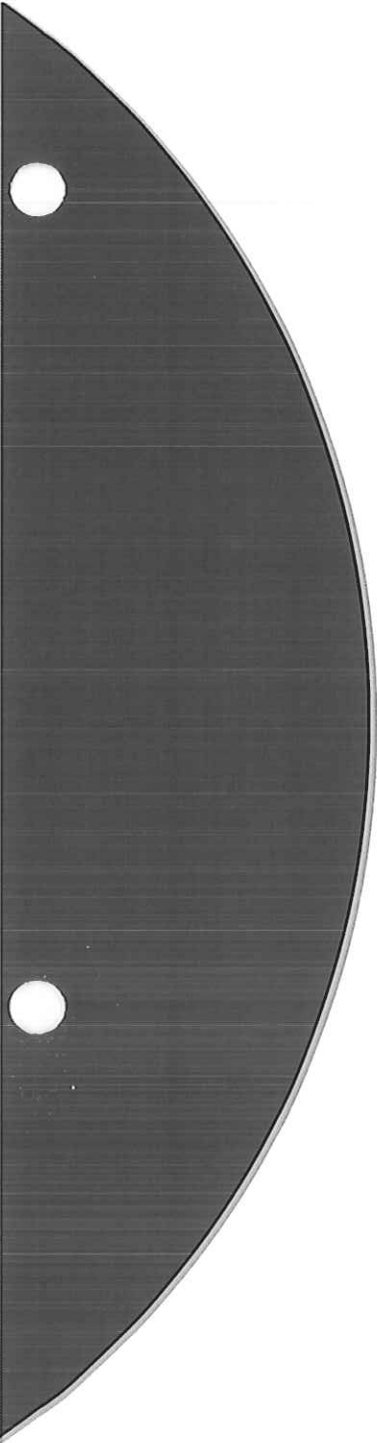
» **Gains Highwall** Field reconnaissance to assess and locate portals and site conditions. Miscellaneous CAD drafting to set up sheets, details, profiles, and cross sections. Designed all drainage for portals, pipes, channels, and aprons. Prepared calculations brief with all supporting documentations, NPDES permit, SWPPP and MM109 permits. Worked with the WVDEP through-out the project in meetings, site visits, emails, and phone calls.

» **Shabbyroom Hollow Complex** Field reconnaissance to assess and locate portals and site conditions. Miscellaneous CAD drafting to set up sheets, details, profiles, and cross sections. Designed all drainage for por-

als, pipes, channels, and aprons. Prepared calculations brief with all supporting documentation, NPDES permit, SWPP and MM109 permits. Worked with the WVDEP through-out the project in meetings, site visits, emails, and phone calls.

» **Harris Branch Field** reconnaissance to assess site conditions. Miscellaneous CAD drafting to set up sheets, details, profiles, and cross sections. Designed all drainage for pipes, channels, and aprons. Prepared calculations brief with all supporting documentation, NPDES permit, SWPPP and MM109 permits. Worked with the WVDEP throughout the project in meetings, site visits, emails, and phone calls.

» **Kingwood Rt. 7 Highwall** Field reconnaissance to assess site conditions. Miscellaneous CAD drafting to set up sheets, details, profiles and cross sections. Regraded refuse pile on site 2. Designed all drainage for portals, pipes, channels, and aprons. Prepared calculations brief with



all supporting documentation, NPDES permit, SWPPP and MM109 permits. Worked with the WVDEP through-out the project in meetings, site visits, emails, and phone calls.

» **Sarah Ann (Vance) Drainage** Field reconnaissance to assess and locate portals and site conditions. Miscellaneous CAD drafting to set up sheets, details, profiles, and cross sections. Regraded slide area. Designed all drainage for portals, pipes, channels, and aprons. Prepared calculations brief with all supporting documentation, NPDES permit, SWPPP and MM109 permits. Worked with the WVDEP throughout the project in meetings, site visits, emails, and phone calls.

» **Venus (Hamilton) Drainage** Field reconnaissance to assess and locate portals and site conditions. Miscellaneous CAD drafting to set up sheets, details, profiles, and cross sections. Designed all drainage for portals, pipes, channel and energy dissipater. Prepared calculation brief with all supporting documentation. Worked with the WVDEP throughout the project in meetings, site visits, emails, and phone calls.

» **Drew's Creek** Field reconnaissance to assess site conditions. Miscellaneous CAD drafting to set up sheets, details, profiles, and cross sections. Designed all drainage for pipes, channels, and aprons. Prepared calculations brief with all supporting documentation. Worked with the WVDEP throughout the project in meetings, site visits, emails, and phone calls.

» Prepare contract documents and permits for numerous WVDEP Office of Abandoned Mine Lands & Reclamation projects to include: erosion and sediment control, grading and drainage, impoundment closure, portal closure, water quality evaluation/mitigation, water treatment, and dewatering of deep mine works.

» Groundwater sampling, monitoring, and analysis for various Municipal and Industrial Landfills and WVDEP Office of Abandoned Mine Lands & Reclamation projects.

» Consultation with flood plain agencies and perform Hydraulic Impact Analyses (HECRAS) on numerous projects throughout West Virginia, Kentucky, and Ohio.



# Mark Clutter

## Project Manager

As Project Manager, Clutter prepares construction documents and associated permitting for numerous projects throughout Kentucky, Ohio, and West Virginia to include: erosion and sediment control plans, storm water management, design of impoundment closures, slope stability analysis, field surveying, drawings and specification preparation, design, design drafting, construction inspection, quality control testing, shop drawing review, project management, contract administration, permitting and report preparation.

### Education

- » B.S. Civil Engineering Technology Fairmont State College
- » A.A.S. Civil Engineering Technology Fairmont State College
- » A.A.S. Drafting/Design Engineering Technology Fairmont State College

### Work Experience

- » 2010 – Present TERRADON Corporation
- » 2004-Present Codeworks
- » 2000-2010 Triad Engineering, Inc.
- » 1990-2003 WV Army National Guard

### Registrations

- » Certified 40 Hr. HAZWOPER (OSHA 29 CFR 1910.120) OSHA, 2001

### Recent AML Project Experience Highlights

» **Mullens Portals & Drainage- 2009, Mullens, Wyoming County, WV** Served as Project Manager for AML Project No. DEP14430. Responsibilities included: project management, design, drawings and specification preparation, contract administration, water sampling, permitting, and report preparation. The project consisted of extensive mine workings requiring: construction access, treatment of numerous open and collapsed portals, and treating/conveying storm/mine drainage, in and around the city of Mullens. A majority of the mine drainage flowed through the city storm sewer system and under County Route 54, requiring close coordination with city, state, and federal agencies.

» **Bellington Portals & Drainage– 2009, Belington, Barbour County, WV** Served as Project Manager- responsibilities included: project management, design, drawings and specification preparation, contract administration, water sampling, permitting, and report preparation. The project consisted of extensive mine workings requiring: construction access, treatment of numerous open and collapsed portals, and treating/conveying storm/mine drainage, in and around the city of.

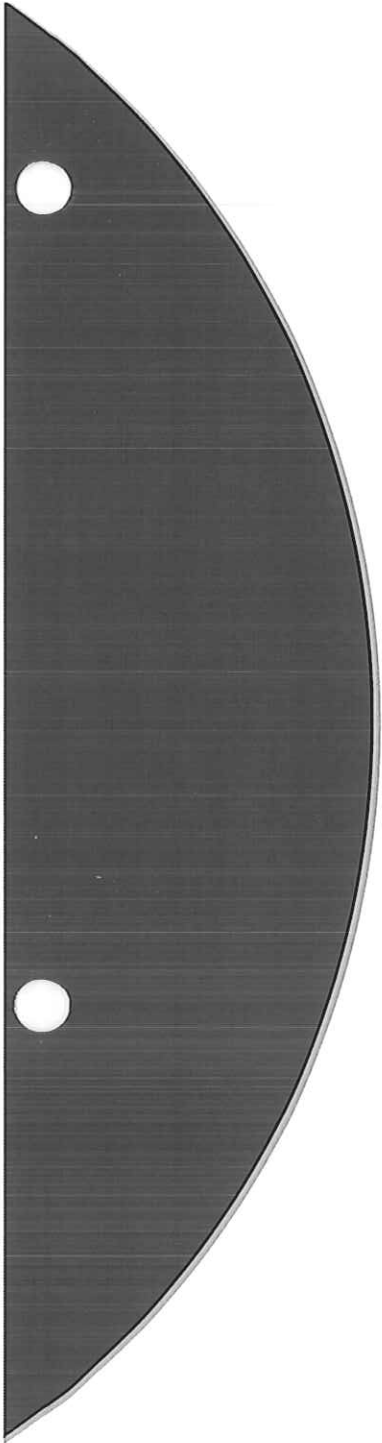
» **Rumble Refuse & Portals- 2008, near Rumble, Boone County, WV** Served as Project Manager- responsibilities included: project management, design, drawings and specification preparation, contract administration, water sampling, permitting, and report preparation. The project

consisted of extensive mine workings requiring: construction access, stabilizing/regarding of refuse piles, treatment of open and collapsed portals, and treating/conveying storm/mine drainage.

» **Elk Creek Portals- 2007, near Delbarton,** management, design, drawings and specification preparation, contract administration, water sampling, permitting, and report preparation. The project consisted of extensive mine workings requiring: stream and construction access, treatment of numerous open and collapsed portals, and treating/conveying storm/mine drainage.

# Purchasing Affidavit

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STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

West Virginia Code §5A-3-10a states: 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 the debt owed is an amount greater than one thousand dollars in the aggregate.

**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.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "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.

**EXCEPTION:** The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this 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.

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

**WITNESS THE FOLLOWING SIGNATURE**

Vendor's Name: TERRADON CORPORATION

Authorized Signature: Muhammad U. Riaz Date: 1-23-13

State of West Virginia

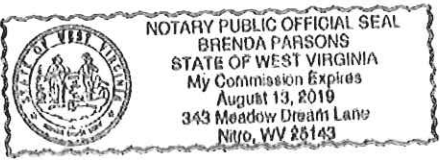
County of Putnam, to-wit:

Taken, subscribed, and sworn to before me this 24th day of January, 2013.

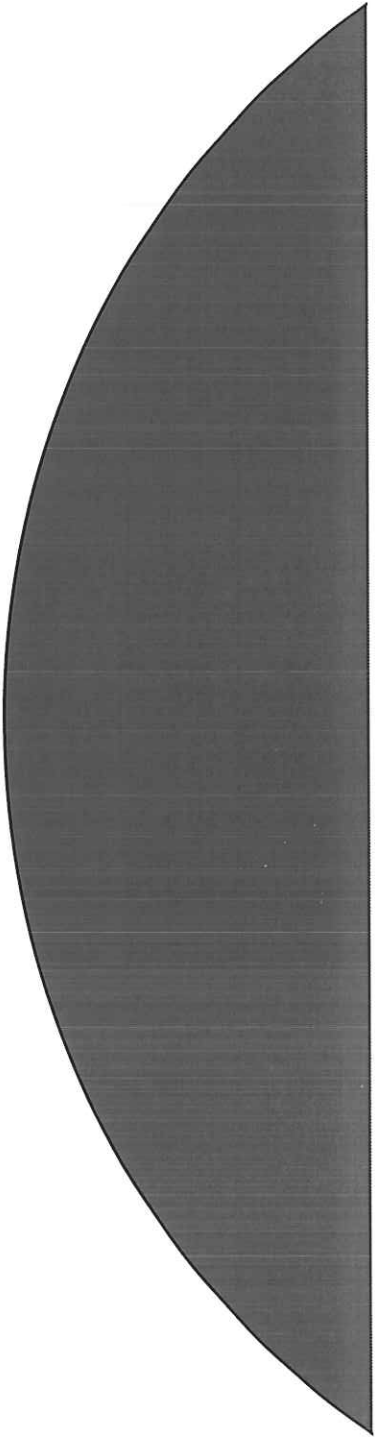
My Commission expires August 13, 2019.

AFFIX SEAL HERE

NOTARY PUBLIC Brenda Parsons



# Certifications



# Certifications

## CERTIFICATE OF *Authorization*

STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS

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

**TERRADON CORPORATION**  
C00901-00

Engineer in Responsible Charge: MUHAMMAD RIAZ - WV PE 014152

has complied with sections 5,30-13-17 of the West Virginia Code, providing  
the issuance of a Certificate of Authorization. The Board hereby certifies you of its  
authorization with issuance of this Certificate of Authorization for the period of:

**July 1, 2012 - June 30, 2013**

permitting for the practice of engineering services in the State of West Virginia

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



WEST VIRGINIA STATE BOARD OF  
REGISTRATION FOR PROFESSIONAL ENGINEERS HAS ISSUED THIS COM-  
MUNICATION UNDER ITS SEAL AND SIGNED BY THE PRESIDENT OF SAID BOARD.

MUHAMMAD RIAZ

WEST VIRGINIA  
BOARD OF PROFESSIONAL SURVEYORS

### *Certificate of Authorization*

ISSUED TO:

**TERRADON CORPORATION**  
**(Nitro, WV)**

CERTIFICATE OF AUTHORIZATION No. 13-5430

This certificate is issued by  
the West Virginia Board of Professional Surveyors  
in accordance with West Virginia Code § 30-13A-20

The person or organization identified on this certificate is licensed to  
conduct professional surveying and mapping services  
in the State of West Virginia for the period  
**January 1, 2013 through December 31, 2013**

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

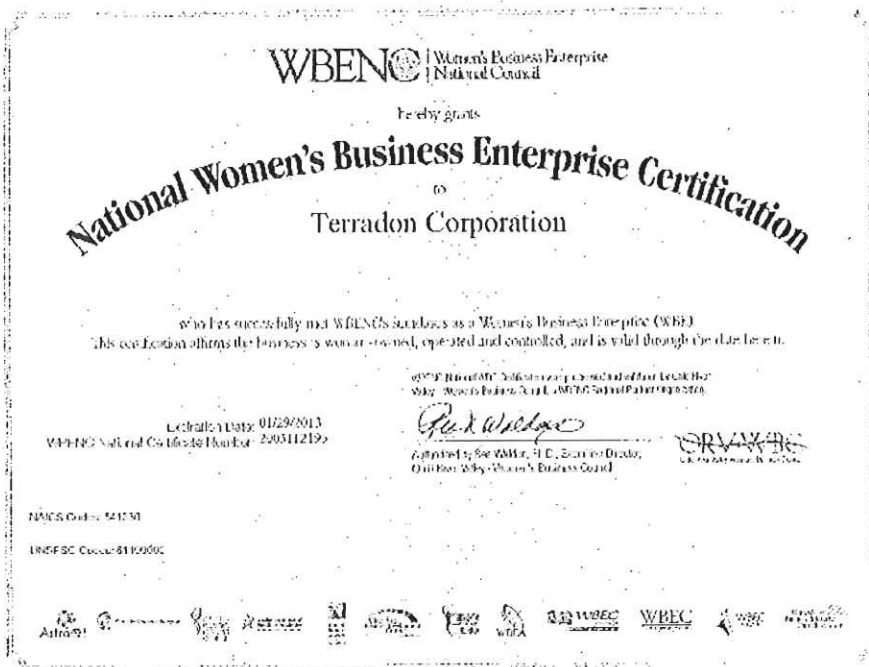
In witness whereof I have put my hand,  
this 17<sup>th</sup> day of December, 2012



ROY E. SHREWSBURY, II, Chairman

NELSON B. DOUGLASS, Secretary

# Certifications



TERRADON CORPORATION is a certified Women's Business Enterprise as defined by the Women's Business Enterprise National Council. TERRADON is controlled by Virginia King, who provides more than 32 years of administrative experience to the company.

The Women's Business Enterprise National Council (WBENC), founded in 1997, is the nation's leading advocate of women-owned businesses as suppliers to America's corporations. It also is the largest third-party certifier of businesses owned and operated by women in the United States. WBENC works to foster diversity in the world of commerce with programs and policies designed to expand opportunities and eliminate barriers in the marketplace for women business owners. WBENC works with representatives of corporations to encourage the utilization and expansion of supplier/vendor diversity programs.