

West Virginia Department of Environmental Protection

EXPRESSION OF INTEREST

RACINE (BRADSHAW) PORTALS

SUBMITTED TO:



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

SUBMITTED BY:



Gannett Fleming

Gannett Fleming, Inc.
800 Leonard Street, Suite 1
Clearfield, PA 16830

RECEIVED

2008 OCT 29 A 10: 15

PURCHASING DIVISION
STATE OF WV

October 2008

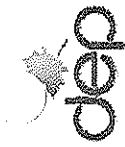


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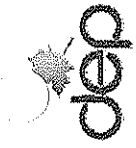
Attachment C - Project Experience Requirements

Attachment D - Key Personnel Resumes

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Gannett Fleming



West Virginia Department of Environmental Protection

Request for Quotation Form





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
 DEP14438

PAGE
 1

ADDRESS: CORRESPONDENCE TO ATTENTION OF
 CHUCK BOWMAN
 304-558-2157

RFQ COPY

TYPE NAME/ADDRESS HERE

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
09/18/2008				

BID OPENING DATE: 10/30/2008 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29		
RACINE (BRADSHAW) PORTALS DESIGN EXPRESSION OF INTEREST THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING EXPRESSIONS OF INTEREST FOR PROFESSIONAL ENGINEERING DESIGN SERVICES AND CONSTRUCTION MONITORING SERVICES AT THE RACINE (BRADSHAW) PORTALS PROJECT IN BOONE COUNTY, WV, PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS. BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID AND IS TERMINATED WITHOUT FURTHER ORDER.						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>Sumner</i>	TELEPHONE 304-256-6492	DATE 10/23/08
TITLE Office Manager	FEIN 25-161359	ADDRESS CHANGES TO BE NOTED ABOVE

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



Sections 1 - 10

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

PROJECT NAME Racine (Bradshaw) Portals Project	DATE (DAY, MONTH, YEAR) 10/30/2008	FEIN 25-1613591
1. FIRM NAME Gannett Fleming, Inc.	2. HOME OFFICE BUSINESS ADDRESS PO Box 67100 Harrisburg, PA 17106-7100	3. FORMER FIRM NAME N/A
4. HOME OFFICE TELEPHONE (717) 763-7212	5. ESTABLISHED (YEAR) 1915	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES NO X
6. TYPE OWNERSHIP Individual Corporation Partnership Joint-Venture		
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE Gannett Fleming, Inc., Suite 200 11 Commerce Drive, Morgantown, WV 26501 (304) 296-6492, Samer H. Petro, PE, Reg. Office Mgr.		

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM
8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
Please see attached sheets for additional response.

9. PERSONNEL BY DISCIPLINE (clearfield office in Parenthesis)

113 ADMINISTRATIVE (1)	8 ECOLOGISTS	2 LANDSCAPE ARCHITECTS	116 STRUCTURAL ENGINEERS
23 ARCHITECTS	3 ECONOMISTS	20 MECHANICAL ENGINEERS	16 SURVEYORS
8 BIOLOGIST	58 ELECTRICAL ENGINEERS	0 MINING ENGINEERS	118 TRAFFIC ENGINEERS (2)
118 CADD OPERATORS (3)	96 ENVIRONMENTALISTS (1)	0 PHOTOGRAMMETRISTS	715 OTHER
5 CHEMICAL ENGINEERS	3 ESTIMATORS	56 PLANNERS: URBAN/REGIONAL	
71 CIVIL ENGINEERS (6)	46 GEOLOGISTS (1)	43 SANITARY ENGINEERS	
84 CONSTRUCTION INSPECTORS	0 HISTORIANS	51 SOILS ENGINEERS	
0 DESIGNERS	1 HYDROLOGISTS	3 SPECIFICATION WRITERS	
13 DRAFTSMEN			1864 TOTAL PERSONNEL

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 3
 *RPEs other than Civil and Mining must provide supporting documentation that qualifies them to supervise and perform this type of work.

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

8. Names of Principal Officers or Members of Firm

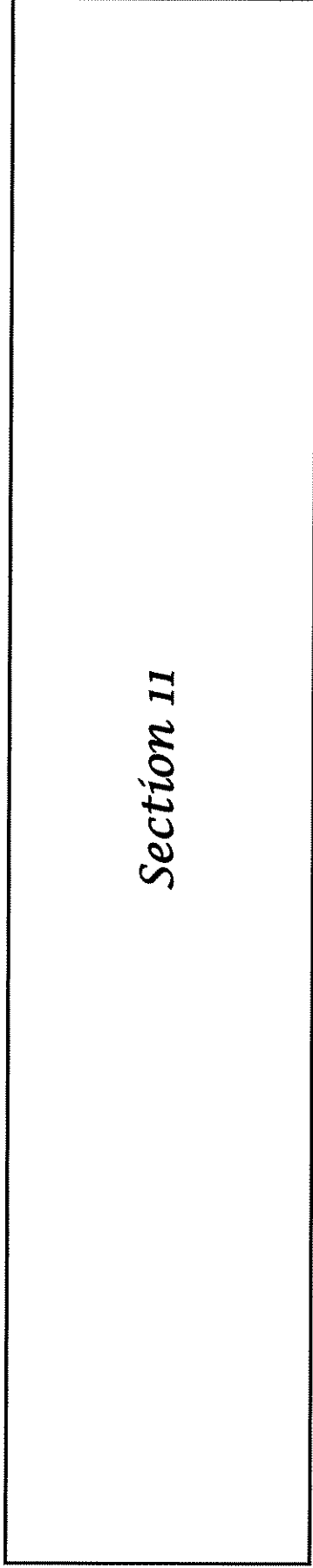
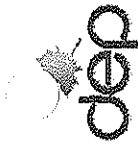
William M. Stout, Chairman of the Board and Chief Executive Officer
* Robert J. Dietz, Vice Chairman, President and Chief Operating Officer
* Chester L. Allen, Senior Vice President and Secretary
* Roger J. Banks, Senior Vice President
* John G. Diviney, Senior Vice President
* John R. Kenny, Senior Vice President

Lynn E. Knepp Senior Vice President and Treasurer
* Gene C. Koontz, Senior Vice President
* Paul D. Nowicki, Senior Vice President
Robert E. Ragan, Senior Vice President
* Robert M. Scaer, Senior Vice President
* Director

9a. Name, Title, & Telephone Number - Other Principals

Martha J. Averso, Vice President, 717-763-7211
Warren A. Barrett II, Vice President, 410-585-1460
Charles H. Beauduy, Vice President, 717-763-7211
William B. Bingham, Vice President, 717-763-7211
R. Edwin Blair, Jr., Vice President, 757-873-0768
Joseph G. Botchie, Vice President, 717-763-7211
John A. Buchheit, Vice President, 407-514-2691
Edward C. Burk, Jr., Vice President, 734-753-5880
Carlos M. Cejas, Vice President, 786-845-9540
Keith M. Chase, Vice President, 717-763-7211
R. Tom Clark, Vice President, 813-882-4366
John W. Cook, Jr., Vice President, 717-763-7211
Rodney J. Dawson, Vice President, 213-624-0347
John A. Derr, Vice President, 602-553-8817
Bruce P. DeVito, Vice President, 212-967-9833
John V. Dougherty, Vice President, 904-998-9809
Trent L. Dreese, Vice President, 717-763-7211
Dean B. Durkee, Vice President, 602-553-8817
James C. Elliott, Vice President, 717-763-7211
Stephen B. Gerlach, Vice President, 410-585-1460
Susan F. Gibbons, Vice President, 215-557-0106
Dale R. Glatfelter, Vice President, 717-763-7211
Peter A. Golonka, Vice President, 617-527-7822
Naldo Gonzalez, Vice President, 786-845-9540
William T. Guy, Vice President, 717-763-7211
Stephen Hadjyane, Vice President, 516-671-8066
Glen L. Hair, Vice President, 717-763-7211
David E. Hassrick, Vice President, 609-584-9592
Richard Hergenroeder, Vice President, 717-763-7211
Jesse G. Hite, Jr., Vice President, 704-375-2438
Arthur G. Hofmann, Jr., Vice President, 412-922-5575
Raymond L. Hofsass, Vice President, 610-650-8101
Rodney E. Holderbaum, Vice President and Assistant Secretary, 717-763-7211
Judy L. Hricak, Vice President, 717-763-7211
Frederick H. Inyard, Vice President, 516-671-8066
Mark D. Johnson, Vice President, 978-687-7292
Robert C. Keller, Vice President, 212-967-9833
Aaron D. Keno, Vice President, 703-222-3704
John W. Kovacs, Vice President, 412-922-5575
Dennis F. Kugle, Vice President, 608-836-1500
James A. Langer, Vice President, 904-998-9809
Michael R. Laurita, Vice President, 212-967-9833
Michael T. Lee, Vice President and Assistant Secretary, 717-763-7211
Richard K. Lee, Vice President, 610-917-9100
Thomas G. Leech, Vice President, 412-922-5575
Ronald N. Leins, Vice President, 813-882-4366
Paul J. Lewis, Vice President, 717-763-7211
George S. Link, Vice President, 856-802-9930
Richard D. Lutz, Vice President, 757-873-0768
Michael Wm. Malloy, Vice President, 505-265-8468
Samuel Mayman, Vice President, 213-624-0347
Esther M. McGinnis, Vice President, 610-650-8101
Barbara R. McLemore, Vice President, 717-763-7211
Gregory Milakovic, Vice President, 856-802-9930
Lawrence E. Miller, Vice President, 602-553-8817
Donald G. Morosky, Vice President, 717-763-7211
Marlene A. Myers, Vice President, 717-763-7211
Donald B. Nicholas, Vice President and Assistant Secretary, 781-380-7750
Charles R. Norrish, III Vice President, 212-967-9833
Paul L. O'Neal, Vice President, 717-763-7211
Fotios Papamichael, Vice President, 516-671-8066
Marlay B. Price, Vice President, 614-794-9424
Richard A. Pugh, Vice President and Assistant Secretary, 717-763-7211
John D. Purdy, Vice President, 212-967-9833
Thomas M. Rachford, Vice President, 717-763-7211
Jeffrey L. Raffensperger, Vice President, 717-763-7211
Jeffrey J. Ream, Vice President, 814-765-4320
Russell L. Ricker, III Vice President, 717-763-7211
Joseph Rikk, Jr., Vice President, 614-794-9424
John D. Romano, Vice President, 814-644-6822
Steven G. Rowley, Vice President, 717-537-4115
Gary A. Rozmus, Vice President, 516-671-8066
Roderick A. Savidge, Vice President, 717-763-7211
Ronald D. Schreier, Vice President, 602-553-8817
Ralph H. Schwartz, Vice President, 717-763-7211
Kambiz F. Shadan, Vice President, 415-384-0822
Scott W. Sibley, Vice President, 610-650-8101
Dennis W. Silbaugh, Vice President, 717-763-7211
John R. Snodgrass, Vice President, 602-553-8817
Myung-Hak Sung, Vice President, 813-882-4366
D. Eric Veydt, Vice President, 412-922-5575
Patrick J. Welch, Vice President, 717-763-7211
David B. Wilson, Vice President, 717-763-7211
Edward L. Woyden, Vice President, 610-650-8101
Chen-yu Yen, Vice President, 410-585-1460

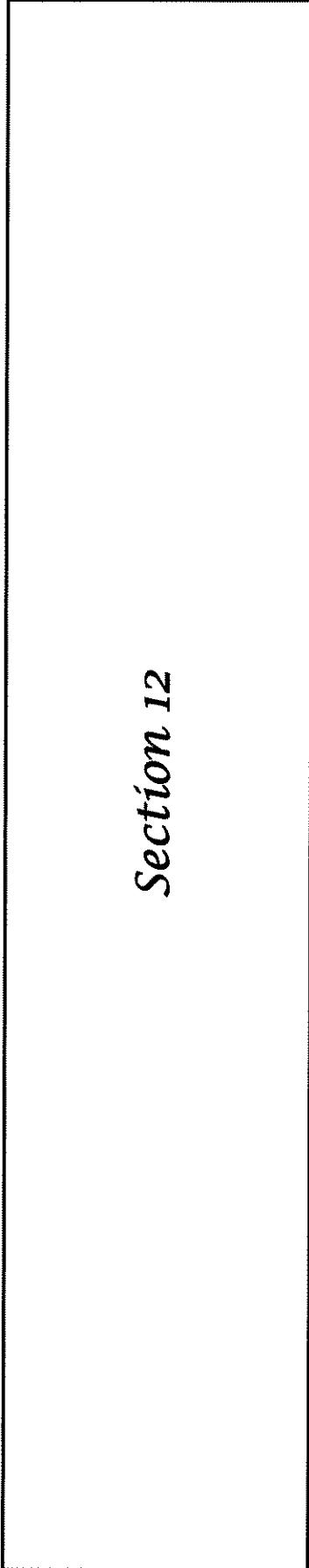
Laurence S. Zimmermann, Vice President, 717-763-7211
Robert K. Rumbaugh, Jr., Assistant Controller, 717-763-7211
Ruby L. Ile, Assistant Secretary, 717-763-7211



Section 11

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

<p>NAME AND ADDRESS: N/A</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>
<p>NAME AND ADDRESS:</p>	<p>SPECIALTY:</p>	<p>WORKED WITH BEFORE _____ Yes _____ No</p>



Section 12



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

YES Description and Number of Projects: _____

Yes. Gannett Fleming has performed Abandoned Mine Land Reclamation on over 10 abandoned mine sites over the past several years. These design projects included preparation of overburden analyses, alkaline addition plans, project plans and specifications, hydrologic & hydraulic analyses, and environmental permits, such as E&S, NPDES, and wetland permitting/mitigation.

NO

B. Is your firm experienced in Soil Analysis?

YES Description and Number of Projects: _____

Yes. Gannett Fleming personnel have performed numerous soil analyses in support of civil works and environmental projects. Our geotechnical environmental engineers work closely with our drillers and soils lab to direct sampling and testing. These projects involved test pits, topographic methods, and active and passive methods for leachate and gas control. We have also performed engineering soil analyses for use in geotechnical engineering calculations, and we have a full service soils laboratory in our Camp Hill office that serves both geotechnical and environmental markets.

NO

C. Is your firm experienced in hydrology and hydraulics?

YES Description and Number of Projects: _____

Yes. Gannett Fleming has performed hydrologic and hydraulic analyses on a multitude of projects including Land development, surface mine permits, surface mine reclamation projects, transportation. Gannett Fleming has also completed the required NPDES permitting associated with the above mentioned projects.

NO

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

YES Description and Number of Projects: _____

NO

No. These services are routinely provided by Gannett Fleming through subconsultants.

E. Is your firm experienced in domestic waterline design? (Include any experience your firm has in evaluation of aquifer degradation as a result of mining.)

YES Description and Number of Projects: _____

Yes. Gannett Fleming has designed over 100 domestic water lines, as well as water treatment plants and pumping/storage facilities throughout the United States for nearly 100 years. We have performed groundwater studies to determine if there was connections

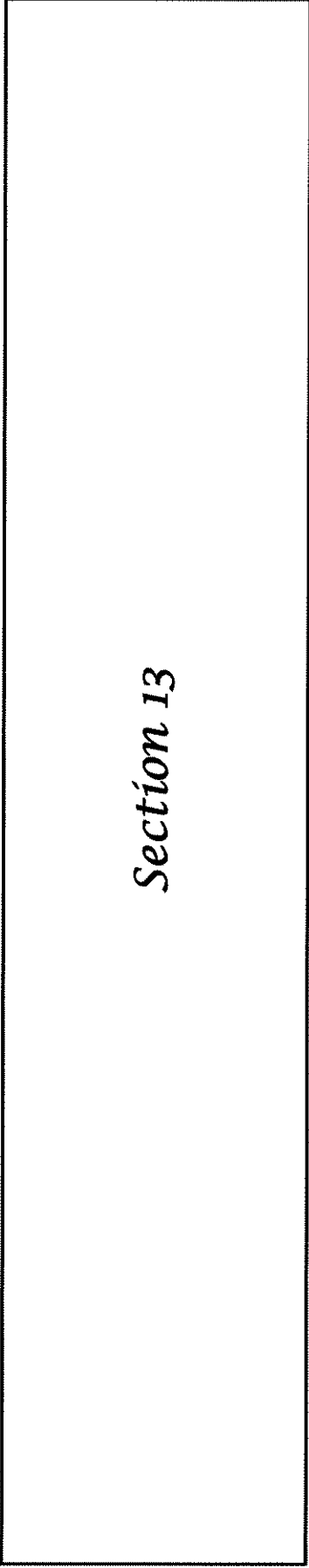
NO

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

YES Description and Number of Projects: _____

Yes. Gannett Fleming has prepared watershed studies to determine the extent and location of acid mine drainage sources followed by recommendations and cost estimates for abatement. We have designed both active and passive treatment systems for acid mine drainage and acid rain abatement in Pennsylvania, Ohio, and West Virginia.

NO



Section 13

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.) Jeffrey J. Ream, PE	YEARS OF AML DESIGN EXPERIENCE: 8	YEARS OF AML RELATED DESIGN EXPERIENCE: 15	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 8
----------------------------------------------------------------	--------------------------------------	-----------------------------------------------	-----------------------------------------------------

Brief Explanation of Responsibilities:

Serves as senior civil engineer for land development and environmental projects involving: hydraulic/hydrologic analysis and design of stormwater management systems; preparation of erosion and sedimentation control plans; design of sanitary sewer and potable water systems and other infrastructure features; geotechnical design of foundations, retaining structures, earth embankments and impoundments; surface water monitoring; wetland mitigation planning and design; stream and riparian ecosystem restoration; application of active and passive wetland water treatment systems; water quality investigations and related remedial investigations, plans and designs.

EDUCATION (Degree, Year, Specialization)

B.S., Civil Engineering, 1993

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineer

REGISTRATION (Type, Year, State)

Registered Professional Engineer (Pennsylvania 1999)
#053753-E

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.) F. Roy Zug, III, PE	YEARS OF AML DESIGN EXPERIENCE: 35	YEARS OF AML RELATED DESIGN EXPERIENCE: 35	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 20
----------------------------------------------------------------	---------------------------------------	-----------------------------------------------	------------------------------------------------------

Brief Explanation of Responsibilities:

Responsible for and directly involved in the coordination and preparation of state and federal permit applications for surface and underground coal mining, non-coal mining, mine reclamation, industrial facility siting, land development and subdivision plans, water resource development projects, and waste disposal plans. Also responsible for and directly involved in the coordination and preparation of private and government-related civil engineering projects, including municipal services plans and specifications, industrial facility siting, land development and subdivision plans, water resource development projects, and waste disposal plans. Project responsibilities will include the design and review of waste water collection lines and pumping facilities associated with development plans and treatment system expansion and upgrades.

EDUCATION (Degree, Year, Specialization)

B.S., Civil Engineering, 1971

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

N/A

REGISTRATION (Type, Year, State)

Registered Professional Engineer (Pennsylvania 1971)
#017274-E
State of Ohio Professional Engineer #65834

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 DOMESTIC WATERLINE DESIGN EXPERIENCE:
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	
Michael F. Auman, PG	29	29	N/A

Brief Explanation of Responsibilities
 Also responsible for conducting geologic and hydrogeologic investigations in various geologic settings within Pennsylvania, West Virginia, and Ohio related to bituminous coal mining, industrial mineral mining, mineral reserve evaluations, private and public water supplies, and solid waste. The reports generated by these investigations are used in permitting decisions by the client and the regulatory agencies for the respective state departments of environmental protection. Has provided expert testimony to the State environmental hearing boards with respect to stream reclassifications and unsuitable-for-mining petitions. Skilled in advanced field-geology methods, supervision of drilling programs, construction of monitoring wells, surface and groundwater monitoring, and installation of flow-monitoring devices, pumping tests, and slug tests for aquifer characterization and groundwater flow gradients and velocities.

EDUCATION (Degree, Year, Specialization)

B.S., Geology, 1978

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

N/A

REGISTRATION (Type, Year, State)

Licensed Professional Geologist (Pennsylvania 1995)
 #PG001407G

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 DOMESTIC WATERLINE DESIGN EXPERIENCE:
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	
Kevin W. Bloom, PE	28	28	20

Brief Explanation of Responsibilities

Responsible for coordination and preparation of state and federal permits for surface and underground coal mining, non-coal mining, mine reclamation, coal preparation facilities, and industrial facility siting. Mr. Bloom is also directly involved with the preparation and coordination of land development plans, valuation studies, wetland evaluations, highway occupancy permits, air quality permits and earth disturbance permits. Project responsibilities have also included conducting hydrologic assessments relative to erosion and sediment (E&S) pollution control design, mining operation plans, soils evaluations, and reclamation and revegetation plans. Mr. Bloom is skilled in conducting and supervision of drilling programs, construction of monitoring wells, surface and groundwater monitoring, and installation of flow-monitoring devices, pumping tests, and groundwater modeling.

EDUCATION (Degree, Year, Specialization)

B.S., Mining Engineering, 1981

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Society for Mining, Metallurgy and Exploration

REGISTRATION (Type, Year, State)

Registered Professional Engineer (Pennsylvania 1986)
 #035160-E

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	
Samer H. Petro, PE		YEARS OF AML DESIGN EXPERIENCE: 1	YEARS OF AML RELATED DESIGN EXPERIENCE: 1
YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 1			

Brief Explanation of Responsibilities

Senior Structural Engineer responsible for designing and analyzing highway bridges and other transportation-related structures.

EDUCATION (Degree, Year, Specialization)

B.S.C.E., Structural Engineering, 1987
M.S.C.E., Structural Engineering, 1993

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

American Society of Civil Engineers
Association for Bridge Construction and Design
Steering Committee Member, National Conference on Integral Abutment and Jointless Bridges, 2005. Conference sponsored by FHWA and WVDOT.

REGISTRATION (Type, Year, State)

P.E.: Ohio - No. 66132 (2001)
West Virginia - No. 15710 (2003)

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	
Michael A. Neely, PE		YEARS OF AML DESIGN EXPERIENCE: 2	YEARS OF AML RELATED DESIGN EXPERIENCE: 2
YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 3			

Brief Explanation of Responsibilities

Project Manager for the West Virginia Regional Office responsible for the design of highway and airport projects, including right-of-way, site development, stormwater, utilities, signing and pavement marking, erosion and sediment pollution control, final cross sections, quantities, and report preparation. Also assists in client consultation, budget preparation, and project scheduling.

EDUCATION (Degree, Year, Specialization)

B.S., Civil Engineering, 1996

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

National Society of Professional Engineers

REGISTRATION (Type, Year, State)

West Virginia - No. 015304 (2002)
Florida - No. 61143 (2004)

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 DOMESTIC WATERLINE DESIGN EXPERIENCE:
Gene A. Janero, PE	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	N/A
	13	13	

Brief Explanation of Responsibilities

Geotechnical Project Engineer responsible for design on various geotechnical and environmental projects, including layout and implementation of field exploration programs, site reconnaissance, drilling inspection, soil and water sampling, and design activities. Also develops and prepares geotechnical reports, technical specifications, and cost estimates.

EDUCATION (Degree, Year, Specialization)

B.S., Civil Engineering, 1995

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Society of American Military Engineers
 Secretary, Pittsburgh Post
 American Society of Civil Engineers
 Deep Foundations Institute

REGISTRATION (Type, Year, State)

P.E.: Pennsylvania - No. PE060736 (2004)

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 DOMESTIC WATERLINE DESIGN EXPERIENCE:
Michael A. Knight, PG	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	N/A
	20	20	

Brief Explanation of Responsibilities

Senior Project Manager and Geologist responsible for directing geologic and hydrogeologic projects involving the study, evaluation, and assessment of earth materials. Areas of responsible charge include geologic interpretation; geologic structures evaluation, groundwater and soils contamination problems; solid waste disposal; public water supply development; abandoned mine land reclamation; aquifer testing; remedial design; wellhead protection; and earth resources development.

EDUCATION (Degree, Year, Specialization)

B.S., Geology, 1983

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

N/A
 P.G.: Wyoming - No. PG-893 (1992)
 Kentucky - No. 1594 (1994)
 Pennsylvania - No. 001237-G (1995)
 MSHA Mine Safety Certified Surface, Coal, Metal, and Nonmetal (2005)

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.)

Michael D. Antonetti, PG, LRS

YEARS OF EXPERIENCE

YEARS OF AML DESIGN EXPERIENCE:

5

YEARS OF AML RELATED DESIGN EXPERIENCE:

5

YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

N/A

Brief Explanation of Responsibilities

Environmental Project Manager responsible for supporting and developing environmental site remediation services for a wide variety of projects, including energy production, collection, storage, and transmission facilities and Brownfield sites.

EDUCATION (Degree, Year, Specialization)

B.S., Environmental Geology, Juniata College, 1980
 M.S., Geology, Syracuse University, 1982

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Pennsylvania Council of Professional Geologists

REGISTRATION (Type, Year, State)

P.G.: Pennsylvania - No. PG002575G (1995)
 L.R.S.: West Virginia - No. 218 (2003)

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:

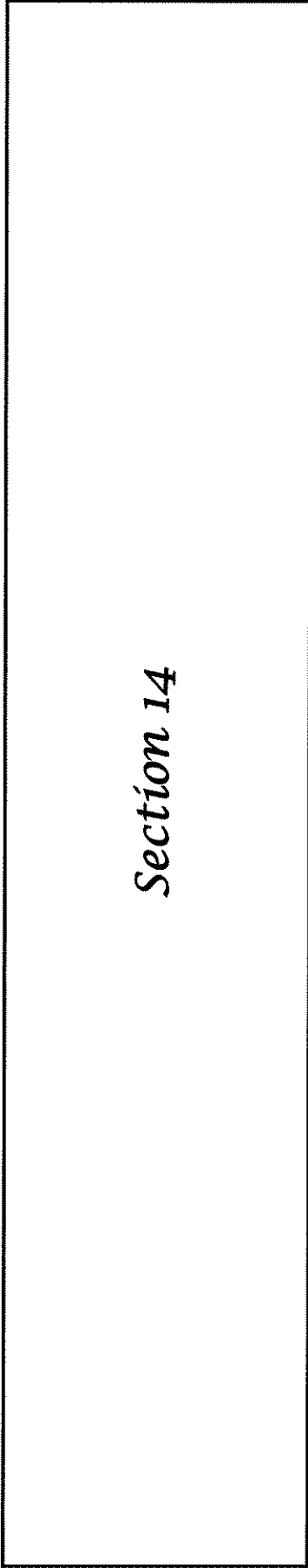
YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:

Brief Explanation of Responsibilities

EDUCATION (Degree, Year, Specialization)

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)



Section 14

EQUIPMENT

Gannett Fleming, Inc. (Gannett Fleming), maintains state-of-the-art computer equipment to support many specific disciplines including: CADD; GIS; Global Positioning System (GPS) and Precision Surveying; Engineering Design and Numerical Analyses; Desktop Publishing; and Multimedia and Graphic Services. Computer resources within each office are linked together with a Windows Local Area Network and corporate wide by a Wide Area Network. Our network of computer resources consists of more than 1,200 desktop PCs and 100 notebooks, Internet e-mail, direct PC Faxing, a full T-3 line that can transmit data at a speed of 44.7 MB per second, World Wide Web (WWW) Internet access, and our own FTP site.

COMPUTER SERVICES

Much of the equipment we maintain is devoted toward providing computer services of all kinds. Central to this system is our IBM ES/9000 System featuring 64 megabytes of internal memory, which operates the VM/ESA and VSE/ESA Operating Systems and supports remote communications from microcomputers and terminals across the continental U.S. This equipment is complemented by auxiliary equipment and software for other specific tasks. In addition to these, we currently maintain and use PCs and 66 laser printers companywide.

Detailed Listing of Computer Hardware	Quantity
IBM ES/9000 model 9221-170 with 64 MB of real storage	1
IBM 3390 22.7 GB disk drives for a total of 68.1 GB of online storage	1
STK 4480 cartridge tape drives	6
STK 4600 9-track tape drives	2
XEROX 4090 92 PPM laser printer	1
Oce 2140 136 PPM laser printer	5
STK 5000 impact printers	2

Sharing and Delivering Digital Files - Gannett Fleming shares and delivers digital files with other users and clients using a variety of methods. We have our own FTP site, Internet e-mail, a network database server, and standard and specialized hardware for writing digital data to disks, CD-ROMs, Zip Drives, and a variety of tape formats. Brief descriptions of each method follow:

- **FTP:** Gannett Fleming has its own FTP site on the WWW at ftp.gfnet.com. Using the FTP utility, a user can post files directly to our public FTP site. This facilitates downloading large digital files for our clients and between our offices.
- **Internet e-mail:** Gannett Fleming engineers and other employees who regularly work with computers are provided with their own Internet e-mail address. Our e-mail software enables users to send and receive text messages and attached files.
- **Writing Data to Disks, CDs, Zip Drives, and Various Tape Formats:** Gannett Fleming can read, store, and archive digital data in almost any format and medium available. Besides standard floppy disks and high-density diskettes, we have a good mix of WORM and Rewritable Drives for permanently writing large data files to writeable CDs. We also provide and support a wide range of tape storage formats ranging from small 4-mm and 8-mm tape cartridges to large 9-track tape drives for substantial mainframe databases.

CADD SYSTEM

Gannett Fleming uses the latest technologies in CADD systems to increase the efficiency of our designers and engineers. We have more than 23 years of direct CADD experience using purchased design software, as well as design software developed in house. Our CADD system provides our engineers with the ability to design directly within the CADD environment. Currently, Gannett Fleming has 264 Bentley MicroStation stations and approximately 217 AutoCAD stations company-wide. Versions of CADD software that Gannett Fleming supports include MicroStation Version 8 and AutoCAD 2005. CADD workstations and engineering PCs are attached to a Windows network to provide a "state-of-the-art" distributed processing environment.

Experience

Gannett Fleming has significant CADD experience in the design of bridges, tunnels, heavy rail subway systems, highways, buildings, water treatment plants, bus facilities, mapping, and site development. With more than 23 years of experience, Gannett Fleming has learned to effectively manage and control a CADD-oriented design approach on our projects.

Gannett Fleming has emerged as a leader of GIS as well as CADD. Our firm has significant experience integrating CADD and GIS capabilities on our engineering projects. Our GIS services include siting, mapping, information management, and facilities management. Our GIS software includes ArcCAD, ArcInfo, Intergraph MGE, and Atlas; as well as many others.

CADD Proficiency and Training

Gannett Fleming's "CADD Central" group is responsible for ensuring that our CADD and computer operations are being effectively used and coordinated for projects throughout the company. CADD Central is composed of professional engineers, programmers, graphic specialists, and experienced technicians. Their function is to make certain that Gannett Fleming's CADD, engineering, and graphic applications remain on the leading edge of technology. Our own in-house training programs instruct operators to effectively implement our CADD/GIS systems in an engineering environment. The training incorporates the latest procedures, software, and programming necessary for maximizing the productivity of our operations. More than 23 years of CADD experience provides us with the knowledge necessary to develop sound, functional training programs. Our training programs cover MicroStation, AutoCAD, and various design software, including InRoads and GEOPAK.

In addition to experience using purchased software, our programming staff has developed in-house CADD software. Programs have been written to link engineering design software with the generation of design drawings, streamline MicroStation user commands, and create AutoCAD LISP routines and MDL applications.

Final CADD output can be plotted on a wide selection of plotters and laser printers. Our plotting capabilities include Oce electrostatic color plotters, large-format Hewlett-Packard InkJet plotters, and a high-end Atlas color plotter. High-speed laser printers available for printing CADD output include various black-and-white, and color laserjet printers. All of our plotters and printers, regardless of their location, are accessible to all Gannett Fleming CADD operators.

The CADD Central group also provides a supplemental training program to keep our more than 300 trained operators current on the latest software and procedures. This additional training ensures that our CADD operators are using the CADD system to its maximum potential.

INFORMATION TECHNOLOGY/WEB SERVICES

Gannett Fleming's Information Technology division is comprised of GeoDecisions®, Information Technology (IT) Services, and GANCOM®. Our staff of more than 250 dedicated IT professionals leverage state-of-the-art technology to support our internal operations as well to provide award-winning solutions to our federal, state, local government, and private-sector clients. Gannett Fleming's IT group is ISO 9001:2000 certified.

GeoDecisions, a national leader in geospatial IT, and the IT Services group combine to provide a one-stop-shop for any client's IT needs. GANCOM is one of the few businesses to offer true "concept to completion" design, production, and fulfillment of copy, print, and direct mail products and services. The combination of human talent, advanced technology, and our state-of-the-art facilities gives us the unique ability to handle entire projects at a single location.

Gannett Fleming has completed numerous award-winning, Internet-based solutions for public and private clients across the country, including more than 400 IT and GIS-related projects, and more than 50 GIS systems installed nationwide. The main Web services that Gannett Fleming provides for its clients include: GIS-driven data or mapping Web sites; Web-based applications; public relations/project Web sites; secure project collaboration Web sites (i.e., extranets); Web site enhancement services; Web site maintenance; and Web site hosting. We are experienced in developing and hosting any type of Web system that our clients require.

All types of Web sites can be hosted on one of Gannett Fleming's in-house Web servers. We are currently hosting 25 different Web sites that we have completed and/or maintain for our clients. Recent high-end information management projects include enterprise-wide infrastructure management and system integration projects, Web portals, and Internet and intranet Web server solutions. Our commitment to research and development makes certain that we provide cutting-edge solutions that are tailored to our clients' needs.

Our general approach is to develop Web sites that are easy to use, as well as easy to upgrade and maintain. Gannett Fleming's database and programming staff are extremely proficient in Oracle, Microsoft SQL, Microsoft Access, ASP, ASP.NET, JAVA, JavaScript, XML, and VBScript programming, to name just a few. We have the knowledge and experience to provide any type of database Internet solution that is required to complete an assignment. Gannett Fleming's extensive staff of Web developers, designers, multimedia specialists, programmers, and database developers is at our clients' disposal.

PROJECT WEB SITES

Because many of our clients are publicly-funded entities, the Internet provides a fast and easy way to keep the public updated and involved throughout the life of a project. Project Web Sites can provide project updates, schedule information, team information, site photos, and even live construction feeds and video. This is also a valuable way to gather feedback from the public in the form of online surveys, message boards, and other interactive methods of communication. We utilize our designers and programming knowledge to provide sites that are informative, interesting, and interactive. Project Web sites can be broken into two different categories, public information and project collaboration sites. Gannett Fleming has extensive experience in developing and hosting both types of project Web sites.

The first category, public information transfer sites, are Web sites available to the general public that contain information about a particular project that would be of interest to those who are affected by the project in some way. An example of this type of Web site would be a bridge construction project. The Web site would contain general information such as the extent of the project, project schedule, photos at different stages of construction, detours and associated alternate routes, as well as links to other related Web sites that may be of interest to the public.

The second category is a project collaboration site. This type of site is not available to the general public. Access is restricted to those individuals who are working on the project. These Web sites provide features such as task assignment, archiving and exchange of CADD or document files, tracked requests for information, message boards, e-mail notification for updates, and custom applications as needed. Collaborative sites can also be used very effectively in conjunction with public or GIS Web sites to provide a secure area for team and agency communications. Collaborative sites can provide different levels of security for different users or team members. On large projects with multiple contractors, access to documents and areas of the Web site can be restricted to only those areas that the contractor has a need to see. The Project Collaboration system is available 24 hours a day, 365 days a year, anywhere that you can access the Internet.

GPS AND PRECISION SURVEYING

Gannett Fleming currently owns Leica System 500 RTK GPS Surveying System. This equipment is capable of performing sub-centimeter precision positioning surveys. We use our Trimble GPS (Pathfinder Professional) equipment as a survey tool to navigate, determine base points, x-y locations, and log feature attribute information with submeter accuracy. This system is used to map natural and man-made features; establish the initial traverse for corridor planning activities; and for locating feature points (manholes), monitoring points (air samples), and pollutant sources. We can plot GPS data on maps using AutoCAD, MicroStation, or GIS ArcInfo. Feature attribute data such as wetland data can be logged in the field and printed on a customized data form. Digital data from an external source such as a noise meter can be imported into GPS and presented on a map or form in conjunction with a feature. To complement GPS, Gannett Fleming also has surveying crews with total station capabilities with first order accuracy. A list of key GPS and conventional survey equipment follows:

	Quantity
Trimble Pathfinder ProXL units (with submeter accuracy)	2
Theodolites and Total Stations	28
Transits	1
Electronic Distance Measuring (EDM)	25
Levels	4
Automatic Levels	27
Boats with Motors	2
Bucket Truck	1
Fathometer	2
Trimble GeoXT	1

DATA CONVERSION

Gannett Fleming has extensive experience in data conversion and output. We have developed efficient procedures for converting hardcopy pre-existing maps and drawings to digital format. Through the use of several large-format 800-dpi scanners, raster editing software, and interactive vectorization software products, we are capable of providing a total package of services.

The hardware that we are currently using for our scanning operations consists of a Vidar truscan 800, and an Ideal FSS8300; both are state-of-the-art 800-dpi E-size scanners. The scanners convert line and text features from the original hardcopy into a raster image, the resolution of which is determined by the quality of the hardcopy and scanner settings.

Once the raster image is created in one of many acceptable formats, (Intergraph .CIT, AutoCAD .RLE, .TIF, .BMP, etc.) we process the raster image with one of our raster editing tools. We use I/RAS C and I/RAS B software products to process either black-and-white or greyscale scanned raster images. Both products have the capability for an affine transformation so that raster images can be georeferenced to any desired datum and projection.

For vectorization purposes, our primary tool is I/GEOVEC software by Intergraph. I/GEOVEC is an interactive vectorization software product that generates vector graphics for CADD or GIS. User-identified parameters define the line work to be vectorized. While the operator must still provide direction cues, this procedure has proven cost-effective over hand-digitizing or current automatic vectorization solutions. Feature fields can also be linked with attributes so that data input can be layered and linked with databases later in the mapping procedure.

PLOTTING

Gannett Fleming has a significant selection of plotters from which to choose. Our plotting capabilities consist of a Versatec 8636 electrostatic plotter, a Versatec 8944 color electrostatic plotter, and several large-format Hewlett-Packard InkJet plotters. All of our plotters, regardless of their location, are accessible to any Gannett Fleming operator through the network. This capability provides our regional offices with high-volume plotting capabilities.

Detailed Description of CADD, GIS, and Programming Systems Hardware Quantity

Pentium-based CADD Workstations	293
Sun Sparc 20 Workstations	1
Versatec 8944 Color Electrostatic Plotter	1
Versatec 8636 HRE Electrostatic 400 DPI	1
Hewlett-Packard 1055 CM DesignJet Color Plotters	2
Hewlett-Packard 755 CM DesignJet Color Plotters	5
Hewlett-Packard 650C DesignJet Color Plotters	5
Hewlett-Packard InkJet Plotters	10
Hewlett-Packard 4M+ PCL/PostScript LaserJet	1
QMS 860 Laser Plotters, 11x17 Size	8
Hewlett-Packard 4MV Laser Plotters, 11x17 Size	4
Hewlett-Packard LaserJet III and LaserJet 4 Printers	40
CD Writers	5
Vidar truScan Large-Format (E size) Scanner	1
Ideal Large-Format (E size) Scanner	1
Data Digitizers	5

(current specifications include 700MHz Pentium III, 256 MB RAM, 18 GB hard drive, and dual monitors; one 19 inch and one 17 inch)

Novell LAN

Main Network server Dual 300MHz Pentium II with 250 GB on line Hard Drive Space and 1 GB RAM

23 Additional Application servers including 6 Internet servers.

Software

Bentley MicroStation V8	Bentley MicroStation/J
Auto CAD 2005 I	Autodesk 3D Studio
Bentley InRoads	Bentley FieldWorks
GEOPAK	Intergraph InFlow
Intergraph Project Architect	Terra Model
GWN DTM	GWN COGO
Descartes	I/GEOVEC
Intergraph MGE	Crystal Reports
Microsoft Visual Basic	Microsoft Visual FoxPro
Microsoft Access	Protogent Client Server
Development Suite	Borland C/C++
Informix-SQL	Intergraph Interplot
MICROSIF SIF Translator	AXIOM Filefixer
AXIOM Spellchecker	I/RAS/C

I/RAS/B	PCIPILOT
MicroStation Masterpiece	QuickView PRO
Arc/Info	Intergraph MGE
Atlas GIS	Byers Plot Station
DM/DBA ADM Toolkit	Exceed
ArcCAD	ARC TIN
ARC NETWORK	ARC COGO
GeoMedia	MapInfo
MGE Grid Analyst	MGE Grid Generation
MGE Network	MGE Projection Manager
MGE Section Manager	MGE Terrain Analyst
ARC/INFO Grid	ERDAS
ArcView 3.0a	ArcView Network Analyst
ArcView Spatial Analyst	Vista Map
MrSID	MapObjects
Oracle	Oracle Spatial Sybase
Oracle Spatial DBASE	Oracle Spatial Access
Oracle Spatial Paradox	GeoMedia
GeoMedia Web MapObjects	ArcSDE
ArcIMS	Mapitude.

IN-HOUSE PROGRAMS AND SOFTWARE DEVELOPMENT

Gannett Fleming is committed to continuously increasing the efficiency with which our CADD drawings are generated. Our programming staff has extensive experience developing programs and procedures for our CADD/GIS system. These programs make possible the automated generation of design drawings from our engineering applications. Gannett Fleming developed programs include MDL applications, MicroStation User Commands, AutoCAD LISP routines, Fortran, and C programs. These programs supplement the various proprietary engineering design software that we have purchased.

Our in-house-developed programs reduce the possibility of error and the labor required to complete design drawings. An added benefit is that our engineers can immediately evaluate their designs and quickly implement changes. Our staff has recently completed the following programs:

- A computer application to automate the process of generating PENNDOT required Item Tabulation Sheets. The application was developed using Microsoft's Visual FoxPro. The program allows users to input standard and non-standard tab items into a database, which in turn creates required cost reports and items as ASCII files. The ASCII output files are then imported into MicroStation using TABz MDL program.
- A highway sign computer program developed for the Arizona Department of Transportation. This traffic engineering MDL program adds highway sign character, sign panels, and arrows, all with proper spacing and witness line dimension labels. The user needs only to provide the character string to be placed into the sign panel, and select any number of predefined character heights.
- A Bridge Analysis computer program developed for MicroStation CADD for Gannett Fleming's Transportation Division. The program analyzes PENNDOT design criteria for multi-span steel girder and multi-span prestressed girder highway bridges and calculates values of shear and moment at each tenth point. The program uses the results of calculations generated from the application and graphs the shear and moment at the tenth points, at user-definable scale, and generates and fills in a PENNDOT-required table suitable for submission with project drawings.

- A relational database with a text-based Graphical Users Interface that assists dam operators and engineers in estimating the cost of upgrading nonfederal earth embankment dams. The program features an input template for data entry, interactive filter-building dialogue boxes, database record display either editing capabilities, and printing utilities.
- A program that generates sewer profiles along roadway alignments from engineering design data files.
- A user-friendly relational database for estimating costs associated with dam rehabilitation.
- A "C" program that can reduce cross section data from electronic survey or engineering design software and create finished, formatted drawings, complete with existing ground links and associated text in a CADD design file.
- An interactive CADD program that calculates and labels the stations and offsets of any point with reference to an identified baseline. The text is oriented to the final drawing and is in the required format. This is ideal for right-of-way work and property plats.
- A program that reduces survey data produced from a total station. This data is then processed with InRoads software to produce finished graphics for contract drawings.
- Two in-house programs that can be applied to produce soil profile drawings. The first of these interactive programs generates a boring log complete with title, layer depths, blow counts, and graphics using very simplified operator input for maximum speed and efficiency. The second program transfers the soil descriptions into the design file from another word processing device. The boring data can be loaded into a three-dimensional or two-dimensional design file. In three-dimensional design files, cross sections that contain complete boring log information can be taken anywhere on the project.
- Graphical database for recording structural inspection findings. This software is used in the field by the inspector to graphically record the defects of structural components on a drawing while physically looking at the same component. The same graphical interface is then used in the office to review and analyze findings. This software has been applied to both buildings and bridges.

MANAGEMENT COMPUTER PROGRAMS

- Primavera SureTrak - Project management software for complex design/production projects with integration/construction management. Compatible to Primavera Project Planner.
- Primavera Project Planner - Project management software to schedule either I-J or precedence-type networks. Provides control of costs and resources.
- Welcom OpenPlan - Desktop and professional versions with full integration of PENNDOT Template.
- Microsoft Project - Microsoft's version of project management software.

GEOTECHNICAL LABORATORY

Gannett Fleming operates a fully equipped 2,000-square-foot soils laboratory. Its facilities and personnel are capable of performing a full range of soil tests as required to analyze and design cut slopes, embankments, landfills, earth barriers, impervious linings, earth covers, and structural foundations.

Equipment is available to perform soil classification, Atterberg limits, unconfined compression, direct shear, triaxial shear, compactions, California Bearing Ratio, permeability, pH, ion exchange capacity, conductivity, and other soil tests. Engineers and geotechnicians experienced in soil engineering and soil testing staff the facility. Tests are performed under the direction of senior professionals who specialize in geotechnical engineering.

The company also has the capacity and equipment to perform field tests of soil density, compaction, permeability, percolation, settlement, slope movement, groundwater elevation, pore pressures, groundwater quality, and other quantitative and qualitative factors. Through the use of our own in house drilling crews or in association with drilling companies, complete subsurface exploration projects can be performed under the firm's professional direction.

The soils testing laboratory is accredited by the AASHTO. The AASHTO Accreditation Program, established in June 1988, is the only program that certifies laboratories for the full complement of basic soil tests.

Personnel have completed 40-hour health and safety training in accordance with OSHA Regulation 29 CFR 1910.120 and are enrolled in a medical monitoring program allowing the laboratory to handle and test potentially contaminated materials.

Tests Performed

Permeability	Unconfined compression
Direct shear	Triaxial shear
Residual shear	Compaction
California bearing ratio	Consolidation
Soil classifications	Sieve analysis
Hydrometer	Atterberg limits
Specific gravity	Organic content
Resistivity of soils	Slake durability
Point load testing of rock	pH, ion exchange capacity

Equipment

	Quantity
Flexible wall permeability cells.....	3
Constant head perm cells.....	1
Triaxial cells.....	2
Consolidometers.....	3
Direct shear machine.....	1
Sieve shakers.....	2
Electronic balances.....	5
Ovens.....	6
Slake durability apparatus.....	1
Muffle furnace.....	1
Point load apparatus.....	1

Geotechnical Field Equipment

Vertical and horizontal inclinometers	Digital data loggers
Nuclear density gauges	Piezometers
Sand cones	Pocket penetrometers
Resistivity meters	Double ring infiltrometers
Settlement plates	Turbidimeters
Water level indicators	Soil gas probes
Seismograph	

GEOTECHNICAL SOFTWARE

Our library of geotechnical software includes programs for pile driving, analyzing inclinometer data, performing finite element analyses of embankment construction, seepage analysis, slope stability, aquifer analysis, sheet pile wall design, foundation analysis, earthquake analysis, settlement, retaining structures, and evaluating sliding stability of concrete structures. The following programs are used regularly by our geotechnical engineers:

CANDE89	CRSP	3DSAD	CSLIDE
MIRASLOPE	PCSTABL6	PASTABLE	PASTABLM
ROCKPACKIII	REAME3D	SLOPE/W	SNAIL
WESHAKE	SHAKE	COM624G	GRLWEAP
PILEDG	LPILE	CBEAR	FEECON
SIGMA	ABUT4	CCELL	CTWALL
CTSHORING	CWALSHT	SPW911	SEEP
ROCKROUT	LOGDRAFTIII	STEREO	DIGIPRO
GEOSYSTEM	DARWIN	LPILE	PLAXIS

DRILLING EQUIPMENT

Gannett Fleming, through its affiliate L.G. Hetager Drilling, Inc., offers complete drilling capabilities. Hetager Drilling has been providing drilling services since 1952 in support of engineering design and construction projects. Our capabilities include diamond core, air rotary, hammer, reverse air circulation, and auger drilling. We perform pressure testing and pressure grouting; instrumentation; monitoring well installation; land and water drilling; and split spoon, undisturbed and rock core sampling.

Our drilling operations are based in Punxsutawney, Pennsylvania with a regional office in Columbus, Ohio. We employ an experienced staff of nearly 40 drilling personnel and machinists. We operate 19 rigs with a wide range of capabilities and a fully staffed machine shop. By manufacturing our own equipment, parts, and supplies, we are able to adapt standard equipment for special applications.

Equipment

Equipment	Quantity
Track mount drill rigs.....	7
Truck mount drill rigs.....	6
Skid mount drill rigs.....	3
ATV drill rigs.....	3
Dozers.....	1
Lowboys.....	2
Steam jennys.....	6
ATV waterbuggies.....	2
4WD water tracks.....	6
150 to 750 CFM air compressors.....	2
Generators.....	2
Welders.....	5

Supply pumps.....	9
Trash pumps.....	16
Grout plants.....	3
Barge.....	1
Geo probe.....	1

ENVIRONMENTAL LABORATORY

Gannett Fleming is associated with an environmental laboratory that is located in our facility and is capable of performing a vast range of water quality, solid waste and environmental testing. The laboratory is nationally accredited under the guidelines of the NELAP program. Analytical equipment includes an autoanalyzer, flame and flameless atomic absorption spectrophotometers, an X-ray diffraction spectrophotometer, a mass spectrograph, gas chromatographs, an infrared analyzer, and the normal array of laboratory facilities. A comprehensive list of our environmental equipment is listed below.

The Environmental Laboratory contains sophisticated, state of the art instrumentation and data processing equipment capable of performing most organic and inorganic analyses.

Organics Equipment

	Quantity
INCO's 50 mass spectrograph with auto sampler#1, ID# MLCH-1	1
LCS 2000 tekmar	1
ALS 2016 tekmar	1
Varian 3400 gas chromatograph	1
Tracor gas chromatograph with dual ECD detectors	1
Tracor gas chromatograph with FID/ECD detectors	1
INCO's 50 mass spectrograph with auto sampler#1, ID# MLCH-4	1
LCS 2000 tekmar	1
ALS 2016 tekmar	1
Varian 3400 gas chromatograph	1
Dynatech auto-injectors for gas chromatographs	1
Tekmar sonic disruptor probe	1
Internal floor centrifuge	1
International bench top centrifuge	1
Labline multi-temp block digester	1
Baker 6 place disc extraction manifold	1
VWR vortex genie	1
Varian CP - 3800 GC (in-service 9/04)	1
Varian 3300 - GC (in-service 9/04)	1
Varian archon purge and trap auto sampler (in-service 9/04)	1
Varian saturn 3 GC/MS (in-service 9/04)	1
Varian star 3400CX (in-service 9/04)	1
Tekmar 3000 model 14-30V0-000 (in-service 9/04)	1
Varian star 3400CX GC (in-service 9/04)	1
Varian saturn 2000 GC/MS (in-service 9/04)	1

Metals and Wet Chemistry Equipment

	Quantity
Spectro flame modula ICP	1
Perkin elmer mercury analysis with PE 2380	1
Pump for mercury analyzer	1
Spectrophysics strip recorder	1
Varian 8000 zeeman graphite furnace AA	1
Blue M magniwhirl water bath	1

Dionex SX 500 ion chromatograph	1
Dionex IC, ID# MLCH-18A	1
Dionex IC, ID# MLCH-18B	1
Dionex auto sampler	1
Dohrman total organic carbon analyzer with auto sampler	1
Beckman DU-64 UV-VIS spectrophotometer	1
Labconco kjeldahl rapid still	1
Labconco kjeldahl digester	1
2 place zero-headspace extractor	1
6 place TCLP extractor	1
TCLP filtration unit	1
HACH 2100A turbidity meter	1
YSI model 58 oxygen analyzer	1
Orion EA940 pH/specific ion meter	1
Constant temperature oven 104°C	1
Constant temperature oven 180°C	1
Dubuque muffle furnace	1
American scientific products 2 decimal place balance	1
American scientific products 4 decimal place balance	1
Mettler analytical balance	1
Ohaus analytical balance	1
Class "S" calibration weights	1
HACH DR/4000U	1
HACH COD digester	1
SCP science hot block	1
Accuement AR25 pH/ion meter	1

Microbiology Equipment

	Quantity
IDEXX colilert system	1
Millipore MF-incubator#2	1
Market forge steriomatic model STM-E autoclave	1
Millipore 3 place filtration manifold	1
Millipore MF incubator #1	1
SteroMasterII fisher model SPT-ITH	1
UV lamp model UVGL-25	1
Millipore UV sterilizer	1
Precision incubator #2 model 805	1
Precision incubator #1 model 805	1
10mL fixed volume micropipettor	1
Millipore 6 place filtration manifold	1
Steward stomacher 400	1
Precision incubator	1
Drummond pipet aid	1
3M 1.0mL pipettor	1
3M 5.0 mL pipettor, ID# MLCH-72	1
3M 5.0 mL pipettor, ID# MLCH-73	1
VWR dual stir/hotplate	1
Colony counter	1
Micromaster microscope	1
Ewave refrigerator/freezer #1	1
Whirlpool refrigerator/freezer #2	1
Whirlpool refrigerator/freezer #3	1

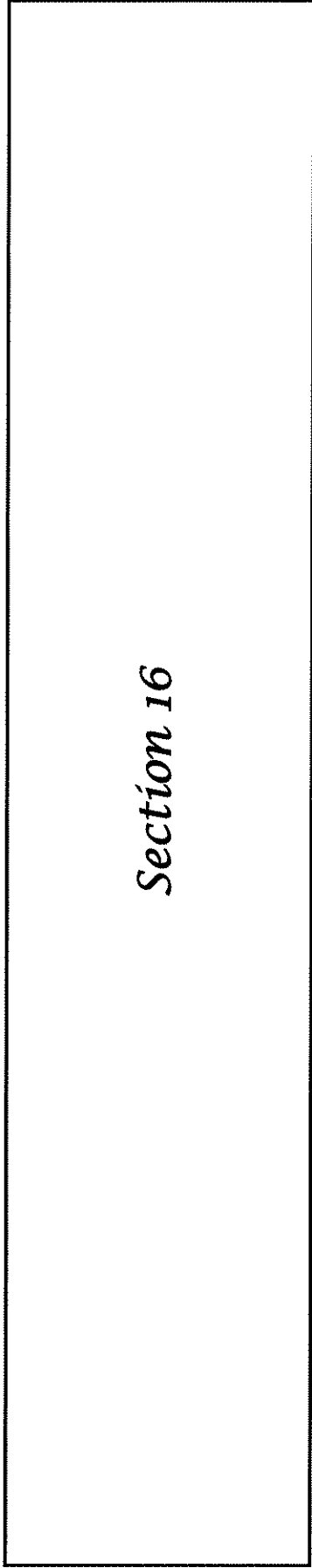
Precision science model 4 incubator	1
Precision science thelco model 6	1
Miscellaneous Equipment	Quantity
Kenmore refrigerator/freezer	1
Jewitt double-door refrigerator	1
Jordon double-door refrigerator	1
Precision water bath	1
Bockel steam bath	1
Class A pipets and graduated cylinders	40
Assorted pyrex beakers and flasks	65
Automated pipettors	1
NIST reference thermometer	1
Miscellaneous thermometers	1
Personal computer work stations	4
Software to support GC/MS, GC, IC, ICP, and GFAA	11
Software to support GC/MS, GC, IC, ICP, and GFAA	1



Section 15

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
North Spring Branch Landfill Wyoming County, WV	Georgia Pacific, LLC James Holmes, PG, CHHM 133 Peach St. PO Box 105605 Atlanta, GA 30348-5605	Design, construction mgt., permitting, monitoring, and reporting for AMD passive treatment system	\$2,000,000	Construction completed in 2001. On-going monitoring and NPDES reporting.
Dents Run 3893 Retrofit	Bennett Branch Watershed Association	Design of recycling Alkaline Addition module for Vertical Flow Wetland Ponds	\$25,000	95%
May Hollow 49 passive Treatment System	Cameron County Conservation District	Design of Passive Treatment System for a Deep Mine Discharge	\$250,000	95%
Ryerson Station State Park Dam, Greene County, PA	Commonwealth of Pennsylvania, Dept of Conservation and Natural Resources	Evaluate Potential Causes of Dam Failure in an Area of Permitted Longwall Mining	\$2,000,000 Study Cost	95%
TOTAL NUMBER OF PROJECTS:			TOTAL ESTIMATED CONSTRUCTION COSTS: \$	



Section 16



Section 17

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD				YEAR	CONSTRUCTED (YES OR NO)
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)	
Fall Brook - active AMD treatment system Tioga County, PA	Tioga County Concerned Citizens Committee	\$1,000,000	2007	No	
Farr Tipple AMD Passive Treatment System Tuscarawas & Coshocton Counties, OH	Ohio Department of Natural Resources	\$250,000	2003	Yes	
Dents Run - Site 3888 AMD Passive Treatment for two underground mine discharges Elk County, PA	U.S. Army Corps of Engineers	\$300,000	2003	Yes	
Dents Run - Site 3893 AMD Passive Treatment System Elk County, PA	U.S. Army Corps of Engineers	\$600,000	2006	Yes	
Fairmount City AML/AMD Reclamation Clarion County, PA	PADEP - Bureau of Abandoned Mine Reclamation		2004	No	
Mosquito Creek Acid Abatement Clearfield County, PA	Mosquito Creek Sportsman Association	\$250,000	2003	Yes	
Arnot #2 Passive Treatment System Arnot, PA	Babb Creek Watershed Association	\$200,000	2004	Yes	
Osage Mine Complex	West Virginia Department of Environmental Protection 105 South Railroad Street Phillippi, WV 26416	\$206,000	2005	Yes	
Mine Fire Investigation	Borough of Throop, Sanderson Street, Throop, PA	\$20,000 Study Cost	2004	No	



Section 18

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
N/A					

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 response.

20. The foregoing is a statement of facts.

Signature: Samer H. Petro Title: Regional Office

Printed Name: Samer H. Petro, PE

Date: 10/28/08



Sections 19 - 20

EXPERIENCE

Gannett Fleming is a recognized leader in providing environmental, geologic, hydrogeologic, and engineering services for the mining and reclamation industry. We know the mining and reclamation industry, and we work with our clients to rapidly identify the unique aspects of each project early in the planning process. Our firm's reputation and excellent working relationship with both Federal and State regulatory and reclamation agencies has enabled us to develop environmentally sensitive, cost effective AMR reclamation and AMD abatement and treatment strategies for our reclamation clients. We also work with various private individuals/organizations and government agencies to investigate abandoned mine sites relative to watershed assessments, reclamation of abandoned minelands (AML), the abatement of acid mine drainage (AMD) by passive or active treatment technologies, the assessment and rehabilitation of existing treatment systems, and the extension of public water supply systems in AMD/AML affected areas.

20. The foregoing is a statement of facts

Date: 10/30/08

Signature: _____



Title: Regional Office Manager

Printed

Name: Samer H. Petro, P.E.



West Virginia Department of Environmental Protection



Purchasing Affidavit

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:

West Virginia Code §5A-3-10a provides that: 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.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:

West Virginia Code §21-1D-5 provides that: Any solicitation for a public improvement construction contract shall require each vendor that submits a bid for the work to submit at the same time an affidavit that the vendor has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code. A public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the West Virginia Code and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the West Virginia Code may take place before their work on the public improvement is begun.

ANTITRUST:

In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

LICENSING:

Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:

The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit www.state.wv.us/admin/purchase/privacy for the Notice of Agency Confidentiality Policies.

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

Vendor's Name: Gannett Fleming Inc.

Authorized Signature: Cecil C. Kuntz Date: 10/14/08



*Attachment C -
Project Experience Requirements*



*Attachment D -
Key Personnel Resumes*

YEARS EXPERIENCE WITH FIRM: 8

YEARS EXPERIENCE WITH OTHER FIRMS: 21

EDUCATION:

BS/1978/Geology

Hydrogeology course

PROFESSIONAL REGISTRATION(S):

Licensed Professional Geologist: Pennsylvania - No. PG001407G (1995)

Mine Safety and Health Administration (MSHA) Mine Safety Certified Surface, Coal, Metal, and Nonmetal (2008)

CURRENT RESPONSIBILITIES:

Geologist responsible for collecting, analyzing, and reporting environmental data related to mining, land development or other industrial activities impacting environmental resources and for designing environmental engineering projects. Also responsible for conducting geologic and hydrogeologic investigations in various geologic settings within Pennsylvania, West Virginia, and Ohio related to bituminous coal mining, industrial mineral mining, mineral reserve evaluations, private and public water supplies, and solid waste. The reports generated by these investigations are used in permitting decisions by the client and the regulatory agencies for the respective state departments of environmental protection. Has provided expert testimony to the State environmental hearing boards with respect to stream reclassifications and unsuitable-for-mining petitions. Skilled in advanced field-geology methods, supervision of drilling programs, construction of monitoring wells, surface and groundwater monitoring, and installation of flow-monitoring devices, pumping tests, and slug tests for aquifer characterization and groundwater flow gradients and velocities, and has conducted various training sessions relative to water sampling and flow determinations for watershed volunteers.

SUMMARY OF EXPERIENCE:

North Spring Branch Wetland Treatment System Design, Wyoming County, WV, Georgia-Pacific Corporation. Senior Geologist responsible for the collection, evaluation, and reporting of groundwater quality and flow data from six groundwater monitoring wells associated with a wood waste disposal landfill. Evaluates and prepares quarterly, semiannual, and annual reports. Performs groundwater testing via slug tests using Hermit 1000 Datalogger/pressure transducers for this ongoing project. Also responsible for West Virginia National Pollutant Discharge Elimination System (NPDES) permit renewal application in conjunction with the passive treatment system, including groundwater evaluation and statistical analyses in accordance with West Virginia Department of Environmental Protection (WVDEP) regulatory requirements, and NPDES permit condition negotiations with WVDEP, resulting in the reduction in monitoring requirements. Responsible for an investigation of surface water intakes within five miles of the discharge point for the elimination of manganese at one of the monitoring points, which was accepted by the WVDEP as a permit modification.



Farr Tipple Acid Mine Drainage (AMD) Treatment System and Simmons Run AMD Treatment System, Tuscarawas and Coshocton Counties, OH, *Ohio Department of Natural Resources.* Senior Geologist responsible for coordination of field studies for the design of AMD treatment systems, including anoxic limestone drain, and vertical flow reactors in conjunction with aerobic wetlands. Prepared bid documents.

Stumps Drift Acid Mine Drainage (AMD) Treatment System, Schuylkill County, PA, *City of Lebanon.* Senior Geologist responsible for the collection and evaluation of water quality data, including the installation of flow monitoring devices and the establishment of stream gauging stations, and for the identification of AMD sources within the study area that contribute AMD-laden water to the City of Lebanon's Christian E. Siegrist Reservoir.

Dents Run - Site 1934 Acid Mine Drainage (AMD) Treatment System, Elk County, PA, *U.S. Army Corps of Engineers, Baltimore District.* Senior Geologist responsible for collection of field water quality data, performance of field investigations, and evaluation of conceptual alternatives. Participated in Project Partners meetings with the client; the Bennett Branch Watershed Association; the Pennsylvania Game Commission; P&N Coal Company, Inc.; PADEP Bureau of Mining and Reclamation; Western Pennsylvania Conservancy; and PADEP Bureau of Abandoned Mines and Reclamation.

Dents Run - Site 3888 Acid Mine Drainage (AMD) Treatment System, Elk County, PA, *U.S. Army Corps of Engineers, Baltimore District.* Senior Geologist responsible for collecting field water quality data, performing field investigations and mapping, and reviewing design reports. Participated in Project Partners meetings with the client; Bennett Branch Watershed Association; the Pennsylvania Game Commission; P&N Coal Company, Inc.; PADEP Bureau of Mining and Reclamation; Western Pennsylvania Conservancy; and PADEP Bureau of Abandoned Mines and Reclamation.

Dents Run Site 3893 Abandoned Mine Land Reclamation and Acid Mine Drainage (AMD) Treatment System, Elk County, PA, *U.S. Army Corps of Engineers, Baltimore District.* Senior Geologist responsible for preparation and supervision of a subsurface exploration plan. Participated in Project Partners meetings with the client; Bennett Branch Watershed Association; the Pennsylvania Game Commission; P&N Coal Company, Inc.; PADEP Bureau of Mining and Reclamation; Western Pennsylvania Conservancy; and PADEP Bureau of Abandoned Mines and Reclamation.

Fairmount City Abandoned Mine Land/Acid Mine Drainage (AML/AMD) Reclamation Project, Clarion County, PA, *PADEP Bureau of Abandoned Mine Reclamation.* Senior Geologist responsible for the collection of property-owner information and access agreements to obtain field water quality data, investigate mine pools through air-rotary drilling and monitoring-well construction, and conduct soil borings and analyses to reclaim AML. These tasks were performed to develop conceptual treatment plans for the mitigation of AMD from three abandoned mine seals; design a conceptual reclamation plan for an abandoned coal-processing facility, including demolition of existing structures; and relocate a utility line.

YEARS EXPERIENCE WITH FIRM: <1

YEARS EXPERIENCE WITH OTHER FIRMS: 27

EDUCATION:

BS/1981/Mining Engineering

PROFESSIONAL REGISTRATION(S):

P.E.: Pennsylvania - No. 35160-E (1986)

PROFESSIONAL AFFILIATIONS:

SME - Society for Mining, Metallurgy and Exploration

CURRENT RESPONSIBILITIES:

Project Engineer responsible for coordination and preparation of state and federal permits for surface and underground coal mining, non-coal mining, mine reclamation, coal preparation facilities, and industrial facility siting. Mr. Bloom is also directly involved with the preparation and coordination of land development plans, valuation studies, wetland evaluations, highway occupancy permits, air quality permits and earth disturbance permits. Project responsibilities have also included conducting hydrologic assessments relative to erosion and sediment (E&S) pollution control design, mining operation plans, soils evaluations, and reclamation and revegetation plans. Mr. Bloom is skilled in conducting and supervision of drilling programs, construction of monitoring wells, surface and groundwater monitoring, and installation of flow-monitoring devices, pumping tests, and groundwater modeling.

SUMMARY OF EXPERIENCE:

Over 27 years experience as a project engineer on civil and mining engineering projects, environmental compliance, land development with extensive experience in the preparation of cost estimates, bid documents and specifications, and construction supervision. Projects have included on-going working relationship with regulatory agencies, including PADEP, PADOT, BAMR, local municipalities, and County Soil Conservation Services. Specific Design Engineer experience includes the design of passive treatment systems including metered flow collection boxes with bypass structures for flows beyond peak design, flow conveyance and flow equalization structures, vertical flow ponds, wetland cells, and polishing ponds. In addition, evaluations of site construction suitability and recommendations to facilitate construction have been prepared. Material specifications and contractor guidelines were provided as well. Permit approval for construction NPDES and Stream Encroachments were completed.

Design engineering for treatment systems to address mine drainage from an underground mines including assessment of projected flow quantity and quality, design of treatment plants, detention ponds, and preparation of permit approval materials have been prepared.

YEARS EXPERIENCE WITH FIRM: 14

YEARS EXPERIENCE WITH OTHER FIRMS: 8

EDUCATION:

B.S., Geology, University of Pittsburgh, 1983

M.S., Civil Engineering, University of Maryland, 1994

PROFESSIONAL REGISTRATION(S):

P.G.: Pennsylvania - No. PG003199G (1996)

CURRENT RESPONSIBILITIES:

Geotechnical Project Manager involved in highway, water supply, and building projects. Responsibilities include supervising staff engineers and geologists; writing proposals; communicating with clients; preparing contract documents; developing, coordinating, and supervising subsurface investigations for highways, buildings, and slope stability evaluations; determining test-boring locations and depths; monitoring standard penetration test (SPT) and diamond core-drilling operations; and determining laboratory testing requirements and interpreting results. Also responsible for preparing geological, foundation engineering, and environmental-assessment reports. Duties include conducting geologic literature reviews, evaluating the published geologic information with respect to the project requirements, conducting geologic field views to study geologic landforms pertinent to the projects, and studying topographic maps and aerial photographs to identify any geologic features. In addition, conducts geologic mapping for proposed highway cuts, evaluates subsurface conditions, performs engineering evaluations, determines mine subsidence, and prepares geological, geotechnical, and environmental reports.

SUMMARY OF EXPERIENCE:

Mine Subsidence Evaluation, Wanzco Residence, Allegheny County, PA, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement. Geotechnical Engineer responsible for investigating the extent of damage incurred to a residential structure caused by mine subsidence. Responsibilities included on-site subsurface investigation, evaluation of the subsurface conditions, review of aerial photographs, geologic literature review, evaluation of the available mine maps, preparation of boring logs, laboratory test data interpretation, and preparation of the geologic and geotechnical aspects of the report. Also conducted geotechnical analyses including bearing capacity and settlement computations.

Mine Subsidence Evaluation, Salvitti Residence, Kennedy Township, Allegheny County, PA, U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement. Geotechnical Engineer responsible for investigating whether the structural distress of a residential structure was related to mine subsidence. The project involved structural and geotechnical analyses. Responsibilities included planning and implementing the subsurface investigation, evaluating the subsurface conditions, inspecting the drilling operations, conducting a geologic literature review, assigning laboratory tests, and reviewing aerial photographs. Also evaluated the available mine maps, prepared boring logs, interpreted laboratory test data, determined the cause of distress, and developed a final written report with conclusions and recommendations for mine void remediation.

Mae West Bend, S.R. 0008, Section A05, Construction Consultation, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0. Geotechnical Project Manager responsible for the oversight of construction consultation for the geotechnical aspects of a highway improvement project. The project included an 80-foot-high, 500-foot-long rock cut slope and rockfall-protection system, soil-nail slope-stabilization system, two arch-culvert extensions, a single-span structure, and a 400-foot-long retaining wall.

Township, Beaver County, PA, Pennsylvania Department of Transportation, District 11-0. Geotechnical Project Manager responsible for final geotechnical design activities for the relocation of a single-span bridge and its roadway approaches. The project included evaluating foundation alternatives to avoid bearing on a local coal seam, and comparing foundations and spread footings on Class C concrete. Also involved were subsurface investigations, laboratory testing, bearing-capacity analysis, deep foundation and settlement evaluations, and geotechnical special provisions and details.

Mae West Bend, S.R. 0008, Section A05, Final Design, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0. Geotechnical Project Manager responsible for providing technical guidance for the design of approximately 4,000 feet of roadway relocation and improvement. Performed field reconnaissance of the project site and identified geologic features affecting the current and proposed rights-of-way. Implemented subsurface exploration and laboratory testing programs to determine the subsurface conditions for two arch-culvert extensions, a single-span bridge, a 400-foot-long retaining wall, and a soil-nail slope-stabilization system. Also evaluated cut-face slope configurations with respect to stability and rockfall potential for an 80-foot-high, 500-foot-long rock-cut slope. A rockfall-catchment zone for the site configuration in conjunction with national standards and the Colorado Rockfall Simulation Program was developed.

Mon/Fayette Expressway, Uniontown to Brownsville, Design Management, Uniontown, PA, Pennsylvania Turnpike Commission (PTC). Geotechnical Project Manager responsible for quality assurance of the geotechnical aspects of a design provided by ten design section consultants for the final design of a \$350 million section of proposed expressway. Responsibilities include managing, directing, and coordinating the geotechnical design work of the design section consultants, coordinating with PennDOT and PADEP; and acting as an extension of PTC's staff. Also responsible for developing and implementing streamlined management design processes necessary to provide the geotechnical design support.

Woodmont Pump Station Subsurface Investigation, Martins Ferry, Belmont County, OH, City of Martins Ferry. Geotechnical Project Manager responsible for investigating and analyzing the subsurface conditions for a water pump station experiencing foundation instability. Duties involved field investigation, including inspection of the drilling of all borings; development of a subsurface exploration program; subsurface analyses; slope stability analyses; evaluations and recommended improvements; and report preparation.

YEARS EXPERIENCE WITH FIRM: 13

YEARS EXPERIENCE WITH OTHER FIRMS: 0

EDUCATION:

B.S., Civil Engineering, University of Pittsburgh, 1995

PROFESSIONAL REGISTRATION(S):

P.E.: Pennsylvania - No. PE060736 (2004)

PROFESSIONAL AFFILIATIONS:

Society of American Military Engineers
Secretary, Pittsburgh Post
American Society of Civil Engineers
Deep Foundations Institute

CURRENT RESPONSIBILITIES:

Geotechnical Project Engineer responsible for design on various geotechnical and environmental projects, including layout and implementation of field exploration programs, site reconnaissance, drilling inspection, soil and water sampling, and design activities. Also develops and prepares geotechnical reports, technical specifications, and cost estimates.

SUMMARY OF EXPERIENCE:

S.R. 0268, Section 250, Petrolia Bridge Replacement over South Branch of Bear Creek, Petrolia, PA, Pennsylvania Department of Transportation (PennDOT), District 10-0. Geotechnical Engineer responsible for performing a hydrologic and hydraulic study to evaluate the hydraulic impacts of a proposed single-span bridge replacement. The hydraulic study included the review and incorporation of an existing Federal Emergency Management Agency (FEMA) study of the project area, review of potential impacts from three Pennsylvania Department of Environmental Protection (PADEP)-regulated dams within the project drainage area, and the development of peak runoff rates using PennDOT-accepted methodology. Hydraulic analyses were performed using the HEC-RAS software with the complex model for the well-developed project site, including numerous structures, retaining walls, and an additional bridge within the limits of study. The model was developed using the MicroStation CADD software by incorporating site-specific survey data. A hydrologic and hydraulic report was ultimately prepared in accordance with PennDOT and PADEP requirements, providing a summary of the evaluations performed and a flood-potential risk assessment based upon the results of the analyses.

S.R. 0279, Section A64, I-279 Connector, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0. Geotechnical Project Engineer responsible for final geotechnical design of bridge foundations and roadway approach embankments for a highway improvement project on Pittsburgh's North Shore. Foundation alternatives considered included H-piles and caissons to support the bridge structure to be constructed on the Allegheny River floodplain deposits. Performed extensive coordination and analyses at a pier location, which is to be constructed within 4 feet of a 11-foot-diameter brick sewer. Performed

geophysical studies and manhole camera efforts to evaluate the condition and exact location of the sewer. The investigations were also used in developing a vibration-monitoring program for use during construction of the pier. Recommended caisson-supported substructures in a structure foundation report based on cost and constructability at the sewer location.

Washington School Dam Inspection and Modification, Washington County, PA, *Washington County School District.* Project Engineer responsible for the annual inspection of a high-hazard dam that serves as a scenic area and stormwater management facility. Performed the inspections in accordance with Pennsylvania Department of Environmental Protection standards, completed the standard inspection checklist form, collected relevant photographs, and developed a site sketch indicating areas of concern. Ongoing work includes the planned modification of the dam to function solely as a stormwater management facility.

Redbank Valley Dam Rehabilitation, Clarion and Armstrong Counties, PA, *Redbank Valley Municipal Authority.* Project Engineer responsible for developing and implementing a geotechnical investigation report to support the rehabilitation of a concrete dam on Redbank Creek. The investigation included background research into soils, geologic, and hydrologic data for the site. Designed and implemented a geotechnical subsurface investigation to evaluate potential foundation conditions for proposed concrete structural work. Permeability testing of bedrock was performed to evaluate seepage potential beneath the dam. Prepared a geotechnical investigation report to support the final structural design.

S.R. 0028, Section A14, Sarah Heinz Retaining Wall, Allegheny County, PA, *Pennsylvania Department of Transportation (PennDOT), District 11-0.* Geotechnical Project Engineer responsible for the preliminary design of replacement alternatives for a failing mechanically stabilized earth (MSE) wall located in a heavily urban area. Provided coordination with the adjacent land development owner and contractor to determine projected land use and available right of way. A detailed review of historic roadway and environmental record information was also performed. Analyses included the development of feasible alternatives that could be constructed within limited right of way, cost comparisons, preliminary geotechnical evaluations of existing subsurface information, and preliminary geotechnical parameters to support type, size, and location (TS&L) design and development. A Reconnaissance Soils and Geological Engineering Report was provided to support the preliminary TS&L submission for the ultimate alternative selection by PennDOT.

S.R. 0058, Section 150, Foxburg Bridge Replacement, Clarion and Armstrong Counties, PA, *Pennsylvania Department of Transportation (PennDOT), District 10-0.* Geotechnical Project Engineer responsible for final geotechnical design of a four-span bridge over the Allegheny River. Project constraints included limited right-of-way, maintenance of traffic during construction, and environmentally sensitive river life. The structure included large-diameter (102-inch) caissons at pier locations. Developed special provisions to provide quality control during the construction of the large caissons in the form of Crosshole Sonic Logging, void repair methods, and downhole camera inspection, in conjunction with PennDOT and its Bridge Quality Assurance Division. Analyses for the caissons included both group and single-caisson

evaluations of lateral loading cases and axial capacity. Pile-supported abutments included vertical piles to support lateral loads, due to limited space for the installation of battered piles at two wingwalls that would interfere with the existing structure. Piles were evaluated for axial capacity and lateral capacities. Corrosion effects were considered for both piles and caissons. A Structure Foundation Report was prepared to support the final design of the structure.

Annual Dam Inspections, Washington County, PA, Washington County Commissioners. Professional Engineer responsible for annual inspections of 10 high-hazard flood-control dams that are owned and operated by Washington County. Performed the inspections in accordance with Pennsylvania Department of Environmental Protection (DEP) standards, completed the standard inspection checklist form, collected relevant photographs, and developed a site sketch indicating areas of concern.

South Hills Rail Facility, Allegheny County, PA, Port Authority of Allegheny County. Geotechnical Engineer responsible for investigation and remediation design of a differential floor heaving problem at a light rail maintenance facility. The investigation involved subsurface soil sampling and laboratory testing for expansive properties of expansive clays and slag material at key locations. Developed remediation alternatives that could be performed without significant disturbance to the facility's 24-hour operations.

Waterford Energy Facility, Retaining Wall Mitigation, Waterford, OH, Bowen Engineering Corporation. Geotechnical Engineer responsible for field investigation, evaluation of mitigation alternatives, ultimate design, and report preparation for a grout bag retaining system to shore an existing distressed gabion wall. The complex project requires construction techniques that can be performed by hand laborers, due to limited access to the existing wall on a steep slope.

S.R. 885, Section A03, Boulevard of the Allies Bridge Replacement over Forbes Avenue, Pittsburgh, PA, Pennsylvania Department of Transportation, District 11-0. Assistant Project Manager responsible for overseeing and implementing geotechnical investigations for the replacement of two bridge structures and the design of new roadways and six retaining walls. Also assisted with client and subconsultant coordination, which are a critical part of the project due to ongoing revisions to the project design requirements necessary to satisfy state, federal, and local interests. Design tasks include subsurface investigations, laboratory testing, geotechnical instrumentation monitoring, geophysical investigations, foundation designs, retaining wall designs, and geotechnical reports.

S.R. 3052, Section B01, Ambridge-Aliquippa Bridge, Beaver County, PA, Pennsylvania Department of Transportation, District 11-0. Senior Geotechnical Project Engineer responsible for an environmental assessment of potentially hazardous waste conditions within five preliminary alignments being investigated for the replacement of a bridge. The project involved office and field investigations, including regulatory file searches, interviews, review of aerial photographs, and field verification of office findings. The results of the investigation were reported in a Phase I Environmental Site Assessment, which details the existence of potentially hazardous materials at each alignment. Recommendations include a preferred alignment based upon hazardous waste concerns.

YEARS EXPERIENCE WITH FIRM: 7

YEARS EXPERIENCE WITH OTHER FIRMS: 0

EDUCATION:

B.S., Environmental Systems Engineering, The Pennsylvania State University, 2002

PROFESSIONAL REGISTRATION(S):

E.I.T.: Pennsylvania - No. ET010678 (2007)

Pipeline Assessment and Certification Program (PACP): No. U-103-567 (2003)

CURRENT RESPONSIBILITIES:

Assistant Project Manager responsible for preparing Act 537 Sewage Facilities Plans, Chapter 94 Wasteload Management Reports, and Annual Reports. Additional responsibilities include Act 203 tapping fee analysis, infiltration/inflow (I/I) sewer system evaluations and rehabilitation analyses, and field surveying and inspections of wastewater facilities including combined sewer overflows.

SUMMARY OF EXPERIENCE:

Sewage Facilities Planning Module, Centre County, PA, Pennsylvania Air National Guard (PAANG). Project Engineer responsible for the preparation of a Component 3 Planning Module required for a new PAANG training facility. The project included conveyance of wastewater flow from Benner Township through Patton Township, requiring planning approval from both municipalities as well as PADEP.

Sewage Facilities Standard Specification Addendum, Cumberland County, PA, Hampden Township. Project Engineer responsible for the preparation of an addendum to the existing Hampden Township Sewage Facilities Standard Specifications. The Addendum included adjustments to review fees and procedures as well as various technical revisions. The Addendum was reviewed and approved by the Hampden Township Sewer Authority and the Hampden Township Board of Commissioner.

Wastewater Treatment Plant (WWTP) Additions and Alteration Basis of Design Report, Cumberland County, PA, Hampden Township. Project Engineer responsible for the preparation of the Roth Lane WWTP Additions and Alteration and Pinebrook WWTP Abandonment Project. The Project consisted of modifications to the Roth Lane WWTP including relocation of the Roth Lane WWTP outfall, conversion from chlorine disinfection to ultraviolet disinfection, addition of nutrient removal facilities, increasing the Roth Lane WWTP capacity, abandonment of the Pinebrook WWTP, upgrades to an existing pumping station located at the Pinebrook WWTP, and construction of a new force main from the Pinebrook WWTP to the Roth Lane WWTP.

Act 537 Sewage Facilities Plan Special Study, Cumberland County, PA, Hampden Township. Project Engineer responsible for the preparation of a sewage facilities plan special study for Hampden Township. The special study was required for the Roth Lane Wastewater Treatment Plant (WWTP) additions and alterations and Pinebrook WWTP Abandonment Project as a result of changes to the design flow projections from what was presented in the Township's

2005 Act 537 Update and the addition of nutrient removal facilities in response to PADEP's Chesapeake Bay Initiative.

Wastewater Flow Monitoring, Cumberland County, PA, Hampden Township Sewer Authority. Project Engineer responsible for installing flow monitoring devices, collecting flow data, and processing flow data. Flow data is obtained from three open channel flow meters and seven Telog Data Recorders installed at separate pumping station once every two weeks. The flow data is analyzed and incorporated into the Township's Chapter 94 Report as well as monthly reports to the Township staff.

Act 203 Tapping Fee Analysis, Schuylkill County, PA, Tamaqua Borough. Engineering Technician responsible for the compilation of applicable expenditures related to the client's sewer system and the calculation of a tapping fee according to Act 203.

Combined Sewer Overflow (CSO) Long-Term Control Plan, Schuylkill County, PA, Tamaqua Borough. Engineering Technician responsible for assisting in the preparation of a CSO Long-Term Control Plan, which involved reviewing the client's progress with the nine minimum controls of their CSOs and developing possible alternatives to reduce the number of CSOs in the system.

Act 203 Tapping Fee Analysis, Cumberland County, PA, Hampden Township Sewer Authority. Engineering Technician responsible for compiling applicable expenditures related to the client's sewer system and calculating a tapping fee according to Act 203 which included a Developer Reimbursement Component.

Chapter 94 Wasteload Management Report, Cumberland County, PA, Hampden Township Sewer Authority. Engineering Technician responsible for preparing the Wasteload Management Report for the Township's sewer system in accordance with Chapter 94 of the PADEP regulation. The sewer system consisted of approximately 135 miles of line, 22 pumping stations, and 2 treatment plants.

Act 537 Sewage Facilities Plan Update, Cumberland County, PA, Hampden Township. Engineering Technician responsible for the preparation of a sewage facilities plan update for Hampden Township. Preparation of the plan included an extensive I/I investigation, flow projections, development of treatment alternatives which included the elimination of one of the Township's treatment plants, and an intensive financial analysis of the Township's sewer revenue fund, which projected borrowing and user fee adjustments necessary to finance the estimated \$30 million in projects developed in the plan.

Annual Report, Cumberland County, PA, Hampden Township Sewer Authority. Engineering Technician responsible for compiling data and preparing the annual report in accordance with the Authority's agreement with Chase Bank, NA.

YEARS EXPERIENCE WITH FIRM: 2

YEARS EXPERIENCE WITH OTHER FIRMS: 0

EDUCATION:

B.S.C.E., Civil Engineering, West Virginia University, 2006

PROFESSIONAL REGISTRATION(S):

E.I.: West Virginia - No. 8549 (2006)

PROFESSIONAL AFFILIATIONS:

American Society of Civil Engineers

CURRENT RESPONSIBILITIES:

Structural Engineer responsible for performing design calculations for highway bridges and other transportation-related structures. Also performs construction inspection.

SUMMARY OF EXPERIENCE:

Dolls Run Bridge Replacement, Monongalia County, WV, West Virginia Department of Transportation, Division of Highways. Structural Engineer responsible for designing a wingwall and calculating quantities for the replacement of a bridge. The existing bridge, with a 30-degree skew and tangent alignment, was replaced with a new structure at its existing location, using a temporary bridge to maintain traffic. The new superstructure consists of a single-span steel structure with an integral abutment.

Foxburg Bridge over the Allegheny River, Foxburg, PA, Pennsylvania Department of Transportation, District 10-0. Structural Engineer responsible for calculating quantities for the replacement of a bridge. The replacement structure consists of a continuous, four-span, steel-girder bridge built adjacent to the existing double-deck, steel-truss structure. The substructure consists of concrete abutments built in two stages to maintain traffic, and concrete piers composed of two circular shafts per pier. The piers were designed to resist the effects of ice flow and ice jams based on historical data, which was summarized in an ice study developed for this project.

Monongahela River Lock and Dam #3 Study, Allegheny County, PA, United States Army Corps of Engineers, Pittsburgh District. Structural Engineer responsible for performing structural analyses to assess the stability risk of existing lock walls that are founded on rock and a fixed-crest dam that is founded on timber piles. The structural analyses and modeling were performed using STAAD software to determine the time-dependent behavior of the lock walls and fixed-crest dam.

Squirrel Hill Tunnels Inspection and Rehabilitation Study, Pittsburgh, PA, Pennsylvania Department of Transportation, District 11-0. Project Inspector responsible for inspecting a tunnel and preparing the inspection and rehabilitation reports for the tunnel and portal building structures.

YEARS EXPERIENCE WITH FIRM: 20

YEARS EXPERIENCE WITH OTHER FIRMS: 2

EDUCATION:

B.S., Geology, Lake Superior State College, 1983

PROFESSIONAL REGISTRATION(S):

P.G.: Wyoming - No. PG-893 (1992)

Kentucky - No. 1594 (1994)

Pennsylvania - No. 001237-G (1995)

MSHA Mine Safety Certified Surface, Coal, Metal, and Nonmetal (2005)

CURRENT RESPONSIBILITIES:

Senior Project Manager and Geologist responsible for directing geologic and hydrogeologic projects involving the study, evaluation, and assessment of earth materials. Areas of responsible charge include geologic interpretation; geologic structures evaluation, groundwater and soils contamination problems; solid waste disposal; public water supply development; abandoned mine land reclamation; aquifer testing; remedial design; wellhead protection; and earth resources development.

SUMMARY OF EXPERIENCE:

Toland Quarry, Mount Holly Springs, PA, Hempt Brothers, Inc. Project Manager responsible for completing geologic and hydrogeologic investigations in support of quarry expansion permitting. The proposed quarry expansion will increase the quarry to approximately 860 acres. Permitting issues included upgrading the existing groundwater monitoring system and improving sedimentation controls.

Locust Point Quarry, Mechanicsburg, PA, Hempt Bros., Inc. Project Hydrogeologist responsible for evaluating the impact of quarry dewatering on nearby domestic wells. Determined drawdown anisotropy related to local geologic structures, predicted drawdowns associated with proposed quarry floor deepening, and supervised a domestic well monitoring program. This project also included an extensive VLF (WADI) electromagnetic geophysical survey of local geologic structures surrounding the quarry site. Interfaced with the Bureau of Mining and Reclamation for permitting purposes.

Abandoned Mine Land Reclamation, Illinois Department of Natural Resources, Office of Mines and Minerals. Project Manager responsible for investigative services in support of abandoned mine land reclamation projects in the northern and central Illinois coal fields. Designed and implemented investigations into geologic, geotechnical, and agronomic conditions at numerous former mine sites. Work activities include topographic mapping, soil sampling, slope stability and embankment analyses, and evaluation of mining structures and shafts.

Quarry Expansion Permitting, Cumberland County, PA, Hempt Bros., Inc. Project Manager responsible for surface and subsurface investigations and permit application preparation for a proposed quarry expansion encompassing 270 acres. The expansion area is situated adjacent to existing quarry pits in an area with complex carbonate geology. Site investigations have

included evaluation of geologic structural features including several prominent faults which have been evaluated to assess their individual and collective influence on site hydrology.

Mine Fire Investigation, Throop, PA, Borough of Throop. Project Geologist responsible for evaluation of conditions in the vicinity of an illicit dump fire situated within coal mine waste piles near the cropline of the No. 1 and No. 2 seams of the Eddy Creek shaft section of the former Olyphant Colliery. Investigation included coordination of site monitoring with personnel from the Office of Surface Mining Reclamation and Enforcement (OSMRE), site reconnaissance, collection of subsurface gas samples, and thermal measurements. Gas samples were collected using summa canisters and were analyzed for hydrogen, nitrogen, oxygen, carbon monoxide, carbon dioxide, and methane using ASTM Method 1945.

Eastern Industries Kutztown Quarry, Berks County, PA, Eastern Industries, Inc. Senior Hydrogeologist responsible for conducting permitting activities for the quarry which produces lime and aggregate products from the Muhlenberg Member of the Allentown Formation. Facilitated increased quarry size by developing dewatering programs which included a pipeline and an Underground Injection Control Permit. The injection system consists of five wells constructed to reinject water generated by quarry dewatering into the subsurface beneath the current quarry floor. The wells were deeply cased and accepted a high percentage of the quarry discharge. Assessed proposed quarry discharges into Sacony Creek as part of the permitting effort. The creek passes through an exceptional value wetland and near a community water supply well field. Conducted hydrologic modeling of various discharge scenarios to evaluate stream stage and channel characteristics.

Eastern Industries Martin's Creek Quarry, Northampton County, PA, Eastern Industrial, Inc. Senior Hydrogeologist responsible for predictive evaluation of groundwater table modifications in the vicinity of a proposed sand and gravel quarry. The proposed quarry will extract Quaternary sand and gravel deposits from a surface mine located at the confluence of Martin's Creek and the Delaware River. Presented assessment of minimal probable hydrologic impact to local government officials.

Temple Quarry, Berks County, PA, Muhlenberg Water Authority. Project Hydrogeologist responsible for examining the feasibility of developing the flooded quarry for water supply purposes. Conducted site reconnaissance and environmental assessment investigations to determine the feasibility of utilizing the abandoned quarry site to build a water treatment plant. Quarrying at the 38-acre site ceased in approximately 1990 and the pit is filled with approximately 200 feet of water.

YEARS EXPERIENCE WITH FIRM: 1

YEARS EXPERIENCE WITH OTHER FIRMS: 24

EDUCATION:

B.S., Environmental Geology, Juniata College, 1980

M.S., Geology, Syracuse University, 1982

PROFESSIONAL REGISTRATION(S):

P.G.: Pennsylvania - No. PG002575G (1995)

L.R.S.: West Virginia - No. 218 (2003)

PROFESSIONAL AFFILIATIONS:

Pennsylvania Council of Professional Geologists

CURRENT RESPONSIBILITIES:

Environmental Project Manager responsible for supporting and developing environmental site remediation services for a wide variety of projects, including energy production, collection, storage, and transmission facilities and Brownfield sites.

YEARS EXPERIENCE WITH FIRM: 12

YEARS EXPERIENCE WITH OTHER FIRMS: 10

EDUCATION:

B.S., Biology, The Pennsylvania State University, 1983

CURRENT RESPONSIBILITIES:

Environmental Project Manager responsible for staff supervision in field data collection, data analysis, computer modeling, agency and public involvement, and environmental document preparation.

SUMMARY OF EXPERIENCE:

Deer Lakes Estates Wetlands Case, Allegheny County, PA, Confidential Client. Technical Expert responsible for providing technical expertise to counsel prior to and during depositions for a wetlands case.

S.R. 2082, Hulton Bridge, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0. Project Manager responsible for the preparation of a feasibility study, which investigated a potential bridge replacement at four locations. Issues that were investigated included environmental features, project needs, traffic analyses, signal warrant analysis, crash analysis, and construction costs.

PA Route 28 Third-Lane Widening, Allegheny County, PA, Pittsburgh Mills Limited Partnership. Environmental Specialist responsible for the preparation of the categorical exclusion evaluation and detailed noise analysis for a third-lane widening of Route 28 from Harmar to the Creighton Exit. Detailed noise analysis included public meetings with affected residents, and coordination with the highway and bridge groups in the development of the type, size, and location (TS&L) drawings for the noise barriers.

Drake Line, Allegheny County, PA, Port Authority of Allegheny County. Senior Environmental Specialist responsible for preparing the Pennsylvania Department of Environmental Protection stream encroachment permit application, as part of upgrades to the light rail transit system. Tasks included field investigation and extensive agency coordination.

McKnight/Ivory Avenue Car Pool Facility, Pittsburgh, PA, Port Authority of Allegheny County. Environmental Manager responsible for preparing the categorical exclusion evaluation for a park-and-ride facility.

Erie East Side Access Highway, S.R. 4034 (Sections A70, A80, A90, and A91), Wetland Replacement Monitoring, Erie County, PA, Pennsylvania Department of Transportation, District 1-0. Project Manager responsible for the five-year monitoring at the Station Road and Cooper Road wetland mitigation sites associated with the Erie East Side Access Highway Project. Approximately 20 acres of wetlands are to be replaced or preserved in accordance with the commitments contained in the Pennsylvania Department of Environmental Protection/U.S. Army Corps of Engineers permits. Responsibilities include project staffing and scheduling, agency coordination, coordination with construction personnel and the District environmental staff, and quality assurance/quality control of the monitoring reports.

Licks Run, Scotia Hollow, and Catfish Run Bridge Replacements, Allegheny County, PA, Allegheny County Department of Engineering and Construction. Environmental Manager responsible for preparing categorical exclusion evaluations for the Licks Run and Scotia Hollow bridge replacement projects. Also prepared a categorical exclusion evaluation/Programmatic Section 2002 Evaluation for the Catfish Run Bridge in South Park.

Interstate 66 Environmental Impact Study, Laurel and Pulaski Counties, KY, Kentucky Transportation Cabinet. Senior Environmental Specialist responsible for preparing the wetlands section of an environmental overview for a highway project. Tasks included the review of historic aerial photographs, a wind shield survey of the project area, agency coordination, and public meetings.

Southern Beltway, PA 60 to U.S. 22, Post-Environmental Impact Statement (EIS) Services, Allegheny, Beaver, and Lawrence Counties, PA, Pennsylvania Turnpike Commission. Environmental Specialist responsible for providing staffing and overall management of post-EIS services to evaluate areas outside the right-of-way of the EIS. Work under this assignment also included, extensive surveys for short-eared owls over a five-year period, agency fields views, agency coordination, identification of potential mitigation sites in western Pennsylvania, and preparation of the mitigation plan.

Killian Road Reconstruction, Summit County, OH, Summit County Engineer. Environmental Manager responsible for the completion of cultural resource investigations, wetland rating coordination, Section 4(f) coordination, and the preparation of a categorical exclusion reevaluation for the reconstruction of Killian Road from Arlington Road to Massillon Road.

Bagley Road Grade Separation, Cuyahoga County, OH, City of Berea. Senior Environmental Specialist responsible for preparing a categorical exclusion document and identifying and delineating wetlands for the grade separation of Bagley Road and the Norfolk Southern Railroad within the city of Berea.

Cranberry Interchange/I-79 Connector, Allegheny and Butler Counties, PA, Pennsylvania Department of Transportation, District 10-0/Pennsylvania Turnpike Commission. Environmental Manager responsible for the preparation of the environmental reevaluation for the completion of the I-79/U.S. Route 19/Pennsylvania Turnpike Connector project, including the addition of the missing ramps to PA Route 228. Key issues included noise analysis, threatened and endangered plant species, wetlands, and stream impacts. Completed plans for an approximately two-acre wetland mitigation site and conducted coordination with federal and state regulatory agencies in the development of approximately 1,500 feet of stream enhancement in Brush Creek Park. Provided the necessary documentation for the modification of the previously issued Pennsylvania Department of Environmental Protection Chapter 105 Permit and the preparation of the U.S. Army Corps of Engineers Section 404 Permit Application package.

YEARS EXPERIENCE WITH FIRM: 2

YEARS EXPERIENCE WITH OTHER FIRMS: 10

EDUCATION:

B.S., Civil Engineering, West Virginia University, 1996

PROFESSIONAL REGISTRATION(S):

West Virginia - No. 015304 (2002) Florida - No. 61143 (2004)

PROFESSIONAL AFFILIATIONS:

National Society of Professional Engineers

CURRENT RESPONSIBILITIES:

Project Manager for the West Virginia Regional Office responsible for the design of highway and airport projects, including right-of-way, site development, stormwater, utilities, signing and pavement marking, erosion and sediment pollution control, final cross sections, quantities, and report preparation. Also assists in client consultation, budget preparation, and project scheduling.

SUMMARY OF EXPERIENCE:

Evansdale Campus Bridge-Garage, Morgantown, WV, West Virginia University (WVU). Project Engineer responsible for preliminary parking garage layout and access road design for a 1,000-space parking garage at the WVU Coliseum.

North Shore Connector, Pittsburgh, PA, Port Authority of Allegheny County/DMJM+Harris. Project Engineer responsible for the final design of a 12-inch waterline relocation, including quantity calculations, specification review, and plan preparation. Performed final design of erosion and sedimentation control facilities including quantity calculations, specification review, and plan preparation.

Final Design, S.R. 0022, Section B10, Westmoreland County, PA, Pennsylvania Department of Transportation (PennDOT), District 12-0. Project Engineer responsible for updating stormwater management detention facilities and stormwater drainage systems. Tasks include verifying detention facility and drainage system capacities, updating facilities as necessary, and generating detailed storm water management and roadway drainage reports following PennDOT guidelines.

WV 705 Connector Design Study Report, Monongalia County, WV, West Virginia Department of Transportation, Division of Highways (WVDOH). Project Manager responsible for preliminary roadway design of an approximately three-mile section of roadway to connect the WV 705 Connector to Beechhurst Avenue in downtown Morgantown, including an interchange at the intersection with the WV 705 Connector. The main alignment follows the Falling Run Valley with multiple alignments between University Avenue and Beechhurst Avenue. This portion of the project required significant coordination between WVDOH, the City of Morgantown, West Virginia University, and developers along the corridor.

YEARS EXPERIENCE WITH FIRM: 8

YEARS EXPERIENCE WITH OTHER FIRMS: 7

EDUCATION:

B.S., Civil Engineering, University of Pittsburgh, 1993

REGISTRATIONS/CERTIFICATIONS:

Registered Professional Engineer (Pennsylvania, 1999)

PROFESSIONAL AFFILIATIONS AND PUBLICATIONS:

American Society of Civil Engineers

CURRENT RESPONSIBILITIES:

Senior Civil Engineer Clearfield Gannett Fleming Office responsible for completion of engineering, and construction management services to private industry and federal and state agencies. Serves as senior civil engineer for land development and environmental projects involving: hydraulic/hydrologic analysis and design of stormwater management systems; preparation of erosion and sedimentation control plans; design of sanitary sewer and potable water systems and other infrastructure features; geotechnical design of foundations, retaining structures, earth embankments and impoundments; surface water monitoring; wetland mitigation planning and design; stream and riparian ecosystem restoration; application of passive wetland water treatment systems; environmental and ecological impact assessments; water quality investigations; environmental liability and risk analyses; and related remedial investigations, plans and designs.

SUMMARY OF EXPERIENCE:

Harrison Hydrologic Study and Treatment Alternatives Analysis, Haywood, WV, Allegheny Energy. Senior Civil Engineer assisting in the development of passive treatment alternatives for metals-contaminated coal combustion byproduct leachate, acid mine drainage, and sediment-contaminated road runoff at a large power generating facility. Performed a detailed economic and technical feasibility study for five potential sites and systems for treatment. Modeled existing and future surface runoff conditions over a complex area of disposal sites, power plant facilities, and piping networks. The final design of the treatment facilities will consist of a combination pumped and gravity drain influent collection system and a passive wetland treatment system consisting of aerobic wetlands, anaerobic wetlands, a vertical flow reactor, and an equalization basin for the removal of hexavalent chromium, selenium, iron, and aluminum from disposal area leachate.

Mosquito Creek Acid Abatement Project, PA, Mosquito Creek Sportsman Association Senior Civil Engineer responsible for hydrologic and hydraulic design and quality assurance/control of plans and specifications for the design of passive acid abatement systems to remediate acid rain impacts to Mosquito Creek and associated trout fisheries. Project used vertical flow reactors (anaerobic compost/limestone cells) to generate alkalinity and neutralize acidity in several headwaters streams in the watershed. Results are being used to obtain funding for additional systems to remediate the entire watershed. Responsibilities included hydrologic/hydraulic analyses, design of collection channels, preparation of E&S and NPDES permits, preparation of engineering cost estimates, plans, specifications, and bid documents.

Dents Run Site 3888 Passive Treatment, PA, US Department of the Army. Senior Civil Engineer responsible for hydrologic and hydraulic design and quality assurance/control of plans and specifications for the for design of two passive treatment systems to remediate three abandoned deep mine discharges impacting Dents Run. Treatment was phased to collect data for future system component design on the steep, constrained construction sites. Initial treatment included installation of two open limestone channels for acidity removal, with results from post-construction monitoring to determine what additional acidity reduction components were necessary. Project involved development of the first performance prediction model for open limestone channels based on channel velocity. Responsibilities included hydrologic/hydraulic analyses, design of collection channels, preparation of E&S and NPDES permits, preparation of engineering cost estimates, plans, specifications, and bid documents.

Dents Run Site 3893 Passive Treatment, PA, US Department of the Army. Senior Civil Engineer responsible for hydrologic and hydraulic design and quality assurance/control of plans and specifications for the for design of two passive treatment systems and remediation plan for an abandoned surface mine to remediate acid mine discharges impacting Porcupine Hollow, which is a tributary of Dents Run. Treatment consisted of two separate systems with three vertical flow wetlands (VFW's) and oxidation/precipitation basins before and after the VFW's. Responsibilities included hydrologic/hydraulic analyses, design of diversion channels/stream relocations, preparation of E&S and NPDES permits, preparation of engineering cost estimates, plans, specifications, and bid documents.

Dents Run Site 1934 Passive Treatment Concept Plan, PA, US Department of the Army. Senior Civil Engineer responsible for hydrologic and hydraulic design and quality assurance/control of plans and specifications for the conceptual design of two passive treatment systems to remediate two acid mine drainage sources in a heavily impacted watershed. One abandoned deep mine discharge shows extremely high iron and aluminum loadings, and conceptual design required large scale sludge removal and storage planning, and development of predictive methods for estimating the life expectancy of vertical flow wetlands for acidity removal under these conditions. The second project site involves multiple contaminated seeps, some of which cannot be collected for a conventional gravity-flow passive system. On this site, the uphill seeps will be collected and treated to generate a highly alkaline discharge, which will then be combined with the acidic discharges downhill in an existing wetland area to generate a net alkaline total flow. Passive treatment planning is concurrent with re-mining efforts on the site, and it is expected that reclamation activities will improve water quality, allowing the treatment systems to be downsized before final design and construction.

Kettle Creek Bio-Capping project, Westport, PA. Trout Unlimited. Senior Civil Engineer responsible for grading plans and conveyance channel designs for a 58-acre abandoned surface coal mine reclamation project. The project also incorporated an engineered soil using a by-product of the vegetable leather tanning process to develop a composted soil amendment product. Food plots and vegetative habitat designs were incorporated into the project to provide food and cover for the growing Eastern Elk population, which inhabit the area. Completed project plans, technical specifications, NPDES permitting, E&S plans, bid documents, engineer's cost estimate, and provided construction administration and oversight.

Farr Tipple AMD Treatment System, *Ohio Department of Natural Resources, Division of Mineral Resources Management.* Responsible for the preparation of the grading plan, erosion/sedimentation control plan, specifications, bid package and construction cost estimate for the treatment of a deep mine related acid mine discharge within the Huff Run Watershed.

Simmons Run AMD Treatment System, *Ohio Department of Natural Resources, Division of Mineral Resources Management.* Responsible for the preparation of the grading plan, erosion/sedimentation control plan, specifications, bid package and construction cost estimate for the treatment of a deep mine related acid mine discharge within the Simmons Run Watershed.

Mine Waste Impoundments. Principal Plan Reviewer on more than 20 high-hazard mine tailings dams. Responsible for the review of hydrologic, hydraulic, geotechnical, and geologic portions of the design of large mine tailings dams throughout the United States. Provided technical assistance to field inspection personnel during mitigation of hazards identified at large coal and metal/non metal tailings dams. Specific tasks include:

- Hydrologic analysis of watershed above tailings impoundment in order to determine the peak rainfall intensity and corresponding runoff to the impoundment.
- Hydraulic analysis of outlet works and appurtenances in order to determine outlet rating curves and flood routing analyses to ensure the appropriate sizing of the impoundment with respect to overtopping and freeboard requirements.
- Geologic analysis of project area in order to determine the extent and characteristics of subsurface soils and rock for consideration in embankment dam design.
- Geotechnical design of embankment dams, including slope stability, foundation engineering of appurtenances and thrust blocks, dynamic slope stability and liquefaction analysis (earthquake engineering)
- Structural analysis of reinforced concrete structures such as spillways and retaining walls.

YEARS EXPERIENCE WITH FIRM: 4

YEARS EXPERIENCE WITH OTHER FIRMS: 10

EDUCATION:

B.S.C.E., Structural Engineering, West Virginia University, 1987
M.S.C.E., Structural Engineering, West Virginia University, 1993

PROFESSIONAL REGISTRATION(S):

P.E.: Ohio - No. 66132 (2001)
West Virginia - No. 15710 (2003)

PROFESSIONAL AFFILIATIONS AND PUBLICATIONS:

American Society of Civil Engineers
Association for Bridge Construction and Design
Steering Committee Member, National Conference on Integral Abutment and Jointless Bridges, 2005. Conference sponsored by FHWA and WVDOT.

CURRENT RESPONSIBILITIES:

Senior Structural Engineer responsible for designing and analyzing highway bridges and other transportation-related structures.

SUMMARY OF EXPERIENCE:

S.R. 28 over Yutes Run Road Bridge, Allegheny County, PA, Pennsylvania Department of Transportation, District 11-0. Project Bridge Engineer for the widening of a three-span continuous reinforced concrete slab bridge supported on an integral stub abutment. The structure is on a curved alignment.

Headsville Bridge Replacement, Mineral County, WV, West Virginia Department of Transportation, Division of Highways. Project Engineer responsible for designing a bridge replacement. Work includes development of structure geometry; type, size, and location studies; foundation submissions; final design submission; and construction cost estimates.

King's Covered Bridge, Somerset County, PA, Pennsylvania Department of Transportation, District 9-0. Structural Engineer assisting in the rehabilitation design of a covered bridge.

YEARS EXPERIENCE WITH FIRM: 3

YEARS EXPERIENCE WITH OTHER FIRMS: 0

EDUCATION:

B.A., Environmental Studies, University of Pittsburgh, 2005
Taxonomy of Seed Plants course at The Pennsylvania State University
Wetland Delineation and Management Training

REGISTRATIONS/CERTIFICATIONS:

Wetland Professional In Training (WPIT), Society of Wetland Scientists (2006)
MSHA Mine Safety Certified Surface, Coal, Metal, and Nonmetal (2007)

PROFESSIONAL AFFILIATIONS:

Society of Wetland Scientists
American Society of Highway Engineers

CURRENT RESPONSIBILITIES:

Environmental Scientist responsible for collecting and applying field data to the preparation of environmental resource maps. Specialties include wetland investigations, water resource studies, erosion and sediment (E&S) pollution control plans, geologic cross sections, and field surveying as applied to the preparation of surface mine permits. Typical project responsibilities include assisting with the design of wetland treatment systems, wetland identification and delineations, threatened and endangered species reports, surface mine permit applications, industrial site plans, land development plans, generating geologic plans and cross sections, E&S pollution control plans, wetland habitat field studies, and soil surveys. Surface mine permit responsibilities include the preparation of environmental resource maps, mine operation maps, pre- and post-mining land use maps, highway plans of intent, remaining maps, geologic cross sections, E&S pollution control facilities, alkaline addition maps, stream surveys, stream encroachment and crossing plans, and collection of environmental data.

SUMMARY OF EXPERIENCE:

Cole Draft, Elk County, PA, Bennett Branch Watershed Association. Environmental Scientist responsible for locating and flagging sampling points, installing flumes, and training Watershed personnel to take and record sample data to determine the appropriate treatment alternative for acid mine drainage to Cole Draft. Also responsible for management of water quality data.

Dents Run Site 3893 Acid Mine Drainage (AMD) Treatment System, Elk County, PA, U.S. Army Corps of Engineers, Baltimore District. Environmental Scientist responsible for field investigations including surface water sampling, preliminary wetland identification, topographic survey, cultural resources, and natural diversity indices. Additional tasks include National Pollutant Discharge Elimination System (NPDES) application and E&S pollution control plan completion.

Driftwood Branch Watershed Assessment, Cameron and Elk Counties, PA, Cameron County Conservation District. Environmental Scientist responsible for analyzing field stream data and incorporating data into a detailed geographic information system (GIS) map for use in planning future stream restoration projects.

Fall Brook Passive Treatment System, Blossburg, Tioga County, PA, *Water's Edge Hydrology, Inc.* Environmental Scientist responsible for wetland identification and delineation.

Lakemont Feasibility Study, Blair County, PA, *Pennsylvania Department of Transportation, District 9-0/Innovative Consulting Group, Inc.* Environmental Scientist responsible for field investigations including bank erosion logging, pebble counts, pool-to-riffle ratios, and bar sampling for a Roesgen-based stream restoration.

North Spring Branch Wetland Treatment System Design, Wyoming County, WV, *Georgia-Pacific Corporation.* Environmental Scientist responsible for collection of groundwater quality data from six groundwater monitoring wells associated with a wood waste disposal landfill. Responsible for an investigation of surface water intakes within five miles of the discharge point for the elimination of manganese as one of the monitoring constraints, which was accepted by West Virginia Department of Environmental Protection as a permit modification.

YEARS EXPERIENCE WITH FIRM: 11

YEARS EXPERIENCE WITH OTHER FIRMS: 35

EDUCATION:

B.S. 1963 - Civil Engineering

REGISTRATIONS/CERTIFICATIONS:

1971 - Civil Engineering

State of Ohio - No. 65834

Commonwealth of Pennsylvania - No. 017274-E

MSHA Mine Safety Certified, Surface & Coal

CURRENT RESPONSIBILITIES:

Vice President of the Clearfield Office of Gannett Fleming and Senior Engineer – responsible for and directly involved in the coordination and preparation of state and federal permit applications for surface and underground coal mining, non-coal mining, mine reclamation, industrial facility siting, land development and subdivision plans, water resource development projects, and waste disposal plans. Also responsible for and directly involved in the coordination and preparation of private and government-related civil engineering projects, including municipal services plans and specifications, industrial facility siting, land development and subdivision plans, water resource development projects, and waste disposal plans. Project responsibilities will include the design and review of waste water collection lines and pumping facilities associated with development plans and treatment system expansion and upgrades.

SUMMARY OF EXPERIENCE:

Over 35 years experience as a project manager/engineer on major civil engineering projects for water resources, transportation, environmental compliance, land development and mining, with extensive experience in the preparation and review of engineering plans and specifications relating to the various project disciplines. Experience also includes project presentations to the general public and negotiations with regard to regulatory issues. Projects have included an ongoing working relationship with regulatory agencies, including ODNR, PADEP, PADOT, and local municipalities.

Farr Tipple AMD Treatment System, *Ohio Department of Natural Resources, Division of Mineral Resources Management.* Project Manager for the preparation of the design of Passive Treatment System, including an Anoxic Limestone Drain, and aerobic wetland cells, preparation of grading plan, erosion/sedimentation control plan, specifications, bid package and construction cost estimate for the treatment of a deep mine related acid mine discharge within the Huff Run Watershed.

Simmons Run AMD Treatment System, *Ohio Department of Natural Resources, Division of Mineral Resources Management.* Project Manager for the preparation of the design of the Passive Treatment System, including vertical flow reactors and aerobic wetland cells, preparation of grading plan, erosion/sedimentation control plan, specifications, design of a beaver dam

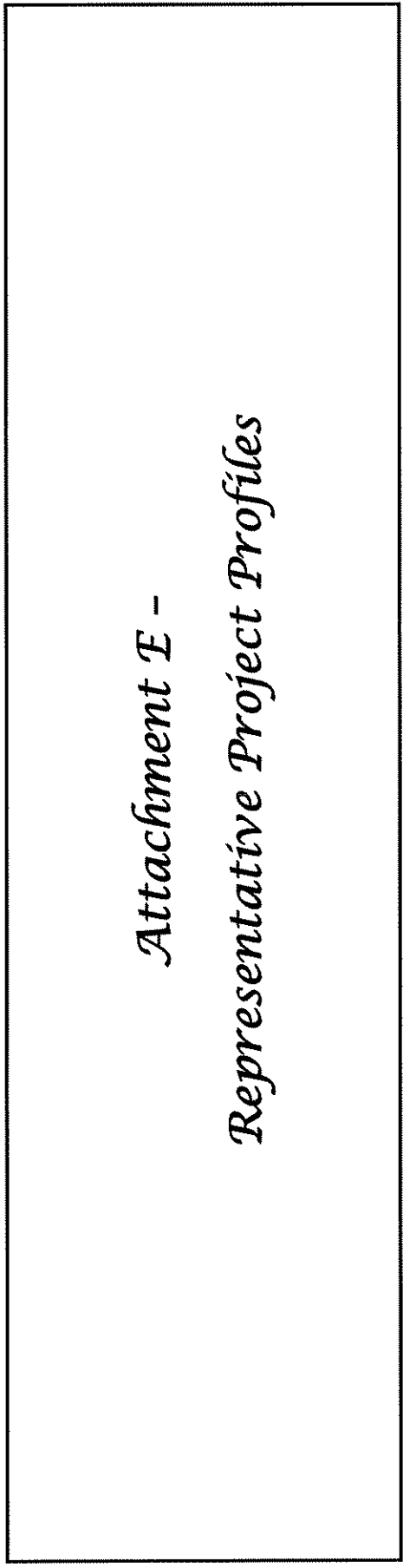
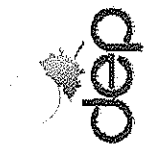
leveler, wetland enhancement, emergency spillway design, bid package and construction cost estimate for the treatment of a deep mine related acid mine discharge within the Simmons Run Watershed.

Mosquito Creek Phase 1 Acid Abatement Project, Clearfield County, PA, Mosquito Creek Sportsman Association. Project engineer responsible for project oversight and system design of a passive acid abatement system to remediate acid rain impacts to Mosquito Creek. System components include a vertical flow wetland cell and a self-regulating inlet structure to attenuate storm surges into the wetland cell while still capturing a portion of the stream baseflow.

Dents Run Site 3888 Passive Treatment, PA, US Department of the Army. Project engineer responsible for coordinating design and permitting activities of two passive treatment systems to remediate three abandoned deep mine discharges impacting Dents Run. The system consists of discharge collection devices designed to capture non-channelized seeps, two open limestone channels for acidity removal and a settling pond to remove precipitates prior to discharging the treated water to the adjacent stream. Project involved development of the first performance prediction model for open limestone channels based on channel velocity. Initial construction will be completed in 2003.

Arnot No. 2 Mine Drainage Treatment System, Arnot, PA, Babb Creek Watershed Association. Project engineer in charge of project oversight and coordination for the design of a passive treatment system for an acidic deep mine discharge impacting a headwaters cranberry bog containing threatened plant species. The system consists of a device to capture the mine discharge, two vertical flow wetland cells, an oxidation/precipitation cell, and a manganese-oxidizing bacteria cell. The system includes an innovative method of flow splitting to two vertical flow wetland cells, allowing treatment of the discharge without passing the entire flow volume through the cells.

Antrim Mine Drainage Treatment Facility, Antrim, PA, Antrim Mining Company, Inc. Project Engineer responsible for design and project oversight of a 1 mgd collection and treatment facility for an acid mine drainage discharge from an abandoned underground coal mine. The project included evaluation of alternative treatment designs utilizing a variety of chemical agents, prediction of precipitate accumulation and clean-out schedules, design of precipitate drying beds, design of a pumping and conveyance system to transport the mine water to the treatment facility, and permitting required to obtain approval of the treatment concept and system design.



*Attachment E -
Representative Project Profiles*

Owner: United State Army Corps of Engineers

Location: Benezetze Township, Elk County, Pennsylvania

Project Construction and Design Costs: \$250,000

Site 3888 is part of the Dents Run Acid Mine Drainage (AMD) restoration project and consists of three (3) deep mine discharges that negatively impacted Dents Run. The original system was proposed by the U.S. Army Corps of Engineers, and consisted of a deep mine discharge collection system, an Open Limestone Channel, and an Oxidation/Precipitation Basin. Gannett Fleming, Inc. was retained by the Corps to analyze the performance of the system and provide remedial solutions if necessary.

Gannett Fleming analyzed the existing system design and influent/effluent water quality data, and found that the system was not meeting water quality effluent goals. Alternatives for remediation and/or retrofit were developed with the intent of using as much of the existing system as possible to reduce remediation costs. The recommended alternative consisted of the conversion of an existing settling pond into a vertical flow wetland. The retrofit made it possible to meet the water quality effluent goals, extend system life, and provide for excess alkalinity to buffer downstream sources of AMD in remote locations not accessible for treatment system construction.



Services Provided:

- Performed feasibility analysis to identify possible remedial alternatives
- Designed a retrofit treatment system to meet effluent water quality goals
- Prepared detailed engineer's cost estimate
- Prepared Plan Drawings and Specifications for Construction

Special Features:

- Retrofit stayed within limits of existing system and required no earthmoving activities
- Surpassed effluent goals
- Provided excess alkalinity to remediate AMD from downstream sources
- Economical use of existing system components



DENTS RUN SITE 3893 RETROFIT

Owner: United State Army Corps of Engineers

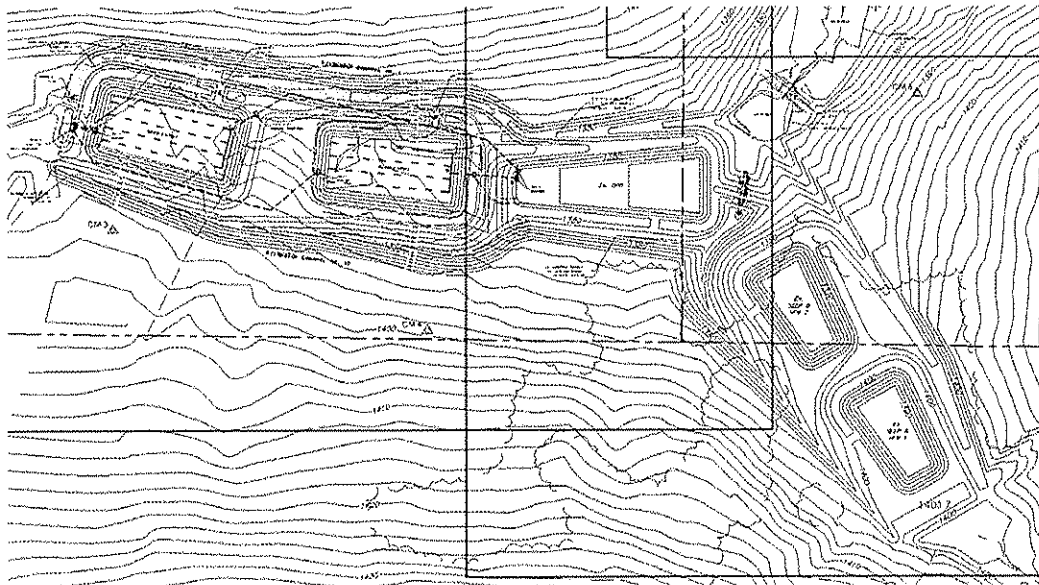
Location: Benezette Township, Elk County, Pennsylvania

Project Construction and Design Costs: \$50,000

Site 3893 is part of the Dents Run Acid Mine Drainage (AMD) restoration project and consists of two (2) unnamed tributaries impacted by acid mine drainage (AMD) baseflow. Gannett Fleming, Inc. was retained by the Corps to finalize Designs for the reclamation of an abandoned surface coal mine and Passive Treatment Systems for the Seep 8 and Seep 9 AMD discharges.

After completion of surface reclamation, USACOE conducted additional water quality monitoring in the Seep 9 hollow during 2006 to see if the reclamation project had improved the quality of the Seep 9 hollow. The results of that monitoring showed that the Seep 9 water quality was actually worse than the data contained in the Corps 1999 feasibility study, resulting in an unacceptably short maintenance interval for the system as designed.

Gannett Fleming analyzed possibilities for remediation and/or retrofit to use as much of the existing design as possible. The recommended alternative was a recirculating pretreatment for the Seep 9 discharge to lower total influent acidity and dissolved metals concentrations, which significantly extended system life and decreased operations and maintenance costs, with a minimal up-front cost.



Services Provided:

- Performed feasibility analysis to Identify possible remedial alternatives
- Designed a retrofit pretreatment treatment system to handle increased AMD pollution loading
- Prepared Plan Drawings and Specifications for Construction
- Revised NPDES permit packages to receive PADEP approval

Special Features:

- Innovative use of centuries old "Water Ram" technology
- Offers possibility of significant cost savings over non-recirculating treatment schemes
- Opens new opportunities for AMD discharges previously thought untreatable by passive technologies

Owner: PADEP / Bureau of Abandoned Mine Reclamation

Location: Clarion County, Pennsylvania

Cost: \$139,000

This project included field investigations and assessment of the quality and quantity of the AMD discharges at two sites, the assessment of an underground mine pool, and their impact to Redbank Creek. This assessment included evaluations of property ownership, PADOT permit requirements, railway easement licensing, utilities mapping, geologic and mining history investigations, including drilling and records searches at PADEP District Mine Offices, geotechnical investigations for conceptual AMD treatment mitigation plans, water quality and quantity investigations of the mine discharges, mine pool, and streams, conceptual reclamation plans and preliminary engineer's cost estimates for the AML reclamation and the AMD treatment systems.



Services Provided:

- Development of Mine History
- Geotechnical Investigation
- Surface and Groundwater monitoring
- AMD Mitigation Plans
- Agency Coordination – PADOT, CCCD, New Shawmut Railway

- Engineering Cost Estimates
- Passive AMD Treatment System Design

Special Features:

- Mine Pool Investigations
- Private Property and Municipal meetings
- AMD Assessment and Statistical Analyses

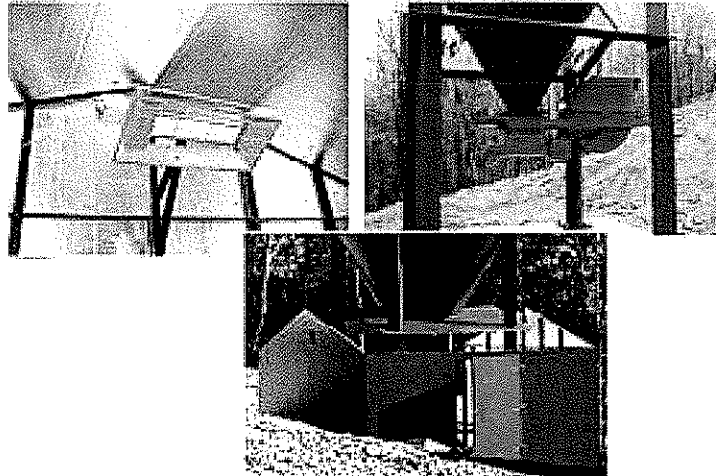
Owner: Tioga County Concerned Citizens Committee

Location: Fallbrook, Tioga County, Pennsylvania

Project Construction and Design Costs: \$1.2M

The Fallbrook project consists of the collection and conveyance of 4 abandoned deep mine discharges that are impacting Fallbrook, a tributary of the Tioga River. Preliminary designs called for passive treatment of the discharges, but site constraints and the large size and cost of passive treatment made the largest of the discharges untreatable with passive technologies. Gannett Fleming was retained by the Tioga County Concerned Citizens Committee (TCCCC) to design an active treatment system that would collect, convey and treat all of the discharges.

Gannett Fleming analyzed the available water quality and flow data at the site, and performed a preliminary feasibility study to determine if it was possible and economically feasible to collect and convey the discharges to a central location without using pump stations to lift the flow of AMD. After initial surveying work was completed, it was determined that a non-powered conveyance system could be designed to carry the flow to a location that best suited a treatment plant. The system was designed to treat a 3000 gallon per minute combined discharge, and consists of approximately 6000 lineal feet of conveyance pipelines, a pebble lime active treatment module with silo, mixing channels, and oxidation/precipitation basins. System construction is expected in 2008.



*Graphic used with permission from Aquafix Systems Inc.

Services Provided:

- Performed feasibility analysis to determine effectiveness of active treatment over passive
- Performed site survey and topographic mapping
- Designed a collection and conveyance system to gather four separate discharges
- Prepared detailed engineer's cost estimate
- Prepared Plan Drawings and Specifications for Construction

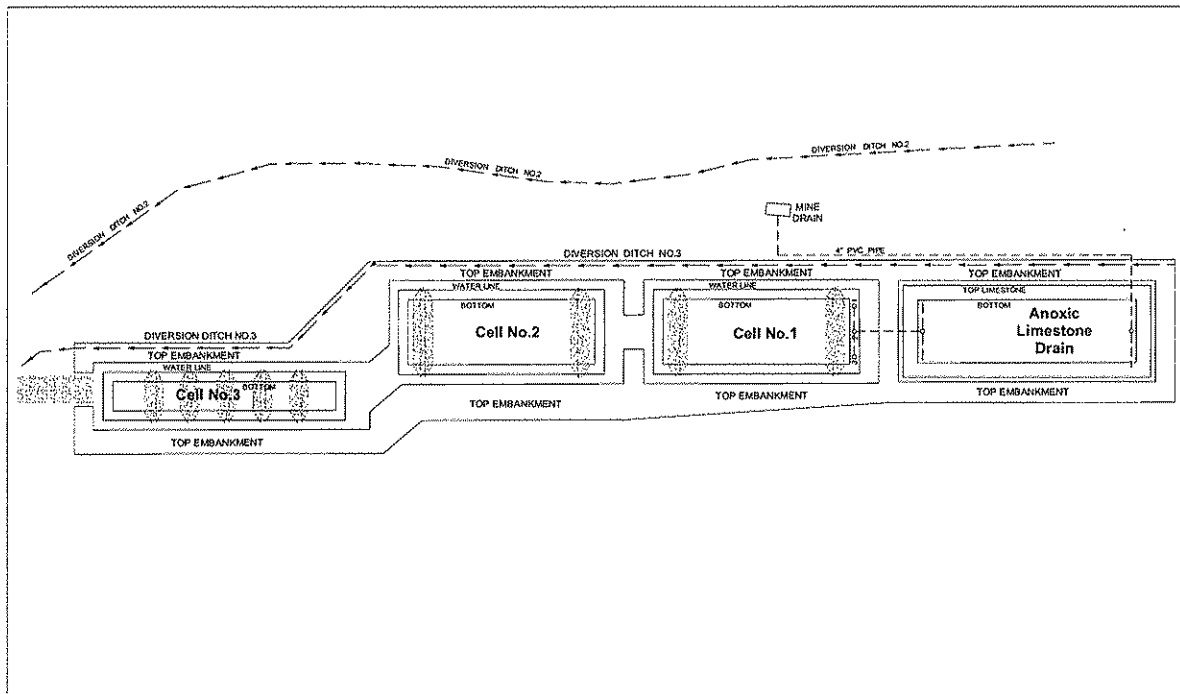
Special Features:

- Non-powered conveyance system
- Active system provided a lower total cost than passive
- Meets effluent goals
- Provided excess alkalinity to remediate AMD from upstream sources
- Innovative use of existing technology

Location: Tuscarawas County, Ohio

Estimated Construction Cost: \$128,000

The Farr Tipple AMD Treatment System has been designed to provide passive treatment to an underground mine discharge. Influent waters are characterized by elevated metals and acidity. Our design proposes a mine seal to insure that all of the mine water is collected and enters the treatment system. This water will initially pass through an anoxic limestone drain, then flow through a series of three (3) wetland cells, an aerobic pond cell, an aerobic wetland cell, and a rock filter cell. The ALD will increase the alkalinity, promoting iron precipitation in the aerobic pond cell. The remaining two cells will continue the iron removal, producing an acceptable effluent quality. The final effluent from the treatment system is expected to be normal effluent limits. The life expectancy of the system as designed is a minimum of 15 years.



Services Provided:

- Design and construction supervision
- Regulatory coordination
- Performance analysis

Special Features:

- Gravity flow system
- Passive pre-treatment reduces chemical usage
- Minimal-maintenance design



Gannett Fleming

KETTLE CREEK WATERSHED ASSOCIATION SURFACE RECLAMATION AND BIOCAPPING

Owner: Trout Unlimited

Location: Leidy & Noyes Townships, Clinton County, Pennsylvania

Gannett Fleming, Inc. was responsible for the preparation of a reclamation and bio-capping plan for an abandoned surface coal mine. The project work included the preparation of an E&S plan, NPDES permit, manufactured soil material handling and composting plan, revegetation plan, bid package preparation, construction observation, and development of as-built plans. A reclamation plan was developed for the 57-acre site, which included bio-capping using WestTan Soil Plus™, an organic soil conditioner from the E.H. Hall/Westfield Tanning Company.

Specific goals and objectives for the project included a reduction of the hydraulic loading and metals loading entering Two Mile Run and Kettle Creek, and the creation of a wildlife food plot for Pennsylvania's growing Elk herd, accomplished by regrading and establishing a permanent vegetative cover to the impacted area.

Close coordination was maintained with the Kettle Creek Watershed Association and Trout Unlimited during plan preparation in order to best meet the restoration goals.



Services Provided:

- Reclamation regrading design
- Erosion & sedimentation remediation
- Construction observation
- Environmental permitting
- Preparation of bid packages

Special Features:

- Biocapping with WestTan Soil Plus
- Creation of food plot for Elk population



KING COAL HIGHWAY

Client: Alpha Natural Services

Location: Mingo County, West Virginia

Design Fee: \$17,300

Gannett Fleming was responsible for geologic reconnaissance, geotechnical site investigation program, site mining issues, cut slope analysis and design, very large embankment fills analysis and design, and other geotechnical design and analysis for the King Coal Highway Project. The proposed highway is a 96-mile, four-lane divided highway running from Williamson to Bluefield. This section of the highway is 9.0 miles in length and is located between Red Jacket and Hampden. The project also consists of the proposed relocation of the existing two-lane roadway of WV Route 65 that runs between Taylorville and Red Jacket accommodating an at grade intersection with the proposed King Coal Highway. These sections of roadway will be developed over an area of rugged topography with an extensive history of surface and deep mining activities. The King Coal Highway alignment encounters large areas with mine overburden mountaintop back stacks, mine valley fills, mine spoil fires, and extensive highwalls. An additional aspect of the project is the partnering relationship between Alpha Natural Resources Inc. (formerly Nicewonder Contracting Inc.), WVDOH, and Mingo County, so that the road can be constructed concurrent with mining activities.



**MARJOL BATTERY RECYCLING SITE
HOST COMMUNITY REVIEW OF
POTENTIALLY RESPONSIBLE PARTY (PRP)
CLEANUP**

Client: Borough of Throop
Location: Throop, Pennsylvania

In the early 1960s, the Marjol Battery Company initiated battery salvage operations in the small borough of Throop just north of Scranton. By the late 1960s, the Pennsylvania Department of Environmental Protection (PADEP) had initiated air sampling of lead emissions in response to citizen complaints. Citizen health problems and PADEP orders addressing the situation continued throughout the 1970s. The site ceased operations in 1981. In 1987, PADEP made a request to the U.S. EPA to perform off-site cleaning under the provisions of Superfund. In 1994, the Borough of Throop requested Gannett Fleming to be its technical advisor relative to the site cleanup of the Marjol property. Issues have included evaluation of alternative remedial actions, soil stabilization of the site to prevent erosion into the adjacent river, subsidence due to underground mining, filling of voids left from surface coal mining, aerial extent and depth of lead, methods of lead-contaminated soil disposal, future land uses, and environmental justice.

Special Concerns

- Facility site located over underground and near surface coal mines
- Stormwater and eroded soil flowed into adjacent river
- Many nearby homes affected by fugitive lead dust

Services Provided

- Participation in citizen review committee meetings.
- Review of Resource Conservation and Recovery Act (RCRA) Facilities Investigation report.
- Review of Corrective Measures Study report.
- Review of proposed disposal methods.
- Evaluation of lead-contaminated soil volumes.
- Investigation of issues associated with underground and surface mining
- Preparation of a series of mini-reports analyzing data from PRP reports





MOSQUITO CREEK ACID RAIN IMPACT ABATEMENT PROJECT

Owner: Mosquito Creek Sportsman Association

Location: Elk County, Pennsylvania

Cost: \$1 Million

The Mosquito Creek watershed is poorly buffered and has suffered for many years from the impacts of acid rain, damaging and in places eliminating a once thriving trout fishery. Under a Pennsylvania Growing Greener Grant, Gannett Fleming is assisting the Mosquito Creek Sportsman Association in adapting and implementing passive treatment approaches for acid mine drainage to generate alkalinity and neutralize acidity in this watershed. One vertical flow wetland cell has been designed and constructed for this purpose, and two additional treatment sites have been funded under another Grant. These systems will work synergistically to reduce acidity in three contiguous headwaters tributaries and a portion of the main stem. A concurrent study will evaluate the results of these projects and sample key points in the remainder of the watershed develop a progressive restoration plan to guide future alkalinity-generating activities, and to predict the ultimate level of effort required to restore water quality throughout Mosquito Creek.



Services Provided:

- Surveying and map preparation*
- Passive treatment system design*
- Construction supervision*
- Monitoring and data evaluation*
- Development of restoration plan*
- Assistance with Grant management*

Special Features:

- Acid rain impact abatement using mine drainage treatment approaches*
- Progressive watershed restoration plan*
- Inlet flow control mechanisms to prevent hydraulic overloads*
- Modeling of future treatment effects*



NORTH SPRING BRANCH BASEFLOW ISOLATION AND PASSIVE TREATMENT SYSTEM

Owner: Georgia Pacific Corporation

Location: Wyoming County, West Virginia

Total Construction Cost or Design Fee: \$97,000

Under NPDES permit conditions, treatment was required for metals-contaminated baseflow emanating from the toe of a wood waste landfill and entering a mountain stream channel at multiple, diffuse points. Using a baseflow isolation approach, Gannett Fleming designed a system to separate the contaminated groundwater from clean surface water runoff in the channel, allowing application of wetland treatment where it would be otherwise prohibited by construction space constraints in the steep, narrow stream valley. The existing channel was filled with coarse aggregate and a collection pipe, and a new, lined stream channel reconstructed on top of the collection zone using gabion baskets. Following completion, discharge from the collection zone was monitored for wetland treatment system design data under an extension of the NPDES compliance timeframe negotiated by Gannett Fleming. The final design consisted of three vegetated wetland cells targeted at iron removal, and a unique high-angle bacteria bed targeted at manganese removal with minimal construction space. Gannett Fleming was responsible for all aspects of the project design, preparation of plans, specifications, and bid package materials, and construction supervision. The system has shown excellent performance, meeting compliance targets since its construction in 1999.



Services Provided:

- Water quality sampling and field investigations
- Permitting and regulatory negotiations
- Surface and groundwater hydrologic modeling
- Engineering design plans and specifications
- Bid package preparation
- Detailed cost analysis

Special Features:

- Stream baseflow isolation to minimize water treatment volumes
- Stream channel reconstruction
- Constrained-space construction approaches
- Sloped bacteria bed system



Gannett Fleming

**BEECH CREEK WATERSHED RESTORATION PLAN
AND ACID MINE DRAINAGE MITIGATION**

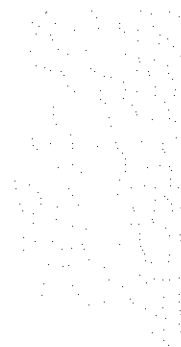
Client: Pennsylvania Department of Environmental Resources

Location: Centre and Clinton Counties, Pennsylvania

The Pennsylvania Department of Environmental Resources contracted Gannett Fleming to provide studies of the Beech Creek Watershed as early as 1968, when our firm provided a study and report of mine drainage pollution abatement facilities.

In 1976, the Department retained the firm for support with a watershed restoration project that included a comprehensive watershed assessment and the development of a plan for addressing acid mine drainage problems. Our firm prepared design plans and specifications and provided construction supervision in association with the project. Acid mine drainage, our drainage abatement measures for the watershed included strip mine reclamation, deep mine sealing, and stream channel reconstruction.

Later (2000), our firm was engaged by the Clinton County Conservation District for restoration project involving a partner relations between our firm, the Beech Creek Watershed Association, and the local Conservation District.



Client: Ohio Department of Natural Resources

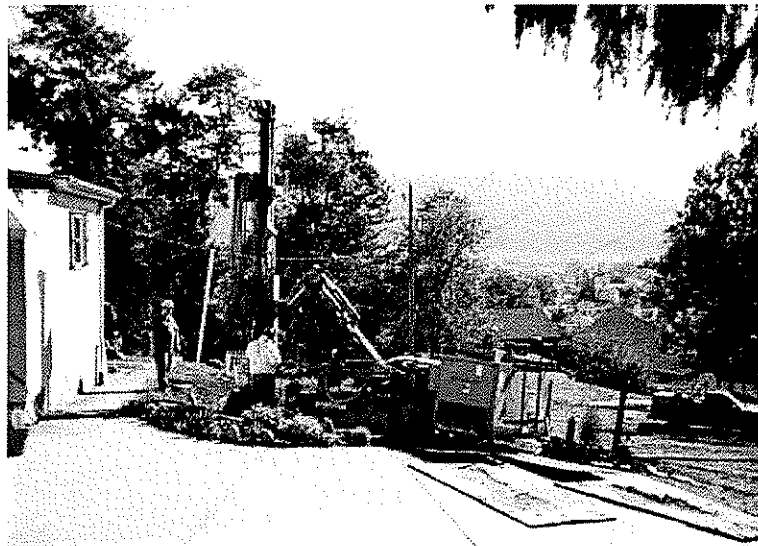
Location: Martins Ferry, Ohio

Design Fee: \$28,000

Our firm provided design and construction services for ODNR Division of Mineral Resources Management to remediate an abandoned underground mine complex causing subsidence damage to seven residences in Martins Ferry, Ohio. This work was performed as part of the Abandoned Mine Land – Emergency program and required rapid response to the initial complaint and fast-track design. Depth to the mine varied over the project area from 15-feet to 40-feet.

Design - A mine void grouting program was designed to protect the seven residences from future subsidence events. Thirty-three boreholes were schedule with angles from zero to forty-five degrees. The residences were located in close proximity to each other, which provided for limited work space between structures. Gannett Fleming prepared the construction Plans, Specifications, and Estimate.

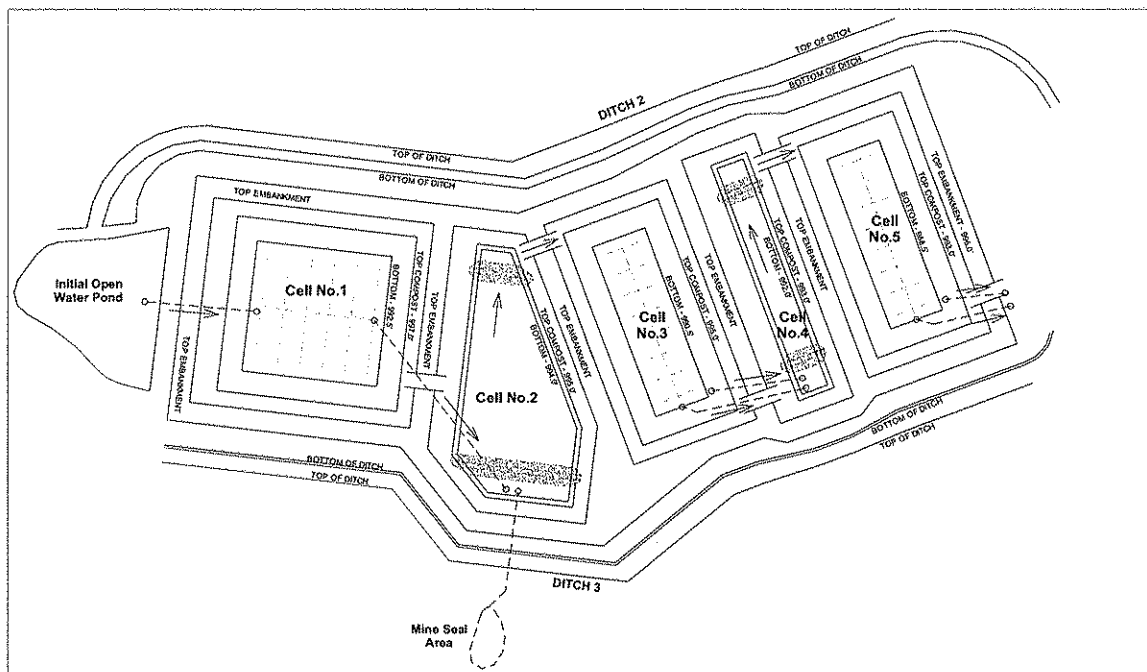
Construction Services - Gannett Fleming provided a professional as a full-time on-site inspector to maintain construction logs and provide technical guidance as required. The work required frequent interaction with the residents and general public. The boring program was adjusted as work proceeded to provide maximum grout coverage under the residences.



Location: Coshocton County, Ohio

Estimated Construction Cost: \$253,000

The Simmons Run A.M.D. Treatment System has been designed to collect and passively treat acid mine drainage originating from abandoned underground and surface coal mines. Influent waters are characterized by elevated metals and acidity. Our firm's design consists of an open water pond and five (5) wetland cells, three (3) anaerobic vertical flow wetland cells and two (2) aerobic wetland cells. The open water pond will collect surface runoff in addition to mine drainage seepage, and will function as a flow equalization device. The pond has been designed with an emergency spillway to route high flows around the wetland system to avoid damage to the wetland cells. The underground mine discharge enters the system at the second wetland cell. Discharge from the system is anticipated to be well within mandated effluent limits. Design of the wetland cells has been based on a minimum life expectancy of 15 years.



Services Provided:

- Design and construction supervision
- Regulatory coordination
- Performance analysis

Special Features:

- Gravity flow system
- Passive pre-treatment reduces chemical usage
- Flow bypass for system protection



Gannett Fleming

**PRE-FINAL DESIGN SOUTHERN BELTWAY, PA
60 TO US 22**

Client: Pennsylvania Turnpike Commission

**Location: Findlay Township, Allegheny County and
Robinson Township, Washington County, PA**

Design Fee: \$120,000

Performed the geotechnical studies for a proposed limited-access four-lane highway covering approximately six miles between U.S. Route 22 in Robinson Township, Washington County and PA Route 60 in Findlay Township, Allegheny County. These studies were performed on four roadway alignment alternatives as part of an environmental impact statement. Performed final design for the selected alternative.

Geotechnical work included an evaluation of geotechnical features such as the site geology, soil conditions, landslide susceptibility, historic mining activities, mine subsidence, and acid mine drainage. Other activities performed involved the delineation of a mine fire and the development of environmental documents. The environmental studies included a health and safety plan; work plans; field investigation of soil, groundwater, surface water, and leachate; field monitoring with FID, PID, and CGI instrumentation; analytical laboratory testing; PADEP coordination; report preparation; and recommendations for remedial action.

For final design, our firm teamed with Pennsylvania Soil and Rock, Inc. to perform temperature monitoring and infrared photography on the mine fire area. Developed construction plans and specifications for the remediation of the mine fire.





S.R. 0837 LANDSLIDE STABILIZATION AND ACID MINE DRAINAGE OF REMEDIATION DESIGN AND CONSTRUCTION SERVICES

Client: Pennsylvania Department of
Transportation, District 12-0
Location: Washington County, Pennsylvania
Firm Fee: \$126,000

Gannett Fleming provided preliminary design, final design, and construction services for landslide and acid mine drainage (AMD) remediation along S.R. 0837, Section 21R. The project included engineering and environmental studies, engineering design, plan and specification preparation, and construction services associated with the stabilization of the landslide that was impacting the roadway. We also investigated maintenance problems associated with abandoned mine drainage and sedimentation of the Houston Run culvert. The overall project spanned approximately 1.2 km and involved the investigation, design, and repair of approximately 457 meters of active landslides, upgrades to approximately 1,524 meters of roadway drainage where AMD was evident, and a modification to the culvert inlet at Houston Run.

- Developing solutions that minimized impacts to adjacent property owners
- Providing cost-effective designs to eliminate the pavement disturbance and control AMD surface runoff along S.R. 0837
- Providing construction phasing and sequencing to minimize the impact to motorists during the construction phase

Services Provided

- Preliminary design, final design, and construction services
- Engineering and environmental studies, engineering design, and plan and specification preparation
- Investigation of abandoned mine drainage and sedimentation of a culvert

Project Tasks

- Accurately determining the physical mechanisms that were causing the continued pavement disturbances along S.R. 0837

