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

Request for Quotation

RFQ NUMBER	PAGE
DEP15612	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
GUY NISBET
304-558-8802

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE
GAI Consultants, Inc.
300 Summers Street,
Suite1100
Charleston, WV 25301

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

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/25/2012				

BID OPENING DATE: 03/01/2012 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29		

WAITMAN - BARBE HW #1 DESIGN

RECEIVED
2012 MAR -1 PM 12:07
WV PURCHASING DIVISION

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 WAITMAN - BARBE HIGHWALL #1 PROJECT IN MONONGALIA COUNTY, WEST VIRGINIA PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS.

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THIS CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.

ANY INDIVIDUAL SIGNING THIS BID IS CERTIFYING THAT: (1) HE OR SHE IS AUTHORIZED BY THE BIDDER TO EXECUTE THE BID OR ANY DOCUMENTS RELATED THERETO ON BEHALF OF THE BIDDER, (2) THAT HE OR SHE IS AUTHORIZED TO BIND THE BIDDER IN A CONTRACTUAL RELATIONSHIP, AND (3) THAT THE BIDDER HAS PROPERLY REGISTERED WITH ANY STATE AGENCIES THAT MAY REQUIRE REGISTRATION.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
Charlie Staley	304.926.8100	March 1, 2012

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Engineering Manager	25-1260999	

RFQ No. DEP15612

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: GAI Consultants, Inc.

Authorized Signature: _____ Date: March 1, 2012

State of West Virginia

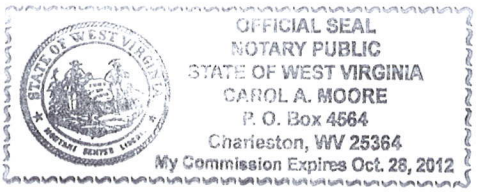
County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 1 day of March, 2012.

My Commission expires October 28, 2012.

AFFIX SEAL HERE

NOTARY PUBLIC _____



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
AML CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE

Attachment "B"

PROJECT NAME	DATE (DAY, MONTH, YEAR)	FEIN
Waitman – Barbe Highwall #1 Design DEP15612	*1, March 2012*	*25-1260999*

1. FIRM NAME	2. HOME OFFICE BUSINESS ADDRESS	3. FORMER FIRM NAME
GAI Consultants, Inc.	*385 E. Waterfront Drive* *Homestead, Pennsylvania 15120*	*NA*

4. HOME OFFICE TELEPHONE	5. ESTABLISHED (YEAR)	6. TYPE OWNERSHIP	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise)
412-476-2000	*1958*	*Corporation*	*NO*

7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
300 Summers Street, Suite1100, ***Charleston, WV*** *25301 / 304/926-8100 / Precha Yodnane, Ph.D., P.E. / 29 Charleston, 13 Pittsburgh*

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM	8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
Precha Yodnane, Ph.D., P.E., Managing Officer / Vice President	*Gary M. DeJidas, P.E., President, 412/476-2000* *Anthony F. Morocco, P.E., Senior Vice President, 412/476-2000*

9. PERSONNEL BY DISCIPLINE **(Bold Lettering Indicates Minimum Design Team Members)**

104 ADMINISTRATIVE	5 ECOLOGISTS	6 LANDSCAPE ARCHITECTS	29 STRUCTURAL ENGINEERS
0 ARCHITECTS	2 ECONOMISTS	11 MECHANICAL ENGINEERS	**17 SURVEYORS**
18 BIOLOGIST	7 ELECTRICAL ENGINEERS	**1 MINING ENGINEERS**	4 TRAFFIC ENGINEERS
69 CADD OPERATORS	33 ENVIRONMENTALISTS	0 PHOTOGRAMMETRISTS	271 OTHER
2 CHEMICAL ENGINEERS	8 ESTIMATORS	10 PLANNERS: URBAN/REGIONAL	
58 CIVIL ENGINEERS	**9 GEOLOGISTS**	2 SANITARY ENGINEERS	
36 CONSTRUCTION INSPECTORS	4 HISTORIANS	14 SOILS ENGINEERS	
32 DESIGNERS	3 HYDROLOGISTS	6 SPECIFICATION WRITERS	804 TOTAL PERSONNEL
0 DRAFTSMEN			

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 5
***RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.**

GAI can field four separate teams (P.E. and CADD operator as defined by EOI) from its Charleston office. However, only one team is expected for this project. GAI has completed all of its AML projects since 1986 from the Charleston office.

10. HAS THIS JOINT-VENTURE WORKED TOGETHER BEFORE? ☐ YES ☐ NO **NA**

11. OUTSIDE KEY CONSULTANTS/SUB-CONSULTANTS ANTICIPATED TO BE USED. Attach “AML Consultant Confidential Qualification Questionnaire” for each if copy is not on file with AML.

NAME AND ADDRESS: **None**	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE _____ Yes _____ No

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

YES Description and Number of Projects: *GAI has completed **133** projects for the WV-AML Program (**21** in the last five years). GAI has completed over 150 projects for all AML Programs (WV, PA, VA, MD, OSM). These projects include but are not limited to design of abandoned refuse piles, abandoned portals, demolition of facilities, design of drainage control structures, mine fires and revegetation plans.*

NO

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

YES Description and Number of Projects: *GAI has completed many (over 200) projects that required soil analysis for revegetation plans, acid/base counts, foundation, stability analysis, engineering properties, etc. Most of the **133** WV-AML projects required some type of soil analysis. GAI has completed some analysis in-house and used subconsultants at other times depending on requirements.*

NO

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

YES Description and Number of Projects: *GAI has completed numerous (300+) projects which involve hydrology and hydraulics including projects that were AML/mining related. Most of the **133** WV-AML projects required hydrology and hydraulic evaluations and design for drainage control structures, mine hydraulic level, mainstream event, water transmission, sediment control, etc. GAI is also experienced and trained in natural stream restoration and wetland mitigation.*

NO

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

YES Description and Number of Projects: *GAI has produced contour mapping on most of its **133** AML projects. We subcontract our aerial photography, if none is available. We do not anticipate aerial photography being needed to complete this project.*

NO

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: *GAI has completed over **77** projects involving domestic waterline design of which 42 were for the WV-AML program. This has included aquifer degradation evaluation and waterline design, Public Service District interaction, PSC requirements, Health Department permits, etc. to include field surveys, field inspection, and public hearings and meetings. **Aquifer degradation** and **waterline design** was the primary components of these projects.*

NO

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

YES Description and Number of Projects: *GAI has completed over **100** AMD evaluations and abatement designs of which 25 were for the WV-AML program; however, AMD was a consideration on most of its **133** WV-AML projects. GAI is noted and published for some of its designs and projects to include grouting programs, SAP installations and other innovative abatement designs.*

NO

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Straley, Charles F. *Project Manager*	*19*	*25*	*19*

Brief Explanation of Responsibilities

Mr. Straley will be responsible for day-to-day project activities and guidance of the GAI staff. His main activities will include development of detailed step-by-step project work plans to ensure the project activities are completed on-budget and on-time, review of the work products at intermediate points and at project completion, providing guidance and direction to project staff, as well as engineering and design work. Mr. Straley will be responsible for preparation of construction drawings, technical specifications, calculations and cost estimates. He will oversee the geotechnical aspects of the project, including but not limited to subsurface exploration, foundation and embankment design, and slope stability.

EDUCATION (Degree, Year, Specialization)
B.S. 1986 Civil Engineering
M.S. 1988 Geotechnical Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Society of American Military Engineers	*1992 Professional Engineer (WV, OH, KY, IN)* *1996 Professional Land Surveyor, 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:
Hemme, James A. *Project Manager*	*13*	*21*	*13*

Brief Explanation of Responsibilities

Mr. Hemme will be responsible for preparation of construction drawings, technical specifications, calculations and cost estimates. He will oversee hydraulic/hydrology aspects of the project, including but not limited to stormwater management, erosion and sediment control, and mine discharge.

EDUCATION (Degree, Year, Specialization)

B.S. 1989 Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	2011 Professional Engineer (WV, TN) *2000 Licensed Remediation Specialist 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:
Penn, C. Elwood	*8*	*26*	*13*

Brief Explanation of Responsibilities

Mr. Penn will provide QA/QC services for the projects.

EDUCATION (Degree, Year, Specialization)

B.S. 1985 Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS National Society of Professional Engineers American Society of Civil Engineers West Virginia QBS Council International right of Way Association American Society of Highway Engineers	1992 Professional Engineer WV, VA, AR, NC, KY, OH 1996 Professional Land Surveyor 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:
Tanner, Matthew T.	*1*	*6*	*1*

Brief Explanation of Responsibilities

Mr. Tanner will be responsible for preparation of construction drawings, technical specifications, calculations and cost estimates. He will oversee hydraulic/hydrology aspects of the project including but not limited to stormwater management, erosion and sediment control, and mine discharge.

EDUCATION (Degree, Year, Specialization)

B.S. 2005 Engineering Mechanics

	REGISTRATION (Type, Year, State)
Society of American Military Engineers	*2011 Professional Engineer (WV,TN)*

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:
Prine, Joseph A. *Project Engineer*	*7*	*7*	*7*

Brief Explanation of Responsibilities

Mr. Prine *will be responsible for preparation of construction drawings, technical specifications, calculations and cost estimates. He will oversee hydraulic/hydrology aspects of the project, including but not limited to stormwater management, erosion and sediment control, and mine discharge.*

EDUCATION (Degree, Year, Specialization)

B.S. 2001 Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	2000 Nicet *2011 Professional Engineer (WV)* *2006 40 hour Hazwoper*

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:
Brennan, Patrick B.	*2*	*2*	2

Brief Explanation of Responsibilities

Mr. Brennan *will be responsible for preparation of construction drawings, technical specifications, calculations and cost estimates. He will oversee hydraulic/hydrology aspects of the project, including but not limited to stormwater management, erosion and sediment control, and mine discharge*

EDUCATION (Degree, Year, Specialization)

B.S. 2010 Civil Engineering

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

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:
Green, Jason T. *CADD Operator/Designer*	*15*	*15*	*15*

Brief Explanation of Responsibilities

Mr. Green will be responsible for activities that will include development of project drawings, transferring survey data to project plans, and development of project details.

EDUCATION (Degree, Year, Specialization)
A.A.S., 2002, Engineering Technology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Society of American Military Engineers	*NICET Level I & II*

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:
Workman, David L. *CADD Operator/Designer*	*10*	*3*	10

Brief Explanation of Responsibilities

Mr. Workman will be responsible for activities that will include development of project drawings, transferring survey data to project plans, and development of project details.

EDUCATION (Degree, Year, Specialization)

B.S. 2000 Industrial Engineering Technology

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

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

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:
Doyle, Mike *CADD Operator/Designer*	*5*	*10*	*10*

Brief Explanation of Responsibilities

Mr. Doyle will be responsible for activities that will include development of project drawings, transferring survey data to project plans, and development of project details.

EDUCATION (Degree, Year, Specialization)

A.S. Computer Aided Drafting and Design

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

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE		
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Candillo, Kate E. *Environmental Engineer*	*2*	*7*	0

Brief Explanation of Responsibilities

Ms. Candillo will be responsible for providing services related to natural resources, including but not limited to wetland delineation, benthic studies, wetland restoration or mitigation, endangered species and stream restoration.

EDUCATION (Degree, Year, Specialization)

B.S. 2001 Molecular Biology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Society of American Military Engineers	OSHA 40 hour HAZWOPER Training Professional Engineer (AZ, 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:
Shank, Shannon C. Environmental Specialist	*3*		

Brief Explanation of Responsibilities

Mr. Shank will be responsible for providing services related to natural resources, including but not limited to wetland delineation, benthic studies, wetland restoration or mitigation, endangered species and stream restoration.

EDUCATION (Degree, Year, Specialization)
B.S. Landscape Architecture, College of Agriculture & Forestry, Minor in Geography/Geographical Information Systems (GIS), 2005 West Virginia University
A.S. Architectural Drafting 2001, West Virginia State College

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	U.S. Army Corps of Engineers Wetland Delineator Certification Program

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 DESIGN EXPERIENCE:
Turka, Robert J. *Senior Staff Hydrogeologist*	22	*Turka, Robert J.* *Senior Staff Hydrogeologist*	22

Brief Explanation of Responsibilities

Mr. Turka will provide expertise in areas of coal refuse reclamation, mine subsidence and AMD remediation.

EDUCATION (Degree, Year, Specialization)
B.S. 1971 Earth Planetary Science
MAT 1972 Secondary Education (Natural Science)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Institute of Professional Geologists *Association of Engineering Geologist* *International Association of Engineering Geologists* *Pittsburg Geological Society* *National Ground Water Association*	*1989 Professional Geologist (PA)* *Certified Professional Geologist*

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:
Newman, F. Barry *Manager – Geotechnical/Structural*	*22*	*40*	*13*

Brief Explanation of Responsibilities

Mr. Newman will provide expertise in the areas of geotechnical engineering, including but not limited to landslides, retaining wall design, slope stability and subsidence.

EDUCATION (Degree, Year, Specialization)
B.S. 1968 Civil Engineering
M.S. 1970 Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers	*1974 Professional Engineer (PA, WV, CO, IN, MD, TX)*

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:
Bruhn, Robert W. *Staff Consultant*	*22*	*42*	*13*

Brief Explanation of Responsibilities

Mr. Bruhn will provide expertise in the areas of subsurface investigation, soil and rock mechanics, and subsidence.

EDUCATION (Degree, Year, Specialization)
B.S. 1967 Geology
M.S. 1969 Civil Engineering
A.B.D. Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers *Association of Engineering Geologists* *Society of Mining Engineers*	*1982 Professional Engineer, (PA)*

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:
Michalski, Stan R. *Senior Staff Geologist*	*22*	*36*	*13*

Brief Explanation of Responsibilities

Mr. Michalski will provide expertise in the areas of geologic studies, mine fire investigations and impoundments.

EDUCATION (Degree, Year, Specialization)
B.S. 1967 Earth and Planetary Science
M.A. 1975 Resource Management
MLIS 2004 Library and Information Science

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
Association of Engineering Geologist	*1995 Professional Geologist, (PA)*

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:
Frech, Kerry L. *Senior Staff Engineer*	*13*	*28*	*13*

Brief Explanation of Responsibilities

Mr. Frech will provide expertise in the area of hydrology and hydraulics, including but not limited to stormwater management and modeling of drainage systems.

EDUCATION (Degree, Year, Specialization)
B.S. 1977 Civil Engineering
M. Eng. 1978 Environmental Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
American Society of Civil Engineers *American Water Resources Association*	*1983 Professional Engineer, (PA)*

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:
Queen, Terry W. *Senior Technician*	*15*	*32*	*15*

Brief Explanation of Responsibilities

Mr. Queen will be responsible for collecting field data including but not limited to water samples, soil borrow samples, refuse samples, and verification of mapping.

EDUCATION (Degree, Year, Specialization)
1986 Math and Physical Education Classwork
1992 Drafting and Design

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	Troxler Nuclear Densometer Certification *WVDOH Portland Cement Concrete and Compaction*

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:
Foster, Mark E. *Technician*	*4*	*4*	*2*

Brief Explanation of Responsibilities

Mr. Foster will be responsible for collecting field data including but not limited to water samples, soil borrow samples, refuse samples, and verification of mapping.

EDUCATION (Degree, Year, Specialization)
B.A. Regents, Bachelor of Arts
A.S. Applied Science (Occupational Development)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS	REGISTRATION (Type, Year, State)
	10 Hour OSHA, OSHA Construction Safety & Health, Foreman Leadership, Blueprint Reading, Line & Grade, Hazardous Waste Worker, Nuclear Radiation Safety, Portable Gage Safety Training, Pipelaying, Lead Abatement Worker, Asbestos Abatement Worker

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

Equipment:	Software:
Plotter	*AutoCAD / Civil 3D*
Digital Planimeters (2)	*MicroStation*
Digital Cameras	*Microsoft Word*
Minolta Photocopier/Printer	*Microsoft Excel*
Nikon DTM-450 Total Stations	*Water CAD*
Nikon DTM-550 Total Stations	*Sewer CAD*
Gorman Global Positioning Unit	*Flowmaster*
TR-55	
Numerous Hydrology/Hydraulic Models	
Maptech (Professional)	
REAME (Slope Stability)	
Hydrocalc Hydraulics	
GeoPack Design	

15. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS THE DESIGNATED ENGINEER OF RECORD

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Route 60 Drainage *Fayette County, WV*	*WV Department of Environmental Protection Office of Abandoned Mine Lands and Reclamation*	*Preparation of reclamation plan*	*$500,000*	*95%*
Cherokee Complex *McDowell County, WV*	*WV Department of Environmental Protection Office of Abandoned Mine Lands and Reclamation*	*Preparation of reclamation plan*	*$300,000*	*75%*
Reynoldsville Refuse *Harrison County, WV*	*WV Department of Environmental Protection Office of Abandoned Mine Lands and Reclamation*	*Preparation of reclamation plan*	*$1,000,000*	*90%*
City of Wheeling Landfill Closure *Ohio County, WV*	*WV Department of Environmental Protection Landfill Closure Assistance Program*	*Preparation of findings report and closure design plan*	*$3,000,000*	*30%*
Laurel Point Strip *Monongalia County, WV*	*WV Department of Environmental Protection Office of Abandoned Mine Lands and Reclamation*	*Preparation of reclamation plan*	*$3000,000*	*75%*

TOTAL NUMBER OF PROJECTS: 4 *(primary office)*

TOTAL ESTIMATED CONSTRUCTION COSTS: ***$5,300,000.00***

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A SUB-CONSULTANT TO OTHERS

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
None					

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST (in thousands)	YEAR	CONSTRUCTED (YES OR NO)
Greystone Mine Drainage Monongalia County, WV The scope of work involved design for construction of a collection system using underdrains, a conveyance drainage system, and site reclamation.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$45K (Fee)*	*2011*	*NO*
Earling Refuse Pile Logan County, WV The scope of work involves seal the mine portal(s), bat gates, providing proper drainage control measures and site reclamation.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$61K (Fee)*	*2011*	*NO*
Reynoldsville Refuse Harrison County, WV The scope of work involved design for construction of mine portal seals, bat gates, regrading and soil covering refuse areas, subsurface drainage collection, providing proper drainage control measures and providing streambank stabilization.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$100K (Fee)*	*2011*	*NO*
Laurel Point Strip Monongalia County, WV The scope of work involved design for construction of mine portal seals, backfilling the exposed and dangerous highwalls, regrading and soil covering refuse areas providing proper drainage control measures and providing streambank stabilization.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$80K (Fee)*	*2011*	*NO*
Cherokee Complex McDowell County, WV The scope of work involved design for construction of structure demolition and disposal, regrading and soil covering a refuse areas, subsurface drainage collection, providing proper drainage control measures, natural stream restoration and providing streambank stabilization.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$44K (Fee)*	*2011*	*NO*

Lynch Run Highwall Harrison County, WV The scope of work involves providing seals for the collapsed portals, backfilling the highwalls, reclamation of the refuse pile, and providing proper controlled drainage including natural stream design. Construction plans and technical specifications were developed.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$50K (Fee)*	*2010*	*NO*
Duck Creek Landslide Logan County, WV The scope of work involves the design of stabilization measures for the slide and design of seepage and stormwater drainage controls. Construction plans and technical specifications were developed.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$100K (Fee)*	*2009*	*YES*
Mallory Refuse Logan County, WV The scope of work involves regarding the refuse pile, sealing the mine portal(s), and design of drainage control measures. Construction plans and technical specifications were developed.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$60K (Fee)*	*2010*	*NO*
Coalburg Water Study Kanawha County, WV The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$15K (Fee)*	*2010*	*NA*
Community of Preston - State Route 72 Waterline, Preston County, West Virginia The scope of work included the preparation of construction documents for a water transmission line. The total length of waterline is approximately 1.1 miles.	*West Virginia Division of Environmental Protection, Abandoned Mine Lands Program Charleston, West Virginia*	*$39 (Fee)*	*2007*	*YES*

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
NA					

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.

Please see attached "Brief Firm History and Experience" for more details of qualifications.

20. The foregoing is a statement of facts.

Signature: Charles Straley Title: Engineering Manager

Printed Name: Charles F. Straley, P.E.

Date: March 1, 2012

NOTE: THIS DOCUMENT WILL BECOME VOID AFTER DECEMBER 31 IN CALENDAR YEAR OF DATE HEREON.

AML and RELATED PROJECT EXPERIENCE MATRIX

PROJECT	Exp. Basis C=Corp. P=Personnel *	Additional Info Provided in Section(s) **	PROJECT EXPERIENCE REQUIREMENTS															PRIMARY STAFF PARTICIPATION/CAPACITY *** M=Management P=Professional	
			Abandoned Surface Mine Reclamation	Abandoned Deep Mine Reclamation	Portal/Shaft Closure	Hydrologic/Hydraulic Design/Eval.	Remining Evaluation	Mine/Refuse Fire Abatement	Subsidence Investigation Mitigation	Hazardous Waste Disposal	Project Specifications	Water Quality Evaluation/Mitigation/ Replacement	Construction Inspection/Management	Water Treatment	Equipment/Structure Removal	Stream Restoration	Geotechnical/Stability	Mapping	Charles F. Straley, PE	James A. Hemme, PE
Webster County Commission Diana Area Feasibility Study	C/P	3	X			X						X							M/P	P
Cherokee Complex	C/P	3	X			X	X				X	X			X	X	X	X	M/P	P
Laurel Point Strip	C/P	3	X	X	X	X					X	X			X	X	X	X	M/P	P
Reynoldsville Refuse	C/P	3	X	X	X	X			X		X	X			X	X	X	X	M/P	P
Earling Refuse Pile	C/P	3	X	X	X	X					X	X			X	X	X	X	M/P	P
Erbacon CR9 Webster County WL Feasibility Study	C/P	3	X			X						X							M/P	P
Kanawha Rambling Hills Water Study	C/P	3	X			X						X							M/P	P
Davis Creek Water Study	C/P	3	X			X						X							M/P	P
Coalburg Water Study	C/P	3	X			X						X							M/P	P
Wallace 353 Water Study	C/P	3	X			X						X							M/P	P
Wallace 354 Water Study	C/P	3	X			X						X							M/P	P
Greystone Mine Drainage	C/P	3	X	X	X	X					X	X					X	X	M/P	P
Route 60 Drainage	C/P	3	X	X	X	X					X						X	X	M/P	P
Malllory Refuse	C/P	3	X		X	X	X				X				X		X	X	M/P	P
Lynch Run Highwall #6	C/P	3	X		X	X					X	X		X	X	X	X	X	M/P	P
Duck Creek Landslide	C/P	3	X			X					X						X	X	M/P	M/P
Heizer Creek Drainage	C/P	3	X	X	X	X					X						X	X	M/P	P
Wolfpen Landslide	C/P	3	X	X	X	X					X						X	X	M/P	P
Hominy Creek	C/P	3	X			X						X							M/P	P
Logan (Marcum) Drainage	C/P	3	X	X	X	X					X	X					X	X	M/P	
Bud Alpoca	C/P	3				X						X							M/P	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

AML and RELATED PROJECT EXPERIENCE MATRIX

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			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	Mapping	Charles F. Straley, PE	James A. Hemme, PE
Nuriva Maben	C/P	3				X						X							M/P	P
Herndon Heights	C/P	3				X						X							M/P	P
Handley/Upper Creek	C/P	3	X	X	X	X					X	X					X	X	M/P	
Titus Road	C/P		X			X					X	X		X			X	X	M/P	
American Legion	C/P		X			X					X	X		X			X	X	M/P	
Cogar	C/P			X	X	X							X						M/P	
East Branch Phase II	C/P		X			X					X	X		X		X	X	X	M/P	P
West Branch Headwaters	C/P		X	X	X	X			X			X				X		X	M/P	P
Lake Milton Reclamation	C/P		X			X					X	X					X	X	M/P	
Middleton Run Reclamation	C/P		X			X					X	X						X	M/P	
Latrobe (Gibson) Landslide	C/P	3		X	X	X					X					X	X	X	M/P	
Lodestar Energy	C/P		X	X	X	X					X		X			X	X	X	M/P	
Ven's Run Maintenance	C/P	3	X			X					X						X	X	M/P	
War Waterline	C/P	3										X							M/P	
Clarks Gap	C/P	3				X						X							M/P	
War (Dash) Impoundment	C/P	3				X											X	X	M/P	
Whites Run	C/P	3	X	X	X	X	X				X	X		X		X			M/P	P
Helen Portals	C/P	3	X	X	X	X	X				X				X	X			M/P	
Bearwallow Branch	C/P	3	X	X	X	X	X				X					X			M/P	P
Ned's Branch Impoundment	C/P	3	X		X	X					X	X	X			X	X		P	
McAlpin Phase II & III	C/P	3	X	X	X	X	X	X		X	X	X		X	X	X	X		M/P	P
McAlpin Phase I	C/P	3	X	X	X	X	X				X	X		X	X	X	X		M/P	P
Community of Preston	C/P	3				X					X		X				X		M/P	P
Kingwood 52/6	C/P	3				X					X		X				X		M/P	
Micajah Ridge	C/P	3				X						X							M/P	

* List whether project experience is corporate or personnel based or both

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AML and RELATED PROJECT EXPERIENCE MATRIX

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Glen Rogers	C/P	3				X						X							M/P	
Rt. 20 / Gould	C/P	3				X						X							M/P	
Elkins/Buckhannon	C/P	3				X						X							M/P	
Laurel Creek	C/P	3		X	X	X			X		X					X	X		M/P	
Superior	C/P	3								X									P	
Wash. Heights Review	C/P	3				X						X							P	
Gaymont	C/P	3				X						X							P	
Hominy Creek	C/P	3				X						X							P	
Elk Creek / Verner	C/P	3				X						X							P	
Orlando Mining	C/P	3								X					X					
Scotch Hill	C/P	3									X						X		P	
Camp Run AMD	C/P	3	X	X	X	X					X	X		X	X	X	X		P	
Mahan	C/P	3	X			X					X					X	X		M/P	
Johnsons Knob	C/P	3	X	X	X	X	X				X	X		X	X	X	X		P	
Carolina	C/P	3	X	X	X	X	X				X				X		X		P	
Hutchinson	C/P	3		X					X		X						X		M/P	
Fairmont (Grandstaff)	C/P	3		X					X		X						X		M/P	
City of Summersville	C/P	3				X													P	
Reynoldsville	C/P	3				X					X		X				X		M/P	P
Mill Creek	C/P	3				X					X			X			X		P	
Majesty	C/P	3	X	X	X	X	X	X	X		X	X		X	X	X	X		P	
Wash. Hts to Jeffrey	C/P	3										X								
Gauley River Review	C/P	3				X													P	
Heizer/Manila Review	C/P	3				X													M/P	
Owings	C/P	3	X	X	X	X	X			X	X	X		X	X	X	X		P	

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Omega	C/P	3		X	X	X					X	X				X	X		P	
Mill Creek - Isom	C/P	3										X								
Weaver-Junior	C/P	3										X							M/P	
Reynoldsville Phase II	C/P	3										X							P	
Mainella	C/P	3		X					X		X						X		M/P	
Glen Morgan	C/P	3		X					X		X						X		M/P	
Harris AMD	C/P	3		X	X	X					X			X					P	
Lefthand Fork	C/P	3	X	X	X	X	X	X			X				X	X	X		P	
Madison Street/Fairview	C/P	3		X		X					X								P	
Summerlee	C/P	3	X			X	X				X					X	X		M/P	
Cow Creek	C/P	3		X	X	X					X						X		P	
Godby Branch	C/P	3				X					X						X		P	
New Haven Phase II	C/P	3										X								
Gauley River Phase II	C/P	3										X								
Heizer and Manila Ph. II	C/P	3										X							M/P	
Matheny Hill Phase I	C/P	3										X							M/P	
Duncan Hill No. 2	C/P	3							X		X						X		M/P	
Urso Subsidence	C/P	3		X					X		X						X		M/P	
Mill Creek Phase II	C/P	3										X								
Duncan Hill Subsidence	C/P	3		X					X		X						X		M/P	
Cora Mine Drainage II	C/P	3		X	X	X					X	X				X			M/P	
Covey Creek Mine	C/P	3		X				X			X						X		P	
Vivian	C/P	3	X			X	X				X					X	X		P	
Kimball	C/P	3	X			X	X				X					X	X		P	
Hampden Bridge	C/P	3				X					X					X				

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Bear Run Refuse	C/P	3	X			X	X				X	X		X		X	X			
Beaver Creek	C/P	3				X					X						X			
Charleston Landslide	C/P	3	X								X						X			
Garrison Complex	C/P	3		X		X					X						X			
Cassity Fork	C/P	3				X					X						X			
Mulberry Fork Landslide	C/P	3	X								X						X			
Beckley Subsidence	C/P	3		X					X		X						X			
Courtright Highwall	C/P	3	X								X						X			

* 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

INTRODUCTION

GAI Consultants, Inc., (GAI) proposes to provide engineering services to the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation (WVDEP - AML). These services will result in the development of mapping, engineering drawings, contract specifications, and other contract documents as may be required for the letting of construction project for the ***Waitman – Barbe Highwall #1 Design*** project. The project includes clearing and grubbing, drilling, water and soil testing, access road upgrade, drainage control, design of mine seals and bat gates, highwall elimination, and condition and re-vegetate all areas disturbed during construction.

This Expression of Interest is **formatted** in a clear, concise manner with the briefest description as possible conveying our expertise and knowledge. All components of the proposal follow in narrative and highlighted sections and as outlined in the AML Consultant Confidential Qualification Questionnaire (CQQ).

The highlighted sections following are:

- Company Experience
- Subcontractors Discussion on:
  - Surveying and Mapping
  - Subsurface Investigation
  - Laboratory Services
- Design Engineering and Contract Document Preparation
- Qualifications of Personnel
- Corporate Specialized Experience and Demonstrated Experience
- Management Plan and Location of Facilities

GAI's Charleston, West Virginia office is exceptionally well qualified to provide the State with the above referenced services. GAI's Charleston office has a staff of **Five Professional Engineers**, **One Professional Surveyor**, and a team of geologists/hydrologists, environmental scientists, biologists, technicians, CADD operators, word processor operators, secretaries, and draftspersons. GAI's Charleston office has served the WVDEP on **previous** AML open-end and other contracts from 1986 to the present as well as several other pre-1986 AML projects. These **projects** include:

- Coal refuse pile reclamation,
- Coal refuse reprocessing evaluations,
- Stream Restoration,
- Acid mine drainage (AMD) evaluation and treatment,
- Landslide investigations and repair,
- Demolition plans,
- Mine portal reclamation,
- Burning coal refuse piles, coal seams and underground mines,
- Subsidence investigations and stabilization plans,
- Wetlands replacement and development,
- Environmental liability assessments,

- Water quality surveys and feasibility reports,
- Water supply system reviews, and
- Water supply system designs.

GAI also provides engineering services to the mining industry including:

- Stream Restoration,
- Design of coal refuse disposal piles including impoundment structures,
- Hydrologic/hydraulic design of erosion and sediment control devices,
- Soil analysis and revegetation plans,
- Coal refuse reprocessing evaluations including mining and reclamation plans,
- Construction monitoring services,
- Design of excess overburden disposal fills, both conventional and durable rock fills,
- Detailed reclamation plans,
- Detailed subsurface/geotechnical investigations for foundation, subsidence, slope stability, and reserve analysis,
- Mine closure plans/post-reclamation land use,
- Permitting for deep and surface mine applications, NPDES, U.S. Army Corps of Engineers Section 404 permits, West Virginia Public Lands permits, air pollution control permits, etc.,
- Probable hydrologic consequences (PHC) statement preparation,
- Reclamation/environmental liability assessments in conjunction with property transfers, and
- Subsidence control plans.

As a result of this experience, GAI will provide the required expertise to complete reclamation projects in a timely, economical, and efficient manner and will not require any subconsultants to be utilized on this project. Our direct knowledge of the AML program guidelines and personnel will also benefit the State.

GAI will perform the work under this contract in our **Charleston, West Virginia** office.

COMPANY EXPERIENCE

GAI Consultants, Inc. provides consulting services in geotechnical engineering, civil engineering, environmental engineering, mining-related design engineering, geology, hydrogeology, environmental science, economics, transportation systems and land-use planning, urban and site engineering, structural engineering, engineering mechanics, agronomy, anthropology and archaeology, and various related professional disciplines. The firm has experienced steady growth in both size and capabilities; and for the past sixteen years has been **rated among the top 500 engineering** and environmental firms in the nation by Engineering News Record (ENR).

GAI Consultants, Inc., is a full service civil, environmental and mining engineering firm headquartered in suburban Pittsburgh, Pennsylvania, with offices in Charleston, West Virginia; Philadelphia, Pennsylvania; Ft. Wayne, Indiana; Orlando and Jacksonville, Florida; Cincinnati, Ohio; and Richmond, Virginia. Established in 1958, GAI and its subsidiaries comprise an organization of over 800 engineers, scientists, and support personnel. With our in-house soils laboratories, surveying services and competent staff of professionals, GAI offers a comprehensive approach to engineering problems requiring a wide range of interdisciplinary skills. In the past 40+ years, we have designed and monitored the construction of numerous facilities and have conducted thousands of related geotechnical and hydrological investigations, many of which involved reclamation of abandoned mine lands. By successfully completing so many reclamation projects, GAI has obtained "expertise" status on an international basis for many type projects. For example, GAI recently completed a very large investigation into delineating the extent of the world's largest mine fire in the country of India. GAI was selected for the country of India mine fire project based upon qualifications only.

GAI's Charleston, West Virginia office opened in 1985. Since opening, our Charleston office has experienced steady growth. Currently, the Charleston office has five registered professional engineers and other experienced disciplines on staff. Clients served by the Charleston office include mining and industrial companies; federal, state, and local governmental agencies; engineers and architects; and private developers.

GAI has successfully served the WVDEP on previous AML contracts from 1986 to the present. We propose to utilize most of the same Charleston and Pittsburgh staff. See attached CCQQ.

Surveying and Mapping

To provide cost efficient and timely services for this contract, surveying services will be conducted by GAI's in-house surveyors. GAI routinely performs the following types of surveys which are relevant to the work possibly associated with this project.

- Aerial mapping control surveys including horizontal and vertical control and reference monuments,
- Topographic and planimetric surveys,
- Construction surveys including work layout staking, establishment of baselines and cross sections, profiles, etc.,
- Construction quantity measurement surveys,
- Detailed as-built documentation surveys,
- Property surveys including both surface and mineral estates, and
- Oil and gas surveying.

GAI presently operates up to three survey crews. GAI has made a commitment to provide timely surveying services.

GAI's survey crew utilizes Nikon DTM-450 and Nikon DTM-550 Total Stations. This is complimented by data collectors and Autocad workstations to generate plan views, profiles, cross sections and other engineering drawings. These CAD-generated drawings can then be utilized by GAI's CAD-drafting/design department for design.

All surveys conducted by GAI are completed under the supervision of a West Virginia licensed land surveyor. Surveying will also be performed under the general direction of a West Virginia registered professional engineer, the GAI project engineer and project manager. All surveys and mapping are completed to the standards as outlined by the National Map Standards, as well as other applicable quality standards to include AML specifications.

Subsurface Investigation

Based upon the information provided in the Expression of Interest, GAI will use a subsurface investigation subcontractor. We have relationships with several drilling firms to provide an economical and available contractor to complete the project. Borrow area investigations will be conducted by GAI personnel, as has been the case in past projects.

Laboratory Services

GAI operates full-service soils and materials laboratories in our Philadelphia, Pennsylvania office.

GAI has the capability to analyze natural materials such as soil and rock, manufactured materials such as concrete and steel, and industrial waste materials. The soils and industrial waste analysis capabilities include classification tests, moisture content, grain size analysis, Atterberg limits, specific gravity, unit weight determinations, and chemical analyses. The characteristic test capabilities include relative density equipment for sample particle sizes to 3 inches in diameter; apparatus for constant- and falling-head permeability measurements in both horizontal and vertical directions, and for moisture-density relationships for both modified and standard densities. The compressibility of materials can be determined in a 2.5-inch diameter, one-dimensional consolidometer or a 2.5-inch diameter, one-dimensional Anteus consolidometer with back pressure and pore pressure capability. Also, volumetric consolidation can be determined isotropically or anisotropically. The strength parameters of soils and industrial/coal waste materials can be determined by unconfined compression, direct shear, or triaxial shear tests. The rock-testing capabilities include classification by visual inspections and petrographic analysis, unconfined compression, direct shear, and triaxial shear tests. GAI also maintains several nuclear densometer testing gauges to monitor field compaction.

Based upon the information provided in the Expression of Interest, GAI is not proposing the use of any other laboratory services.

Design Engineering and Contract Document Preparation

GAI has extensive experience in design engineering and the preparation of contract documents for AML reclamation and related projects. GAI prides itself in development of **simple, yet innovative, cost-efficient designs** that are easily implemented in the field during construction. Our experience gained on various types of West Virginia AML projects during the past 25 years will ensure this quality engineering continues.

GAI has prepared **over 90** construction packages for WVDEP-AML since 1985. Other West Virginia AML projects completed by GAI did not result in the preparation of construction drawings such as water quality surveys and feasibility reports and landslide investigations where it was determined that the problems were not mining related. GAI is completely familiar with WVDEP's guidelines for preparing construction drawings, technical specifications, and supporting documents. We are able to draw on a large collection of typical construction details contained within our computer aided drafting (CAD) library for the above types of AML projects. GAI also has various master specifications which we are able to draw from to create project specific specifications.

During the design engineering phase of our projects, GAI develops alternatives for the reclamation program and schedules meetings with WVDEP-AML to review options and select a mutually acceptable plan. We feel that this approach results in a more workable plan at an ultimately lower cost. We also perform a constructability review of each construction package by technical staff familiar with actual methods of construction. This review also expedites the overall reclamation plan.

QUALIFICATIONS OF PERSONNEL

GAI has a staff of over 700 technical support personnel. GAI's staff is particularly well suited to investigate problems associated with abandoned mine lands. We propose to utilize a staff of engineers (civil and mining), geologists, biologists, surveyors, and CADD operators to conduct the investigatory and design work backed by a group of management professionals.

Mr. Charles F. Straley, P.E., P.S. will serve as a Project Manager. Mr. Straley has managed and participated in the design and development of reclamation plans and feasibility studies for over **50** abandoned mine land projects for the WVDEP, Abandoned Mine Lands and Reclamation Program. Mr. Straley has a complete understanding of WVDEP - AML guidelines, specifications, and project expectations. He has a good working relationship with many of the AML staff.

Mr. James A. Hemme, P.E., L.R.S. will serve as a Project Manager. Mr. Hemme has participated in the design and development of reclamation plans and feasibility studies for over **20** abandoned mine land projects for the WVDEP, Abandoned Mine Lands and Reclamation Program. Mr. Hemme has a complete understanding of WVDEP - AML guidelines, specifications, and project expectations. He has a good working relationship with many of the AML staff.

Mr. Elwood C. Penn, P.E. will provide QA/QC services for the project. Mr. Penn has over **twenty five (25)** years of engineering services with relation to construction document packages.

Mr. Joseph A. Prine, P.E. will serve as a Project Engineer. Mr. Prine has participated in the design and development of reclamation plans and feasibility studies for **six (6)** abandoned mine land projects for the WVDEP, Abandoned Mine Lands and Reclamation Program. Mr. Prine has a complete understanding of WVDEP - AML guidelines, specifications, and project expectations.

Mr. Matthew T. Tanner, P.E. will serve as a Project Engineer. Mr. Tanner has participated in the design and development of reclamation plans and feasibility studies for **one (1)** abandoned mine land projects for the WVDEP, Abandoned Mine Lands and Reclamation Program. Mr. Tanner has a complete understanding of WVDEP - AML guidelines, specifications, and project expectations.

Mr. Patrick B. Brennan, E.I. will serve as a Project Engineer. Mr. Brennan has participated in the design and development of reclamation plans and feasibility studies for **five (5)** abandoned mine land projects for the WVDEP, Abandoned Mine Lands and Reclamation Program. Mr. Brennan has a complete understanding of WVDEP - AML guidelines, specifications, and project expectations.

All have relevant direct experience with mine reclamation, grading/drainage, feasibility studies, water study and design, stream restoration, and preparation of construction documents.

A team of staff engineers, geologists/hydrologists, environmental scientists, biologists, technicians, CADD operators, word processor operators, secretaries, and draftspersons will provide the expertise and manpower to complete the project. For special needs we can call on planners, land use specialists, natural resource specialists, soil scientists, archaeologists, architectural historians, and structural and material engineers.

CORPORATE SPECIALIZED EXPERIENCE AND DEMONSTRATED ABILITIES

GAI has provided a wide variety of services to governmental agencies related to the reclamation of AML problems. GAI has served the WVDEP on open-end and other contracts from 1986 to the present. We have also completed numerous projects for the Office of Surface Mining, Reclamation and Enforcement (OSMRE) and AML programs in Pennsylvania, Ohio, Maryland, and Virginia.

MANAGEMENT PLAN & LOCATION OF FACILITIES

Management Plan

GAI's proposed project management plan is presented on Figure 1. The work will be performed in **GAI's Charleston, West Virginia Office** which will allow ready access to the project area. Assistance, if and when needed will be provided by staff located in the Pittsburgh, Pennsylvania office of GAI. GAI's Charleston location is also convenient with respect to the WVDEP's Charleston location.

GAI's professional, technical and support staff have extensive experience on AML and related design projects and are extremely well qualified to serve the WVDEP on this contract. GAI stands ready to commit the personnel and resources required to complete the project in a timely, technically sound and cost efficient manner.

Project Management will be provided by **Mr. Charles F. Straley, P.E., P.S. or Mr. James A. Hemme, P.E., L.R.S.** as shown in Figure 1. Mr. Straley will be responsible for the day to day management and performance of the project. He will review the work directive and prepare the scope of work and cost proposal. A written proposal including a detailed cost estimate (manhours and expenses associated with the project) will then be prepared and submitted to the WVDEP for their review. Upon WVDEP's approval of the proposal, the Project Manager will arrange for the start of the work. Included will be project staffing, arrangement and detailing of the scope of services to be provided by GAI, and review of project budget and schedule. The Project Manager will generally supervise the work in progress and review work products at intermediate points and finally prior to submittal to the WVDEP and will be responsible for maintaining liaison with the WVDEP Project Manager including project status reports, as required.

QA/QC services if deliverables will be performed by **Mr. C. Elwood Penn, P.E.** He will use his 25 years of experience to provide quality deliverables.

Day-to-day project activities will be performed under the direction of the Project Manager by one of the **Project Engineers (Messrs. Joseph A. Prine, P.E. Matthew Tanner, P.E. and Patrick B. Brennan, E.I.)** as shown in Figure 1. They will be responsible for guidance of the GAI staff. Their main activities will include development of detailed step-by-step project work plans to ensure the project activities are completed on-budget and on-time, review of the work products at intermediate points and at project completion, providing guidance and direction to project staff, as well as engineering and design work.

GAI's large experienced staff permits us to respond quickly, provides flexibility, and permits high level input to the project's staff from in house experts. However, our method of staffing projects, as evidenced by our performance on prior projects for WVDEP-AML, is to assign a small team with total responsibility for completion of the work to the client's satisfaction and budget. Where necessary the team can draw on the expertise available within GAI's large staff.

Project Budget Control

The Project Manager will be responsible for monitoring the project budget. GAI's staff submits time sheets on a weekly basis. All charges including labor hours and other project expenses to a particular project are compiled in our data center and are distributed to the Project Manager by Wednesday of the following week. In this manner, we can keep close track of our project costs.

Schedule Control

Direct responsibility for schedule control lies with the Project Manager. Initially, the Project Manager will review the work directive schedule requirements to see if they can be complied with given the anticipated scope of work. As the project progresses, the Project Manager will monitor progress and compare it with the established schedule on a weekly basis. In this manner, the Project Manager can make staff adjustments to maintain the project schedule. If circumstances develop that make it impossible to maintain the project schedule, the Project Manager will contact the WVDEP Project Manager to develop a mutually acceptable adjustment to the schedule.

Location of Facilities

GAI proposes to complete work under this contract in our **Charleston, West Virginia office**. We feel that our close proximity to the WVDEP's Charleston office and the project area will allow the project to be completed in a timely, efficient manner.

PROJECT MANAGEMENT PLAN

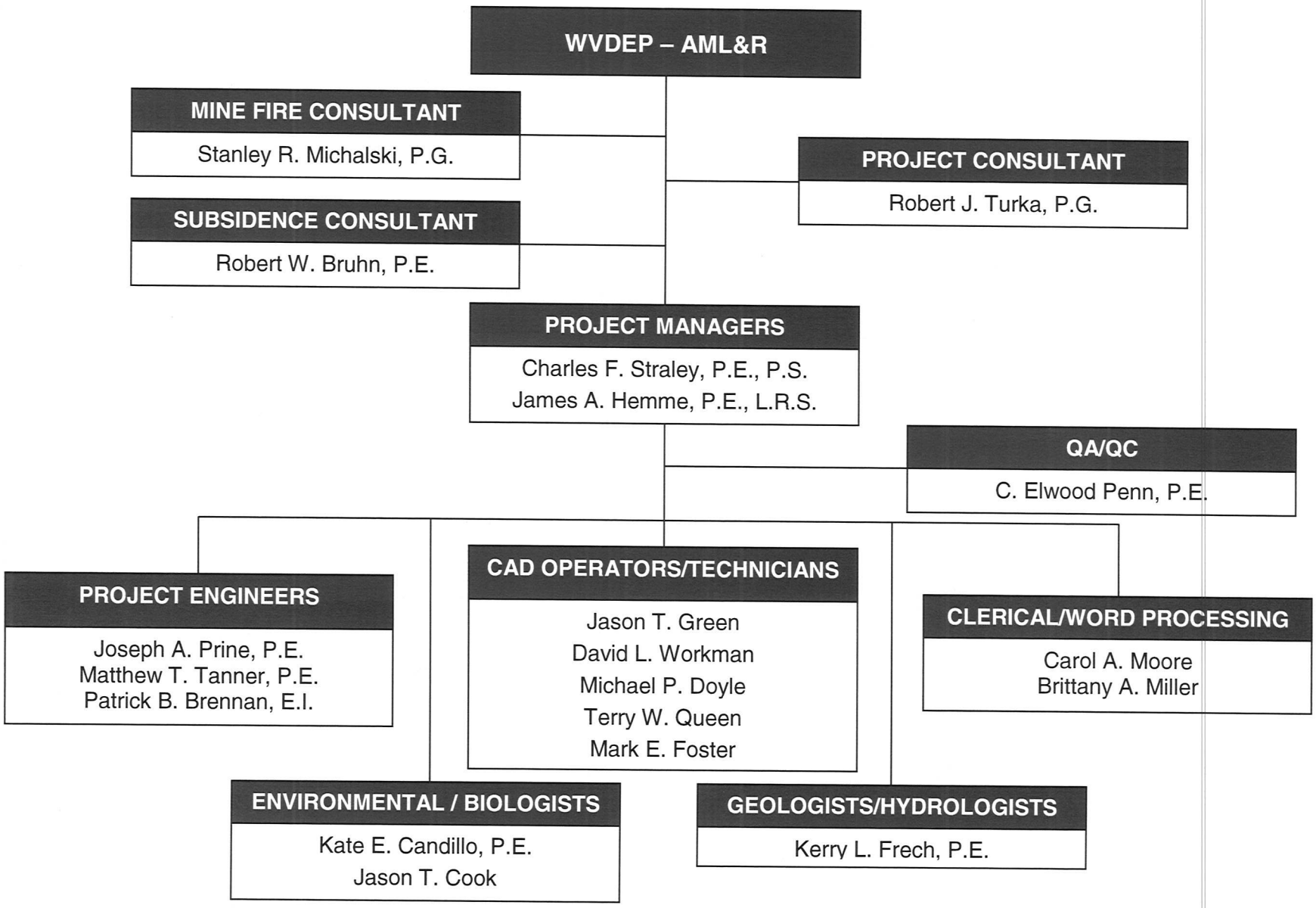

FIGURE 1

ABANDONED MINE LAND PROJECTS
WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION

Project No.: E110258.00
Title: **Webster County Commission Diana Area Feasibility Study (ID#383)**
Location: Webster County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E101392.01
Title: **Cherokee Complex**
Location: McDowell County, West Virginia
Tasks: The scope of work involved providing regrading and soil covering of the refuse pile, providing natural stream restoration and streambank protection, structure demolition, and providing proper drainage control measures. We also prepared and obtained a Stormwater NPDES Permit and COE 404 permit.

Project No.: E100722.00
Title: **Laurel Point Strip**
Location: Monongalia County, West Virginia
Tasks: The project consisted of 2 sites. The scope of work involved regrading and soil covering refuse pile, constructing access roads, providing streambank stabilization, sealing the mine portal(s), backfilling highwalls, landslide reclamation, providing proper drainage control measures and revegetating the areas. Construction plans and technical specifications were developed. We also prepared and obtained a Stormwater NPDES Permit and WVDOH permits.

Project No.: E100423.00
Title: **Reynoldsville Refuse**
Location: Harrison County, West Virginia
Tasks: The project consisted of 11 sites. The scope of work involved providing regrading and soil covering refuse piles, construct access roads, provide streambank stabilization, sealing mine portal(s), bat gates, demolition of mining structures, filling of vertical shafts, regrade sink hole areas, provide proper drainage control measures, and revegetate the areas. Construction plans and technical specifications were developed. We also prepared and obtained a Stormwater NPDES Permit and WVDOH permits.

Project No.: E100281.00
Title: **Earling Refuse Pile**
Location: Logan County, West Virginia
Tasks: The scope of work included regarding the refuse pile, provide streambank stabilization, stream restoration, seal the mine portal(s), bat gates, and provide proper drainage control measures. Construction plans and technical specifications were developed. We also prepared and obtained a Stormwater NPDES Permit.

Project No.: E100291.00
Title: **Erbacon CR9 Webster County WL Feasibility Study (ID#376)**
Location: Webster County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E091306.01
Title: **Kanawha Rambling Hills Water Study**
Location: Kanawha County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E091306.02
Title: **Davis Creek Water Study**
Location: Kanawha County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E091306.03
Title: **Coalburg Water Study**
Location: Kanawha County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E091306.04
Title: **Wallace 353 Water Study**
Location: Harrison and Wetzel Counties, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E091306.05
Title: **Wallace 354 Water Study**
Location: Harrison County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E091252.00
Title: **Greystone Mine Drainage**
Location: County, West Virginia
Tasks: The scope of work involves providing seals for the collapsed portals, backfilling the highwalls, reclamation of the refuse pile, and providing proper controlled drainage including natural stream design. Construction plans and technical specifications were developed.

Project No.: E08194.00
Title: **Route 60 Drainage**
Location: Fayette County, West Virginia
Tasks: The scope of work involves providing seals for the collapsed portals, design of controlled drainage, and design of a pneumatic concrete wall for a rock highwall. Construction plans and technical specifications were developed.

Project No.: E081338.00
Title: **Lynch Run Highwall #6**
Location: Harrison County, West Virginia
Tasks: The scope of work involves providing seals for the collapsed portals, backfilling the highwalls, reclamation of the refuse pile, and providing proper controlled drainage including natural stream design. Construction plans and technical specifications were developed.

Project No.: E081094.00
Title: **Mallory Refuse Pile**
Location: Logan County, West Virginia
Tasks: The scope of work involves regarding the refuse pile, sealing the mine portal(s), and design of drainage control measures. Construction plans and technical specifications were developed.

Project No.: E080494.00
Title: **Duck Creek (Jenkins) Landslide**
Location: Logan County, West Virginia
Tasks: The scope of work involves the design of stabilization measures for the slide and design of seepage and stormwater drainage controls. Construction plans and technical specifications were developed.

Project No.: E080354.02
Title: **Wolfpen (McBurney) Landslide**
Location: Kanawha County, West Virginia
Tasks: The scope of work involves stabilizing a slope, providing seals for collapsed portals, and providing controlled drainage. Construction plans and technical specifications were developed.

Project No.: E08054.01
Title: **Heizer Creek (Lett-Zitselberger) Drainage**
Location: Putnam County, West Virginia
Tasks: The scope of work involves stabilizing a slope, providing seals for collapsed portals, and providing controlled drainage. Construction plans and technical specifications were developed.

Project No.: E070607.00
Title: **Hominy Creek Area Waterline Extension Feasibility Study**
Location: Nicholas County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E060330.10
Title: **Logan (Marcum) Drainage Emergency Project**
Location: Logan County, West Virginia
Tasks: The scope of work involves emergency evaluation and investigation to develop a method to collect and discharge the seepage from the coal seam and conveyance to a downstream drainage system. Construction plans and specifications were developed.

Project No.: E060185.10
Title: **Bud/Alpoca Waterline Extension Feasibility Study**
Location: Wyoming County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E060184.10
Title: **Nuriva/Maben Waterline Extension Feasibility Study**
Location: Wyoming County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E060183.10
Title: **Herndon Heights Waterline Extension Feasibility Study**
Location: Wyoming County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E050470.10
Title: **Handley/Upper Creek Drainage Project**
Location: Kanawha County, West Virginia
Tasks: The reclamation plan included dewatering the underground impoundment(s) and creating diversion ditches to redirect the drainage around structures to the nearby stream. Regrading the areas behind the retaining wall, revegetating, and providing proper drainage for all disturbed areas is also included in the plan.

Project No.: E050287.10
Title: **Latrobe (Gibson) Landslide Emergency Project**
Location: Logan County, West Virginia
Tasks: The scope of work involved emergency evaluation and investigation to develop alternatives to reduce slopes, eliminate instability, and provide for controlled drainage. Once an alternative was selected, construction plans and specifications were developed.

Project No.: E050212.10
Title: **Ven's Run Maintenance Project**
Location: Harrison, County, West Virginia
Tasks: The scope of work involves stabilizing the slopes and provide for controlled drainage. It is GAI's initial approach to the abatement of the landslide is to provide a proposed reclamation plan that will grade the slide in place as much as practical and not conduct a total removal of material.

Project No.: E050126.10
Title: **War Waterline Extension Feasibility Study**
Location: McDowell County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: E050123.10
Title: **Clark's Gap Waterline Extension Feasibility Study**
Location: Mercer and Wyoming Counties, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: 2004-134-10
Title: **War (Dash) Impoundment**
Location: McDowell County, West Virginia
Tasks: The scope of work included providing aerial mapping and ground survey for verification of two sites consisting of a small impoundment, several mine portals, and coal refuse disposal. In addition, stability analyses were performed on various scenarios for the elimination of the impoundment including subsurface investigation.

Project No.: 2003-485-10
Title: **Whites Run Highwall and Portal**
Location: Randolph County, West Virginia
Tasks: The scope of work consist of preparing construction documents for the reclamation of 6,000 linear feet of highwall, three deep mine portals, a coal refuse spoil area, and treatment of acid mine drainage (AMD). The treatment of the AMD will utilize passive treatment techniques. The project also includes re-establishment of a stream by natural stream techniques.

Project No.: 2003-439-10
Title: **Helen Portals**
Location: Raleigh County, West Virginia
Tasks: The scope of work included the preparation of construction documents for four sites, consisting of abandoned mine portals, unstable refuse piles, small impoundment, and demolition of a mining related structure. The project also included re-establishing a stream by natural stream techniques.

Project No.: 2003-174-10
Title: **Ned's Branch Impoundment (Phase II)**
Location: Mingo County, West Virginia
Tasks: The scope of work included this preparation of construction documents for reclamation of the failed impoundment. The scope of work included regrading of refuse, eliminating impoundment capability, sealing of mine portals, stream restoration, highway relocation and construction management services for the above activities.

Project No: 2003-154-10
Title: **Bearwallow Branch Refuse Pile**
Location: McDowell County, West Virginia
Tasks: The scope of work included the preparation of construction documents for reclamation of seven sites. The various sites consist of unstable refuse piles, abandoned mine portals, small impoundments, and miscellaneous structures.

Project No.: 2002-282-10
Title: **Community of Preston - State Route 72 Waterline**
Location: Preston County, West Virginia
Tasks: The scope of work included the preparation of construction documents for a water transmission line. The total length of waterline is approximately 1.1 miles.

Project No.: 2002-144-10
Title: **Anchor Road Waterpumping, Storage and Distribution Feasibility Study**
Location: Logan County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: 2002-143-10
Title: **Standard, Paint Creek, Collinsdale Waterline Extension Feasibility Study**
Location: Kanawha County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: 2002-138-10
Title: **McAlpin Eroding Dump - Phase II**
Location: Raleigh County, West Virginia
Tasks: The scope of work included the preparation of construction documents for eleven sites. The sites consisted of ten coal refuse piles (one of which is burning), numerous mine openings (both collapsed and open), old mine buildings, possible AMD, and various mine related debris.

Project No.: 2001-489-10
Title: **McAlpin Eroding Dump - Phase I**
Location: Raleigh County, West Virginia
Tasks: The scope of work included the preparation of construction documents for six sites. The sites consisted of six coal refuse piles, numerous mine openings (both collapsed and open), old mine buildings, possible AMD, and various mine related debris.

Project No.: 96-554-27
Title: **Kingwood 52/6 Water Supply Extension**
Location: Preston County, West Virginia
Tasks: The scope of work included the preparation of construction documents for a water transmission line. Included in the distribution system are a 96,000 gallon water storage and a booster pump station. The total length of waterline is approximately 13 miles.

Project No.: 96-554-26
Title: **Micajah Ridge - Herndon Heights/Itman Waterline Extension Feasibility Study**
Location: Wyoming County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: 96-554-25
Title: **Water Feasibility Study, Glen Rogers Study Area**
Location: Wyoming County, West Virginia
Tasks: Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Project No.: 96-554-24
Title: **Rt. 20 / Gould Community Waterline Extension Feasibility Study**
Location: Upshur County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: 96-554-23
Title: **Water Feasibility Study, Elkins/Buckhannon Study Area**
Location: Upshur County, West Virginia
Tasks: Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Project No.: 96-554-22
Title: **Laurel Creek Subdivision Subsidence**
Location: Raleigh County, West Virginia
Tasks: Preparation of construction documents for the Laurel Creek Subdivision Subsidence project in Beckley, West Virginia. Project involved subsurface investigation (including borehole camera work); sampling of mine water; injection plan layout for grouting under over 40 residences; surface water drainage structure, preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings.

Project No.: 96-554-21
Title: **Superior (PocaLand) Complex**
Location: McDowell County, West Virginia
Tasks: The assessment included a site reconnaissance, asbestos observations and sample analysis, lead-based paint observations and analysis, and limited surficial soil sample analysis. The assessment was concluded in a report to aid in evaluating the existing subsurface soil quality in the area to better understand the costs involved during reclamation efforts.

Project No.: 96-554-20
Title: **Washington Heights to Jeffrey Waterline Extension**
Location: Boone County, West Virginia
Tasks: The project involved a technical review plans and specifications presented by the WVAWC as part of the Boone County Public Service District: Regional Water Supply System. The plans included a total of seven contracts. The scope of work was to identify areas of the contracts that were within project limits set by a Phase II Water Feasibility Study conducted for the WVDEP and to determine the amount of the contract costs that were the responsibility of the WVDEP. Included were field reconnaissance, review of plans, hydraulic calculations, and cost estimating.

Project No.: 96-554-19
Title: **Water Feasibility Study, Gaymont, Edmond, and Winona Study Area**
Location: Fayette County, West Virginia
Tasks: Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Project No.: 96-554-17
Title: **Water Feasibility Study, Hominy Creek Study Area**
Location: Nicholas County, West Virginia
Tasks: Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Project No.: 96-554-16
Title: **Elk Creek / Verner Waterline Extension Feasibility Study**
Location: Logan County, West Virginia
Tasks: The scope of work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: 96-554-15
Title: **Orlando Mining Facility**
Location: Gilmer County, West Virginia
Tasks: The scope of work included preparation of a report identifying the results from an investigation/evaluation of the facilities and equipment at the site. The investigation included determining the value, usefulness and/or condition of the facilities and equipment.

Project No.: 96-554-14
Title: **Scotch Hill / Miller Hill Water Supply Extension**
Location: Preston County, West Virginia
Tasks: The scope of work included the preparation of construction documents for a water transmission line beginning at the existing hydropneumatic booster station. Included in the distribution system is 96,000 gallon water storage. The total length of waterline is approximately 7.5 miles.

Project No.: 96-554-13
Title: **Camp Run AMD**
Location: Barbour County, West Virginia
Tasks: The scope of work included the preparation of construction documents for two sites. The sites consisted of ten to fifteen mine portals and mine drainage seep locations, one pond (to be drained), concrete tramway abutments (and debris), coal refuse, and various areas of saturated soil from mine drainage (one of which is sliding).

Project No.: 96-554-12
Title: **Mahan Tipple and Refuse Maintenance**
Location: Fayette County, West Virginia
Tasks: The scope of work included the preparation of construction documents for the repair of a sliding reclaimed coal refuse pile. The project consisted of installing a rock toe buttress and drainage channels

Project No.: 96-554-11
Title: **Johnsons Knob**
Location: Fayette County, West Virginia
Tasks: The scope of work included the preparation of construction documents for four sites. The sites consisted of five coal refuse piles totaling approximately twenty acres, numerous mine openings (consisting of auger hole and portals, both collapsed and open), six old mine buildings, possible AMD, and various mine related debris (including two old conveyors and a collapsed tipple).

Project No.: 96-554-10
Title: **Carolina Refuse**
Location: Marion County, West Virginia
Tasks: The project consisted of two sites. The sites consisted of a refuse pile totaling approximately three acres, various non-mine related debris, and two concrete mine shafts with some various debris.

Project No.: 96-554-09
Title: **Omega Mine Complex Project**
Location: Monongalia County, West Virginia
Tasks: The project involved writing a final report to the Electric Power Research Institute to include a comparison of the pre- and post-injection water quality data, the results of a post-construction benthic survey, and the results of an analysis of data from injection operations.

Project No.: 96-554-08
Title: **Omega Mine Complex Completion**
Location: Monongalia County, West Virginia
Tasks: The scope of work included the preparation of construction documents for a booster station upgrade as part of the Omega Mine Complex project. Hydraulic analyses were performed, new pumps were selected, and a demonstration was made that the new pumps had higher efficiencies than the old pumps. Construction documents for the booster station upgrade and pressure reducing assembly were prepared.

Project No.: 96-554-06
Title: **Hutchinson Subsidence**
Location: Fairmont, West Virginia
Tasks: Preparation of construction documents for the Hutchinson Subsidence project in Fairmont, West Virginia. Project involved subsurface investigation (including borehole camera work); sampling of mine water; injection plan layout for grouting under three residences; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings.

Project No.: 96-554-05
Title: **Fairmont (Grandstaff) Subsidence**
Location: Fairmont, West Virginia
Tasks: Evaluation of potential subsidence effects for the Grandstaff Subsidence project in Fairmont, West Virginia. Project involved subsurface investigation (including borehole camera work); sampling of mine water; and preparation of a report describing the findings of the above investigations.

Project No.: 96-554-04
Title: **City of Summersville (Rt. 39)**
Location: Nicholas County, West Virginia
Tasks: The project included the review of another consultants water feasibility study report and determination if the findings of the report were accurate.

Project No.: 96-554-03
Title: **Reynoldsville, Wallace, and Clarksburg Water Supply Extension Project**
Location: Harrison County, West Virginia
Tasks: The project included a feasibility/rate analysis, design of 9,400 feet of 8-inch water line, 33,000 feet of 6-inch water line, 12,200 feet of 2-inch water line, a 96,000 gallon (nominal) water storage tank, and other appurtenances, selection, surveying, and geotechnical investigation of a water storage tank site, and preparation of construction documents, regulatory permit applications, and an engineer's report.

Project No.: 96-554-02
Title: **Mill Creek Regional Water Supply Extension Project**
Location: Logan County, West Virginia
Tasks: Preparation of construction documents for the construction of water transmission lines, a water distribution system, two water storage tanks, a booster station, two hydropneumatic tanks, and a water treatment plant. The total length of water line to be constructed was approximately 34 miles.

Project No.: 96-554-01
Title: **Majesty Mine Complex**
Location: Barbour County, West Virginia
Tasks: Preparation of construction documents for the reclamation of the Majesty Mine Complex. The Majesty Mine Complex was an abandoned mine site which included old mine structures, open mine portals, unreclaimed refuse piles and an extensive highwall, existing wetlands and ponds, and numerous seeps producing acid mine drainage (AMD).

Project No.: 93-198-25
Title: **Phase II Water Feasibility Study, Washington Heights to Jeffrey Study Area**
Location: Boone County, West Virginia
Tasks: Phase II water feasibility study for private water supplies in the Washington Heights to Jeffrey Study Area in Boone County, West Virginia. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report. Work was completed on a "fast track" schedule.

Project No.: 93-198-24
Title: **Evaluation of Construction Documents, Gauley River Water Line Extension**
Location: Fayette and Nicholas Counties, West Virginia
Tasks: Evaluation of construction documents for the Gauley River Water Line Extension, to be funded by AML. Evaluation included a review of technical specifications and drawings; evaluation of hydraulics; completion of letter summarizing the evaluation; and meetings to discuss the evaluation.

Project No.: 93-198-23
Title: **Evaluation of Construction Documents, Heizer/Manila Creek Water Line Extension**
Location: Putnam County, West Virginia
Tasks: Evaluation of construction documents for the Heizer/Manila Creek Water Line Extension, to be funded by AML. Evaluation included a review of technical specifications and drawings; evaluation of hydraulics; completion of letter summarizing the evaluation; and meetings to discuss the evaluation.

Project No.: 93-198-22
Title: **Owings Mine Complex**
Location: Harrison County, West Virginia
Tasks:
(1) Evaluation of water quality and potential passive AMD treatment system design at the Owings Mine Complex Site. Project included identification of monitoring points (streams and AMD discharges); sampling and analysis of monitoring points for a 3-month period; preparation of a report summarizing the findings; and conceptual design of passive AMD treatment system including costs.

(2) Preparation of construction documents including subsurface investigation; surveying; refuse processing evaluation; grading and drainage design for four refuse piles and various other refuse areas; design of seals for eighteen mine portals; and preparation of technical specifications, drawings, and engineer's cost estimate.

Project No.: 93-198-21
Title: **Omega Mine Complex**
Location: Monongalia County, West Virginia
Tasks: Preparation of construction documents for the Omega Mine Complex project in Monongalia County, West Virginia. The project involved the injection of coal combustion byproduct grouts into mine workings to help alleviate the generation of AMD. Work included subsurface investigation; surveying; grout mix evaluation; acid-base accounting analysis of overburden and coal; and preparation of drawings, technical specifications and engineer's cost estimate.

Project No.: 93-198-20
Title: **Mill Creek - Isom Community**
Location: Logan County, West Virginia
Tasks: Design of water system to service approximately 800 residents of the Mill Creek-Isom Community in Logan County, West Virginia. Work included sizing of water treatment plant, 4 water tanks, 4 booster stations, 1 pressure reducing valve, and approximately 23 miles of water line. Construction cost was estimated at approximately $5,500,000.

Project No.: 93-198-19
Title: **Phase II Water Feasibility Study, Weaver-Junior Study Area**
Location: Randolph and Upshur Counties, West Virginia
Tasks: Phase II water feasibility study for private water supplies in the Weaver-Junior Study Area in Randolph and Upshur Counties, West Virginia. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Project No.: 93-198-18
Title: **Phase II Water Feasibility Study, Reynoldsville, Wallace, and Clarksburg Study Area**
Location: Harrison County, West Virginia
Tasks: Phase II water feasibility study for private water supplies in the Reynoldsville, Wallace, and Clarksburg Study Area in Harrison County, West Virginia. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Project No.: 93-198-17
Title: **Mainella Subsidence**
Location: Marion County, West Virginia
Tasks: Preparation of construction documents for the Mainella Subsidence project in Fairmont, West Virginia. Project involved subsurface investigation (including borehole camera work); sampling of mine water; injection plan layout for grouting under three residences; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Approximately 15 injection holes were proposed at an estimated construction cost of approximately $138,000.

Project No.: 93-198-15
Title: **Glen Morgan Subsidence**
Location: Raleigh County, West Virginia
Tasks: Preparation of construction documents for the Glen Morgan Subsidence project near Beckley, West Virginia. Project included subsurface investigation (including borehole camera work); base mapping development; sampling of mine water; injection plan layout for grouting under one residence; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Estimated construction cost was approximately $164,000.

Project No.: 93-198-14
Title: **Harris AMD**
Location: Harrison County, West Virginia
Tasks: Preparation of construction documents for the Harris AMD site in Harrison County, West Virginia. Project included subsurface investigation; surveying; sampling of mine discharges; design of channels, wet seals, and drain pipes; preparation of technical specifications, drawings and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Bid construction cost was approximately $65,000.

Project No.: 93-198-13
Title: **Lefthand Fork (See) Burning Refuse**
Location: Logan County, West Virginia
Tasks: Preparation of construction documents for Lefthand Fork (See) Burning Refuse project. Project included subsurface investigation including temperature probe readings; surveying; refuse processing evaluation; grading and drainage design for regrading of refuse pile; delineation of burning refuse areas; design of excess material disposal site; completion of IBR for relocating existing bonded haul road; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Bid construction cost was approximately $940,000.

Project No.: 93-198-12
Title: **Madison Street/Fairview Route 218 Portals**
Location: Marion County, West Virginia
Tasks: Work performed on this project was an extension of activities as described on Project No. 88-460-21.

Project No.: 93-198-11
Title: **Summerlee Refuse - Post Construction Water Quality**
Location: Fayette County, West Virginia
Tasks: Water sample collection, analysis, and evaluation at the reclaimed Summerlee Refuse site. Findings were summarized in a report.

Project No.: 93-198-10
Title: **Cow Creek - Sarah Ann Water Supply Extension Project**
Location: Logan County, West Virginia
Tasks: Preparation of construction documents for the Cow Creek - Sarah Ann Water Supply Extension project in Logan County, West Virginia. Project included subsurface investigation; design of three water tanks, three booster stations, one master meter assembly, and approximately 19 miles of waterline; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Bid construction cost was approximately $4,800,000.

Project No.: 93-198-09
Title: **Godby Branch Water Supply Extension**
Location: Logan County, West Virginia
Tasks: Preparation of construction documents for the Godby Branch Water Supply Extension project. Project included subsurface investigation; surveying; design of water tank, booster station, and approximately 2.5 miles of water line; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings. Bid construction cost was approximately $680,000.

Project No.: 93-198-08
Title: **Phase II Water Feasibility Study, New Haven Study Area**
Location: Fayette County, West Virginia
Tasks: Phase II water feasibility study for private water supplies in the New Haven Study Area in Fayette County, West Virginia. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report. Conceptual design of water system included sizing a water treatment plant, 1 booster station, 5 water tanks, and approximately 87 miles of water line. Estimated construction cost was approximately $13,800,000.

Project No.: 93-198-07
Title: **Phase II Water Feasibility Study, Gauley River Study Area**
Location: Fayette and Nicholas Counties, West Virginia
Tasks: Phase II water feasibility study for private water supplies in the Gauley River Study Area in Fayette and Nicholas Counties, West Virginia. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the investigation in a report.

Project No.: 93-198-06
Title: **Phase II Water Feasibility Study, Heizer and Manila Creek Community**
Location: Putnam County, West Virginia
Tasks: Phase II water feasibility study for private water supplies in the Heizer and Manila Creek Community in Putnam County, West Virginia. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: 93-198-05
Title: **Phase I Water Feasibility Study, Reynoldsville, Wallace, & Clarksburg Study Area**
Location: Harrison County, West Virginia
Tasks: Phase I water feasibility study of the Reynoldsville, Wallace, & Clarksburg Study Area in Harrison County, West Virginia to evaluate the potential for pre-1977 mining activity to have degraded the water supplies of residents. Work included interviews, record searches, field reconnaissance, and preparation of remedial action cost estimates. A report summarizing the findings was submitted.

Project No.: 93-198-04
Title: **Phase I Water Feasibility Study, Weaver-Junior Study Area**
Location: Randolph and Upshur Counties, West Virginia
Tasks: Phase I water feasibility study of the Weaver-Junior Study Area in Randolph and Upshur Counties, West Virginia to evaluate the potential for pre-1977 mining activity to have degraded the water supplies of residents. Work included interviews, record searches, field reconnaissance, and preparation of remedial action cost estimates. A report summarizing the findings was submitted.

Project No.: 93-198-03
Title: **Phase I Water Feasibility Study, Matheny Hill Study Area**
Location: Harrison County, West Virginia
Tasks: Phase I water feasibility study of the Matheny Hill Study Area in Harrison County, West Virginia to evaluate the potential for pre-1977 mining activity to have degraded the water supplies of residents. Work included interviews, record searches, field reconnaissance, and preparation of remedial action cost estimates. A report summarizing the findings was submitted.

Project No.: 93-198-02
Title: **Duncan Hill Subsidence No. 2**
Location: Harrison County, West Virginia
Tasks: Completed subsidence evaluation investigation at the Duncan Hill Subsidence No. 2 project site in Clarksburg, West Virginia. Work included subsurface investigation; mapping development; surveying; records review; water sampling; and preparation of a report summarizing the findings. The report did not recommend stabilization for the structures in the project area, due to a lack of evidence that subsidence was causing problems.

Project No.: 93-198-01
Title: **Urso Subsidence**
Location: Fairmont, West Virginia
Tasks: Field reconnaissance, resident interviewers, videotape surveys of existing conditions, subsurface investigation, surveying, and subsequent evaluation to determine if mine subsidence was affecting structures within a several block area of Fairmont. Ultimately, stabilization program was limited to 5.4 acre area with approximately 28 residences and businesses. Construction documents, including drawings, technical specifications, and engineer's cost estimate were prepared. Proposed construction included approximately 140 injection holes and 18,000 cubic yards of injection material. Construction cost was estimated at approximately $1,200,000.

Project No.: 88-460-24
Title: **Phase I Water Feasibility Studies**
Location: Brooke County, along Gauley River in Fayette County & Nicholas Counties, and New Haven area (around Hico) in Fayette County, West Virginia.
Tasks: Preliminary investigation of 3 separate communities to evaluate the possibility that pre-1977 mining activity degraded water supplies. The investigation included a review of mining records, existing water quality data, and conductance of resident interviews to assess possible impacts. Separate reports were prepared for each community,

documenting findings and providing a cost estimate for extending public water supply systems.

Project No.: 88-460-23
Title: **Phase II Water Feasibility Study, Mill Creek Study Area**
Location: Boone, Lincoln, and Logan Counties, West Virginia
Tasks: Phase II water feasibility study for private water supplies in the Boone County Community, Lincoln County Community, and Logan County Community all encompassed in the Mill Creek Study Area. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in separate reports for each community. Estimated construction cost for extending a public water supply to residents of the Mill Creek Study Area was approximately $15,400,000 and included 1 water treatment plant, 1 booster station, 7 water storage tanks, and approximately 40 miles of water line.

Project No.: 88-460-22
Title: **Phase II Water Feasibility Study, Godby Branch Community**
Location: Logan County, West Virginia
Tasks: Phase II water feasibility study for private water supplies in the Godby Branch Community in Logan County, West Virginia. Work included interviewing local residents and government officials; collecting and analyzing surface and private water supply samples; researching water quality records; designing and costing remedial measures; calculating the percentage of wells that had been degraded by mining activity; and summarizing the findings in a report.

Project No.: 88-460-21
Title: **Madison Street/Fairview Route 218 Portals**
Location: Marion County, West Virginia
Tasks: Preparation of construction documents for the Madison Street/Fairview Route 218 Portals project. Work included subsurface investigation; surveying; design of wet mine seals and associated drains at multiple sites; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings.

Project No.: 88-460-20
Title: **Summerlee Refuse Project**
Location: Fayette County, West Virginia
Tasks: Preparation of construction documents for the Summerlee Refuse pile project. Project included subsurface investigation; surveying; water quality sampling; grading and drainage design for regrading and revegetation of 60 acre refuse pile, 2 impoundments, and 2 ponds; preparation of technical specifications, drawings, and engineer's cost estimate; and participation in pre-bid and pre-construction meetings.

Project No.: 88-460-19
Title: **Putnam County Phase I Water Studies**
Location: Two communities in Putnam County, West Virginia
Tasks: Preliminary investigation of the Manila Creek and Heizer Creek areas of Putnam County to determine the possibility of pre-1977 mining activity degrading water supplies. Study included review of historical mining records, geological data, and resident interviews to assess possible impacts. Report prepared documenting findings and a cost estimate for extending public water supply system.

Project No.: 88-460-18
Title: **Boone County Phase I Water Studies**
Location: Various communities in Boone County, West Virginia
Tasks: Preliminary investigation of the Greenview/Big Branch, Ramage/Six Mile Creek, Secoal/Jeffrey/Obes Branch, Hewett Creek/Missouri Fork, and Meadowfork communities of Boone County to determine the possibility of pre-1977 mining activity degrading water supplies. Study included review of historical mining records, geological data, and resident interviews to assess possible impacts. Reports prepared documenting findings and cost estimates for extending public water supply systems.

Project No.: 88-460-17
Title: **Duncan Hill Subsidence**
Location: Clarksburg, West Virginia
Tasks: Field reconnaissance, resident interviews, videotape surveys of existing conditions, subsurface investigation, borehole video camera surveys, and surveying to determine whether subsidence was affecting numerous homes, water tank, and YMCA over a 16 acre area. Development of report documenting that damages to water tank and YMCA were not subsidence related. Preparation of stabilization plan including plans, specifications, etc. for residential area.

Project No.: 88-460-16
Title: **Phase II Logan Water Feasibility Study**
Location: Logan County, West Virginia
Tasks: Investigation to determine the percentage of residents in the Cow Creek, Crooked Creek and Upper Rum Creek communities whose ground water supplies had been degraded by pre-1977 mining activity. Field reconnaissance, mine map and mine permit records search, interviews, water sampling and analysis, and classification via piper diagrams were conducted.

Project No.: 88-460-15
Title: **Cora Mine Drainage No. II**
Location: Logan County, West Virginia
Tasks: Mine drainage abatement project included drilling and water analysis with subsequent design of several mine seals with piping and channels to convey flow to the receiving stream. Project included boring and jacking pipeline under railroad.

Project No.: 88-460-14
Title: **Covey Creek Mine**
Location: Logan County, West Virginia
Tasks: Field reconnaissance, historical records review, and subsurface investigation to determine extent of mine fire and to develop options for remediation.

Project No.: 88-460-13
Title: **Logan Phase I Water Study**
Location: Logan County, West Virginia
Tasks: Preliminary investigation of the Clothier, Cow Creek, Crooked Creek, Godby Branch, Godby Heights, Upper Rum Creek, and Whitman Creek/Holden communities to determine the possibility of pre-1977 mining activity degrading the water supplies of the communities. Field reconnaissance, interviews, and mining and water quality record searches were conducted, and a remedial cost estimate was provided with reports summarizing the findings for each community.

Project No.: 88-460-12
Title: **Vivian Refuse Pile**
Location: Vivian, West Virginia
Tasks: Subsurface investigation, surveying, and design for reclamation of a large coal refuse pile and two mine entries. Plans, specifications, cost estimate, coal refuse reprocessing evaluation, and supporting documents for regrading over 150,000 cubic yards of refuse, surface water control, mine seals, and riprap toe protection were completed.

Project No.: 88-460-11
Title: **Kimball Refuse Piles**
Location: Kimball, West Virginia
Tasks: Subsurface investigation, surveying and design for reclamation of 3 coal refuse piles and six mine entries. Design included replacement of a water well and related supply piping for the town of Kimball. Completed preparation of plans, specifications, cost estimate, coal refuse reprocessing report, West Virginia Department of Health permit for new well, and other supporting documents for reclaiming this large site with over ½ million cubic yards of regrading.

Project No.: 88-460-10 & 88-460-09
Title: **Hampden (Smith) Bridge**
Location: Mingo County, West Virginia
Tasks: Design of metal arch culvert to replace a bridge to allow access to a landslide repair project. Development of plans and specifications were on a fast-track schedule.

Project No.: 88-460-08
Title: **Bear Run Refuse**
Location: Gilmer County, West Virginia
Tasks: Field reconnaissance to establish project limits, develop reclamation options, and collect water quality information to design a wetlands reclamation project. Subsurface investigation, surveying, and development of aerial mapping for 160 acres were conducted. Plans, specifications, cost estimate, reprocessing evaluation and report, and permit application assistance to develop reclamation plan for 13 former coal refuse

disposal ponds/impoundments and 3 refuse piles were completed. Plan included developing and enhancing wetlands.

Project No.: 88-460-07
Title: **Beaver Creek Waterline Extension**
Location: Barbour and Randolph Counties, West Virginia
Tasks: The project included design of a 1.5 mile, 6-inch diameter water line extension including fire hydrants, stream crossings, and service to 13 residents. Preparation of plans, specifications, cost estimate, and supporting documents were completed.

Project No.: 88-460-06
Title: **Charleston (Ratcliffe) Landslide**
Location: Kanawha County, West Virginia
Tasks: The project included subsurface investigation; research of mine mapping; and determination if the slide was due to mining.

Project No.: 88-460-05
Title: **Garrison Complex**
Location: Garrison, Boone County, West Virginia
Tasks: Subsurface investigation, surveying, and design for the removal of a railroad embankment posing a water impounding hazard were conducted. Project also included several mine entries and surface water runoff control channels. Plans, specifications, cost estimate, and supporting documents were prepared.

Project No.: 88-460-04
Title: **Cassity Fork Water Supply Extension**
Location: Randolph County, West Virginia
Tasks: The project consisted of a water study to document existing water quality and impacts due to mining, subsurface investigations, surveying, and design of an 8-mile waterline extension including booster station, reservoir, pressure reducing valves, and provision for fire flow. Preparation of plans, specifications, cost estimate and supporting documents, and a review of contractor submittals during construction were conducted.

Project No.: 88-460-03
Title: **Mulberry Fork (Stover) Landslide**
Location: Fayette County, West Virginia
Tasks: The project included subsurface investigation and design of corrective measures for a landslide.

Project No.: 88-460-02
Title: **Beckley (Queen Street) Subsidence**
Location: Beckley, West Virginia
Tasks: Subsurface investigation to determine if mine subsidence was responsible for damages experienced by a home was conducted. Preparation of a report documenting that subsidence was not responsible for the observed damage was completed.

Project No.: 88-460-01
Title: **Courtright Highwall**
Location: Bridgeport, West Virginia
Tasks: Work performed on this project was an extension of activities as described for 86-181-23.

Project No.: 86-181-23
Title: **Courtright Highwall**
Location: Bridgeport, West Virginia
Tasks: The project included a subsurface investigation to determine extent of landslide and whether mining related, field surveying to establish topographic mapping and control, and subsequent design of landslide repair alternatives. Design ultimately selected included a reinforced slope using stabilizing grid. Landslide contained 400,000 cubic yards of material.

Project No.: 86-181-22
Title: **Jonben (Haga) Subsidence**
Location: Jonben, West Virginia
Tasks: Subsidence control on an emergency basis including sinkhole backfilling and drainage control. Project included drilling to determine the extent of mining and subsidence, field surveying to develop topographic mapping, and development of a backfilling and drainage plan.

Project No.: 86-181-21
Title: **Belle (Malcolm) Landslide**
Location: Belle, West Virginia
Tasks: Landslide stabilization including excavation of slide mass, sealing of several mine entries, and drainage controls. Project included drilling, sampling, and piezometer installation and monitoring to develop project plans and specifications.

Project No.: 86-181-20
Title: **Holden (Padgett) Subsidence**
Location: Whitman Junction, West Virginia
Tasks: The project included subsurface investigation to determine extent of mine workings, development of stabilization plan including drainage channels/pipes, and mine seals. Construction documents were prepared, and participation in pre-bid and pre-construction meetings was completed.

Project No.: 86-181-19
Title: **Minden Mine Fire**
Location: Minden, West Virginia
Tasks: The project included subsurface investigation to determine source and extent of underground fire.

ABANDONED MINE LAND PROJECTS
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Project No.: 86-181-18
Title: **Williamson (Elias) Landslide - Emergency**
Location: Williamson, West Virginia
Tasks: Subsurface investigation and determination of whether or not a landslide threatening 1 home was mining related with subsequent development of plans for a retaining wall were conducted.

Project No.: 86-181-17
Title: **Kitchen/Gibson Landslide - Emergency**
Location: Boone County, West Virginia
Tasks: Subsurface investigation and determination of whether or not a landslide threatening 4 homes was mining related were conducted.

Project No.: 86-181-16
Title: **Doug Gray Subsidence**
Location: Fairmont, West Virginia
Tasks: Subsidence control by injecting grout to fill mine voids. Project included exploratory drilling and sampling including both vertical and angle borings with the subsequent development of a grouting program to support homes and businesses in Fairmont, West Virginia.

Project No.: 86-181-15
Title: **St. John's Road Subsidence**
Location: Brooke County, West Virginia
Tasks: Subsurface investigation and development of specifications and construction drawings for remedial work on mine subsidence affecting 30 acres and 50 homes were conducted.

Project No.: 86-181-14
Title: **High Coal Tipple**
Location: Boone County, West Virginia
Tasks: The project included development of specifications and construction drawings for remedial work on 16 mine portals and an abandoned tipple and its several associated structures.

Project No.: 86-181-12
Title: Route 19/28 Subsidence
Location: **Harrison County, West Virginia**
Tasks: The project included subsurface investigation and development of construction specifications and drawings, and topographic mapping for remedial work on mine subsidence affecting a road.

Project No.: 86-181-10
Title: **Omar Refuse Piles**
Location: Logan County, West Virginia
Tasks: The project included subsurface investigation and development of specifications and construction drawings for remedial work on regrading 5 refuse piles with over 330,000 cubic yards of earthwork, and sealing 6 mine portals and a large vertical shaft.

Project No.: 86-181-09
Title: **Mt. Hope (Sawyer) Subsidence**
Location: Fayette County, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications and drawings, and topographic mapping for remedial work on mine subsidence affecting 1 home.

Project No.: 86-181-08
Title: **Morgantown Airport Drainage**
Location: Morgantown, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications and drawings, and some topographic mapping for remedial work on mine subsidence effecting a day care center and an airport access road, and for closure of 4 mine portals below the end of a runway.

Project No.: 86-181-07
Title: **Logan Drainage Project**
Location: Logan, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications and drawings, and some topographic mapping for remedial work on 4 mine portals, a mine seep, and 400 feet of abandoned conveyor with its headhouse and loadout platform.

Project No.: 86-181-06
Title: **Huffman Street Subsidence**
Location: Fairmont, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications and drawings for remedial work on mine subsidence affecting 20 homes.

Project No.: 86-181-05
Title: **Switzer/Adams/Robinson Drainage**
Location: Logan County, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications, drawings, and topographic mapping for remedial work on 3 mine portals, including the design of an energy dissipator with associated piping under railroad and state highway.

Project No.: 86-181-04
Title: **Follansbee (Hultsburg) Drainage**
Location: Brooke County, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications and drawings for remedial work on acid mine drainage problems.

Project No.: 86-181-03
Title: **Fairmont East Subsidence**
Location: Fairmont, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications and drawings for remedial work on mine subsidence affecting 125 homes on 20 acres.

Project No.: 86-181-02
Title: **Fairmont IV**
Location: Fairmont, West Virginia
Tasks: The project included subsurface investigation to determine if subsidence of 3 homes was related to mining and subsequent development of construction specifications and drawings for remedial work on the subsidence.

Project No.: 86-181-01
Title: **Hawkins AMD**
Location: Harrison County, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications, drawings and topographic mapping for remedial work on acid mine drainage emanating from mine portals following a "blow-out" and causing a large saturated area above 5 homes.

Project No.: 86-107
Title: **Kistler Refuse and Mine Fire Extinguishment Program**
Location: Logan County, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications and drawings for extinguishment through grout injection, and subsequent construction monitoring.

Project No.: 85-354
Title: **Rebrook Street Drainage**
Location: Clarksburg, West Virginia
Tasks: The project included subsurface investigation and development of construction specifications and drawings for remedial work on acid mine drainage from 2 mine portals which was effecting a house and its garage, and subsequent construction monitoring.

Project No.: 85-289
Title: **Hurricane Fork/Five-Mile Fork Burning Coal Seams**
Location: Kanawha County, West Virginia
Tasks: The project included subsurface investigation and development of costs which would be associated with extinguishment.

Project No.: 84-192
Title: **Duck Creek Landslide**
Location: Gilmer County, West Virginia
Tasks: The project included subsurface investigation, development of construction specifications and drawings, and construction monitoring for remedial work on a landslide resulting from uncompacted strip bench spoils.

ABANDONED MINE LAND PROJECTS
WEST VIRGINIA DEPARTMENT OF NATURAL RESOURCES

Project No.: 85-113
Title: **Kingmont Complex Reclamation**
Location: Marion County, West Virginia
Tasks: The project included development of specifications and construction drawings for sealing 4 mine portals and demolishing a steel river truss and buildings associated with an abandoned deep-mine complex.

Project No.: 84-289
Title: **Fairmont No. 2 Subsidence**
Location: Fairmont, West Virginia
Tasks: The project included report with recommendations after a subsurface investigation to determine whether or not subsidence of 3 homes was mining related, and subsequent development of specifications and construction drawings.

Project No.: 84-265 and 266
Title: **Green's Run Highwall and Marrara Spoil Area Reclamation Projects**
Location: Preston County, West Virginia
Tasks: The project included subsurface investigation with test-pits and development of specifications and construction drawings for reclaiming 30 acres of strip mine with 3 highwalls, 6 refuse piles, and 2 access roads.