



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

DEP14381

PAGE

1

ADDRESS CORRESPONDENCE TO ATTENTION OF

CHUCK BOWMAN
304-558-2157

RFQ COPY

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Tetra Tech NUS
661 Andersen Drive
Pittsburgh, PA 15220

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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
09/04/2008				

BID OPENING DATE: 10/07/2008 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-94	NA	NA
COALDALE/BRAMWELL HILL WATERLINE DESIGN SVC						
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 COALDALE/BRAMWELL HILL WATERLINE EXTENSION PROJECT IN MERCER COUNTY, WEST VIRGINIA, 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.						

RECEIVED

2008 OCT -7 A 10:14

PURCHASING DIVISION
STATE OF WV

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE 412-921-8916	DATE October 6, 2008
TITLE Pittsburgh Operations Manager	FEIN 05-4660169	ADDRESS CHANGES TO BE NOTED ABOVE

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



TETRA TECH

Mark Speranza, PE
Pittsburgh Operations Manager

October 6, 2008

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

Subject: **RFQ# DEP14381**
Expression of Interest (EOI) for Professional Engineering Design Services;
Coaldale/Bramwell Hill Waterline Extension, Mercer County, West Virginia
Tetra Tech Vendor ID : 317151437

Dear Mr. Bowman:

Tetra Tech NUS, Inc. (Tetra Tech) is pleased to present the State of West Virginia, Department of Administration Purchasing Division (State) and the West Virginia Department of Environmental Protection (WVDEP), Office of Abandoned Mine Lands & Reclamation (AML) our Expression of Interest (EOI) to provide engineering design services for the Coaldale/Bramwell Hill Waterline Extension project. This submittal includes one original plus one convenience copy and one copy on CD of our EOI. As requested, the EOI contains a concise summary of Tetra Tech's corporate history and the experience, qualifications, and performance data of our staff as summarized in a completed "AML Consultant Confidential Qualification Questionnaire (CCQQ) and the "AML and Related Project Experience Matrix" (RPEM).

Tetra Tech is a national engineering company with an extensive pool of engineering resources. Our AML and waterline design experience includes projects throughout the United States. Tetra Tech has been rated Number 1 of the Top 500 design firms by Engineering News Record in the Water/Water Resources category in 2007. Tetra Tech ranks number 8 overall in the Top 500 Design Firms. Tetra Tech's design engineering experience is strong nationally and in our Pittsburgh-based staff. Thomas Gray, PE and Allan Berenbrok, PE have over 60 years of design engineering experience with over 30 associated with AML and water line projects. Mr. Gray previously was the Branch Manager in a Charleston, WV office and is experienced with WVDEP AML projects. Mr. Jon Ludwig is the Tetra Tech Charleston Office Manager.

In addition to the 166 people in our Pittsburgh office, Tetra Tech also provides services to clients in the areas of water, wastewater, water resources, watershed and water quality assessment, watershed modeling, and Total Maximum Daily Load (TMDL) development in support of the WVDEP, Division of Water and Waste Management (DWWM) out of our Charleston, WV office.

Tetra Tech NUS, Inc.
661 Andersen Drive, Pittsburgh, PA 15220
Tel 412.921.8746 Fax 412.921.4040 www.ttnus.com



TETRA TECH

Mr. Chuck Bowman, Buyer
October 6, 2008, Page 2 of 2

Supplementing Tetra Tech will be Allegheny Surveying Inc. (ASI) of Weston and Bridgeport, WV. ASI is experienced with WV AML projects and will provide surveying and mapping services.

Tetra Tech personnel have managed numerous waterline, mining, environmental, water resource, and remediation projects in West Virginia and throughout the country. We believe the combination of our local field operations and management personnel coupled with our AML expertise and extensive waterline design expertise will effectively meet the West Virginia DEP scope of work.

Tetra Tech appreciates the opportunity to submit our qualification to you for this project. If you have any questions about the information provided, please contact Mr. Thomas Gray at any time, at 412-921-8794.

Very Truly Yours,

Mark P. Speranza, PE
Pittsburgh Operations Manager

Thomas A. Gray, PE
Energy and Natural Resources Group Manager

Enclosures

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION AML CONSULTANT CONFIDENTIAL QUALIFICATION QUESTIONNAIRE				Attachment "B"
PROJECT NAME Coaldale/Bramwell Hill Waterline Extension		DATE (DAY, MONTH, YEAR) 06/10/2008	FEIN # 95-4660169 DUNS # 04-967-1456	
1. FIRM NAME Tetra Tech NUS, Inc. - Pittsburgh, PA		2. HOME OFFICE BUSINESS ADDRESS Foster Plaza 7 - 661 Andersen Drive Pittsburgh, PA 15220-2745		3. FORMER FIRM NAME NA
4. HOME OFFICE TELEPHONE 412-921-7090		5. ESTABLISHED (YEAR) 1966	6. TYPE OWNERSHIP Individual Partnership Corporation Joint-Venture	6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) YES NO
7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE Foster Plaza 7 - 661 Andersen Drive Pittsburgh, PA 15220-2745/412-921-7090/Tom Gray/20				
8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM Mark Speranza, PE - Operations Manager		8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS Mark Perry, PE - Regional Manager (Mining Engineer) 412-921-7090		
9. PERSONNEL BY DISCIPLINE				
32 ADMINISTRATIVE ARCHITECTS	2 ECOLOGISTS ECONOMISTS	LANDSCAPE ARCHITECTS MECHANICAL ENGINEERS		1 STRUCTURAL ENGINEERS SURVEYORS
4 BIOLOGIST	1 ELECTRICAL ENGINEERS	3 MINING ENGINEERS	TRAFFIC ENGINEERS	
8 CADD OPERATORS	10 ENVIRONMENTALISTS	PHOTOGRAMMETRISTS	OTHER 45	
12 CHEMICAL ENGINEERS	1 ESTIMATORS	PLANNERS: URBAN/REGIONAL		
19 CIVIL ENGINEERS	15 GEOLOGISTS	2 SANITARY ENGINEERS		
3 CONSTRUCTION INSPECTORS	HISTORIANS	1 SOILS ENGINEERS SPECIFICATION		
DESIGNERS	4 HYDROLOGISTS	WRITERS		
DRAFTSMEN			166 TOTAL PERSONNEL	
TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 4				
*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? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> NA				

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

NAME AND ADDRESS: Allegheny Surveys, Inc 80 U.S. Highway 33 Weston, WV 26452	SPECIALTY: Surveying	WORKED WITH BEFORE ____ Yes X ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No
NAME AND ADDRESS:	SPECIALTY:	WORKED WITH BEFORE ____ Yes ____ No

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

YES **Description and Number of Projects:** Tetra Tech staff and consultants have completed over 100 abandoned mine land projects. The listing in Attachment C is only a partial listing. Thomas Gray has been working on abandoned mine reclamation projects for the past 21 years, many in West Virginia. Tetra Tech has been involved with mine reclamation for many years in the western U.S. and has made a commitment to providing similar services in the Appalachian coalfields. Tetra Tech has an office in Charleston, WV that has worked for WVDEP.

NO

B. Is your firm experienced in Soil Analysis?

YES **Description and Number of Projects:** Tetra Tech has conducted thousands of soil investigations worldwide that included sampling and analysis. Along with this site work we have provided thousands of reports presenting the results of the investigations. We have extensive specialized experience and technical competence in providing soil sampling and analysis services, including performing more than 6,000 environmental site characterizations, including mining sites, and more than 1000 geotechnical investigations. Tetra Tech has trained and experienced filed sampling crews available in our lead design office.

NO

C. Is your firm experienced in hydrology and hydraulics?

YES **Description and Number of Projects:** Tetra Tech has over three decades of corporate experience in hydrology and hydraulics. Our expertise and knowledge in evaluating hydrologic systems is applied to specific water resource project types including; water resource and flood damage assessment, flood control design (including channels, levees, detention basins and bank protection, hydraulic structure designs, erosion/sedimentation studies, stream restoration and wetland design projects, dam and levee safety evaluations, reservoir operation/optimization studies, flood-control and floodplain management studies and mapping, development of flood warning systems, dam break flood studies and contingency planning, stormwater drainage design, surface and groundwater supply analysis. The basis of these hydrologic studies is the application of HEC software such as; **HEC-HMS, GeoHMS, HECFFA, HEC-SSP, HEC-DSSVue, HEC-Ressim, CWSM and legacy software such as HEC-1, HEC-5, HEC-DSS, and COED.**

NO

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

YES **Description and Number of Projects**

NO Tetra Tech regularly subcontracts these activities and has teamed with Allegheny Survey, Inc. to provide these services

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: Tetra Tech has extensive expertise modeling, designing, and building reliable, save and cost-effective water transmission and distribution systems. Our experience encompasses transmission and distribution systems, including large and small diameter water mains, distribution piping, booster pumping stations, storage tanks, and metering facilities. Tetra Tech has performed domestic water line design projects nationwide for the hundreds of municipalities and water authorities. Tetra Tech has experience with the KYPIPE water system modeling software. Our staff has experience with evaluating aquifer degradation due to mining projects. Mr. Gray has evaluated the hydrogeology of many mining sites and their impacts from surface and underground mining both active and abandoned.

NO

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

YES Description and Number of Projects: Tetra Tech's Pittsburgh office is currently involved with four acid mine drainage projects. The Gladden discharge project is a passive treatment design for an acidic discharge that averages over 900 gpm. A mine pump station is currently being designed at an acid mine drainage treatment plant. Tetra Tech is also consulting on a sodium hydroxide treatment plant design for an acidic discharge that averages about 30 gpm. Tetra Tech is preparing an AML/AMD passive treatment design for a 20-acre site located in north central Pennsylvania. Our current staff has also been involved with many other AMD evaluation projects and abatement design while working for other consultants.

NO

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)		YEARS OF EXPERIENCE	
Gray, PE, Thomas A. Group Manager - Energy and Natural Resources		YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:
		22	34
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:	16
Brief Explanation of Responsibilities:			
<p>Mr. Gray is an experienced mining engineer and has been involved with abandoned mine reclamation for the past 22 years. He is a recent addition to Tetra Tech and is currently working on the reclamation design of the Gladden mine discharge in western Pennsylvania. Mr. Gray has extensive waterline design experience, including projects performed directly for the WVDEP. These projects included overseeing preparation of construction documents for a water supply extension project in Logan County, evaluating construction documents for the Gauley River and Heizer/Manila Creek water line extension projects, and the design of a water supply system to service approximately 800 residents of the Mill Creek-Isom Community along Godby Branch watershed. He also managed the design of approximately two miles of a pump and overland pipeline system and provided designs and specifications for a half mile overland pipeline, including a bridge crossing for a utility in Greene County, PA and the design and construction inspection of a 2.5-mile water pipeline and pump station project for Cambria Township, PA and for the Colver Power Plant.</p>			
EDUCATION (Degree, Year, Specialization) BS, 1973, Mining Engineering Masters Business Administration, 1977			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Society of Mining Engineers(SME) - Pittsburgh section Distinguished Member, Society of American Military Engineers		REGISTRATION (Type, Year, State) Professional Engineer 26978-E, 1978, Pennsylvania Professional Engineer 17048, 1989, Maryland Professional Engineer 11628, 1980, Virginia Professional Engineer 10523, 1988, West Virginia	

13. PERSONAL HISTORY STATEMENT OF PRINCIPALS AND ASSOCIATES RESPONSIBLE FOR AML PROJECT DESIGN (Furnish complete data but keep to essentials)			
NAME & TITLE (Last, First, Middle Int.)	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Berenbrok, PE, Allan R. Senior Project Manager	0	0	28
Brief Explanation of Responsibilities:			
<p>Mr. Berenbrok has 28 years of municipal utility design, site development and construction management experience that includes small diameter water lines, booster stations, sanitary sewers, storm sewers, public utilities and roadway maintenance and repair. He recently began working on AML projects and is currently working on the Gladden project in South Fayette township. He recently completed mine seal design in Ohio. Three other AML design projects are just getting started. His experience with water authorities and municipalities provides the first hand experience in working with the authority, the water customers (private and commercial), railroads, other utilities and local/state roadway jurisdictions regarding the submission and acquisition of permits. Relevant design experience includes hydraulic modeling (KYPipe) of current and proposed systems, hydrant flow testing, booster station design and evaluation, writing specifications, preparation of bid packages and contract documents, cost estimating, bid phase services, shop drawing review, construction inspection and construction management. He has extensive knowledge of easements and rights of ways through public and private property. His experience with municipalities and water design projects includes West Virginia, Pennsylvania, North Carolina, California, Florida and Virginia.</p>			
EDUCATION (Degree, Year, Specialization) BS, 1980, Civil Engineering MS, 1984, Systems Management			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:			
none			
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 AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Higginbotham PE, Herbert C. Vice President	0	0	10
Brief Explanation of Responsibilities:			
<p>Mr. Higginbotham is a vice president with 36 years of project management and executive management of technical design staff and project delivery operations. His leadership role in the Allegheny County Sanitary Authority project exemplifies his ability to coordinate complex municipal design and funding issues across multiple local jurisdictions and authorities. His executive management of water and sanitary projects has resulted in project deliverables on time and within budget.</p>			
EDUCATION (Degree, Year, Specialization) BS, 1972, Civil Engineer			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS			
National Society of Professional Engineers Water Environment Federation American Public Works Association Pennsylvania Municipal Authorities Association			
REGISTRATION (Type, Year, State) Professional Engineer, 1976, Pennsylvania Professional Land Surveyor, 1982, Pennsylvania			

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 AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Ludwig, Jon - Charleston Office Manager	8	10	0
Brief Explanation of Responsibilities:			
<p>Mr. Ludwig is the director of the Charleston, WV office of Tetra Tech's TMDL and Water Resources Center. He is a senior environmental scientist with over 10 years experience providing technical and management support to federal, state, regional, and private clients in the areas of water resources, watershed and water quality assessment, watershed modeling, and Total Maximum Daily Load (TMDL) development. In support of EPA Region 3 and West Virginia Department of Environmental Protection Division of Water and Waste Management (WVDEP DWWM), he has served as project manager in the development of over 1,900 EPA approved TMDLs in West Virginia. Currently, he serves as project manager for the existing TMDL contract with WVDEP DWWM that includes the development of TMDLs for total iron, total manganese, dissolved aluminum, pH, selenium, fecal coliform bacteria, and biological impairments throughout the state of West Virginia. Mr. Ludwig also oversees development of a stressor identification process for biologically impacted streams throughout West Virginia including development of macroinvertebrate tolerance values. Mr. Ludwig also has extensive experience implementing various hydrologic and water quality models, including EFDC, SWMM, BASINS, HEC-2, HEC-RAS, LSPC, GWLF, HSPF, WASP, and DESC-R.</p> <p>EDUCATION (Degree, Year, Specialization) MS, 1997, Environmental Pollution Control BS, 1995, Environmental Science</p>			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS		REGISTRATION (Type, Year, State)	
American Water Resource Association Water Environment Federation		None	
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 AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE:
Jozwik, PE, Kari Project Engineer	0	0	9
Brief Explanation of Responsibilities:			
<p>Mr. Jozwik is a project engineer in the Municipal Civil Department. Her experience includes water distribution system design, water tank inspection and contract specifications. She has experience with small and large diameter water mains within public rights of way and private property.</p> <p>EDUCATION (Degree, Year, Specialization) BS, 1998, Civil Engineering</p> <p>MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS</p> <p>REGISTRATION (Type, Year, State) Professional Engineer, 2004, Michigan</p> <p>None</p>			

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

AutoCAD (2008), KYPipe 2006, TR-55, STABL5, HEC-HMS, GeoHMS, HECFFA, HEC-SSP, HEC-DSSVne, HEC-ResSim, CWMS and legacy software such as HEC-1, HEC-5, HEC-DSS, and COED.

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
Gladden Mine Drainage; Passive Treatment Design; South Fayette Township, Allegheny County, PA	South Fayette Conservation Group 515 Millers Run Road Morgan, PA 15064	Investigation and passive treatment system design, including surveying, wetland delineation, H&H evaluation, plans and specifications	\$500,000	15%
Pump Station Design; Canterbury Mine; Apollo, PA	Murray Energy One Industrial Drive Wheeling, WV 26003	Design of floating pump station, including pump selection, power supply and pipeline	\$150,000	50%
Rock Springs Subsidence Mitigation Rock Springs, WY	Wyoming Dept of Environmental Quality, Abandoned Mined Lands Division, 122 West 25th St, Herschler Building Cheyenne 82002	Assessment of subsidence hazards within the City of Rock Springs where historic underground coal mining resulted in moderate to severe subsidence.	\$2,100,000	30%
Bauxite Residue Seepage Assessment, Subsurface Investigation and Groundwater/Surface Water Assessment from tailing dam on previously mined land, Bauxite, AR	Alcoa Arkansas Reclamation 1401 Bauxite Cutoff Rd Bauxite, Arkansas 72015	Perform a subsurface investigation and install wells and piezometers to assess groundwater conditions and flow patterns. Installed manometers and performed flow measurements in surrounding streams to determine flow and chemical characteristics of surface water. Design surface and groundwater containment systems.	\$1,000,000	80%
SPL Consolidation, Closure Design Project, Listerhill, AL	Alcoa, Inc 201 Isabella Street Pittsburgh, PA 15212	Develop/design a closure plan to consolidate and cap residual materials from past process activities at a closed aluminum manufacturing plant.	\$600,000	20%

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

PROJECT NAME, TYPE AND LOCATION	NATURE OF FIRMS RESPONSIBILITY	NAME AND ADDRESS OF OWNER	ESTIMATED COMPLETION DATE	ESTIMATED CONSTRUCTION COST	
				ENTIRE PROJECT	YOUR FIRMS RESPONSIBILITY
Jonathan Run Acid Rock treatment plant design; Snowshoe, PA	Consulting	Penn DOT Clearfield, PA	December, 2008	\$130,000	Review of design and technically assist during the design process.

17. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS THE DESIGNATED ENGINEER OF RECORD				
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
SWMU Closure Feasibility Study and Design including cover design for South End Landfill, New Martinsville, WV	Bayer Corporation State Route 2 New Martinsville, WV 26155	1,200,000	2004	NO
Mud Lake Reclamation involving slope regrading, revegetation, and stream relocation, Listerhill, AL	Alcoa Remediation Management, Inc. 201 Isabella Street Pittsburgh, PA 15212	650,000	2006	YES
East St Louis, Site Remediation Design and Oversight of waste removal and disposal. East St. Louis, IL	Alcoa Remediation Management, Inc. 201 Isabella Street Pittsburgh, PA 15212	250,000	2006	YES
Bauxite Residue Disposal Area seepage assessment and subsurface drainage collection system design and construction oversight, Hurricane Creek, Bauxite, AR	Alcoa Arkansas Reclamation 1401 Bauxite Cutoff Rd Bauxite, Arkansas 72015	500,000	2004	YES
Sherwin Dike Upgrade, collect soil samples, performed testing and analysis and grading plans associated with efforts to stabilize and heighten 3.5 mile dike, Corpus Christi, TX	Alcoa Remediation Management, Inc. 201 Isabella Street Pittsburgh, PA 15212	2,500,000	2006	YES

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)					
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
NA					
19. Use this space to provide any additional information or description of resources supporting your firm's qualifications to perform work for the West Virginia Abandoned Mine Lands Program.					
20. The foregoing is a statement of facts.					
Signature: <u>Mark P. Speranza</u>			Title: <u>Pittsburgh Operations Manager</u>		
Printed Name: <u>Mark P. Speranza, PE</u>			Date: <u>October 6, 2008</u>		

Thomas A. Gray, P. E.
GROUP MANAGER – ENERGY, ENVIRONMENT AND MINERAL RESOURCES
PITTSBURGH, PA

EDUCATION: BS; Mining Engineering; the Pennsylvania State University; 1973
MBA; Business Administration; University of Pittsburgh; 1977

CERTIFICATIONS/

REGISTRATIONS: Professional Engineer Pennsylvania, 26978-E, 1978
Professional Engineer, Maryland, 17048, 1989
Professional Engineer, Virginia, 11628 1980
Professional Engineer, West Virginia, 10523 1988

EXPERIENCE SUMMARY:

Mr. Gray has 34 years of professional experience. His is a technical expert in mining engineering, mine reclamation, coal ash disposal and utilization, watershed and ecosystem restoration, mine subsidence, acid mine drainage remediation, mine stabilization via grouting and abandoned mine fire mitigation.

Mr. Gray specializes in active and abandoned mining projects and with infrastructure projects that have mining related concerns. His project management responsibility has included construction, engineering, regulatory compliance, and research and development.

PROJECT EXPERIENCE:

Project Manager; West Virginia Division of Environmental Protection, Monongalia County, WV. This research and demonstration project injected coal combustion byproduct based grout into 25 acres of abandoned mine workings to reduce the generation of acid mine drainage and to reduce subsidence potential.. Responsible for research and development investigation, construction plans and specifications, monitoring construction, and preparing a research report. Project sponsors included Allegheny Energy, the U.S. Department of Energy, Consol Inc. and the Electric Power Research Institute.

Project Advisor; West Virginia Division of Environmental Protection, Chapmanville, Logan County; WV. Designed a water supply system to service approximately 800 residents of the Mill Creek-Isom Community along Godby Branch watershed.

Project Advisor; West Virginia Division of Environmental Protection, Logan County, WV. Prepared construction documents for a water supply extension project.

Project Advisor; West Virginia Division of Environmental Protection, Nicholas County, WV. Evaluated construction documents for the Gauley River and Heizer/Manila Creek water line extension projects.

Project Manager; Duquesne Light Company, Greene County, PA. Designed approximately two miles of a pump and overland pipeline system and provided designs and specifications for a half mile overland pipeline, including a bridge crossing.

Project Manager; Cambria Township Water Authority, in conjunction with Inter-Power/AlCon Partners, Colver, PA. Responsible for designing and providing construction inspection for a 2.5-mile water pipeline and pump station project. The system provides up to 1600 gpm of water for the Municipality of Cambria Township and for the Colver Power Plant. The Colver Plant is a 110 mw water-cooled facility.

Project Manager; Inter-Power/AlCon Partners, Colver, PA. Conducted a geotechnical and hydrologic investigation for a 53'-high embankment dam to provide a municipal water supply and cooling water for a cogeneration power plant. Completed an environmental assessment, including wetland delineation, wetland mitigation design and cultural resources investigations. Provided design, cost estimating, permitting and construction monitoring services for the Dam and Reservoir.

Mining Engineer; U.S. Steel Corporation, Greene County, PA. Planned and designed the mine water pumping system at the Robena Coal Mine using 19 pumps within the mine, several miles of pipeline, and discharging approximately two million gallons per day.

PROFESSIONAL AFFILIATIONS:

Society for Mining, Metallurgy, and Exploration, Inc., (SME); Past Chairman of Pittsburgh Section, 1997 Distinguished Member Award

Society of American Military Engineers

Engineering Society of Western Pennsylvania

PUBLICATIONS:

2007 Gray, T.A., "Surface Mining" article for inclusion in McGraw-Hill Encyclopedia of Science and Technology, 10th edition

2003 Gray, T.A., and Broush, J.C. "Use of GIS in Mining Applications" presented at the Seminar on the Use of GIS in Mining Application at California University, Canonsburg, PA, May 8, 2003.

2002 Gray, T.A. and Gray, R.E. "Omega Mine Injection Projects" presented at the PA Conference on Abandoned Mine Reclamation, June 15, 2002, State College, PA.

2000 Gray, T. A., Kyper, T.N., Smith, E., and Hedin, R. "Feasibility Study for Ecosystem Restoration by Remediation of the Webster Mine Discharge at Nanty Glo, Pennsylvania." Presented at the U.S.D.O.E., NETL Facility, Morgantown, WV, October 4, 2000.

ALLAN R. BERENBROK, PE
SENIOR PROJECT MANAGER
PITTSBURGH, PA

EDUCATION: BS, Civil Engineering, Virginia Military Institute, 1980
MS, Systems Management, University of Southern California, 1984

**CERTIFICATIONS/
REGISTRATIONS:** Professional Engineer, Pennsylvania, 037262-E, 1988

TRAINING: OSHA 1910.120 40-Hour HAZWOPER Training; May /1995
OSHA 1910.120 8-Hour Annual Refresher Training; October/1997

EXPERIENCE SUMMARY:

Mr. Allan R. Berenbrok has 28 total years of professional experience in civil design, project management and construction management as an officer in the United States Air Force, public works, and in private industry. Experience includes commercial site development, private site development, municipal services, computerized storm water runoff and drainage analysis and design, erosion and sediment control permits, NPDES permits, water line design using KY Pipe modeling software, construction management and design/build projects.

PROJECT EXPERIENCE:

Project Engineer; Fox Chapel Rising Main; Pittsburgh Water and Sewer Authority Pittsburgh, PA. Responsible for preparation of a feasibility study, site design, system layout, pump station design, construction drawings and specifications for the installation of a 16 inch main and supporting pumping stations. The project included analysis of public system water usage and a sizing distribution delivery pumping system to provide 5.5 million gallons per day of potable water.

Project Manager; Water System Improvements Construction Management; Borough of Baden, PA. Project Manager for the supervision and coordination of engineering resident inspectors and direct interface with the contractor's activities to perform over \$1 million of municipal waterline replacement. The contract included installation of over 12,000 l.f. of new waterline in an urban environment. Work included daily coordination with Borough officials answering and managing issues from the Borough residents, conflict resolution with the contractor and quality control review.

Project Engineer; Stream Hydrologic and Hydraulic Analysis; Charleston, WV. Responsible for hydraulic analysis of box culverts meeting the state of West Virginia Flood Plain Criteria for private land development. Project included the analysis of the stream using the HEC 1 and HEC 2 computer model to determine upstream and downstream water surface elevations, and HY-8 in order to size the box culverts. Duties included client contact and with the USA Corps of Engineers, Huntington District.

Program Manager/Client Manager; Majestic Star Casino; Bergman Walls Associates; Pittsburgh, PA. Client manager and lead technical design engineer for the development of a brown field site located on the north shore of Pittsburgh. Prepared and coordinated site development design including coordination with the Pittsburgh Water and Sewer Authority for water service and upgrades to the existing system, acquired PaDEP stormwater management and Allegheny County Erosion and Sediment Control permits for the site construction, coordinated design/build features of the site and facility design directly with the architect and the Owner for the \$600 million dollar Casino.

Herbert C. Higginbotham II, P.E., P.L.S.
VICE PRESIDENT
PITTSBURGH, PA

EDUCATION: BS; Civil Engineering; Bucknell University; 1972

CERTIFICATIONS/

REGISTRATIONS: Professional Engineer, Pennsylvania, 1976, PE024719E
Professional Land Surveyor, Pennsylvania, 1982, SU001364A

EXPERIENCE SUMMARY:

Mr. Higginbotham knows first-hand the importance of meeting expectations through his extensive project experience spanning over 36 years working for both the public and private sectors primarily in engineering disciplines, either in a technical or key administrative role. Beginning in the late 60s as an engineering intern, and through the end of 1995, as Director of the Department of Aviation with Allegheny County, Pennsylvania, Mr. Higginbotham's position has evolved to an ever-more responsible leadership role. Through this time he has amassed experience in critical disciplines such as Program/Project Management, Construction, Operations and Maintenance, Financial Analyses, Capital Improvement Plans, Planning, Scheduling, Marketing, Inspection, Surveying, and more.

While with another firm, Mr. Higginbotham has managed the Civil Engineering Group as its Operations Manager. As head of this department, he oversaw the design of projects including municipal/sanitary, geotechnical engineering, site development, mining and industrial projects; monitored the allocation and scheduling of Baker's resources and personnel; oversaw budgeting compliance; and was responsible for ensuring client satisfaction.

In serving clients, Mr. Higginbotham draws on his experience in numerous areas including program/project management, construction, operations and maintenance and capital improvement planning.

PROJECT EXPERIENCE:

Project Executive and Senior Project Manager; Facilities Planning for Allegheny County Sanitary Authority (ALCOSAN) Chartiers Creek Interceptor Systems Improvements Project Work Plan; Pittsburgh, PA. In December 2007, ALCOSAN authorized Tetra Tech to begin work on the \$6.3 million facilities planning for the Chartiers Creek Interceptor Systems Improvements Project. This project is the first of seven to be awarded by ALCOSAN to address a Consent Decree, mandated by the U.S. Environmental Protection Agency, Pennsylvania Department of Environmental Protection, and Allegheny County Health Department, that requires ALCOSAN to submit a Wet Weather Plan (WWP) for the ALCOSAN service area by September 2012. Specifically, the WWP is to provide feasible technical alternatives that mitigate sanitary sewer overflows (SSOs) and combined sewer overflows (CSOs) and satisfy applicable water quality standards in the ALCOSAN service area, which encompasses most of Allegheny County. ALCOSAN is also required to comply with the terms of a lawsuit settlement

that was agreed with the Pennsylvania Environmental Defense Foundation in 2004 and addresses SSOs along Chartiers Creek.

The Chartiers Creek Intceptor Planning Basin, which is the largest of the basins covered by the WWP, includes approximately 14 miles of interceptor sewer that parallels Chartiers Creek from Bridgeville to the ALCOSAN wastewater treatment plant located in the North Side section of the City of Pittsburgh along the Ohio River. The interceptor, which has approximately 200 manholes and 65 flow diversion structures, receives sanitary and storm water discharges from 23 municipalities that cover a sewered service area of approximately 46 square miles.

Program Management Assignment, 3 Rivers Wet Weather, Inc. (3RWW), Pittsburgh, PA. Project Executive and Project Manager. 3RWW's assisting the 83 Municipalities tributary to the Allegheny County Sanitary Authority (ALCOSAN) service area to perform activities in response to the Administrative Consent Orders issued by the PA Department of Environmental Protection and the Allegheny County Health Department with regard to the sewage collection systems. This assistance consisted of management tasks including, but not be limited to: data and information collection, oversight and coordination of Municipalities' activities, direct management of 3RWW's contracts, assistance with procurement, scheduling, resource evaluation, quality assurance of collected/generated data, education and guidance of Municipalities' staffs and/or consultants, and dissemination of information to various stakeholders.

Project Principal; Development of a Long Term Control Plan for Combined Sewer Overflow (CSO) Abatement; Pittsburgh Water and Sewer Authority (PWSA); Pittsburgh, PA. Responsible for a \$7.5 million, three-year study of Pittsburgh's sewer system designed to develop a Long-Term Control Plan (LTCP) to eliminate 200 CSOs from over 750 miles of sanitary and combined sewers for the city.

Project Principal; Diversion Chamber and Manhole Inspection and Hydraulic Analysis Project; Allegheny County Sanitary Authority (ALCOSAN); Pittsburgh, PA. Responsible for the \$1.4M investigation, survey, evaluation, database creation, and hydraulic analysis of the ALCOSAN diversion chambers and manholes within the Northern service district region. The project involves the collection of sewer system data through surveys and inspections to adequately describe the condition of the existing structures and identify needed rehabilitation to maintain the system capacity. Results of the fieldwork will be used to perform a hydraulic analysis of the flow transport components of the structures. As part of the physical inspection, GPS measurements will be obtained for accurate locations and elevations. Televising and sewer velocity profiling will be performed on the tributary community sewers. As Project Principal, Mr. Higginbotham reviews budget, schedule, and performance issues with the project staff, as well as independently with the client's Board of Directors and their executive and project staff.

PROFESSIONAL AFFILIATIONS:

Southwest PA Engineering Outreach – Board Member

American Public Works Association – Past President, W PA Chapter

Engineers' Society of Western PA – Past Board Member

National Society of Professional Engineers – 1993 National Convention Chair

National Society of Professional Engineers / PA Society of Professional Engineers – Past President and Chapter

Director, Pittsburgh Chapter; PA State Convention Chairman (two terms)

American Society of Highway Engineers – Past Board Member, Pittsburgh Chapter

Water Environment Federation / Pennsylvania Water Environment Association

American Public Works Association (Life Member)

Engineers' Society of Western Pennsylvania

Pennsylvania Municipal Authorities Association

Southwest Pennsylvania Engineering Outreach – Board Member

Jon C. Ludwig
PRINCIPAL SCIENTIST
CHARLESTON, WV

EDUCATION: MS; Environmental Pollution Control, The Pennsylvania State University, 1997
BS, Environmental Science, Widener University, 1995

CERTIFICATIONS/

REGISTRATIONS: None

EXPERIENCE SUMMARY:

Mr. Ludwig is the director of the Charleston, WV office of Tetra Tech's Water Resources Groups. He is a senior environmental scientist with over 11 years experience providing technical and management support to federal, state, regional, and private clients in the areas of water resources, stormwater management, watershed and water quality assessment, watershed modeling, NPDES permitting, and Total Maximum Daily Load (TMDL) development. In support of EPA Region 3 and West Virginia Department of Environmental Protection Division of Water and Waste Management (WVDEP DWWM), he has served as project manager in the development of over 1,900 EPA approved TMDLs in West Virginia. These projects included detailed modeling analyses to assigned "implementable" wasteload allocations to MS4 communities throughout West Virginia. Currently, he serves as project manager for the existing TMDL contract with WVDEP DWWM that includes the development of TMDLs for total iron, total manganese, dissolved aluminum, pH, selenium, fecal coliform bacteria, and biological impairments throughout the state of West Virginia. Mr. Ludwig also has extensive experience implementing various hydrologic and water quality models, including EFDC, SWMM, BASINS, HEC-2, HEC-RAS, LSPC, GWLF, HSPF, WASP, and DESC-R. Mr. Ludwig has played instrumental role in the technical development of the Mining Data Analysis System (MDAS), a dynamic watershed tool that has been customized for watershed assessment and TMDL development efforts in West Virginia. Additionally, he has reviewed National Pollutant Discharge Elimination System (NPDES) permits and assessed measures taken to model the effects of discharge to stream systems. He has also conducted a series of training courses to support EPA and various state agencies in modeling and TMDL development. Courses included bacteria, sediment, mining, and TMDL report writing.

PROJECT EXPERIENCE:

Project Manager; West Virginia TMDL Development for Hydrologic Groups A, B, C, and D; WV DWWM. Currently serving as project manager for more than 950 metals (iron, dissolved aluminum, manganese, and selenium), pH, fecal coliform bacteria, and biological TMDL in the Upper Kanawha River, Upper Ohio North, Lower Kanawha River, North Branch/Potomac River, Coal River, Gauley River, Potomac River Direct Drains, Greenbrier River, New River, Little Kanawha River, and James River watersheds.

Project Manager; EPA Region 3; WV TMDL Development Support for EPA Region 3. Served as project manager for the development of over 1,000 pH and metals TMDLs in West Virginia including the Monongahela River, West Fork River, Tug Fork River, and Guyandotte

watersheds. Provided lead role both technically and administratively in the evaluation of data and pollutant sources to assess and determine relationships between acid mine drainage and in-stream metals concentrations. Developed various technical approaches related to mining impacts (nonpoint and point sources) on metals loading and applied the Mining Data Analysis System (MDAS), a dynamic watershed modeling tool, to develop TMDLs throughout West Virginia.

Mining NPDES Permit Support; WVDEP. Over the past few years, Tetra Tech has supported WVDEP in the development of metals TMDL development for the Coal River watershed. During the course of TMDL development, EPA approved a revision to the West Virginia Water Quality Standards that altered the zone of applicability of the manganese water quality criterion for the public water supply designated use. The criterion is now applicable only in the five-mile zone upstream of known public or private water supply intakes used for human consumption. The revision resulted many request letters from coal companies to “back-slide” their current manganese effluent limits to technology-based limits. At the request of WVDEP, Tetra Tech conducted a comprehensive analysis to determine the cumulative effect of this backsliding at various downstream locations in the Coal River watershed where the revised manganese criterion is applicable.

Project Manager; Reactive Transport Modeling; California Gulch, CO. In support of Colorado Department of Human Health and Environment (CDPHE), serving as Project Manager for dissolved metals transport modeling in the California Gulch watershed. Tetra Tech has developed an in-stream chemical transport model to evaluate remedial effectiveness scenarios of various CERCLA reclamation activities in the California Gulch watershed. The customized in-stream model includes 1-D transport model equipped with sediment transport routines coupled with a dynamic chemical speciation model to simulate dissolved zinc and cadmium in California Gulch and the Upper Arkansas River.

Project Manager; Left Hand Creek Watershed TMDL and Remediation Alternatives Analysis, CO. Supporting USEPA Region 8 and CDPHE, served as project manager to develop metals TMDLs for the Left Hand Creek watershed. Tasks included developing an in-stream chemical transport model to simulated water quality under critical flow conditions and assign loading to specific abandoned mine sources. The customized in-stream model includes 1-D transport model was used to dynamically simulate dissolved zinc, cadmium, copper, and lead in three reaches of the Lefthand Creek watershed. The calibrated model was also used to evaluate remedial alternatives scenarios for multiple abandoned mine sites.

PROFESSIONAL AFFILIATIONS:

American Water Resources Association
Water Environment Federation

PUBLICATIONS/PRESENTATIONS:

Ludwig, J., J. Beckman, and D. Montali. 2007. Accounting for Construction Stormwater in TMDL development for Sediment Impaired Streams in Rapidly Growing Residential Areas. Kentucky Water Resources Annual Symposium

Ludwig, J. and D. Montali. 2005. Total Maximum Daily Load Development for Mining Impaired Waterbodies in West Virginia.. Kentucky Water Resources Annual Symposium.

Burton, J., J. Bailey, C. Boschen, J. Ferrites, B. Lowman, J. Ludwig, D. Montali, S. Wilkes, J. Wirts, L. Zheng. 2004. Inferring causes of biological impairment in Appalachian streams (1): Watershed-based problem formulation. Society of Environmental Toxicology and Chemistry Annual Conference.

Zheng, L., J. Bailey, C. Boschen, J. Gerritsen, B. Lowman, J. Ludwig, D. Montali, S. Wilkes, J. Wirts. 2004. Inferring causes of biological impairment in Appalachian streams (2): empirical model development to identify multiple stressors.

Gerritsen, J., Bailey, C. Boschen, J. Gerritsen, B. Lowman, J. Ludwig, D. Montali, S. Wilkes, J. Wirts. 2004. Inferring causes of biological impairment in Appalachian streams (3): integrating multiple lines of evidence. Society of Environmental Toxicology and Chemistry Annual Conference.

Henry, T., J. Ludwig, C. Barreto Acobe, D. Montali, P. Campbell, K. Ruhl. 2002. Mining Related TMDL Issues Tug Fork River Watershed, West Virginia. American Water Resources Association's 2002 Annual Water Resources Conference.

Henry, T., J. Ludwig, C. Barreto Acobe, D. Montali, P. Campbell, J. Greenfield. 2002. West Virginia Mining TMDLs Inter jurisdictional Issues: Tug Fork River Watershed. Water Environment Federation TMDL Conference.

Henry, T., J. Ludwig, M. Beck, P. Campbell, D. Montali, J. Shen, A. Parker. 2002. Metals and pH TMDL Development for the Tygart Valley River Watershed, West Virginia. Water Environment Federation Watershed 2002 Conference.

Henry, T., J. Shen, M. Lahlou, L. Shoemaker, A. Parker, J. Ouyang, H. Yang, and J. Ludwig. 2002. Mining Data Analysis System (MDAS). Water Environment Federation Watershed 2002 Conference. Ludwig, J. 1997. Influence of settling agents ($\text{FeCl}_3/\text{SiO}_2$) on effluent quality of recycle papermill wastewater. M.S. thesis, Environmental Pollution Control, The Pennsylvania State University.

Kari L. Jozwik, P.E.
Project Engineer
Brighton, MI

EDUCATION: BS, Civil Engineering, Michigan State University, 1998

CERTIFICATIONS/

REGISTRATIONS: Licensed Professional Engineer, State of Michigan, August 2004
(No. 051647)
Construction Documents Technology, April, 2001
Fundamentals of Engineer, Michigan, April 1998

EXPERIENCE SUMMARY:

Ms. Jozwik is a project manager, group supervisor and lead engineer in the Municipal Civil/Sanitary Department. Her expertise includes site development and planning, water distribution systems, well house designs, storm water management systems and designs, storm sewer design and layout, detention/retention basin designs, and contract specification editing and administering.

Project responsibilities for Ms. Jozwik include monitoring schedules, costs, work flow and design quality; coordinating, scheduling and budgeting the programming, planning and design activities to ensure project continuity; serving as a contact between in-house personnel and clients, consultants and contractors; coordinating and organizing various details of company projects, and oversight of construction services.

PROJECT EXPERIENCE:

Oceola Township Water Tower; Howell, MI. Assisted the water system operators in coordinating the cleaning and inspection of a 500,000-gallon elevated water storage tank. As part of project an altitude valve and by-pass piping was installed within the bell of the tank.

Michigan Department of Transportation (MDOT); Baker Road and I-94; Scio Township, MI. Lead Design Engineer of the relocation/replacement of 1,000 feet of 16-inch water main along Baker Road. Responsibilities included coordination with Township and MDOT to relocate the water main with out interruption of services, providing construction sequencing, preparing special provisions and drawings complete for construction.

Project Manager; Bigelow Road and Water Main Improvements; Oceola Township; MI. Served as project manager for roadway and water main improvements which included 5,200 feet of minor patching, 3,400 feet of full road reconstruction, and 4,500 feet of 12-inch water main, valves, and fire hydrants. As project manager, Ms. Jozwik coordinated the preparation the construction documents, specifications, and assisted the Township with a public bidding process, and maintained continual involvement during construction phase to provide a successful project from start to finish. Ms. Jozwik served as the main contact with the Client and the Road Commission and continually corresponded with the reviewing agencies with interests in the project.

Lead Design Engineer; Howell Township District 11 and 12 Water Main Extensions; Howell Township; MI. Served as lead design engineer for 35,800 feet of water main. Responsible for coordinating engineering disciplines and designing construction drawings and specifications.

Project Manager and Lead Design Engineer; Marion, Howell, Oceola and Genoa Water Treatment Plant Expansion – Well 4, 5 and 6 Expansion; Marion Township; MI. Served as project manager and lead design engineer for the constructing three 16-inch, 400-foot deep, wells and well houses. Assisted in the designed the detention backwash/storm detention facility, site plan, and landscaping plan for 12.0 MGD plant expansion.

Lead Engineer; Industrial Booster Station; Genoa Township; MI. Upgraded a booster station for increased public and private water demands.

Lead Process and Site Design Engineer; Pierce Street Water Treatment Plant Rehabilitation; Brighton, MI. Lead process and site design engineer for completely rehabilitating the water treatment plant.

Project Manager and Lead Design Engineer; Challis Road Well No. 6; Brighton, MI. Served as project manager and lead design engineer for the constructing a 16-inch, 165-foot deep, well in the Challis Road well field.

Project Manager and Lead Design Engineer; Pine Creek Elevated Storage Tank; Brighton, MI. Served as project manager and lead design engineer for the design of a 250,000-gallon single pedestal elevated storage tank and associated site work.

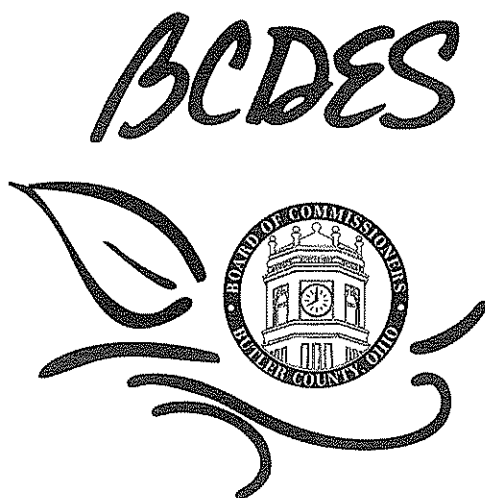
PROFESSIONAL AFFILIATIONS:

Chi Epsilon, Civil Engineering Honor Society since April 1997
American Society of Civil Engineers



TETRA TECH

Port Union Water Main Connection Replacement Hamilton, Ohio



This project included a full survey with rights-of-way, depths, and special details with profiling over the proposed water main alignment. Design was for 16,140 feet of proposed 8-inch, 10-inch, 12-inch, and 16-inch water main in a heavy traffic area. Tetra Tech completed Ohio House Bill 538 compliance and coordinated the project with all of the local utility companies, ODOT, railroad, and the Butler County Engineer's Office.

The project included up to four easement plats and the design of a 10-inch pressure regulator valve vault. As-built drawings were completed based upon information provided by the Butler County inspector. No survey work was performed after the design was complete.

BCDES provided its own bidding and construction administration/inspections services.

Project Highlights:

- Project Management
- Meetings
- Survey
- Preliminary Concept Design
- Preliminary Project Work
- Utility Coordination
- Cost Estimating
- Final Design
- QA/QC
- Construction As-Builts

Project Value:

\$1,800,000

Project Duration:

2005 (Completion)

Reference:

Butler County Department
of Environmental Services
130 High Street, Fifth Floor
Hamilton, Ohio 45011

Martha Shelby
513.887.5699



Project Highlights:

- Feasibility Study; Preliminary Alignment and Design
- Surveying and Mapping
- Modeling
- Utility and Highway Coordination
- Final Design
- Permitting
- Bidding Document Preparation
- Bidding Services
- Construction Administration
- Resident Engineering

Project Value:

\$7,000,000

Project Duration:

Phase I: 2004 (Completion)
Phase II: 2006 (Completion)

Reference:

Boone County Fiscal Court
Boone County, Kentucky

Robin Curry
859.334.2245

This project's purpose was to serve potable water to Boone County residents who, prior to the project's completion, used private sources of water.

This entire project was divided into two phases: (a) Phase I — 147,500 feet of 8" and 12" water main and (b) Phase II — 75,300 feet of 8" and 12" water main.

Although designed and administered for the Boone County Fiscal Court, project coordination mainly occurred with the Boone County Water District, which will eventually take ownership of the project. Also, since the project traversed several fire district jurisdictions, coordination with each district was required.

Boone County terrain is hilly and has many slope stability issues. Geotechnically, the water main was designed to prevent the future failure of not only the water line but also the existing infrastructure. In some instances, the water line had to be designed deeper into rock or beyond the toe of the slope, requiring additional easements. Project creek crossings were numerous as well and required appropriate profiling and design.



TETRA TECH

**Boone County Rural
Water System Expansion**
Boone County, Kentucky

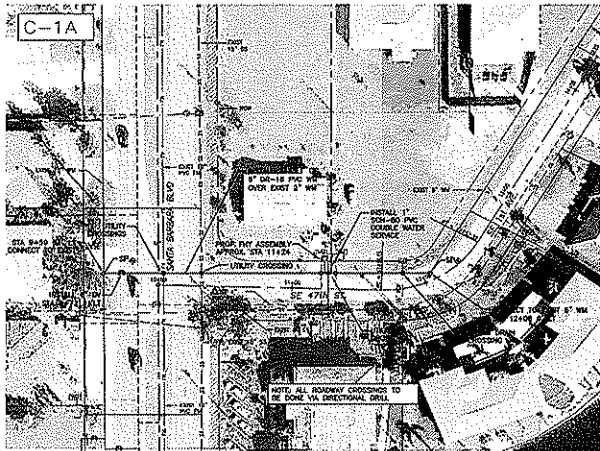
Tetra Tech's major project tasks included: feasibility study; preliminary alignment and design; surveying and mapping; modeling; utility and highway coordination; final design; permitting; bidding document preparation; bidding services; construction administration; and resident engineering.

Hydraulic modeling was performed to ensure adequate pressure and flow at each service without adversely affecting the existing system, as well as to determine pipe sizing and the need for storage structures and booster pump stations.

Water quality modeling was performed to determine the age of the water and projected chlorine residuals at the furthest point in the system. These modeling data were used to determine pipe sizing and the need for chlorine booster stations.



SE Galvanized Pipe Replacement, Area IV City of Cape Coral, Florida



Much of the City's original potable water infrastructure in the Southeast Corridor of the City was constructed of galvanized pipe. Due to the corrosive atmosphere, much of this pipe has begun to deteriorate. As part of the City's Utilities Expansion Program, the majority of this pipe was replaced with new polyvinyl chloride (PVC) pipe in the 1990s. However, there are still some areas remaining which have not replaced. These areas are along the extremities of the southeast portion of the City and consist primarily of 2-inch galvanized distribution pipe. As part of an ongoing program, the City has been replacing the deteriorated galvanized distribution pipe with new PVC pipe.

Tetra Tech was retained to perform design, permitting, bidding and construction management for a portion of the area, Section 4. This section consists of the replacement/upgrade of approximately 34,667 linear feet of 2-inch galvanized pipe and over 330 service connections/laterals with new 6-inch PVC pipe, new service laterals and fire hydrants.

As part of this project, the necessary distribution lines and related components will be replaced with new PVC pipe. Service connections including valves, valve boxes and fittings will also be replaced between the distribution main and the City-owned water meter located at the Right-of-Way line. Neither water meters nor backflow prevention assemblies are anticipated to require replacement.

Project Highlights:

- Replacement of nearly 35,000 lf of 2-inch galvanized pipe with 6-inch PVC
- Tetra Tech performed design for 1 of 4 areas. This was the largest and 1st to be completed.

Project Value:

\$2,500,000.00
(Construction Costs)

Project Duration:

2007 (Project Completed)

Reference:

City of Cape Coral
P.O. Box 150027
Cape Coral, FL 33915-0027

Mr. George Reilly, P.E.,
Utilities Manager
239.574.0709



TETRA TECH

LeBlond Avenue Water Main Design, Phases 1 and 2 Cincinnati, Ohio



GREATER CINCINNATI
WATER WORKS

In Phase 1 of this project, Tetra Tech designed approximately 1,100 feet of 8-inch ductile iron pipe (DIP) water main to replace existing main. Phase 2 consisted of the design of approximately 4,100 feet of 8-inch DIP water main to replace existing main.

Both phases included full topographic survey and right-of-way establishment, utility coordination, design plans, and an engineer's construction cost estimate. Project management and QA/QC were also provided.

Project Highlights:

- Design of app. 5,200 feet of 8-inch DIP water main
- Project management and QA/QC
- Surveying/Easements
- Cost estimating
- Utility coordination

Project Duration:

2007 (Completion)

Reference:

Greater Cincinnati Water Works
4747 Spring Grove Avenue
Cincinnati, Ohio 45232

Russ Weber, P.E.
Supervising Engineer
513.591.7862





TETRA TECH

**Stonehouse, Oneonta, and Washington Trace Roads
Water Main Extension and Replacement
Campbell County, Kentucky**

Northern Kentucky Water District

This project involved design of more than 22,000 feet of new 12-inch water main intended as a hydraulic improvement to strengthen the surrounding area and provide more reliable water service and fire protection. This main also replaced 2- and 3-inch water mains.

Tetra Tech's services included topographic surveying and establishing benchmarks; utility coordination and road/traffic coordination with local agencies; preliminary letter report on alignment and geotechnical needs; 50% and 90% detailed water main design plans; final design plans; project review meetings at milestone dates; assistance during bidding; and minor construction administration services.

Additional services included coordination with the Kentucky Department of Transportation for road permits and re-alignment revisions; coordination with the Kentucky Division of Water for the construction permit; and easement descriptions/plats as required along the project route.

Project Highlights:

- Design of more than 22,000 feet of new 12-inch water main
- Fire flow and service reliability improvements
- Road permits and easement descriptions/plats

Project Value:

\$1,700,000

Project Duration:

2007 (Completion)

Reference:

Northern Kentucky Water
District
Erlanger, Kentucky

Justen T. Dennis
Project Manager
859.578.4893

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: Tetra Tech NUS, Inc.

Authorized Signature: Mark P. Spencer Date: October 6, 2008