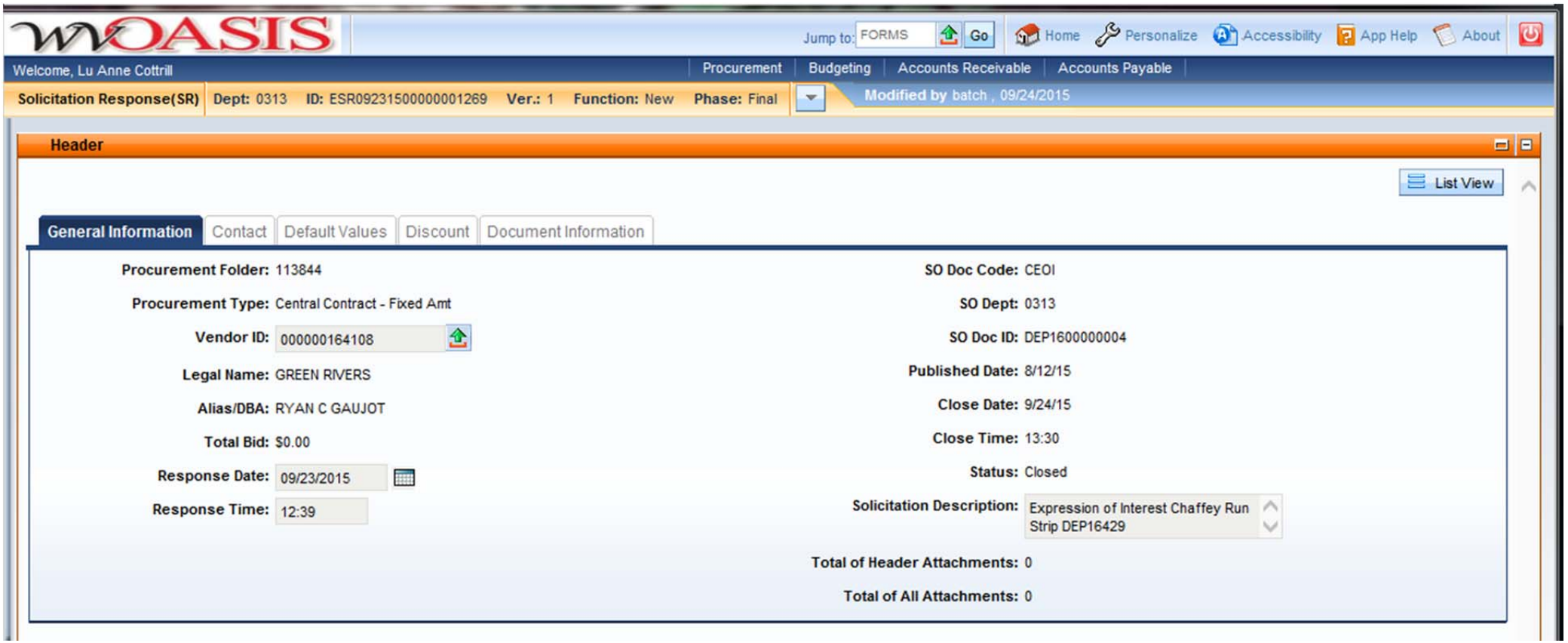
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency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


WVOASIS
Jump to: FORMS Go
Home
Personalize
Accessibility
App Help
About
Welcome, Lu Anne Cottrill
Procurement
Budgeting
Accounts Receivable
Accounts Payable
Solicitation Response(SR) Dept: 0313 ID: ESR09231500000001269 Ver.: 1 Function: New Phase: Final
Modified by batch , 09/24/2015
Header
List View
General Information
Contact
Default Values
Discount
Document Information
Procurement Folder: 113844
Procurement Type: Central Contract - Fixed Amt
Vendor ID: 000000164108
Legal Name: GREEN RIVERS
Alias/DBA: RYAN C GAUJOT
Total Bid: $0.00
Response Date: 09/23/2015
Response Time: 12:39
SO Doc Code: CEOI
SO Dept: 0313
SO Doc ID: DEP1600000004
Published Date: 8/12/15
Close Date: 9/24/15
Close Time: 13:30
Status: Closed
Solicitation Description: Expression of Interest Chaffey Run Strip DEP16429
Total of Header Attachments: 0
Total of All Attachments: 0

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

State of West Virginia
Solicitation Response

Proc Folder : 113844

Solicitation Description : Expression of Interest Chaffey Run Strip DEP16429

Proc Type : Central Contract - Fixed Amt

Date issued	Solicitation Closes	Solicitation No	Version
	2015-09-24 13:30:00	SR 0313 ESR09231500000001269	1

VENDOR

000000164108

GREEN RIVERS

RYAN C GAUJOT

FOR INFORMATION CONTACT THE BUYER

Beth Collins

(304) 558-2157
beth.a.collins@wv.gov

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

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

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

Comm Code	Manufacturer	Specification	Model #
81100000			

Extended Description : *Dates of Service are estimated for bidding purposes only.

WEST VIRGINIA
STATE TAX DEPARTMENT

BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
GREENRIVERS LLC
PO BOX 106
THOMAS, WV 26292-0106

BUSINESS REGISTRATION ACCOUNT NUMBER: **2211-7176**

This certificate is issued on: 01/29/2013

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

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

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

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

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

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

atL006 v.4
L0845540224

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 08/19/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Trevar Bennington	
AdventSure/ Town And Country Insurance 123 OLD WRIGHT SHOP RD MADISON HEIGHTS VA 24572-2149	PHONE (A/C, No, Ext): (434) 426-8733	FAX (A/C, No): (888) 842-1156
	E-MAIL ADDRESS: trevar@townandcountry-insurance.com	
	INSURER(S) AFFORDING COVERAGE	**NAIC #**
	INSURER A : Essex Insurance Company	
INSURED	INSURER B : Victor O Shinerer	
	INSURER C : Progressive Insurance Company	
GREEN RIVERS, LLC. PO BOX 106 THOMAS WV 26292-0106	INSURER D : NCCI- American Mining Ins Co	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	[X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS-MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [X] POLICY [ ] PRO-JECT [ ] LOC OTHER:			3DW8148	05/15/2015	05/15/2016	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1000000 $ 100000 $ 5000 $ 1000000 $ 2000000 $ 2000000
C	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [X] HIRED AUTOS [X] NON-OWNED AUTOS			02244350-2	06/04/2015	06/04/2016	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1000000 $ $ $
	[ ] UMBRELLA LIAB [ ] OCCUR [ ] EXCESS LIAB [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $						EACH OCCURRENCE AGGREGATE	$ $
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y / N: Y (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		WC-47-47-002556-00	05/15/2015	05/15/2016	[X] PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1000000 $ 1000000 $ 1000000
B	Professional Liability			EEH288381381	7/26/2015	7/26/2016	$1000000	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

Phone: Fax:
WVDEP
601 57TH ST SE
CHARLESTON WV 25304-2345

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE Trevar Bennington

RFQ No. _____

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

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

DEFINITIONS:

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

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

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

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: GREEN RIVERS, LLC.

Authorized Signature: _____ Date: 9/17/15

State of West Virginia

County of Tucker, to-wit:

Taken, subscribed, and sworn to before me this 17th day of September, 2015

My Commission expires June 17, 2018.

AFFIX SEAL HERE

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
KATHY L. THOMAS
P.O. Box 52
Davis, WV 26260
My Commission Expires June 17, 2018

NOTARY PUBLIC Kathy L Thomas

CERTIFICATIONAND SIGNATURE PAGE

By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

GREEN RIVERS LLC
(Company)

President
(Authorized Signature) (Representative Name, Title)

304-704-4283 9/14/15
(Phone Number) (Fax Number) (Date)

Rev. 04/14

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

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

1. **Application is made for 2.5% vendor preference for the reason checked:**
X Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or,**

___ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or,**

___ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or,**

2. **Application is made for 2.5% vendor preference for the reason checked:**
X Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

3. **Application is made for 2.5% vendor preference for the reason checked:**
___ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or,**

4. **Application is made for 5% vendor preference for the reason checked:**
X Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or,**

5. **Application is made for 3.5% vendor preference who is a veteran for the reason checked:**
___ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or,**

6. **Application is made for 3.5% vendor preference who is a veteran for the reason checked:**
___ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

7. **Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with *West Virginia Code* §5A-3-59 and *West Virginia Code of State Rules*.**
___ Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

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

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

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

Bidder: GREEN RIVERS LLC **Signed:** _____

Date: 9/19/15 **Title:** President

Chaffey Run Strip
Engineering Design Services
Expression of Interest

September 23th, 2015

Submitted to:

West Virginia Department of Environmental Protection
Office of Abandoned Mine Lands and Reclamation
101 Cambridge Place, Bridgeport, WV 26330

Submitted by:

P.O. Box 106
Thomas, WV 26292

West Virginia Department of Environmental Protection
Office of Abandoned Mine Lands and Reclamation
101 Cambridge Place, Bridgeport, WV 26330

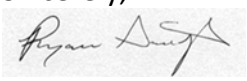
September 23, 2015

We are delighted and thankful for the opportunity to present our Expression of Interest and Statement of Qualifications for the Chaffey Run Strip Reclamation Design Project. Green Rivers is excited to have the opportunity to work with the WVDEP AML Program in assisting with the reclamation and restoration of the naturally beautiful lands and waters of West Virginia. The Green Rivers Team has an excellent track record working in conjunction with various private, stakeholder, watershed, and regulatory agency partnerships on complex environmental problems. Our small, highly trained team offers clients an alternative to conventional environmental consulting by combining cost effective solutions with a dedication to our work and an approachable, client-first mentality.

The Green Rivers team would ensure that the engineering services for the design of the Chaffey Run Strip project is of the highest quality. The scope of the project shall include the design of drainage, mine seals and bat gates, re-grading of refuse and mine spoil to eliminate highwall, access road upgrade, installation of aggregate plugs, and revegetation. We are fully staffed, trained, equipped, and experienced for the successful and timely completion of all such design tasks.

Our company profile and appropriate employee resumes, prospective work flow and design concepts, and Consultant Qualification Questionnaire and Related Project Experience Matrix (Attachments B and C) are included. If you would like to discuss this proposal in more detail, please contact me at your convenience.

Sincerely,

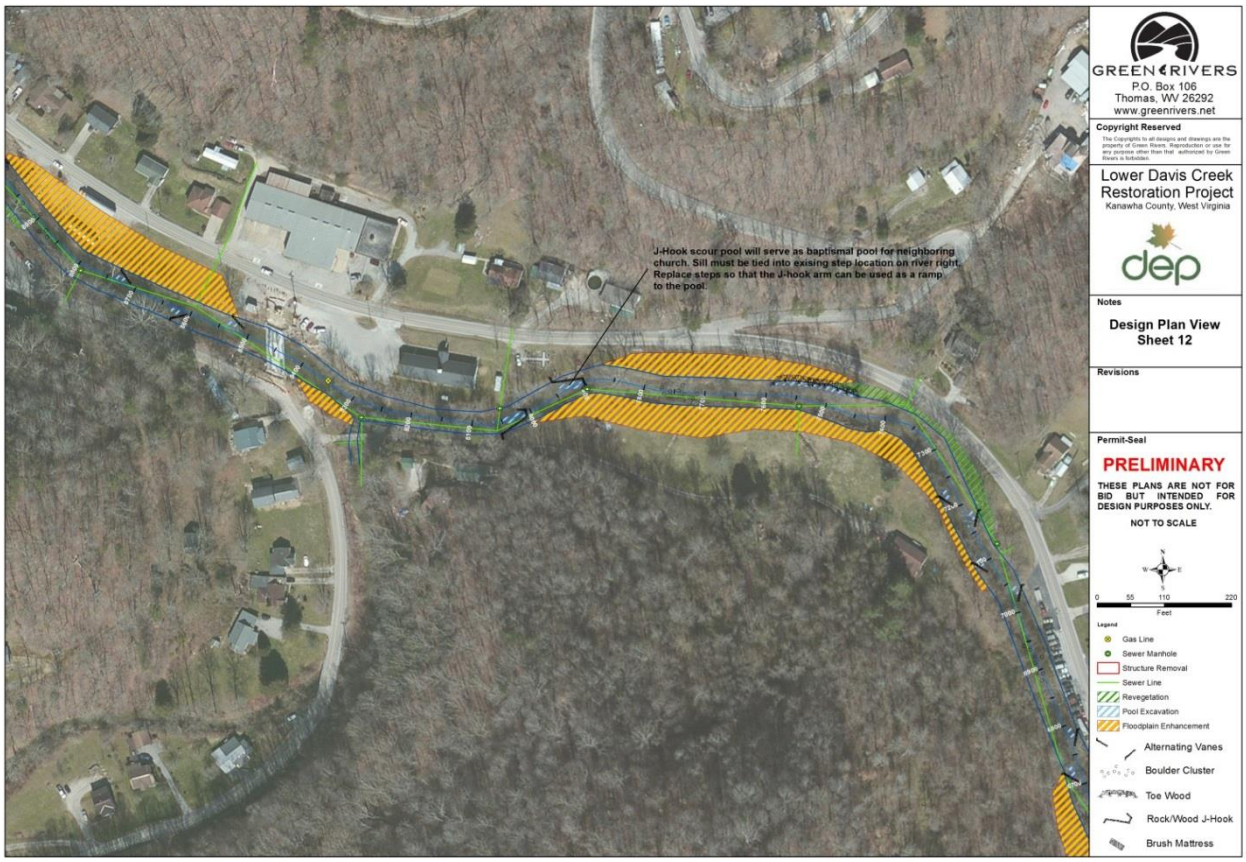


Ryan Gaujot, PH
President
Green Rivers
PO Box 106
Thomas, WV 26292
304-704-4283
gaujot@greenrivers.net
www.greenrivers.net

Company Profile

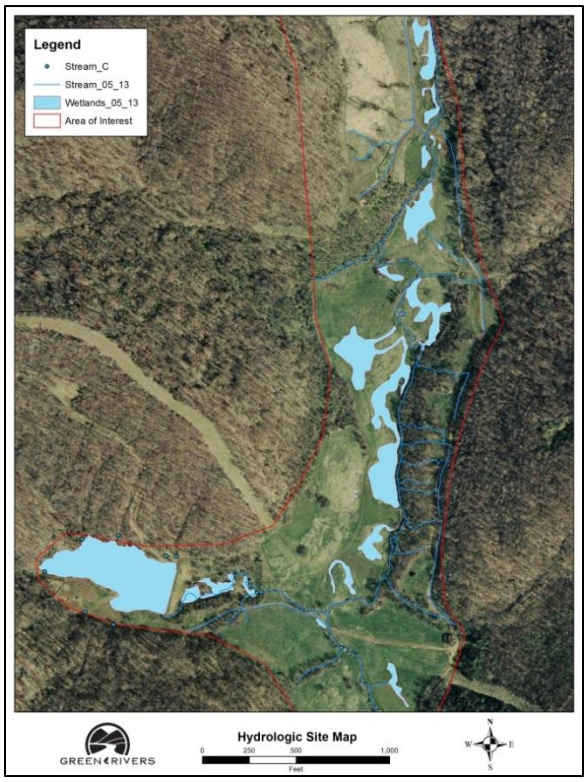
Green Rivers is an Environmental Consulting Company providing specialty services in water, watershed restoration, natural stream design, aquatic resource valuation, mitigation, riverfront development planning, environmental permitting, stream & wetland construction, native vegetation reestablishment, and ecological monitoring. Green Rivers has its origin working at the table with the energy industry, watershed groups, local city government, developers, state and federal agencies. The Green Rivers Team offers clients expert services with a core belief of investing in our water resources for a healthy future.

Ryan C. Gaujot, a leader amongst environmental specialists, founded Green Rivers to provide successful and efficient clean water initiatives. The highly mobile Green Rivers field team can deploy quickly to deliver accurate water resource investigations and sustainable solutions. We use our multidisciplinary backgrounds to guarantee that the final product is thorough, practical, and high quality. Green Rivers has been active in the development of the environmental markets, technologies, and design standards including mitigation, BMPs, and permit requirements. We have worked closely with interagency review teams and permit reviewers. Green Rivers has considerable background in field geology, environmental science and policy, geographic information systems (GIS), aquatic inventories& monitoring, watershed plans, stream & wetland impact permitting, acid mine drainage treatment design, FEMA mapping, stream & wetland restoration, culvert & bridge design, retrofit, and installation.



The map above is a recent Green Rivers design example from our Davis Creek project near Charleston.

Ecological & Environmental Services Offered



<u>Streams, Wetlands, & Floodplains</u>

- FEMA & USACE Water Resource Delineations
- Aquatic & Biological Inventories
- Freshwater Mussels
- Freshwater Fish
- Benthic Macroinvertebrates
- Vegetation Surveys
- RT&ES Surveys
- Permitting Preparation
- Water Quality Monitoring
- Reference Reach Investigations
- Bankfull Discharge Determination
- Stream Gage Installation, Calibrations, & Rating Curve Development
- Sediment Transport Analysis, Prediction, & Validation
- Environmental Mitigation (In-Lieu, Mitigation Banking, Permittee Responsible)
- Stream & Wetland Restoration Design & Construction
- Culvert & Small Bridge Retrofit, & Installation
- Acid Mine Drainage (AMD)
- Native Vegetation Reestablishment
- Stream & Wetland Training

<u>Environmental Permitting, Appraisal, & Planning</u>

- Restoration Site Identification
- Ecological Cost-Benefit Analysis
- Easement Preparation
- Remote Sensing Analysis
- Watershed Based Planning
- Agency Collaboration
- Stakeholder Facilitation
- Riverfront Development Planning
- Phase I ESA
- Geologic & Hydrogeologic Investigations
- Conceptual Design
- Floodplain Modeling
- NEPA Documentation
- Floodplain Management

AML Reclamation Design Services Offered

Mine Reclamation Professional Services

- Full Scale Mine Reclamation Design
- Site Reconnaissance, Pre-planning
- Reclamation Cost Estimates
- Surveying & Mapping
- Acid Mine Drainage Treatment Design
- Water Treatment Cost Estimation
- AMDTreat Utilization
- Contract and Bid Preparation
- Contract & Construction Administration
- Construction Monitoring
- Aquatic & Biological Inventories
- NPDES Permitting Preparation
- Stormwater Permitting Preparation
- Army Corps 401 and 404 Permitting
- Water Quality Monitoring
- Natural Stream Design Methodologies
- Stream Gage Installation, Calibrations, & Rating Curve Development
- Stream & Wetland Restoration Design
- Culvert & Small Bridge Design
- Native Vegetation Reestablishment Planning

Mine Reclamation Construction Services

- Full Scale Mine Reclamation Construction
- Licensed Excavation & Engineering Contractor
- Pond & Wetland Installation & Maintenance
- Passive & Active Water Treatment Component Installation & Maintenance
- Road, Ditch, Culvert Installation
- Mine Portal Closure, Drainage, Bat Gates
- Mine Re-grading, Spoil Capping/Disposal
- Surface & Subsurface Drainage Systems

AML Reclamation Design

Work Flow

- Acquire all available historical mine info
  - Site visits, meetings with AML & landowners
  - WVGES http://ims.wvgs.wvnet.edu/index.html
  - Enviromap Explorer http://tagis.dep.wv.gov/mining/
  - Tax maps
- Perform Site Survey, 2' contours
- Develop Conceptual Plan in conjunction with stakeholders (AML, landowners, watershed groups, OSR, etc.)
  - Discuss Plan Alternatives & Budget
  - Discuss Project Scheduling related to sensitive timelines and species (i.e., hunting, bat gates)
  - Verify post-reclamation land use desires
  - Produce Preliminary Plans / Maps (with aerial image overlays) for review & approval, revise as necessary
- Develop Bid Sheet / RFQ / Maps / DWGs
  - Develop specifications, utilize existing AML contract language & standards where appropriate
  - Build Site Plans from survey in AutoCAD Civil 3D
  - Verify lengths, areas, quantities for RFQ
  - Produce complete bid package for review, revise as necessary
  - Produce Engineer's Estimate
- Ensure acquisition of appropriate NPDES/Army Corps permits (if necessary/requested)
- Assist with pre-bid conference and contractor questions/clarifications (if necessary/requested)

AML Reclamation Design

Concepts

- Design of drainage conveyances.
  - Follow WV Erosion & Sediment Control BMP Manual methods
  - Ensure appropriate sizing/capacity based on drainage area & measured flows
  - Utilize Natural Stream Design elements where possible & appropriate
- Installation of Mine Seals & Aggregate Plugs.
  - Design to avoid collapse, intrusion, impounding
  - Drainage w/ racks to prevent clogging where appropriate
  - Bat access gates where appropriate
- Refuse Reclamation and Regrading of Mine Spoil to Eliminate Highwall.
  - Design with diversion ditches, straw wattles, silt fence, erosion control matting where necessary
  - Drainage installed at top, base, and toe of highwall where necessary
  - Elevate, lime, & cap acid-producing materials in backfill where appropriate
  - Pre-select best available material for topsoiling
  - Re-vegetate promptly
  - Design to maximize disposal within highwall backfill
  - Collaborate with local landowners & hauling companies to establish disposal options if necessary
- Access road construction.
  - Ensure appropriate base material for intended post-reclamation land uses
  - Design with drainage & culverts as appropriate to prevent erosion
- Re-vegetation of disturbed areas.
  - Ensure proper utilization of best available on-site topsoil material
  - Ensure appropriate lime, fertilizer, seed, & mulch application rates for soil conditions and post-reclamation land uses

Project Experience

Green Rivers has enabled effective projects in communities throughout the Mid-Atlantic Highland counties of West Virginia, Pennsylvania, Virginia, and Maryland. The Green Rivers Team has experience in both urban and rural landscapes including projects in the Little Coal River, Back Creek, Cheat River, Elk Headwaters, Knapps Creek, Shavers Fork, Upper North and South Branches of the Potomac, West Fork River, Monongahela River, Tug Fork, Lower Kanawha, Guyandotte River, Ohio River direct drains, and the Youghiogheny River watersheds.

Previous clients include: Patriot Coal, Petroleum Development Corp., Pittsburgh Plate and Glass, XTO, EQT, Chesapeake Energy, North State Environmental, Stantec Consulting, Summit Engineering, Highland Engineering & Surveying, GAI Consultants, Smith Land Surveying, Thrasher Engineering, Blue Heron Environmental Network, Davis Creek Watershed Association, Elk Headwaters Association, Friends of the Cheat, Cheat River TMDL Stakeholder Group, Shavers Fork Coalition, Briscoe Run Watershed Association, the South Branch Watershed Association of Hampshire County, Opequon Creek Project Team, Sleepy Creek Watershed Association, Tuscarora Creek Landowners, the Youghiogheny River Watershed Association, Morris Creek Watershed Association, Kelly's Creek Watershed Association, Hughes Creek Watershed Association, Gilmer Watershed Coalition, WV Rivers Coalition, WV Council of Trout Unlimited, The Nature Conservancy, Wildland Hydrology, Earth Mark Mitigation, Appalachian Stream Restoration, Appalachian Forest Products, Downstream Strategies, West Virginia University, West Virginia Water Research Institute, the City of Thomas West Virginia, United States Environmental Protection Agency, United States Army Corps of Engineers, United State Fish and Wildlife Service, Federal Emergency Management Agency FEMA, United States Forest Service, WV Department of Environmental Protection, West Virginia Conservation Agency, and the WV Division of Natural Resources. Several example projects are highlighted on the following pages.

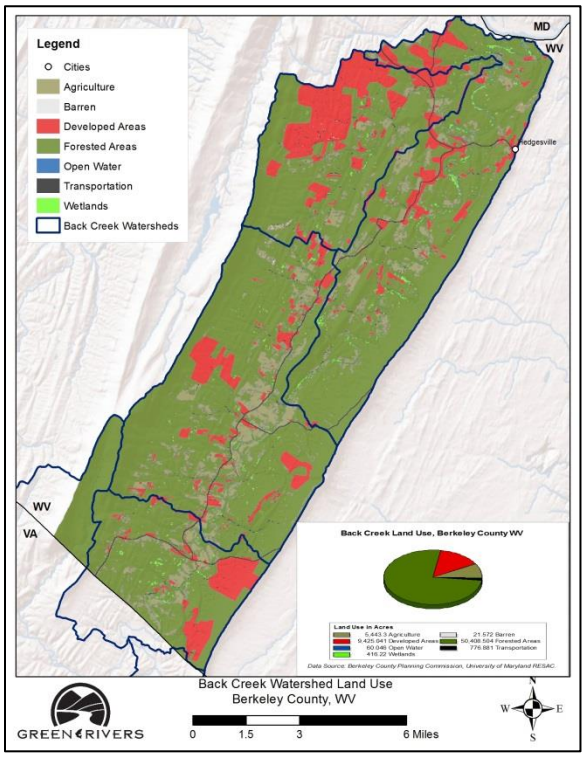
The pictures above highlight the Green Rivers Little Coal River Project near Danville, WV

Gragston Creek Stream Stabilization Project

Client: West Virginia Conservation Agency

Project Summary: The Gragston Creek Stream Stabilization Project is located near the town of Prichard, Wayne County, West Virginia. Green Rivers worked in cooperation with the West Virginia Conservation, Agency Guyan District, and Appalachian Stream Restoration to design and build a stream stabilization project on a local cattle farmer's property to help eliminate further flooding and erosion. The project focused on floodplain redesign, riparian restoration, and cattle exclusion from non-designated watering areas.

The floodplain elevation was lowered on the west side of the property to give the stream better floodplain access. Two natural stream design structures, known as root wad/log vane/J-Hook combos, were placed within the stream to help dissipate energy and direct water flow away from the streambank. All disturbed areas were re-seeded and mulched to establish vegetation. Brush mattresses and live stakes were installed along the stream banks to reestablish a riparian buffer. High tensile electric fencing was placed along the stream banks to prevent livestock access.



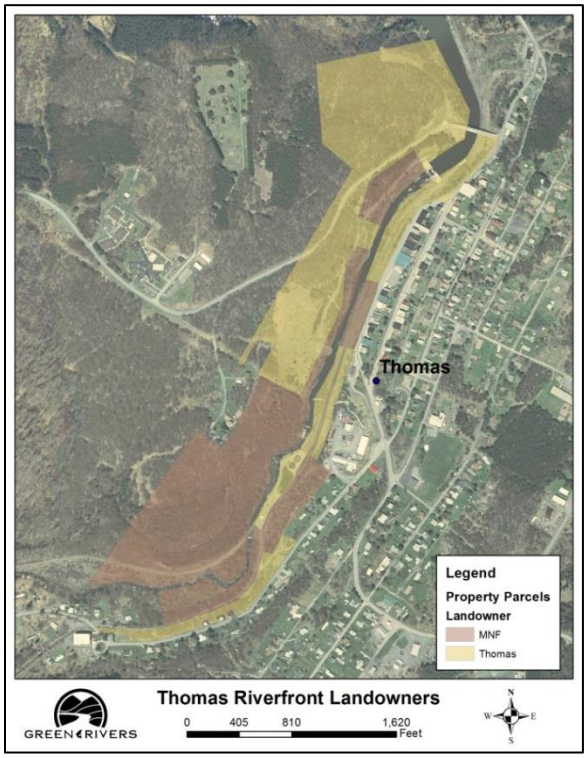
Back Creek Watershed Protection Plan

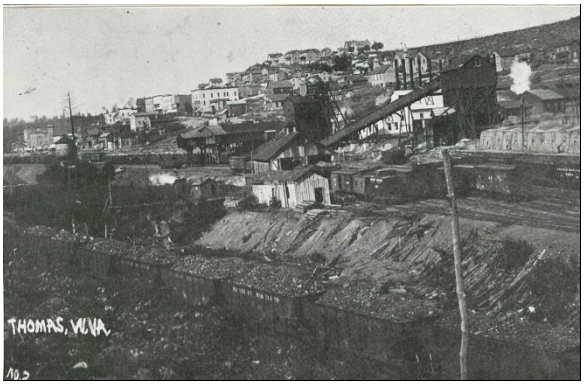
Client: WV Conservation Agency

Project Summary: The Back Creek Watershed Protection Plan (WPP) was developed by Green Rivers with input from the Back Creek Project Team which included WV Department of Environmental Protection, WV Division of Forestry, WV Conservation Agency, Blue Heron Environmental Network, Eastern Panhandle Conservation District and Berkeley County. In addition, various stakeholders contributed to the plan through a series of public meetings and surveys distributed throughout the watershed. This plan was designed to guide land conservation and watershed restoration projects within the Back Creek Watershed. It identified critical resources to protect (i.e. high priority forested lands, threatened or endangered species, etc.) and critical sites to restore (i.e. severely eroding streambanks).

The Back Creek WPP plan contains a comprehensive overview of the watershed, including its characteristics and provides a history behind the water quality, overall watershed health, and concerns identified by stakeholders. These concerns are discussed in detail throughout the process; management strategies are recommended, an estimate of costs and technical assistance are provided, as well as a timeline for implementation are all included in the Back Creek WPP.

City of Thomas Phase 1 Environmental Site Assessment





Client: City of Thomas, West Virginia

Project Summary: During the summer of 2012, Green Rivers completed a Phase 1 Environmental Site Assessment on properties along the North Fork of the Blackwater River in Thomas. The rich industrial history of the area made for a very interesting site assessment!

Green Rivers utilized a mixture of field assessment, environmental record searches, historical mapping and photography, and personal interviews to ensure all potential environmental conditions were identified.

Green Rivers is very proud of this project, which helps our hometown of Thomas progress with their property redevelopment plans.

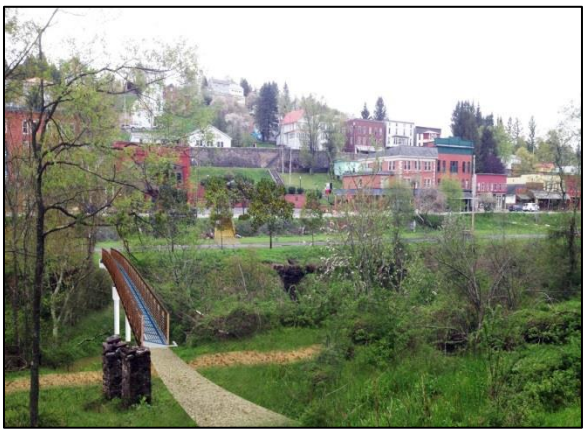
Thomas Riverfront Park Development Plan Update

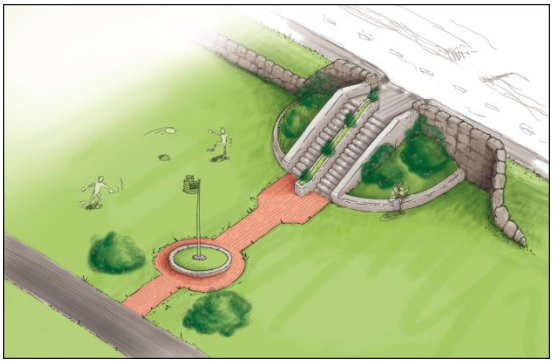
Client: New Historic Thomas

In the spring of 2013, Green Rivers was awarded the task of making updates to the 2002 conceptual riverfront park plan for New Historic Thomas; a nonprofit organization focused on preserving the history, culture, and heritage of the City of Thomas, while working to strengthen its economic base and attract new business and resources to the city.

Green Rivers produced an updated version of the Development Plan which lays out a fundable blueprint for development based on stakeholder input and on the ground conditions. The plan brings together infrastructure, historical heritage, outdoor recreation, and green space into a seamless, livable extension of downtown Thomas.

Funded through the WV Brownfields Program, the Development Plan was made possible by the completion of a Phase I ESA on the property the previous year.





Water Resource Investigations

Client: Various West Virginia Businesses, Agencies, and Individuals

Green Rivers staff members are trained in stream and wetland delineation according to the US Army Corps of Engineers methodology. We provide quality stream and wetland inventory, classification, and mapping for proposed and as-built projects and construction sites.

Our team has completed stream and wetland delineations on over 100 miles of pipeline, and hundreds of acres of well pads, access roads, and compressor station sights.

Green Rivers has managed all environmental facets for proposed and as-built projects, as well as environmental permitting and agency reporting.

We work with our clients to avoid unnecessary impacts, defensibly document water resources, and accurately navigate the permit process. Green Rivers can also recommend options to offset unavoidable stream and wetland impacts and deliver environmental mitigation alternatives.

Lower Davis Creek Restoration Project

Client: West Virginia Department of Environmental Protection

Project Summary: Green Rivers is overseeing a stream restoration project along Lower Davis Creek in cooperation with the West Virginia Department of Environmental Protection (WVDEP), West Virginia University, and Davis Creek Watershed Association (DCWA). The primary goals of the stream restoration project are to transport local sediments, remove invasive species, enhance fishery habitat, and maintain navigation for recreational boating. Field investigations were conducted to identify, prioritize, and implement stream restoration efforts along a 3.2 mile reach of Lower Davis Creek in Kanawha County, West Virginia. Stream restoration will be conducted by utilizing natural stream design principles throughout the project area. In addition to natural stream design measures being constructed, existing in-stream structures will be removed, repaired or modified, invasive vegetation species will be eradicated, and vegetated floodplains will be created. Project construction is scheduled to begin in July, 2014. Natural stream design techniques and ecological criteria will be monitored for five years after construction.

Little Coal River Restoration Project

Client: West Virginia Department of Environmental Protection

Project Summary: Green Rivers partnered with Stantec Consulting Services, North State Environmental, and Green Meadow Services to accomplish the Little Coal River Restoration Project. The goals and objectives of the project are to increase aquatic habitat, increase sediment transport, decrease the deposition of sediment, and maintain navigability for recreational boaters. Stream restoration was conducted by utilizing Natural Channel Design principles throughout approximately 1.3 miles of the Little Coal River near Danville, West Virginia. The in-stream structures included rock cross vanes, log vanes, rock-wood combination J-hook vanes, rock J-hook vanes, single and double wing deflectors, toe wood, sod mats, constructed riffles, and boulder clusters. Green Rivers is the prime contractor and has provided project coordination, landowner contact, landowner Right of Entry agreements, QAQC, and acquired federal, state, and local construction permits for the project. Green Rivers will monitor the project location for two years after construction to ensure that each structure is performing as intended. Stantec Consulting provided stream design assistance and construction oversight. North State Environmental constructed the in-stream structures. Green Meadow Services provided materials for the project.

Morris Creek Acid Mine Drainage Abatement Projects

Client: Morris Creek Watershed Association

Project Summary: This effort involved securing over $1.5 million in Acid Mine Drainage abatement projects in the Morris Creek watershed near Montgomery, West Virginia. The project team assessed the watershed, prioritized sites, secured Office of Surface Mining Watershed Cooperative Agreement grant funding (OSM WCAP), help select design and construction contractors, and corresponded with stakeholders. The Morris Creek Watershed Association (MCWA) is an energetic West Virginia stakeholder group that seeks to secure funding for local clean water projects and economic opportunities. Green Rivers is currently observing some successes, some lessons learned, and potential future projects and repairs with the Morris Creek Watershed Association and WVDEP.

Elk Headwaters Stream Design

Client: Elk Headwaters Watershed Association & Downstream Strategies

Project Summary: Elk Headwaters Watershed Association partnered with Downstream Strategies and Green Rivers' staff to perform stream assessments and develop conceptual stream restoration designs as part of the comprehensive watershed planning process. The project team contacted 21 landowners in the watershed to discuss methods and resources to address sedimentation issues and 13 were met onsite at their properties. Projects were prioritized based on two major factors: (1) the project's potential to reduce sedimentation, and (2) landowner willingness to see the project to successful completion. Green Rivers' staff performed a preliminary hydrologic analysis and conceptual design for 5 sites. Green Rivers also developed detailed construction cost estimates for collaborative funding efforts. EHWA seeks to turn these conceptual designs into on-the-ground projects in 2013.

Engineer's Experience

Trevor Swan, Green Rivers' Engineer of Record, is a WV-registered Professional (Civil) Engineer with a strong background in mine reclamation design, estimation, and project management. He worked in the Office of Special Reclamation within the WV Department of Environmental Protection (WVDEP) for 3+ years, designing mine reclamation and acid mine drainage (AMD) treatment plans for bond forfeited coal mines in northern West Virginia. There he had a substantial role designing and managing projects such as the Buffalo Coal Co. A-34 site near Mount Storm in Tucker/Grant counties and the Freeport Mining Co. site near Pisgah in Preston County, both of which actively treat over one hundred gallons of sub-4 pH water per minute. He also had a lead role in design and management of multiple other active and passive AMD treatment and land reclamation projects, as well as conceptual design and cost estimation for dozens more AMD treatment systems. Since leaving the WVDEP in 2012, he has continued to take on private consulting work for both design and cost estimation of mine reclamation and water treatment. Trevor earned a B.S. in Civil Engineering from West Virginia University in 2006, focusing his studies on hydrology and structures.

The following pages highlight a handful of these aforementioned projects.

Freeport Mining Reclamation - Project 1

This trio of forfeited permits represented a substantial safety issue and eyesore for the community of Pisgah in Preston County, as well as a legacy of failed land reclamation features. Primary issues included an 80+ foot unprotected highwall above a mine pit full of sub-4 pH AMD, an open landfill, several open deep mine portals, large swampy seep areas, several failed pond structures, and 70+ acres of ungraded, open strip. These three permits were split into two construction projects, the first dealing with the two permits mostly needing land reclamation, drainage modification, and landfill reclamation. This first project stretched across the property multiple landowners, thus design for coordination of their desires with reclamation goals was an iterative process. Some failed or outdated ponds and ditches were abandoned and re-graded, while the others were either left to stand as wildlife habitat or improved to facilitate a measure of passive treatment. Two primary seep areas were encountered, which were able to be handled passively by upgrading a rough, leaky ditch to an engineered lined limestone treatment ditch utilizing both limestone riprap and fines. A major intent of this project was to re-grade the surface to discourage infiltration of water to long-abandoned underground mines, which contribute to water issues on the second project.

Freeport Mining Reclamation - Project 2

This second project, consisting of the third forfeited permit along with some pre-law abandoned mine lands (AML), had nearly 2000 feet of unprotected highwall and large amounts of AMD emanating from underground portals into a large open pit. Also necessary were mine seals with drainage and bat gates and capping and disposal of highly acidic spoils. Close coordination with the WVDEP's AML office was essential on this project, and a new cooperative reclamation plan was forged, a first of its kind in WV. While the AML office did not see their portion of the project by itself as being a high reclamation priority, they agreed to rearrange funding and schedules to allow the entire project area to be reclaimed under a single construction contract, designed and administered by the Office of Special Reclamation. This allowed for streamlined design and construction planning, in effect doing what simply made sense not only from an earthwork and hydrological standpoint, but also for the landowners' sanity and intended post-mine land uses. For water treatment, a network of underdrain piping was laid out on the floor of the pit before backfilling, and directed toward the first of two lime dosing units. This treated water then flows through three lined settling ponds before either being discharged from the site or sent through a second lime dosing unit. This second unit also treats AMD from a second smaller source (found during construction), before flowing through two additional settling ponds to the site outlet. Bypass piping was designed and installed for all components on this project, to enable complete sludge removal and dry repair/maintenance conditions. Conceptual designs found in the original mining permit were the basis for the water treatment design. Trevor was the lead engineer and coordinator for these projects, producing fully engineered designs, construction plans, and bid packages, with assistance from his colleagues at the WVDEP OSR and AML. The winning bid for both of these projects came in below the engineer's estimate, costing $518,000 and $1,567,000 respectively.

Buffalo Coal Co. Reclamation – A-34 Project

One of the largest open pit mines ever forfeited in WV, this AMD reclamation project required the design and installation of two lime dosing units, as well as re-routing and modification of drainage through three sediment control ponds and two enormous settling ponds. Two different sources of impaired water necessitated the dual in-line treatment systems, the first of which pre-treated a smaller quantity source of slightly less acidic water before flowing down a long, steep mixing/aeration channel, then joining with the larger seep of lower pH water at the head of the first settling pond. The second lime dosing unit was placed where the first settling pond drained into the second, to further assist in boosting pH to settle metals. The two large settling ponds were each split approximately in half with a dike to simplify sludge removal, as the main bulk of sludge would be contained in the entry half of each pond. Bypass piping was also installed for all system components to enable complete sludge removal and dry repair/maintenance conditions. Other considerations on this project included reconfiguring surface drainage so that a large area of rain and snow runoff would be excluded from the treatment system, and maintaining proper system outlet drainage at an active rail line. On this project, Trevor started with existing conceptuals and produced fully engineered designs, construction plans, and bid package, with assistance from his colleagues at the WVDEP Office of Special Reclamation. The winning bid for the project came in below the engineer's estimate, costing $589,000.

Mass Project Estimation

Due to the results of a federal lawsuit, the WVDEP Office of Special Reclamation was forced to acquire NPDES permits for its 120+ water treatment sites, which were therefore subjected to more stringent treatment requirements. As upgrading all of these treatment sites would have quickly bankrupted the Special Reclamation Fund (SRF, built up by a per-ton tax on actively mined coal), a massive estimation project was undertaken to justify raising the Special Reclamation Tax. Trevor was put in charge of coordinating this project, in conjunction with the WV Water Research Institute (WRI), to provide realistic capital construction and operation & maintenance (O&M) cost estimates for all sites, within around 8 months. Information gathering, data analysis, and conceptual design for each site was an important early phase, to help decide how much and what type of additional treatment would be necessary and possible. After substantial number crunching and site characterization & classification, OSR and WRI collaborated on assigning site-specific appropriate treatment technologies. Concurrently, regionally-specific data was accumulated from actual recent reclamation costs for use in upgrade the default cost values used in AMDTreat, a common estimation tool, once treatment technologies were selected. In all, over $33M in capital costs and $5M/year in O&M were estimated by the court-imposed deadline, resulting in nearly doubling the Special Reclamation Tax, increased from $0.144/ton to $0.279/ton.

Watershed-Based Plans

After departing from the WVDEP, Trevor continued work on developing conceptual designs and refining cost estimate values through a pair of projects in conjunction with Downstream Strategies. The first was brought about by a lawsuit in the state of Tennessee, where we were asked to estimate water treatment costs avoided by a coal company who had shirked their treatment responsibilities. This process involved review and analysis of their site water chemistry data, selecting appropriate treatment technologies, and extrapolating estimated capital and O&M costs into both the past and future. The second project was for nd in conjunction with Friends of the Cheat, where bulk conceptual designs and estimates were needed for the purposes of producing watershed-based plans for two tributaries of the Cheat River: Muddy Creek and Pringle Run. These streams have historically been highly impacted with AMD, and although some progress has been made, much reclamation and remediation is still necessary to meet watershed goals. Further refining of the default costs used in AMDTreat was an important early step, as was characterization of known un-reclaimed sites for targeting prioritization. Conceptual designs and estimates produced for this project continue to assist Friends of the Cheat in strategizing the planning and implementation of reclamation projects to come.

Personnel

RYAN C. GAUJOT P.H.
President
Green Rivers LLC
gaujot@greenrivers.net

Education
M.S. Geology, West Virginia University, 2002
B.S. Geology, University of Utah, Salt Lake City, UT, 1998

Geology, Surface Hydrology, and Fish Habitat Relationships in the upper Shavers Fork Drainage Basin, West Virginia, 2002, Master's Thesis, West Virginia University, Morgantown, WV.

Mr. Gaujot is president and principal geologist with Green Rivers LLC. Green Rivers provides ecological restoration to businesses, communities, associations, and agencies. Ecological restoration initiatives include watershed assessment, watershed planning, site identification, riparian corridor design and construction, turn-key stream & wetland restoration projects, mitigation banking, streambank stabilization, culvert & small bridge design, retrofit, and installation, passive acid mine drainage AMD abatement design, and ecological monitoring services.

Previous clients include Elk Headwaters Association, Friends of the Cheat, Cheat River TMDL Stakeholder Group, Shavers Fork Coalition, Briscoe Run Watershed Association, the South Branch Watershed Association of Hampshire County, Opequon Creek Project Team, Sleepy Creek Watershed Association, Tuscarora Creek Landowners, the Youghiogheny River Watershed Association, Morris Creek Watershed Association, Kelly's Creek Watershed Association, Hughes Creek Watershed Association, Davis Creek Watershed Association, Gilmer Watershed Coalition, Canaan Valley Institute, WV Rivers Coalition, WV Council of Trout Unlimited, The Nature Conservancy, Wildland Hydrology, Earth Mark Mitigation, Appalachian Stream Restoration, Appalachian Forest Products, Patriot Coal, Petroleum Development Corp., Chesapeake Energy, North State Environmental, Stantec Consulting , Summit Engineering, Highland Engineering & Surveying, GAI Consultants, Thrasher Engineering, Downstream Strategies, West Virginia University, West Virginia Water Research Institute, United States Environmental Protection Agency, United State Army Corps of Engineers, United State Fish and Wildlife Service, Federal Emergency Management Agency FEMA, United States Forest Service, WV Department of Environmental Protection, and the WV Division of Natural Resources.

Previous Employment

- Canaan Valley Institute, Thomas, WV (2002-2010); Geologist, Aquatic Restoration Team
- West Virginia Division of Natural Resources, Elkins, WV (2001-2002); Forestry Technician Internship, Wildlife Resources Division
- West Virginia University, Morgantown, WV (1999-2001); Teaching Assistant, Department of Geology and Geography, (*Teaching Assistant of the Year 2000*)
- Marshall Miller & Associates, Bluefield, VA (1998-1999); Geologist, Special Services Unit

Professional Experience

Highlights

- Stream & wetland restoration assessment, design, and construction management

- Environmental mitigation, mitigation banking, and post construction monitoring
- Stream and wetland delineation and avoidance
- Permit applications for federal, state, and local requirements
- EPA 319 watershed based plans & watershed master plans
- NEPA Compliance & Reporting
- OSM WCAP grant submission & acid mine drainage abatement project design
- FEMA Flood Map redelineation for Gilmer & Preston Counties, West Virginia
- Watershed Assessment for River Stability & Sediment Supply (WARSSS)
- Stream gauge installation & calibrations
- Floodplain management solutions
- Geologic & hydrogeologic assessments
- Trainer in over 1000 hours of hydrologic classes & programs
- Published in the *Encyclopedia of Appalachia*, 2006, University of Tennessee Press
- Central to collaborations with businesses, technical agencies & private citizens
- Legislative testimony on water quality and flooding issues for Appalachia

Ecological Restoration Experience (1998-2014)

- Participated in all aspects of over **50 miles of 'on-the-ground' aquatic restoration projects** in the Eastern US, including assessment, design, permitting, installation, and monitoring
- **Rosgen certified levels 1-4** with Wildland Hydrology; field and **technical instructor** with Dave L. Rosgen, P.H. PhD in over 600 hours of Natural Stream Design (NSD) training courses from Levels 1-3 including the Level 1 Engineers Course
- **Natural resource assessments, Environmental compliance and avoidance**. 404 permit compliance for over 100 miles of midstream and drilling locations in Appalachia
- Grant application development, design, and funding acquisition for **EPA 319 Watershed Base Plans** for the Morris Creek Watershed Association, Mountwood Park, Elk Headwaters, and Mill Creek of the Opequon River
- **Watershed Cooperative Agreement Proposals** (WCAP) to the US Office of Subsurface Mining for the Morris Creek Watershed acid mine drainage and sediment abatement projects, Montgomery, West Virginia
- **Geomorphologic and hydrologic assessments**, bedload and suspended sediment measurement and monitoring, stream stability and sediment supply analysis, geophysical exploration, assessment of property, proposal of exploration, core drilling supervision, geophysical logging of drill holes, evaluation and closure of solid waste facilities
- **Groundwater monitoring** activities include assessment of contaminants including causes, impact, and remedial alternatives, deep and shallow well installations and development, permeability testing, sampling and reporting, water supply inventory, contaminated site risk assessment, diesel product recovery, potentiometric flow maps, and stream gauging
- **Bedload and suspended sediment sampling** for transport rates , annual sediment yield, and **TMDL reductions** for two stream monitoring stations in the Cheat Basin
- **LiDAR** data acquisition, ground control, and analyses for **FEMA flood mapping** and stream restoration projects in the Mid Atlantic Highlands, Gilmer County digital flood insurance rate map DFIRM production and community implementation
- **Geologic Assessment** for a construction project on 3,208 acre parcel adjacent to USF&WS Wildlife Refuge, the Davis municipal water supply system, WV state highways 93, a WVDEP acid mine drainage treatment system, and the Blackwater River

- Provided over **1000 hours of tailored hydrologic training** to federal, state, and local agencies and various watershed organizations in WV, MD, VA, and PA

Certifications and Training

- Professional Hydrologist [redacted]; American Institute of Hydrology
- Rosgen Trained Level 1-4 in Applied Fluvial Geomorphology, River Assessment, Monitoring, Restoration, and Natural Stream Channel Design

WILLIAM TREVOR SWAN III, P.E.
Civil Engineer
swan@greenrivers.net

Education
B.S. Civil Engineering, West Virginia University, 2006

Previous Employment
- Backwoods Engineering, Grafton, WV (2013-2014); Owner/Civil Engineer. Hydrological and structural consulting and design, mine drainage treatment design, analysis, and cost estimation.
- West Virginia Department of Environmental Protection, Office of Special Reclamation, Philippi, WV (2009-2012); Civil Engineer Trainee. Mine reclamation design, cost estimation, and project management.

Professional Experience
- **Mine Reclamation Design**: Prepare engineering designs, specifications, construction plans, final estimates, and bid package documents for requisitioning of construction of land and water rehabilitation & reclamation projects for abandoned mining operations.
- **Preliminary Investigation**: Research mine permits, investigate mapping, and coordinate site visits of new reclamation sites for preparation of preliminary cost estimates.
- **Project Management & Oversight**: Provide assistance in construction surveillance and quality assurance of construction work to ensure reclamation work is performed according to plan. Serve as point of contact for contractors, inspectors, consultants, utility companies, property owners, watershed groups, etc. for design and construction issues and clarifications. Assist in planning and conducting on-site pre-bid and pre-construction conferences.
- **Software Utilization**: AutoCAD w/ Carlson Suite, AMDTreat, WinTR-55, ArcGIS, and Microsoft Office Suite for drainage structure designs, stormwater runoff analyses, land stability design and analysis, spoil balance, land surveying, water chemistry analysis, chemical treatment designs, construction cost analysis, and detailed construction specifications.
- **AMDTreat Utilization:** Optimization of AMDTreat default values, costs, and parameters for utilization on large-scale multiple treatment system and scenario cost estimation.
- **Technical writing:** Authoring and review of technical documents, including bid packages.
- **Water quality monitoring:** Sampling of AMD-impacted water on and around mine sites.

Certifications and Training
- **Registered Professional Engineer**: WV PE[redacted]
- **Passive Treatment Theory and Applications**: Provided by Office of Surface Mining, 2010
- **AMDTreat Training**: Provided by Office of Surface Mining, 2010
- **AutoCAD Map 3D Training**: Provided by Office of Surface Mining, 2010
- **NPDES Permitting Training:** Provided by WVDEP Office of Special Reclamation, 2009

ROBERT TROY STULL
Project Manager
stull@greenrivers.net

Education

B.S. Environmental Studies with a concentration in Resource Management and Environmental Education, Shepherd College, 2000
Associate of Science in Park Management, Frederick Community College, 1996

Previous Employment

- Green Rivers LLC, Thomas, WV (2011-present); Project Manager. Stream Restoration and Wetland Delineation.
- FLOC Outdoor Education Center, Harpers Ferry, WV (2006-2011); Program and Outreach Coordinator. Environmental Education programs.
- Canaan Valley Institute, Thomas, WV (2003-2006); Watershed Circuit Rider. Stream Restoration and Wastewater issues in the Mid-Atlantic Highlands
- Notre Dame Academy, Middleburg, VA (2000-2003); Faculty/Coach. Environmental Science, Health and Outdoor Recreation.
- WV Division of Natural Resources, Inwood, WV (April- July 1999); Environmental Education Coordinator. Educational programs in the Chesapeake Bay Watershed

Professional Experience

Ecological Experience (1999-2013)

- **Stream Surveying**, including the acquisition of cross sectional profiles, longitudinal profiles, and establishing control with high resolution RTK GPS, total station, and laser level equipment
- **Field data collection** for various projects including the acquisition and calculation of Bank Erosion Hazard Index, Near Bank Stress, and Pfankuch data.
- **Permit applications related to stream restoration projects**, including US Army Corps of Engineers, West Virginia DEP, West Virginia DNR, and local permits
- **Landowner research and contact** related to stream restoration activities in West Virginia
- **Stream Restoration Assessment** on Davis Creek located in Kanawha County, with the goal of identifying and prioritizing restoration efforts targeting fish habitat and sediment transport.

Certifications and Training

- **Rosgen Trained Level 1-3** in Applied Fluvial Geomorphology, River Morphology and Applications, and River Assessment and Monitoring
- **The Swamp School:** U.S. Army Corps of Engineers Wetland Delineation and Regional Supplement Updates training. NAACWS Accredited 2012
- **Watershed Partnership Seminar:** U.S. Environmental Protection Agency 2005
- **Save Our Streams**: Certified Facilitator 2005

David Alan Young
Hydrologist
David.Young@greeanrivers.net

Education

M.S. Forest Hydrology, West Virginia University, 2014
B.S. Engineer, Texas State University, 2006

Previous Employment

- West Virginia University, Morgantown, WV (2013-2014); Graduate Research Assistant. Investigated impacts of climate change and land cover disturbance on hydrology.
- The Mountain Institute, Spruce Knob Mtn. Center, WV (2009-2012); Manager of Logistics & Course Director. Managed programs that educated students in adventure leadership and natural sciences through experiential activities.

Professional Experience

- **Watershed Management:** Assess the historic, present, and future impacts of climate change and land cover disturbance on streamflow generation processes, pattern, and trend.
- **Data Analysis:** Analyze temporal and spatial variation of streamflow, climate, and population data using modeling and statistical-analysis.
- **Stream and Water Quality Assessment:** Perform morphological survey and analysis of data for reports and restoration design. Assess stream and water condition using biological, physical, and chemical sampling methods.
- **Land and Resource Conservation:** Perform and oversee evasive vegetation control, native vegetation plantings, and soil amendments.
- **Software Utilization:** ArcMap, R, Microsoft Office Suite for project feasibility, design, and communication. Including, statistical analysis, cartography, hydrologic modeling, suitability modeling, probability modeling, and landscape analysis.
- **Communication:** Author, design, and review technical documents, including reports and permits. Articulate technical information through oral and poster presentations to students, scientists and practitioners.

References

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Save Our Streams Program Coordinator
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(304) 926-0499 X 1710

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

PROJECT NAME	DATE (DAY, MONTH, YEAR)		FEIN NUMBER
Chaffey Run Strip	September 23th, 2015		263101712
1.FIRM NAME Green Rivers	2.HOME OFFICE BUSINESS ADDRESS PO Box 106 Thomas, WV 26292		3.FORMER FIRM NAME
4.HOME OFFICE TELEPHONE 304-704-4283	5.ESTABLISHED (YEAR) 2008	6.TYPE OWNERSHIP INDIVIDUAL	6A.WV REGISTERED DBE (Disadvantaged Business Enterprise) NO

7. PRIMARY AML DESIGN OFFICE: ADDRESS/TELEPHONE /PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
PO Box 106, Thomas, WV 26292. 304-704-4283. Ryan Gaujot. 4 Design Personnel.

8. PRINCIPAL OFFICERS OR MEMBER OF FIRM	8A. NAME, TITLE, & TELEPHONE – OTHER PRINCIPALS
Ryan C. Gaujot P.H. 304-704-4283	

9. PERSONNEL BY DISCIPLINE

_X_ ADMINISTRATIVE	_X_ ECOLOGISTS	__LANDSCAPE ARCHITTECTS	__ STRUCTURAL ENGINEERS
__ ARCHITECHS	__ ECONOMISTS	__ MECHANICAL ENGINEERS	_X_ SURVEYORS
_X_ BIOLOGISTS	__ ELECTRICAL ENGINEERS	__ MINING ENGINEERS	__ TRAFFIC ENGINEERS
_X_ CADD OPERATORS	__ ENVIRONMENTALISTS	__ PHOTOGRAMMETRISTS	__ OTHER
__ CHEMICAL ENGINEERS	__ ESTIMATORS	__ PLANNERS: URBAN REGIONAL	
_X_ CIVIL ENGINEERS	_X_ GEOLOGISTS	__ SANITARY ENGINEERS	
_X_ CONSTRUCTION INSPECTORS	__ HISTORIANS	__ SOILS ENGINEERS	
__ DESIGNERS	_X_ HYDROLOGISTS	__ SPECIFICATION WRITERS	__4__ TOTAL PERSONNEL
__ DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: _1_____

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

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? YES

11. OUTSIDE KEY CONSULTANTS/SUBCONSULTANTS ANTICIPATED TO BE USED. Attach AML "Consultant Qualification Questionnaire "		
NAME AND ADDRESS: Energy Surveys Clarksburg, WV Kurt Newbrough, P.S.	SPECIALTY: Land Surveying	WORKED WITH BEFORE ___X____ YES _______ NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _______ YES _______ NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _______ YES _______ NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _______ YES _______ NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _______ YES _______ NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _______ YES _______ NO
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _______ YES _______ NO

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

Description and number of projects:
1) City of Thomas Phase I ESA: During the summer of 2012, Green Rivers completed a Phase 1 Environmental Site Assessment on properties along the North Fork of the Blackwater River in Thomas. The rich industrial history of the area made for a very interesting site assessment! Green Rivers utilized a mixture of field assessment, environmental record searches, historical mapping and photography, and personal interviews to ensure all potential environmental conditions were identified. Green Rivers is very proud of this project, which helps our hometown of Thomas progress with their property redevelopment plans.

2) Morris Creek Acid Mine Drainage Abatement Project: This effort involved securing over $1.5 million in Acid Mine Drainage abatement projects in the Morris Creek watershed near Montgomery, West Virginia. The project team assessed the watershed, prioritized sites, secured Office of Surface Mining Watershed Cooperative Agreement grant funding (OSM WCAP), help select design and construction contractors, and corresponded with stakeholders. The Morris Creek Watershed Association (MCWA) is an energetic West Virginia stakeholder group that seeks to secure funding for local clean water projects and economic opportunities. Green Rivers is currently observing some successes, some lessons learned, and potential future projects and repairs with the Morris Creek Watershed Association and WVDEP.

3) Green Rivers' Engineer of Record, Trevor Swan, has over three years' experience directly with the WV DEP Office of Special Reclamation (OSR) as an employee there from 2009 to 2012, prior to employment with Green Rivers. While there, he worked in some capacity on dozens of projects, from site reconnaissance and water sampling to full project design, estimation, and management. Several projects required construction cooperation and/or jurisdictional determinations with WV OAMLR, where Trevor worked in collaboration with Jim Connolly, Jon Knight, Dave Broschart, and Rob Rice.

B. Is your firm experienced in Soil Analysis? Yes. Green Rivers has performed Jurisdictional Wetland Determinations, accompanying soil analyses for wetlands and uplands, utilized soil test kits and Munsell soil charts to complete soil profiles. We have completed Phase 1 archaeological analysis, soil test pit profiles, and Phase 1 and Phase 2 Environmental Site Assessment soil assessments. We have also performed numerous soil analyses for US Army Corps of Engineers 404 permits for placement of fill.

C. Is your firm experienced in hydrology and hydraulics? Yes. Our Gilmer Floodplain Redelineation project utilized FEMA and NFIP map modernization programs for the Little Kanawha River Watershed. For this project we performed broad analysis of LiDAR photography and mapping provided by a subcontractor. Floodplain surveys, base flow elevations (BFE), longitudinal stream profiles, pebble counts, and 100yr and 500yr floodplain analyses are a standard subset of our core business. We have assisted with floodplain permitting for various types of development within FEMA Special Flood Hazard Areas (SFHAs).

D. Does your firm produce its own Aerial Photography and Develop Contour Mapping? No. We have subcontracted this service for past projects where necessary.

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.) No.

F. Is your firm experienced in Acid Mine Drainage Evaluation and Abatement Design? Firm: No, Engineer: Yes. Trevor Swan, Green Rivers' Engineer of Record, is a WV-registered Professional (Civil) Engineer with a strong background in mine reclamation design, estimation, and project management. He worked in the Office of Special Reclamation within the WV Department of Environmental Protection (WVDEP) for 3+ years, designing mine reclamation and acid mine drainage (AMD) treatment plans for bond forfeited coal mines in northern West Virginia. There he had a substantial role designing and managing projects such as the Buffalo Coal Co. A-34 site near Mount Storm in Tucker/Grant counties and the Freeport Mining Co. site near Pisgah in Preston County, both of which actively treat over one hundred gallons of sub-4 pH water per minute. He also had a lead role in design and management of multiple other active and passive AMD treatment and land reclamation projects, as well as project lead for conceptual design and cost estimation of dozens more AMD treatment systems. Furthermore, after departure from OSR, Trevor consulted for Downstream Strategies on mine reclamation and AMD treatment estimation projects in Tennessee and Watershed-Based Plans (WBPs) for Friends of the Cheat.

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

NAME & TITLE (Last, First, MI)	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE	YEARS OF AML RELATED DESIGN EXPERIENCE
Gaujot, Ryan C.	10	15 (total)

Brief explanation of responsibilities

Mr. Gaujot, Professional Hydrologist, is the founder of Green Rivers. His primary responsibilities are to provide environmental services to businesses, communities, associations, and agencies. His ecological restoration initiatives include various watershed assessments, watershed planning, site identification, riparian corridor design and construction, turn-key stream & wetland restoration projects, mitigation banking, streambank stabilization, culvert & small bridge design, retrofit, and installation, acid mine drainage AMD design, and ecological monitoring services. Mr. Gaujot's project experience includes:

- Stream & wetland restoration assessment, design, and construction management
- Environmental mitigation, mitigation banking, and post construction monitoring
- Stream and wetland delineation and avoidance
- Permit applications for federal, state, and local requirements
- EPA 319 watershed based plans & watershed master plans
- NEPA Compliance & Reporting
- OSM WCAP grant submission & acid mine drainage abatement project design
- FEMA Flood Map redelineation for Gilmer & Preston Counties, West Virginia
- Watershed Assessment for River Stability & Sediment Supply (WARSSS)
- Stream gauge installation & calibrations
- Floodplain management solutions
- Geologic & hydrogeologic assessments
- Trainer in over 1000 hours of hydrologic classes & programs
- Published in the *Encyclopedia of Appalachia*, 2006, University of Tennessee Press
- Central to collaborations with businesses, technical agencies & private citizens
- Legislative testimony on water quality and flooding issues for Appalachia

EDUCATION (Degree, year, specialization)

MS, Geology, 2002, Geology, Hydrology, River Restoration

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, year, state)
AIH – American Institute of Hydrology GSA – Geological Society of America ASFLM – Association of State Floodplain Managers C.F. M.	WV P.H. Professional Hydrologist (#13-H-5015); American Institute of Hydrology

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

NAME & TITLE (Last, First, MI)	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE	YEARS OF AML RELATED DESIGN EXPERIENCE
Swan, William Trevor	3+	6+

Brief explanation of responsibilities:

Mine reclamation design: Prepare engineering designs, specifications, construction plans, final estimates, and bid package documents for requisitioning of construction of land and water rehabilitation & reclamation projects for abandoned mining operations.
Preliminary Investigation / Cost Estimation: Research mine permits, investigate mapping, and coordinate site visits of new reclamation sites for preparation of preliminary cost estimates.
Project Management: Provide assistance in construction surveillance and quality assurance of construction work to ensure reclamation work is performed according to plan. Serve as point of contact for contractors, inspectors, consultants, utility companies, property owners, watershed groups, etc. for design and construction issues and clarifications. Assist in planning and conducting on-site pre-bid and pre-construction conferences.

EDUCATION (Degree, year, specialization)
BS Civil Engineering, 2006, Hydrology and Structures

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, year, state)
Member-ASCE (American Society of Civil Engineers)	WV PE #19990, 2012 - present

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

NAME & TITLE (Last, First, MI)	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE	YEARS OF AML RELATED DESIGN EXPERIENCE
Stull, Robert T.	0	10

Brief explanation of responsibilities

Mr. Stull brings over ten years of experience working on natural resource projects throughout WV. He has extensive experience managing projects, conducting stream and wetland resource investigations and stream assessments, facilitating stakeholder involvement and community outreach, and watershed planning. Mr. Stull will assist in the overall project oversight as well as assist in the development of all necessary reports.

EDUCATION (Degree, year, specialization)
BS Environmental Studies, 2000, Resource Management

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, year, state)

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

NAME & TITLE (Last, First, MI)	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE	YEARS OF AML RELATED DESIGN EXPERIENCE
Young, David, Hydrologist	0	5

Mr. Young will provide specialized support and participate in field oversight throughout the project life cycle. He is an experienced field investigator of morphological surveys, elevation surveys, and water quality assessments. He is at home performing data analysis: including statistical analysis, hydrologic modeling, and GIS spatial analysis. He is practiced in management, coordinating logistics, and articulating technical information through oral and poster presentations to students, scientists, and practitioners.

Professional Experiences:

- Watershed Management: Assess the historic, present, and future impacts of climate change and land cover disturbance on streamflow generation processes, pattern, and trend.
- Data Analysis: Analyze temporal and spatial variation of streamflow, climate, and population data using modeling and statistical-analysis.
- Stream and Water Quality Assessment: Perform morphological survey and analysis of data for reports and restoration design. Assess stream and water condition using biological, physical, and chemical sampling methods.
- Land and Resource Conservation: Perform and oversee evasive vegetation control, native vegetation plantings, and soil amendments.
- Software Utilization: ArcGIS, R, RiverMorph, Microsoft Office Suite for project feasibility, design, and communication. Including, statistical analysis, cartography, hydrologic modeling, suitability modeling, probability modeling, and landscape analysis.
- Communication: Author, design, and review technical documents, including reports, permits, bid documents. Articulate technical information through oral and poster presentations to students, scientists, and practitioners.

EDUCATION (Degree, year, specialization)
MS Forest hydrology, West Virginia Univeristy, 2014. BS Manufacturing Engineer, Teaxs State University 2006.

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

AutoCAD Civil 3D
ArcGIS
River Morph
AMDTreat
HEC-RAS
Win-TR55
Microsoft Office Suite

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE & LOCATION	NAME & ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
TOTAL NUMBER OF PROJECTS:		TOTAL ESTIMATED CONSTRUCTION COSTS: $		

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUBCONSULTANT TO OTHERS					
PROJECT NAME, TYPE & LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME & ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY

17. COMPLETED WORK WITH IN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE & LOCATION	NAME & ADDRESS OF OWNER	ESIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK WHICH YOUR FIRM WAS RESPONSIBLE)					
PROJECT NAME, TYPE & LOCATION	NAME & ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.					
20. The foregoing is a statement of facts Signature:  Title: ____President_____ Printed Name: ___Ryan Cooley Gaujot_____				Date: __9/23/15_____	

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C-Corp P-Personal *	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	NPDES/ Stormwater preparation	Gaujot	Swan	Stull	Young	Lutz
Gragston Creek	C,P					X					X		X			X			M, P				
Back Creek WPP	C,P					X						X				X		X	M, P		M, P		P
Thomas Brownfields	C,P		X	X	X			X	X	X		X		X		X	X	X	M, P		M, P		P
Lower Davis Creek	C,P					X					X	X	X			X		X	M, P	P	M, P		P
Little Coal River	C,P					X					X		X			X			M, P		P		P
Morris Creek AMD	C,P			X	X	X		X		X	X	X		X		X			M, P		P		P
Elk Headwaters	C,P					X					X	X	X			X			M, P		M, P		P
Dunloup Creek	C,P					X					X	X	X			X			M, P		M, P		P
Dunkard Flow Study	C,P					X					X	X	X				X		M, P	P	P		P
WPPLP	C,P		X	X		X		X	X	X	X	X	X		X	X	X		M, P		P	M, P	P
Dunkard Water Quality	C,P										X	X	X				X		M, P		P		P
Freeport Mining	P		X	X	X					X	X	X	X	X	X		X	X		M, P			
Buffalo A-34	P		X								X	X	X	X	X		X	X		M, P			

NPDES Estimation	P		X	X							X	X						X		M, P			
Friend of Cheat WBPs	P		X	X	X						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 "C"