

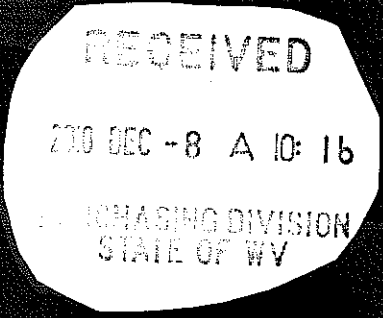
Expression of Interest to Provide:

Engineering Services for Cartright Branch Refuse Pile Design

Submitted to:

West Virginia Department
of Environmental Protection

December 8, 2010



Engineers, Architects and Planners

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December 7, 2010

West Virginia Department of Environmental Protection
Abandoned Mine Lands & Reclamation
c/o State of West Virginia Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, WV 25305-0130
Attn: Chuck Bowman, Buyer Supervisor

RE: Expression of Interest—Engineering Services for Cartright Branch Refuse Pile Design,
DEP15232

Dear Mr. Bowman:

Buchart Horn Inc. (BH) is pleased to present our Expression of Interest for engineering and construction phase services related to the Cartright Branch Refuse Pile Design project in Logan County. We have reviewed your project announcement and reviewed the project requirements. Based on our understanding of this information and a preliminary assessment of potential project solutions, we are very confident in our team's ability to provide you quality, cost efficient service for this assignment.


BH is a full-service engineering and architectural firm with offices in Charleston, Pittsburgh and 13 other locations in the eastern United States and Germany. We have strong experience in site stabilization and remediation design. Our local staff includes registered Professional Engineers and individuals with experience in the AML program. Gregory F. Scott, PE will serve as our Project Manager. Mr. Scott brings over 18 years of site/civil and environmental design experience. He most recently worked on the Terry Branch Portals and Refuse project in Wyoming County. At his disposal are over 300 professionals including specialists in site and civil engineering, structural, geological, and hydrological engineering, planning, mapping, and site surveying.

In accordance with the instructions outlined in your Request for Expressions of Interest, this package contains a completed copy of the DEP AML Consultant Confidential Qualification Questionnaire. We have also provided additional details on our firm, recent relevant projects, and our proposed project team.

Should you have any questions concerning the information presented herein, please do not hesitate to contact me. We look forward to your favorable review of our Expression of Interest and the opportunity to serve the West Virginia Department of Environmental Protection.

Very truly yours,

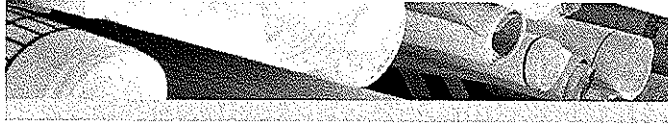
BUCHART HORN, INC.



Michael A. Schober, PE
Senior Vice President

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www.bh-ba.com

Pennsylvania | Louisiana | Maryland | Mississippi | New Jersey | Tennessee | West Virginia | Germany



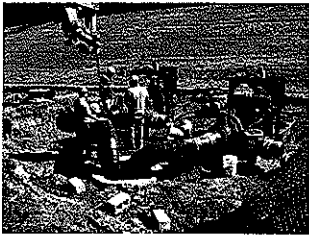
Corporate Overview	Section 1
Project Management & Design Team	Section 2
Relevant Experience	Section 3
Required Forms	Section 4

Professional Services

With complete in-house capabilities, we can assemble a team from our full-service staff to match each client's particular needs.

Environmental Engineering

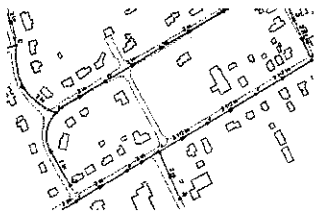
Our environmental engineering services range from water treatment to sludge management and disposal. Our staff is familiar with code regulations. Services available include:



- Comprehensive planning
- Environmental assessments/impact studies
- Environmental auditing
- Environmental compliance: CAA, CWA, RCRA, UST, CERCLA/SARA, PCB, Asbestos, HMTA
- Environmental site assessments (Phases I-IV)
- Financial analysis/funding assistance
- Geological engineering
- Geophysical investigations
- Groundwater contamination investigation
- Highway noise analysis
- Hydrogeological studies
- Industrial and hazardous waste management
- Infiltration/inflow studies
- Instrumentation, telemetering, and controls
- Permitting and government regulations
- Pollution prevention plans
- Remedial action design and implementation
- Soil contamination studies
- Solid waste/air quality management
- Stormwater management/NPDES permitting
- Underground storage tank investigation
- Water and wastewater collection/treatment systems
- Water and sewage facilities planning
- Water distribution/storage systems
- Waterline feasibility studies (AML)
- Wetlands delineation and permit applications

Planning

In our firm, planning is not a separate discipline. It is an important component in assisting our clients in making knowledgeable project and programming decisions. We provide planning for the following types of projects:



- Comprehensive planning
- Economic feasibility
- Environmental planning
- Facilities planning
- GIS/mapping
- Land planning
- Landscape architecture
- Master planning
- Public meetings
- Recreational planning
- Space planning
- Zoning and subdivision ordinances

Civil Engineering

Buchart Horn's civil engineering group matches sophistication and execution to complex, project-specific, and regulatory requirements to leverage the latest technological and computer advances.



- Flood studies
- Grading and drainage design
- Parking studies and design
- Right-of-way services
- Sediment and erosion control
- Signalization
- Site development
- Stormwater management
- Traffic studies and analyses
- Utilities design

Transportation

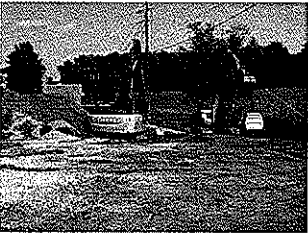
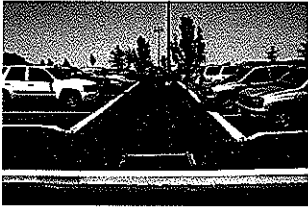
Our Transportation Division offers a full range of transportation-related experience including:

- Airport design
- Bridge design and inspection
- Dam design and inspection
- Flood studies and hydrological analyses
- General structural design
- Highway design
- Railroad and railroad bridge design
- Site grading, drainage, and stormwater design
- Traffic studies

Construction Management

Our construction management engineers and inspectors serve as representatives of the client/owner, providing liaison with contractors so that construction complies with contract documents. We provide the full spectrum of construction phase services for all types of architectural and engineering projects including:

- Construction inspection
- CPM scheduling and evaluation
- Claims/change order management
- Constructability analysis
- Construction audits
- Construction management
- Contract administration
- Design/build
- Equipment start-up
- Grants administration
- Materials/equipment procurement
- Material sampling and testing
- Permit processing
- Specialized testing
- Videotaping



Project Management & Staffing

We believe that the goal of every successful project is a fully satisfied client and workable, cost effective solutions to problems. The element that enables a successful project is the people - skilled and experienced technical personnel committed to a successful project and supported by the management and owners of the firms. We have assembled an exceptional group of professionals to work on the design of the Cartright Branch Refuse Pile Design Project.

Gregory F. Scott, PE will serve as Project Manager and Technical Lead. Greg brings more than 18 years of civil and site design experience. He recently provided construction phase services on the Terry Branch Portals and Refuse Project and the Oakland Public Service District Project, both of which are detailed in Section 3. His specific project experience includes obtaining 404/401 permitting from the U.S. Army Corps of Engineers.

His project responsibilities for this assignment will include:

- Formulating the Project Work Plan.
- Establishing the Project Schedule.
- Ensuring that all project milestones are met through the coordination and monitoring of the project schedule and budget for the entire project team.
- Conducting meetings with WV DEP to document decisions or open items (project issues) and to publish meeting minutes that document those decisions/open items.
- Identifying and monitoring all open items/project issues so that all key project information is acted upon/ responded to in a timely and professional manner.
- Participating with the team in site visits in order to assess existing conditions and to collect and verify all appropriate program needs and requirements.
- Confirming that all work is being performed in accordance with the project scope and guidelines.
- Coordinating and monitoring of project engineers/ architects to ensure consistency and quality of work via regular meetings.
- Communicating among all members of the project team to ensure the consistent application of all project standards, schedules and date decisions.

Other key members of our project team include:

Michael A. Schober, PE will serve as Principal-in-Charge. He has 25 years of experience in the field of municipal engineering, water and wastewater treatment, distribution and collection. He is responsible for coordinating the activities of professional staff as well as managing design projects and coordinating design teams. Mr. Schober's experience includes water distribution and storage design, filtration, and well development.

Robert T. Zulick, PE will serve as QA/QC Manager for this assignment. Bob brings more than 37 years of experience in civil, site, and water systems engineering. He is a registered Professional Engineer and currently oversees all our work in West Virginia, including both environmental and engineering projects. He is serving as Project Manager on a current water system assignment for the Oakland Public Service District in Weirton, and has been QA/QC Manager on two West Virginia DEP projects, including the Terry Branch Refuse and Portals project.

P. Eric Mains, PE brings more than 19 years experience in the areas of Stormwater Management and Regulations. He has made presentations at varying levels regarding changes in stormwater management program administration, comprehensive stormwater planning, floodplain management regulation and riparian buffering. Mr. Mains continues to be involved in the dynamic changes



that are being undertaken as policies regarding stormwater management change from just rate control to practices that include water quality and runoff volume reduction(s).

Donald H. Newman, PE brings over 27 years of environmental and site design experience. He has been involved with several AML projects for the Pennsylvania DEP, including work at the 75 acre McIntyre Mine site and the 55 acre Sherwood Drive site. He has also performed hydrologic and hydraulic analysis for a stream relocation due to potential AMD impacts at a generating station in Homer City, PA.

Tony B. Kitzmiller, PE brings over 28 years of experience in the design of water distribution systems, drainage systems, mine engineering, and civil engineering. He has experience with the supervision of design and construction for coal mining in Northern West Virginia, including water discharges, slurry, and refuse construction. He is intimately familiar with mining conditions and construction, including the design of portal closures and seals. He has experience in managing and construction of methane drainage wells.

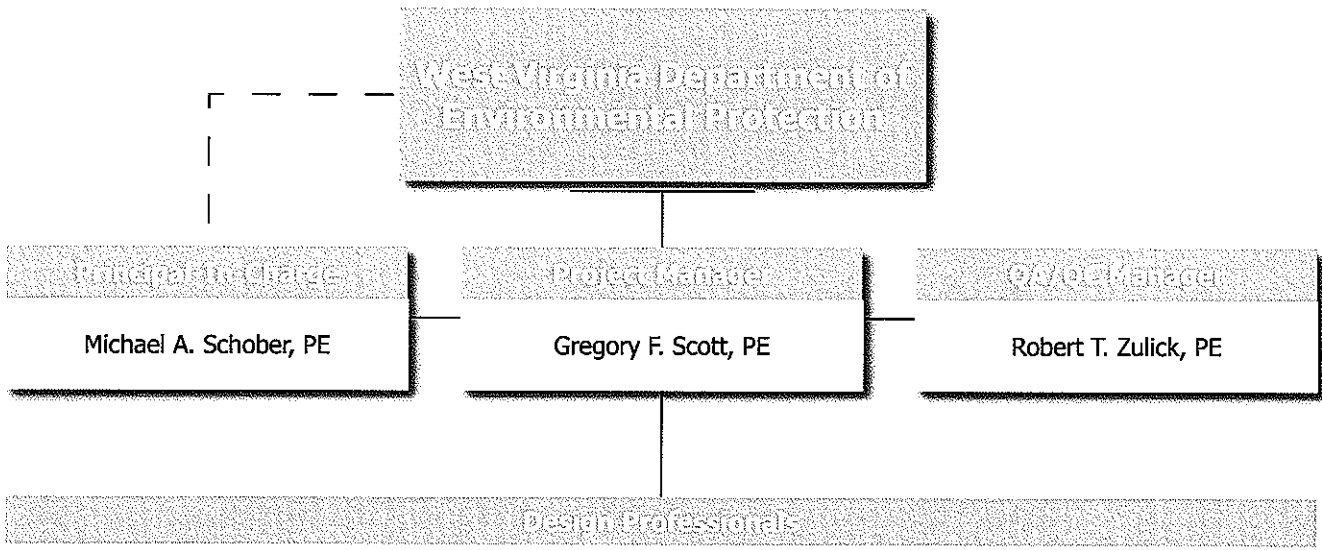
Thomas T. Dancsecs, PE has over 21 years of experience in all aspects of hydrology and hydraulics, including the design of drainage and stormwater management systems. This experience includes work with WVDOT.

Teresa Blauch, PG has over 21 years of varied experience in geology and hydrogeology. She has applied her knowledge of these two areas to soil investigations, groundwater studies, remedial investigations, underground storage tanks and environmental site assessments in both the private and public sectors in Maryland, New Jersey, Pennsylvania, Virginia and West Virginia.

Matthew J. Leisses has extensive field experience, and has worked on a variety of environmental documentation including, but not limited to PA Department of Environmental Protection Permits and various NEPA documents. He routinely submits permits to PADEP for various clients. He has also been involved in meetings with USACE, USFWS, PADEP, PennDOT, and NJDOT. Mr. Leisses has established relationships with several governmental agencies along with numerous non-profit environmental groups.

Laura M. Danko, PWS is certified as a Professional Wetland Scientist with 16 years of experience providing technical and managerial environmental and ecological consulting for both public and private sector clients on a wide range of natural resources planning, conservation, and design projects.

Thomas J. Dougan, PE has over 36 years of experience and has served many clients including PennDOT, Pennsylvania Turnpike Commission (PTC), West Virginia Department of Highways (WVDOT), Ohio Department of Transportation (ODOT), New Jersey Transit (NJT), and numerous city, county and local governments.



West Virginia Department of Environmental Protection

Principal Investigator
Michael A. Schober, PE

Project Manager
Gregory F. Scott, PE

O&D Manager
Robert T. Zulick, PE

Design Professionals

Stormwater Management
P. Eric Mains, PE

Mineshaft/Portal Engineer
Tony B. Kitzmiller, PE

Project Designer
Donald H. Newman, PE

Environmental Scientist
Matthew J. Leisses
Laura M. Danko, PWS

Hydrology
Thomas T. Dancsecs, PE

Geologist
Teresa Blauch, PG

Structural Engineer
Thomas J. Dougan, PE

Technical support staff of over 300, including structural, civil, and cost estimating.



Gregory F Scott, PE

Project Manager

Education:

Master of Science
Civil and Environmental
Engineering
University of Pittsburgh

Bachelor of Science
Environmental Engineering
Technology
Pennsylvania State University

Registrations/Certifications:

Professional Engineer

Years of Experience:

18

Professional Affiliations:

American Society of Civil
Engineers/Region 2 Governor

Water Environment Federation

Mr. Scott has more than 18 years of experience in water systems engineering. His experience includes directing a technical staff of civil engineers and designers on projects involving design of distribution systems, transmission mains, pump stations, treatment works upgrades and storage facilities, including design of new elevated and ground storage tanks. He has managed projects from conceptual planning through contract document preparation, permitting, and construction services. He has also been responsible for representing multiple municipal clients including Boroughs, Townships, and Municipal Authorities in Western Pennsylvania.

WVDEP, Terry Branch Portals and Refuse Remediation, Wyoming County, WV. Construction phase services for access road into site, demolition and disposal of fan and fan house, reclamation of refuse pile, design of three wet seal mine closures, addressed on-site drainage concerns, and re-vegetated all areas disturbed by construction.

Oakland Public Service District, Water System Improvements, Weirton, WV. Project Engineer responsible for preparation of an engineering report to assist the Client in securing funding for water system improvements including water storage tank rehabilitation or replacement, removal of iron and manganese from water, and water line extension along Chapman Road.

3 Rivers Wet Weather Inc., Financial Asset and Liability Data Gathering, Pittsburgh, PA. Data mining efforts to provide a more efficient, effective and relevant municipal asset data module.

Regulatory Support, Borough of Etna, PA. Project overview for retainer engineering services related to sewer engineering and GIS for the Borough of Etna.

Farmerie Alley Flood Drainage Improvements, Borough of Etna, PA. Design of drainage facilities and package pump station for stormwater conveyance.

McCandless Township Sanitary Authority, Upgrade North Interceptor to Babcock Pump Station, Pittsburgh, PA. Fieldwork, preliminary design, final design and permitting services for replacement of sewer line.

Water Treatment Plants (WTP), Western Pennsylvania
Clients: As noted

Moon Township Municipal Authority WTP
Backwash Wastewater Equalization and Treatment Facilities

Tri-County Joint Municipal Authority
High Service Pump Upgrade
Raw Water Pump Upgrade
Backwash Wastewater Treatment Facility

Water Distribution and Storage Facilities, Pennsylvania
Clients: As noted

Western Allegheny Municipal Authority
Booster Pump Station with VFD control system
Distribution (radio signal) Telemetry System (3 tanks & booster station)
Recoating of two 500,000-gallon water storage tanks

Moon Township Municipal Authority
Elevated 1,500,000-gallon hydropillar tank
Recoating of one 1,000,000-gallon, two 1,200,000-gallon and one 400,000-gallon water storage tanks



Tri-County Joint Municipal Authority

Elevated 500,000-gallon hydropillar tank

500,000-gallon ground storage tank

3 Booster Pump Stations with VFD control systems

Telemetry (radio signal) and SCADA System (6 tanks, 4 booster stations and WTP)

108,000 feet of 12-inch and 8-inch water main

Robert T Zulick, PE

Quality Assurance/Quality Control

Education:Bachelor of Science
Civil EngineeringMS
Civil Engineering**Registrations/Certifications:**

Professional Engineer

Years of Experience:

37

Professional Affiliations:American Society of Highway
Engineers

American Water Works Association

Society of American Military
Engineers

As an Associate Vice President with significant experience in administration and coordination of municipal and industrial water and wastewater projects from initial planning phase through design to project construction and facility start-up, Mr. Zulick has the authority to commit the full resources of the firm as necessary to successfully complete any project. He will secure additional resources your project requires when the Project Manager requests those resources, or if you should request those additional resources to meet agreed upon performance goals.

Water Line Feasibility Studies, West Virginia Department of Environmental Protection, Boone, Mercer, and Raleigh Counties, WV. QA/QC Manager responsible for studies of the water supplies of three areas in southern West Virginia to verify if the areas have been affected by mining activities.

Terry Branch Portals and Refuse Remediation, WVDEP, Wyoming County, WV. QA/QC Manager responsible for review of design for project, including demolition and disposal of fan and fan house, reclamation of refuse pile, design of four bat gate mine seals and six dry mine seals.. Addressed on-site drainage concerns, and re-vegetated all areas disturbed by construction.

Oakland Public Service District, Water System Improvements, Weirton, WV. Project Manager responsible for preparation of an engineering report to assist the Client in securing funding for water system improvements including water storage tank rehabilitation or replacement, removal of iron and manganese from water, and water line extension along Chapman Road.

Oakland Public Service District, Water System Improvements, Weirton, WV. Project Manager responsible for design, bidding and construction phase services for Oakland Water System improvements including new water storage tank, treatment facilities to remove iron and manganese, Bell Hill to Ballantyne Road Water Line extension, and Golden Keys Water Storage Tank rehabilitation.

Backwash Water Holding Tank Replacement, Kittanning Filter Plant, Pennsylvania American Water, Armstrong County, PA. Project Manager responsible for design, bidding and construction administration services for a 175,000-gallon backwash water holding tank and related piping.

Hays Mine Chemical Feed Building Evaluation, Pennsylvania American Water, Pittsburgh, PA. Project Manager responsible for engineering/architectural review of deteriorating building and systems at the Hays Mine Treatment Plant to examine the feasibility of rehabilitation/replacement; our services included recommendations regarding chemical feed systems.

Systemwide Water Treatment and Distribution Vulnerability Assessment, Pittsburgh Water and Sewer Authority, PA. Project Manager responsible for this EPA-mandated security project that included a systemwide vulnerability assessment and review/recommendations for revisions/upgrades to the Authority's existing emergency response plan.

Lowries Run Engineering Services, McCandless Township Sanitary Authority, Pittsburgh, PA. Regional Manager responsible for overview of capacity evaluation of the Lowries Run Interceptor and preparation of existing conditions report for an interceptor serving seven contributing municipalities and a customer base near 25,000 persons. Work included flow monitoring and data analysis.



ALCOSAN, Inspection and Hydraulic Analysis of Diversion Structures and Manhole Inspection Program, Pittsburgh, PA. QA/QC Manager responsible for overview and quality control regarding project scope of service, schedule and budget that involved inspection, analysis and database development of manholes and diversion structures in the Eastern Basin of the ALCOSAN Service Area.

ALCOSAN, Interceptor System Instrumentation Improvements, Pittsburgh, PA. QA/QC Manager responsible for overview and quality control regarding project scope of service, schedule and budget that involved studies, design, and construction phase services for replacement of equipment associated with overflow monitoring at five interceptor pumping stations and level monitoring at nine access shaft structures.

Pine Creek Flood Mitigation, Etna Borough, Pittsburgh, PA. As the Consultant Engineer for Etna Borough near the City of Pittsburgh, Buchart Horn has been involved in a number of projects related to the mitigation of flooding from Pine Creek. In September of 2004, Etna Borough experienced catastrophic flooding of Pine Creek due to Tropical Storm Ivan. Buchart Horn provided continual on-site support following this event, including infrastructure assessments, debris removal, emergency funding applications, and engineering services required to restore normal infrastructure operations. Subsequently, we have supported a program of long term improvements to Pine Creek featuring over \$1.2 million in DCED/PADEP funded projects.

PennDOT District 11-0, SR 19 Bridge Over SR 910, Allegheny County, PA. Regional Manager responsible for overview of preliminary and final design of 146-foot, steel multi-girder bridge replacement, including structure configurations, review and coordination of geotechnical investigations, and reviews and determinations of roadway alignments.

Group B Bridge Design, Allegheny County, Pittsburgh, PA. Regional Manager responsible for overview oriented toward project staffing, quality of product, project schedule and budget for the replacement of Davis Run Bridge, Jack's Run Bridge and Homeville Creek Bridge including environmental studies, preliminary engineering, final design, additional structural design, right-of-way and deed research.

Michael A Schober, PE

Principal-in-Charge

Education:

Bachelor of Science
Civil Engineering

Registrations/Certifications:

Professional Engineer

Years of Experience:

25

Professional Affiliations:

American Society of Civil Engineers
Chesapeake Water Environment
Association
Water Environment Federation/
Public Education Committee

Mr. Schober has 25 years of experience in the field of municipal engineering, water and wastewater treatment, distribution and collection. He is responsible for coordinating the activities of professional staff as well as managing design projects and coordinating design teams. Mr. Schober's experience includes water distribution and storage design, filtration, and well development.

Water Line Feasibility Studies, West Virginia Department of Environmental Protection, Boone, Mercer, and Raleigh Counties, WV. Principal-in-Charge responsible for studies of the water supplies of three areas in southern West Virginia to verify if the areas have been affected by mining activities.

Terry Branch Portals and Refuse Remediation, WVDEP, Wyoming County, WV. Principal-in-Charge responsible for construction of access road into site, demolition and disposal of fan and fan house, reclamation of refuse pile, design of three wet seal mine closures. Addressed on-site drainage concerns, and re-vegetated all areas disturbed by construction.

Oakland Public Service District, Water System Improvements, Weirton, WV. Principal-in-Charge responsible for design, bidding and construction phase services for Oakland Water System improvements including new water storage tank, treatment facilities to remove iron and manganese, Bell Hill to Ballantyne Road Water Line extension, and Golden Keys Water Storage Tank rehabilitation.

Conewago Creek Watershed Conservation Plan, Pennsylvania Environmental Council, York County, PA. Principal-in-Charge responsible for completion of a River Conservation Plan (RCP) and subsequent development of an interactive GIS Watershed Toolbox that includes recommendations for preservation, conservation, and restoration of the resources of the Conewago Creek Watershed.

Watershed Conservation Plan, Muddy Creek Trout Unlimited, York County, PA. Principal-in-Charge responsible for background research, basic data collection, analysis of issues and development of recommendations needed to prepare a long-term management plan for the entire Muddy Creek Watershed.

Hartman Run Stream Stabilization, New York Wire, Mt. Wolf, PA. Principal-in-Charge responsible for obtaining an emergency permit to fix and stabilize the Hartman Run stream due to significant damage to the gabions during a storm event, and proposed improvements consisting of re-alignment of the stream and installation of rock vanes to redirect the flow to reduce near bank shear stress along the outside bend (previous location of gabion baskets).

Flood Protection Levee Federal Code Compliance Certification, City of Lock Haven, PA. Principal-in-Charge responsible for engineering services leading to certification by the Federal Emergency Management Agency (FEMA) that the City of Lock Haven flood protection levee meets or exceeds the Code of Federal Regulations, including field surveys, hydrologic and hydraulic analysis, geotechnical evaluations, and operations and maintenance.

P Eric Mains, PE

Stormwater Management

Education:

Bachelor of Science
Civil Engineering

Registrations/Certifications:

Professional Engineer

Years of Experience:

19

Professional Affiliations:

Association of State Dam Safety
Officials

National Society of Professional
Engineers

Mr. Mains has more than 19 years experience in the areas of Municipal Engineering and Stormwater Management Regulations. He has served on committees ranging from the Technical Review Committee for the PA Stormwater Management Handbook as well as the Adams County Stormwater Advisory Council and the Adams County Ad Hoc Stormwater Review Committee. He has made presentations at varying levels regarding changes in stormwater management program administration, comprehensive stormwater planning, floodplain management regulation and riparian buffering. Mr. Mains continues to be involved in the dynamic changes that are being undertaken as policies regarding stormwater management change from just rate control to practices that include water quality and runoff volume reduction(s).

New to the Bucharthorn family, Mr. Mains brings the following experience:

Highland Township, Subdivision and Land Development Ordinance, Highland Township, PA. Assisted Township in authoring a major re-write of their Ordinance including initial drafting, workshop meetings with the Planning Commission, technical assistance in preparing new Ordinance and overall adoption process.

Gettysburg College, Comprehensive Stormwater Management Master Plan, Gettysburg, PA. In conjunction with overall Master Planning efforts, Mr. Mains was responsible for preparation of a campus-wide stormwater management strategy which identified existing drainage issues and provided selection of options to remedy. The Plan hydrological and hydraulically modeled the conditions of the campus, with simulation of anticipated building projects.

Reading Township, Bakers Watering Trough Road, Reading Township, PA. Preparation of construction plans and environmental permitting necessary to replace failing culvert pipes with a pre-cast concrete box culvert. The project was fast-tracked using a collaboration of environmental engineering services and construction management techniques.

Lake Heritage Property Owner's Association (LHPOA), Dam Breach Assessment, Gettysburg, PA. As mandated by the PA DEP, the LHPOA was obligated to perform an analysis of various scenarios where the existing earthen embankment dam would fail and result in downstream flooding. The results of this study were then used to develop Inundation Area Mapping and associated Emergency Action Planning. The study involved the development of an intricate hydrologic model of the entire contributory drainage area as well as the downstream channels to determine what event would cause the dam to breach and what effects would occur at points several miles downstream. The models included data such as soils, land use, slopes, ground cover and various road/bridge information. Once the models were compiled, they were then run and calibrated to ensure their accuracy.

BAE Systems - Test Track Facility (York, PA) - Mr. Mains was asked to review and provide quality control (as a subconsultant) regarding the hydrologic and hydraulic analysis of various stream improvements that were being made as part of a test track expansion project at the York, PA facility. The work included review of the HEC-RAS models to provide recommendations for improvements and troubleshooting of error codes that came out of the original modeling efforts. In addition, efforts were made to review the overall stormwater computations, using statistical modeling software to provide confirmation of estimated flows on the ungaged streams.



Carroll Valley Borough - Section "F" Dam Stream Embankment Stabilization - The Borough was mandated by PA DEP to repair and stabilize an extended section of earthen embankment that was being scoured by the adjacent Tom's Creek. As part of this effort, a design was prepared using gabion baskets to provide a reinforced embankment edge/wall upon which the stream flows could dissipate (without compromising the integrity of the dam). Flows were calculated and calibrated to simulate the stream flow conditions, from which the hydraulic models of the stream were prepared. This allowed for a comparison of pre and post project conditions to support the Joint Permit Application (Army. Corp. of Engrs.) that accompanied this project. The selected design was then implemented using Borough labor forces, under the direct supervision of Mr. Mains, so as to realize project cost savings.

Highland Township - Stormwater Management Program / Policies, Highland Township, PA. Recognizing that the Township was having issues with the current stormwater management program that was in place, Mr. Mains drafted new procedures and policies which were streamlined and less burdensome on the residents.

Donald H Newman, PE

Project Designer

Education:

BA
Environmental Engineering

MS
Water Pollution Control/Water
Quality Mgmt./Env. Health Plan

Registrations/Certifications:

Professional Engineer

Certified Municipal Compost
Operator

Years of Experience:

33

Professional Affiliations:

Air and Waste Management
Association

American Association for the
Advancement of Science

American Society of Civil Engineers

American Water Resources
Association

American Water Works Association

National Ground Water Association

National Trust for Historic
Preservation

Mr. Newman has management responsibilities for the activities of professional and technical personnel for work on environmental engineering projects in the areas of water supply, sewage, stormwater, solid waste and industrial waste management. During his 33-year career, he has successfully executed over 350 engineering projects. Mr. Newman is also experienced in the siting and engineering of conveyance, treatment and disposal facilities, as well as related areas of comprehensive planning, sediment control, stormwater management, route and option assessment, occupancy/easement/regulatory permits, facility closure, geotechnical engineering, and cost estimating. In addition, he has extensive experience in complex environmental/natural resource/cultural resource assessments and transportation related environmental activities.

Central West Virginia Regional Airport Authority, Yeager Airport Deicing Study, Charleston, WV. Senior Staff Engineer responsible for Control/Treatment Alternatives under the second phase of the Deicing Fluid Runoff Study. The focus of this phase was to evaluate and give opinions of cost associated with options intended to abate nuisance conditions in an area downstream of a point of discharge from the airport stormwater drainage system. The abatement study examined collection of the deicer runoff and ultimate treatment and disposal. Estimated volume and concentrations from facility operations and use records in tandem with estimated runoff events: direct connection to the Charleston Sanitary Board (CSB) system, or construction of holding facilities - either a tank or pond - with removal to a remote site for treatment and disposal via six distinct conceptual alternatives.

PADEP Abandoned Mines Lands (AML) Program for 75-acre McIntyre and 55-acre Sherwood Drive Refuse Sites. Directed preparation of site grading and reclamation plans, facility design, construction documents, and permitting. Directed periodic site inspections and monitored progress during construction phase. Sherwood Drive design incorporated design and compaction requirements for the construction of a new interchange for the Pennsylvania Turnpike on part of the site.

Closure of Five Ash Disposal Sites Located throughout Western PA for Pennsylvania Electric Company. Directed engineering, regulatory applications, and participated in negotiations in successful closure and reclamation of Homer City Station Emergency Ash Site, Williamsburg Ash Site, Seward Station Ash Sites Nos. 1 & 2, and Shawville Station Ash Disposal Site. The closure engineering consisted of interim and final site grading plans, hydrologic and hydraulic assessment for seepage and stormwater runoff, erosion and sediment control plans, groundwater monitoring plans and monitoring system installation, design of drainage and other related support facilities, construction cost estimates, preparation of construction drawings/specifications, construction inspection (with the exception of Williamsburg). As lead professional, provided post closure monitoring, compliance evaluation, certifications and review of as-built drawings. More complex project sites required assessment of subsurface conditions, evaluation of critical materials, stability & settlement analysis, liner design, flood routing, air emissions controls, and cover/re-vegetation plans.

ALCOSAN, Inspection and Hydraulic Analysis of Diversion Structures and Manhole Inspection Program, Pittsburgh, PA. Project Manager responsible for inspection, analysis and database development for manholes and diversion structures in the Eastern Basin of the ALCOSAN Service Area.



ALCOSAN, Interceptor System Instrumentation Improvements, Pittsburgh, PA. Project Manager responsible for studies, design, and construction phase services for replacement of equipment associated with overflow monitoring at five interceptor pumping stations and level monitoring at nine access shaft structures.

Lowries Run Engineering Services, McCandless Township Sanitary Authority, Pittsburgh, PA. Project Manager responsible for evaluation of the capacity of the Lowries Run Interceptor and preparation of an existing conditions report. The Lowries Run Interceptor currently serves seven contributing municipalities and a customer base over 20,000 persons. Prior work had supported management initiatives by the Owner, documented the location and number of connections, and established both base (dry) flow and peak (wet) flow through flow monitoring, data analysis results, areas of infiltration and/or inflow, and problem areas were identified preparatory to corrective actions in an existing conditions report. Directed modeling of the Lowries Run Interceptor using standard flow models SANSYS and SWMM. Incorporated the GPS based survey data and other specific physical details into models for interceptor management and corrective action purposes. Performed initial model calibration study from GIS data, water use records, and subbasin flow monitoring.

Lowries Run Stormwater Capacity Analysis, McCandless Township Sanitary Authority, Pittsburgh, PA. Project Manager responsible for an engineering assessment of the impact of a proposed MTSA treatment plant in the upper Lowries Run sewershed. The XP-SWMM Model analysis assumed that sewer flows presently contributed at MH 74 and MH 70 will no longer be conveyed by the Lowries Run Interceptor. The engineering evaluation provided information to MTSA on the projected downstream effects on conveyance capacity (i.e. surcharges, flooding, etc.) during wet weather conditions with updated hydraulic factors from a recently completed evaluation of the CAP metering data.

Lowries Run Sewershed Wet Weather Management Program, McCandless Township Sanitary Authority, Pittsburgh, PA. Project Manager responsible for engineering services for Lowries Run Sewershed to address longstanding concerns over the amount of extraneous water conveyed by the Lowries Run Interceptor.

Ross Township, Hodil Road Overflow Data Analysis, Pittsburgh, PA. Project Manager responsible for analysis of flow monitoring data to determine quality, installation information, and profile of hydrologic conditions of past overflow events.

Pine Creek Flood Mitigation, Etna Borough, Pittsburgh, PA. As the Consultant Engineer for Etna Borough near the City of Pittsburgh, Buchart Horn has been involved in a number of projects related to the mitigation of flooding from Pine Creek. In September of 2004, Etna Borough experienced catastrophic flooding of Pine Creek due to Tropical Storm Ivan. Buchart Horn provided continual on-site support following this event, including infrastructure assessments, debris removal, emergency funding applications, and engineering services required to restore normal infrastructure operations. Subsequently, we have supported a program of long term improvements to Pine Creek featuring over \$1.2 million in DCED/PADEP funded projects.

Farmerie Alley Flood Drainage Improvements, Etna Borough, PA. Design of drainage facilities and package pump station for stormwater conveyance.

Poplar Street Slope Stabilization, Etna Borough, PA. Design of a retaining wall along Poplar Street to correct slope failure due to undercutting of Pine Creek streambank during flood events.



Tony B Kitzmiller, PE

Mine Shaft/Portal Engineer

Education:

Bachelor of Science
Civil Engineering

Registrations/Certifications:

Professional Engineer

Years of Experience:

29

Mr. Kitzmiller has more than 10 years of coal mining experience as both a Superintendent and a Project Engineer.

Coal Mining Experience, 10+ years

Chief Engineer at the Blacksville Division.

Supervisor of Design and Construction of Northern West Virginia Region.

- Duties: Supervised 13 surveyors and resident engineers.
- Permits - Pa mine subsidence, well permits for longwall mining thru oil and gas wells, water discharges, slurry and refuse construction. New shaft permits for drilling and conventional sinking.
- Designed bridges, roads, etc, and helped resolve underground mining problems.
- Managed methane drainage wells including construction of same.
- Project manager for outside construction. Annual budget varied from 10 to 17 million annually.

Williamson Shaft Contracting, 2+ years

Project Engineer and Superintendent

As Superintendent:

- Batched concrete on site at mine shafts under construction.
- Planned daily work schedule. Procured materials and equipment for shaft construction.
- Worked three shifts per day. Directed the work force.

As Project Engineer:

- Calculated excavation, concrete, and reinforcing quantities for new shaft construction.
- Prepared drawings for underground rotary dump and shaft building.
- Prepared monthly invoices for numerous projects.
- Inspected the various projects on a biweekly schedule.

Additional Experience

To Date: Performed design of water distribution systems and some sewer design. Assembled specifications, bid projects, secured permits and awarded contracts. Project manager for numerous water and sewage systems.

Airport RPR, two years. Repaired and renovated existing runways and taxiways plus airport drainage and lighting systems. Also inspected placement of P401 asphalt.

Owner/Operator of Hydro Engineering and Contracting, 10 years. Performed sandblasting and painting of chemical tanks, water towers, heat baked linings specialties, and installed special floor coatings to meet certain lab and shop requirements.

Project Manager for Comsat Corporation of Washington D.C., 3.5 years. Installation of microwave transmission towers to a second earthstation, managed 50,000 sq ft new construction expansion to the existing Edam Earthstation. Construction facility included new power switching yard, internal switch gear, UPS system, new A/C and Turbine engine emergency power. Numerous other items related to new construction.



Thomas T Dancsecs, PE

Hydrology

Education:

Bachelor of Science
Civil Engineering

Registrations/Certifications:

Professional Engineer

Years of Experience:

21

Professional Affiliations:

American Society of Highway
Engineers

Mr. Dancsecs has 21 years of experience in the field of hydraulics and drainage design. His background includes design of drainage and stormwater management systems for a variety of transportation projects, as well as experience in hydraulic modeling and permitting. He is familiar with the drainage design standards for numerous state transportation departments and agencies. In addition to drainage design for roadways, Mr. Dancsecs' abilities include hydraulic modeling for bridge projects over waterways, floodplain analysis, design of detention/retention ponds, scour analysis, design of underground detention systems, culvert design and analysis, stream encroachment permitting, and NPDES permitting.

Preliminary Design, Route 168/Benigno Boulevard Intersection, New Jersey DOT, Borough of Bellmawr, Camden County, NJ. Design of safety and traffic flow improvements to intersection of NJ 168 and Benigno Boulevard, including widening for turn lanes, consolidation of driveways on east side of NJ 168 to align with realigned Benigno Boulevard, new coordinated signals, lighting, stormwater management.

Southard Street Bridge Replacement, Initial/Final Design, New Jersey DOT, Trenton, NJ. Highway Engineer responsible for roadway drainage design. Also assisted with utility relocation issues.

Route 206/Crusers Brook, Final Scope Development for Bridge Replacement, New Jersey DOT, Montgomery Township, NJ. Highway Designer responsible for oversight/coordination with subconsultant performing hydraulic modeling for sizing of bridge opening as well as stormwater management design.

United States Avenue Bridge Replacement, New Jersey DOT, Lindenwold, NJ. Highway Designer responsible for utility relocation efforts, including identifying conflicts, developing schemes of accommodation, developing utility checklists, preparing utility agreement plans and specifications. Performed oversight of roadway drainage design and stormwater management. Also assisted with intersection grading, maintenance and protection of traffic, environmental permitting, and public involvement.

Route 9 Sidewalk Improvements, NJDOT, City of Northfield, Atlantic County, NJ. Task Manager responsible for performing a complete analysis of the existing roadway drainage system within the Route 9 project limits, including spread calculations, inlet capacity, and storm pipe capacity. Developed a preliminary design for an improved roadway drainage system that would also collect runoff from proposed sidewalks. Investigated stormwater management facility locations to comply with NJDEP regulations.

Marlton Circle Elimination, Evesham Township, NJ. Task Manager responsible for identifying all properties impacted by the circle elimination project, and checking impacted properties for compliance with the State Highway Access Management Code. Classified all access changes as Adjustments, Modifications, or Revocations and prepared access cutouts per NJDOT criteria. Used Autoturn program to establish design vehicle turn paths and site circulation. Also performed oversight of drainage design and utility relocation.

Patterson's Mill Bridge and Avella Bridge Replacements, PennDOT District 12, Uniontown, PA. Preliminary and final design services for the replacement of Patterson's Mill Bridge (SR 4029) over the North Fork of Cross Creek and the replacement of Avella Bridge (SR 4029) over the Middle Fork of Cross Creek.



Teresa Blauch, PG

Geologist

Education:

Bachelor of Science
Geology

Coursework
MODFLOW Computer Modeling

Coursework
Natural Attenuation of Chlorinated
Solvents in Groundwater

Registrations/Certifications:

Professional Geologist

OSHA 40-Hour Hazardous Waste
Operations & Emergency Response

Underground Storage Tank Closure

Years of Experience:

21

Professional Affiliations:

Society of Women Environmental
Professionals

Ms. Blauch has had varied experience in geology and hydrogeology. She has applied her knowledge of these two areas to soil investigations, groundwater studies, remedial investigations, underground storage tanks and environmental site assessments in both the private and public sectors in West Virginia, Virginia, Maryland, New Jersey and Pennsylvania. Some of her responsibilities have included direct drive soil collections and soil gas surveys. Groundwater studies have involved supervising well installation and development, selecting potential water supply well sites, water feasibility studies, and determining hydraulic gradient and direction. She has aided in implementation of vacuum extraction systems and air stripping towers and supervised excavation of contaminated material. Underground storage tanks included delineation of contaminated areas, registration, removal and closure of tanks according to state regulations. Some closures have proceeded to a groundwater characterization study and eventual remediation. With the advent of Pennsylvania's Act 2 "Land Recycling Program" and updates in New Jersey's "Technical Requirements for Site Investigations", she has kept up-to-date on both the academic requirements and the regulatory changes. Environmental site assessments according to ASTM Guidelines have been conducted on agricultural areas, commercial areas, and industrial areas. The assessments involved assessing past and present activities as to their potential negative impact on the surrounding environment.

Clock Towers Site Groundwater Remediation, General Dynamics, Lancaster, PA. Professional services for monthly site visits, monitoring via modem every other day, system troubleshooting, minor repairs and maintenance of equipment, carbon change-out (if necessary), semi-annual PADEP well search, monthly effluents sampling and analysis, semi-annual groundwater sampling and analysis, annual groundwater sampling and analysis, quarterly water level monitoring, and biennial residential well sampling.

Water Supply Test Well, New Freedom Borough, PA. Coordination with PADEP, preparation of pre-drilling plan and installation of a test well.

Buchart Horn "Brownfields" Headquarters Preliminary Environmental Site Assessment, York, PA. Engineering Geologist responsible for conducting environmental borings and cores for analysis of volatile organic compounds and heavy metals. Provided technical support on how to properly close storage tank located within a concrete vault.

General Machine Act 2 Special Industrial Site Closure, York, PA. Senior Geologist who conducted a fate and transport analysis of an abandoned manufacturing facility to comply with requirements of Act 2 "Land Recycling Program", Special Industrial Sites. Using data generated from slug tests, determined hydraulic conductivity of underlying unconfined aquifer. Determined groundwater flow rate and direction from water levels in monitoring wells.

Kennedy Van Saun Health Risk Assessment, Danville, PA. Engineering Geologist responsible for the installation of monitoring wells for industrial site in response to a release of petroleum products. Collected groundwater and surface water samples to determine impact on the water quality.

Keystone/Adsc0 Landfill, Adams County, PA. Engineering Geologist who conducted azimuthal resistivity survey to characterize fracture orientations. Collected groundwater samples quarterly as per PADEP requirements.



Loucks Mill Road Plant Remediation, Northrop Grumman Corporation, York, PA. Site had been used for manufacturing metal furniture. It was abandoned in the late 1980's. A Phase I environmental site assessment was conducted on this 10.4-acre site according to ASTM guidelines. The Phase I and resultant follow-up resulted in 45 Areas of Concern (AOC). Each AOC was investigated using appropriate field techniques. Soil samples were collected to characterize the subsurface. Groundwater monitoring wells were advanced to determine groundwater flow direction and the influence of an on-site stream on the water table. Slug tests were performed on select wells, and the data was used to generate aquifer characteristics from computer-aided programs. The technical requirements for obtaining a release of liability under Act 2 "Land Recycling Program" Site-Specific and Statewide Health Standards for soil, groundwater and surface water were ascertained. Coordination with PADEP personnel was maintained. Physical properties of the on-site contaminants (including heavy metals and chlorinated solvents) were reviewed and incorporated into the site conceptual model.

Knox Gelatin Supplemental Remedial Investigation Work Plan Preparation, Camden Redevelopment Agency, NJ. Development of a Remedial Investigation Work Plan involving field investigation to collect and analyze soil and/or groundwater samples for presence of hazardous materials.

Southard Street Bridge Replacement, Initial/Final Design, New Jersey DOT, Trenton, NJ. Development of plans for three-span over steel structure over US Route 1 and Conrail, including bridge design, highway design, utility engineering, right-of-way, geotechnical engineering, drainage, traffic detour, lighting, permitting, hazardous waste investigations and context sensitive design.

Hazardous Waste Investigations Indefinite Delivery Contract, New Jersey DOT, Statewide, NJ. Engineering Geologist responsible for geophysical surveys, borings, Geo-Probe sampling, monitoring well installation, and groundwater and surface water testing to determine impact on future road improvements.

NJDOT-owned Maintenance Yards, Trenton, NJ. Senior Geologist who comprised and implemented NJDEP-approved remedial action work plans at five maintenance yards. Performance of activities adhered to NJDEP regulations and guidance. Supervised the removal of dry wells at two of the maintenance yards. Collected requisite confirmatory soil samples. Conducted groundwater investigations at all five maintenance yards. Supervised monitoring well installation and groundwater sample collection. Compared analytical results with groundwater quality criteria. Determined contaminant trends based upon historic data. Provided remedial action progress reports to NJDEP.

Agway Energy Products, Washington Plant Remediation, NJ. Senior Geologist responsible for conducting site characterization and remedial investigation in a glacial till environment. Tasks included monitoring well installation, groundwater sampling, Geo-probe soil sampling, and a receptor study. The vertical and horizontal delineation of both soil and groundwater contamination was investigated. Discussed remedial options with NJDEP, and agreed upon possible reclassification of aquifer. Provided necessary NJDEP documentation.

Washington County Water & Sewer, Water Intake Rehabilitation/Relocation Study, Sharpsburg, MD. Engineering Geologist responsible for regional groundwater study via published data, area reconnaissance, and fracture trace analysis to determine if an economical supply of groundwater could be obtained from the underlying aquifer and to find the optimal location of the wells.



Matthew J Leisses

Environmental Scientist

Education:

Coursework
Biology

Coursework
Rosgen Applied Geofluvial
Morphology Level 1

Coursework
38-Hour Wetland Delineation
Program

Coursework
Pennsylvania Stormwater
Symposium

Coursework
Native Plants

Coursework
Wetland Identification

Coursework
EPA Mid-Atlantic Region 3
Macroinvertebrate Training

Years of Experience:

5

Professional Affiliations:

Codorus Creek Improvement
Partnership/Chair

Codorus Creek Watershed
Association

Watershed Alliance of York/Board
Member

Mr. Leisses has worked in and around streams and wetlands and has extensive knowledge of aquatic monitoring; native and invasive plant species; riparian buffers; streambed restoration; workshop/lesson plan research, development, and implementation; grant writing; and community relations. In his prior work for the Codorus Creek Improvement Partnership, he has experience in identifying wetlands, stream restoration, in teaching watershed education, and has frequently attended workshops on varying wetland and watershed topics. His field experience includes habitat assessment; chemical, physical, and biological water quality monitoring; and coordination and execution of watershed restoration.

In addition to his extensive field experience, Mr. Leisses has worked on a variety of environmental documentation including, but not limited to PA Department of Environmental Protection Permits and various NEPA documents. He routinely submits permits to PADEP for various clients. He has also been involved in meetings with USACE, USFWS, PADEP, PennDOT, and NJDOT. Mr. Leisses has established relationships with several governmental agencies along with numerous non-profit environmental groups.

Hartman Run Stream Stabilization, New York Wire, Mt. Wolf, PA. Buchart Horn obtained an emergency permit to fix and stabilize the Hartman Run stream due to significant damage to the gabions during a storm event, and proposed improvements consisting of realignment of the stream and installation of rock vanes to redirect the flow to reduce near bank shear stress along the outside bend (previous location of gabion baskets).

Water Supply Test Well, New Freedom Borough, PA. Coordination with PADEP, preparation of pre-drilling plan and installation of a test well.

Conewago Creek Watershed Conservation Plan, Pennsylvania Environmental Council, York County, PA. Completion of a River Conservation Plan (RCP) and subsequent development of an interactive GIS Watershed Toolbox that includes recommendations for preservation, conservation, and restoration of the resources of the Conewago Creek Watershed.

Watershed Conservation Plan, Muddy Creek Trout Unlimited, York County, PA. Project Manager responsible for background research, basic data collection, analysis of issues and development of recommendations needed to prepare a long-term management plan for the entire Muddy Creek Watershed.

Retainer Services for Water Projects, West Manchester Township Authority, York, PA. Retainer services for design of small scale water projects, including water main replacements, permitting, and review of proposed designs, as well as several larger projects of note, including the design of a groundwater well for public supply, a vulnerability assessment, and a security upgrade study.

Riverfront Park: Riverbank Stabilization and Flood Control Design and Construction Management, City of Sunbury, PA. Preliminary assessments and studies, schematic and final engineering designs, and bidding and construction phase services for the riverfront park and associated facilities, including design of appropriate stabilization and restoration measures for the riverbank and preserving the structural integrity of the existing levee/floodwall system.

Packers Island Water Main Replacement, PA American Water, White Deer District, Northumberland Borough, PA. Design of a water main replacement using HDD with multiple river crossings.



West Manheim Water Main Extension Wetland Determination, York Water Company, Adams County, PA. Project Manager responsible for on-site determination as to presence or absence of wetlands in vicinity of five proposed water line stream crossings and approximately 4,000 feet of proposed alignment between Hostetter Road and Sell's Station Road in Oxford, Mount Pleasant, and Union Townships.

Bullfrog Valley Run PADEP Permits, Township of Derry Board of Supervisors, Hershey, PA. Preparation and obtaining of PADEP permits GP 5 and GP 11 for construction of a footbridge.

Broad Creek Basin Sewer Rehabilitation, Washington Suburban Sanitary Commission, Laurel, MD. Final engineering design, field investigations and constructability reviews, preparing bid packages, and conducting a community outreach program for pipe rehabilitation and stream restoration in Broad Creek basin.

Laura M Danko, PWS

Environmental Scientist

Education:

AAS
Horticulture and Landscape Design

Bachelor of Science
Environmental Science

Graduate Coursework
Master's Program, Environmental
Resource Management

Registrations/Certifications:

Professional Wetlands Scientist

Years of Experience:

16

Professional Affiliations:

York County Master Gardener
Program, MAEScapes Educational
Series, Curriculum Educator for
rain-gardening initiatives use of
native plant species, and
identification and replacement of
invasive plant species

Cumberland County Master
Gardener Program, Education
Symposia Committee Chairperson
dedicated to developing and
facilitating horticultural and
ecological educational programs
for the benefit of our local
communities

Ms. Danko is certified as a Professional Wetlands Scientist with 16 years of experience providing technical and managerial environmental and ecological consulting on a wide range of natural resources planning, conservation, and design projects. Her experience includes conducting wetland/environmental delineations and function/value assessments; wetland, stream, and wildlife habitat restoration and mitigation design; regulatory permitting services; environmental monitoring services; wetland and stream construction management and inspection; natural resource inventories; wildlife species, habitat, and biodiversity survey and analysis; technical document and open-end contract proposal development; project committee and advisory board liaison services; coordination and facilitation of project meetings, public events, and presentations; development of technical project documents and specifications; quality control review of technical reports; preparation of construction specifications, bid documents, and cost estimates; and technical and impact analysis documents including feasibility studies, hydrology determinations, habitat studies, species studies, and NEPA documents.

Packers Island Water Main Replacement, PA American Water, White Deer District, Northumberland Borough, PA. Design of a water main replacement using HDD with multiple river crossings.

Riverfront Park: Riverbank Stabilization and Flood Control Design and Construction Management, City of Sunbury, PA. Preliminary assessments and studies, schematic and final engineering designs, and bidding and construction phase services for the riverfront park and associated facilities, including design of appropriate stabilization and restoration measures for the riverbank and preserving the structural integrity of the existing levee/floodwall system.

Water Supply Test Well, New Freedom Borough, PA. Coordination with PADEP, preparation of pre-drilling plan and installation of a test well.

Watershed Conservation Plan, Muddy Creek Trout Unlimited, York County, PA. Background research, basic data collection, analysis of issues and development of recommendations to prepare a long-term management plan for the Muddy Creek Watershed.

Conewago Creek Watershed Conservation Plan, Pennsylvania Environmental Council, York County, PA. Environmental Scientist responsible for development/compilation of natural resource data and development and assessment for watershed protection, conservation, and restoration strategies.

Sewage Facilities Expansion Design, Bonneauville Borough Municipal Authority, PA. Environmental Scientist responsible for wetland/stream and site investigation for construction plan and permit application, development and submittal of State General Permit application for environmental impact, and initial concept development/recommended strategy for stream stabilization efforts.

Watershed Study, St. Mary's County, MD. Project Manager responsible for the study of two watersheds to determine areas considered suitable for development. Project involved both GIS analysis and ground-truthing to determine sensitive areas throughout each watershed that were in need of protection. Study included consideration of numerous rare, threatened or endangered species, including the dwarf wedge mussel, a federal endangered species. Final product consisted of a Sensitive Area Protection Report and Mapping.



County Park Wetland/Area 6 Stream Restoration, Department of Planning, Bureau of Environmental Services, Carroll County, MD. Project Manager responsible for a complex design project to restore proper channel dimensions to an urban stream and to create viable wetlands. The project involved stream bank stability restoration, stream geometry restoration, re-vegetation, wildlife habitat creation, creation of stormwater management and water quality improvement/Best Management Practices (BMPs), creation of a wetland to provide wildlife habitat, and detainment of high storm flows.

Winters Run Wetland Delineation, Department of Environmental Protection and Resource Management (DEPRM), Baltimore County, MD. Performed wetland and stream delineation on an approximately 25-acre tract of land as part of the Baltimore County Winters Run Stream Restoration Project. Responsibilities included performing initial site assessment, wetland/stream field-delineation, and preparation of wetland/stream delineation report.

Potee Street Bridge Replacement, City of Baltimore and Maryland State Highway Administration. Environmental Manager responsible for the preparation of a Joint Federal/State Permit application including pertinent graphic plates depicting wetland and stream impacts, review of roadway design for determination of impacts, wetland avoidance and minimization efforts and alternative analyses, selection and design of the wetland mitigation site, regulatory agency coordination, development of Categorical Exclusion document to fulfill NEPA requirements, coordination with Chesapeake Bay Critical Area Commission (CBCA) for impacts within the Critical Area and associated 100-foot buffer, development of CBCA mitigation plans totaling more than three acres, presentation to the CBCA Commission for request of project and mitigation approval.

Rock Creek, Woodrow Wilson Bridge, Maryland State Highway Administration and Virginia Department of Transportation. Developed vegetative restoration plans, landscaping plans, construction specifications, and quantity and cost estimates for fish passage improvements and bank stability measures for Rock Creek in Rock Creek National Park, Washington D.C., as part of the compensatory stream mitigation for the Woodrow Wilson Bridge Replacement project.

Thomas J Dougan, PE

Structural Engineer

RESUME

Thomas J. Dougan, PE

Education:

Master of Science
Engineering Management (Industrial
Engineering)
University of Pittsburgh

Bachelor of Science
Civil Engineering
Villanova University

Registrations/Certifications:

Professional Engineer

Years of Experience:

36

During Mr. Dougan's 36-year career, he has served many clients including PennDOT, Pennsylvania Turnpike Commission (PTC), West Virginia Department of Highways (WVDOT), Ohio Department of Transportation (ODOT), New Jersey Transit (NJT), and numerous city, county and local governments.

Pedestrian Bridge Design, H.J. Heinz Plant / SR 0028: PennDOT 11-0 - Project Manager for development of TS&L plans for a new pedestrian bridge, including adjacent retaining walls and ramp structures; preparation of the foundation submissions for the bridge and retaining walls; and overall supervision of the final structure design and final QA/QC.

West Virginia DOT - Mon/Fayette Expressway, I-68 Interchange, Structure Design on New Alignment, Morgantown, WV - Structure Task Leader responsible for the development of span arrangement, TS&L and foundation submissions, and the supervision of the final PS&E development for 10 structures. The structures include simple span steel, multi-span prestressed concrete, multi-span continuous steel curved girders.

Urban Redevelopment Authority (URA), Allegheny Co. - Structure Rehabilitation - Project Manager for the rehabilitation of the railroad bridge crossing the back-channel of the Allegheny River at Herr's Island. The project adhered to strict aesthetic criteria for incorporating the structure into the environs of the residential development at Herr's Island.

Mon-Fayette Expressway Section 53E, PTC - Deputy Project Manager responsible for preliminary and final structure design of the interchange at the heart of the Mon-Fayette Expressway 51 to Pittsburgh leg. The interchange will be fully directional and connect downtown Pittsburgh with Monroeville to the east and the previously constructed Mon-Fayette Expressway to the south.

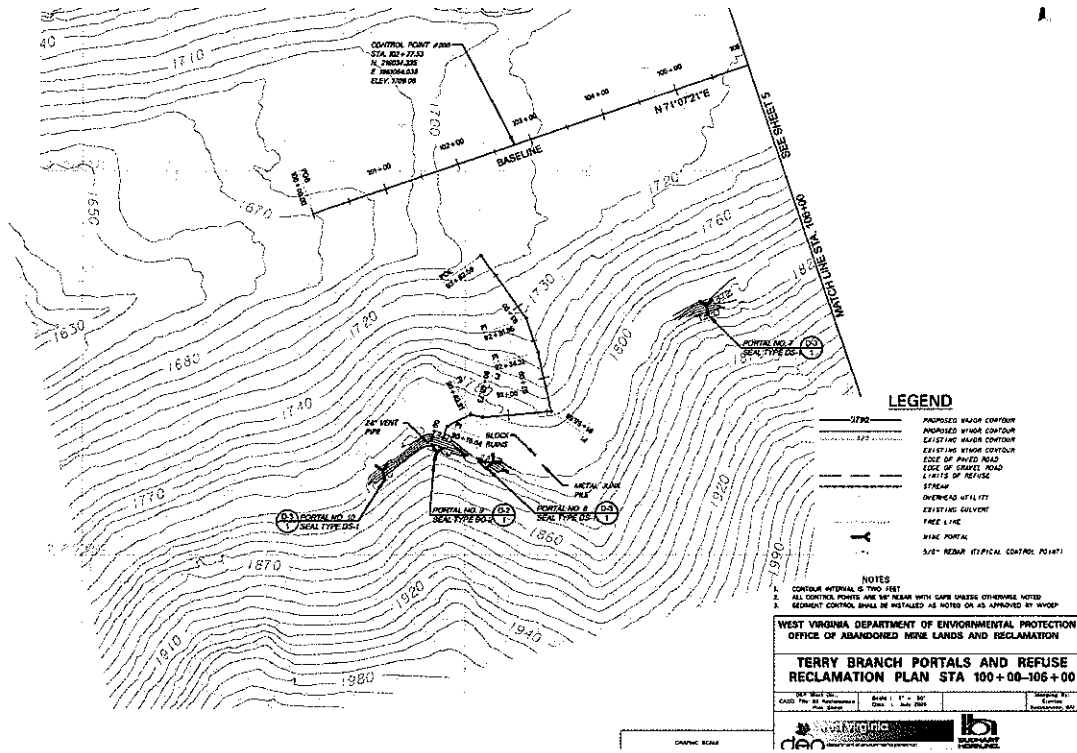
Memorial Bridge: Structure Rehabilitation - PennDOT District 12-0 - Project Manager for the rehabilitation of the Memorial Bridge over the Youghiogheny River in Fayette County, PA. Responsible for developing repair and retrofit alternatives, jacking schemes for bearing replacement and pin hanger removal and replacement.

Keystone Viaduct over SR 2002 and CSX Railroad: Somerset County, PA - The Keystone Viaduct is located approximately two miles east of Meyersdale Borough in Somerset County. The viaduct is comprised of a 242-foot Warren Truss and eight deck girder spans for an overall length of 910 feet. The project included an in-depth inspection of the superstructure and substructure, an inspection report, T. S. & L. submission for rehabilitation of the structure for use as part of the Allegheny Heritage Trail, Final Design to replace three spans and two piers with a single span curved girder, Final Design of the new superstructure, including detailed jacking schemes associated with the erection of the curved steel two-girder system, concrete repairs to the substructure units, repairs to the steel superstructure, and handrail and fencing details. This project received a CEC Diamond Award for Engineering Excellence.

Pennsylvania Department of Transportation (Numerous Districts) - As part of his responsibilities as Chief Bridge Engineer, Mr. Dougan was responsible for the performance of constructability reviews of approximately 16 structures of various degrees of complexity. The reviews included evaluating erection procedures, ensuring adequate right-of-way and/or temporary easements are available, identifying utility conflicts, ensuring pay items exist for all work activities, evaluating construction schedules and construction cost estimates.



Strengthening Communities



Client:

WV DEP
Office Abandoned Mine Lands & Reclam
116 Industrial Dr
Oak Hill, WV 25901

WVDEP, Terry Branch Portals & Refuse Remediation Design

Buchart Horn provided design services in support of the West Virginia Department of Environmental Protection Office of Abandoned Mine Lands and Reclamation for the reclamation of the Terry Branch Portals and Refuse in Wyoming County. Services included site surveys, development of preliminary and final plans, preparation of cost estimates, specifications, and potentially construction inspection services. Buchart Horn also coordinated the work of geotechnical consultants. Final plans have been submitted.

The project location is near the Town of Mullens, and is situated within the Guyandotte River watershed. Site features include four open mine portals, six collapsed portals, one fan house, and a coal refuse pile that has steep slopes and is eroding into the creek. The area is used extensively for recreational purposes, and is also accessible by ATVs. The existing site poses several threats to area residents and users of the area. Four of the portals are open and evidence of visitors, household garbage and other debris can be seen inside of the openings. The fan house is deteriorating and the large metal fan is still present. The refuse pile has steep and unstable slopes. The slopes have the potential to slip and create a dam across the creek. This situation could pose a flooding hazard to the downstream residents.

Buchart Horn's remediation design includes the following features:

- Regrade to establish positive drainage around all mine portals
- Provide dry seals for the collapsed portals and bat gate mine seals for the open portals
- Provide removal of all structures and equipment including fan house and mine cars
- Delineate areas to obtain necessary soil cover
- Reestablish vegetation on all disturbed areas
- Delineate contractor access



- AML Remediation Project
- Wet Mine Seals
- Bat Gate Installation
- Site Stabilization
- COE Permitting

Client:

WV DEP
601 57th Street SE
Charleston, WV 25311-1250



AML Program Study

Water System Impact Evaluation

WV DEP Water Line Feasibility Studies

Buchart Horn performed studies of water supplies for three communities in southern West Virginia: Bone County Rts. 28, 28/1, and 28/1, served by the Boone County PSD; Fairdale, Raleigh County Rtes. 1/12 and 2/4, served by Glen White—Trap Hill PSD; and Mercer County Rts. 71/11 and 71/20 served by Lashmeet PSD. The studies are intended to verify whether the areas have been affected by pre-law (prior to August 3, 1977) mining activities and would be valid candidates for funding for improvements. The scope of services for each area included field reconnaissance of the study area to define affected residences and business to be evaluated, review of historical data for the areas, field sampling and analysis of water supplies, interviews with local residents, development of mapping showing pre- and post- mining characteristics for the areas, and development of a report summarizing the findings of the studies.

PROJECT

WV DEP Water Line Feasibility Studies



Strengthening Communities

Client:

Pennsylvania Department of
Environmental Protection

Additional Services Provided:

Abandoned Mine Reclamation

Established Positive Drainage

Regrade/Reclaim Site

Site Grading Plan, Acid Drainage Mitigation, Abandoned Strip Mine, Buckeye Run

As part of a U.S. Office of Surface Mining site restoration, Buchart Horn, Inc. designed a site grading plan for the surface mined, 67-acre Buckeye Run area in southwestern Clearfield County, PA. The area had been abandoned for over 40 years.

The runoff discharged from the mined area contained high levels of dissolved iron and aluminum sulfates in conjunction with pH values less than 4.5 (acidic). It is produced when oxygen dissolved in water reacts with pyritic (iron sulfide) materials found in association with most coal deposits. Acid mine drainage (AMD) degrades the water quality of streams and water supplies, often to the point of eliminating all biological activity within the AMD-contaminated stream.

In addition to the pollutants, there were also several dangerous highwalls and spoil piles remaining from the final cut of the surface mining operation. Buchart Horn developed regrading/erosion and sediment control plans to eliminate the highwalls, the low points, and various spoil piles. Stormwater and normal surface water were conveyed in vegetated swales to tributaries of Buckeye Run. The vegetated swales prevent erosion and further assist in keeping runoff away from potentially acidic materials.

PROJECT

Site Grading Plan, Acid Drainage Mitigation, Abandoned Strip Mine, Buckeye Run



Strengthening Communities

**Client:**

Oakland Public Service District
768 Carothers Rd
Weirton, WV 26062

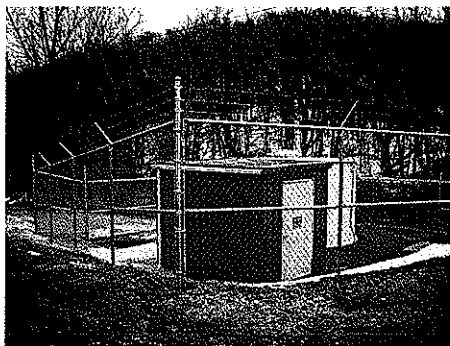
Oakland Public Service District, Water System Improvements

The Oakland Public Service District (PSD), located in Hancock County, West Virginia, is operated under the West Virginia Department of Health and Human Resources Bureau for Public Health, Permit Number WV3301517. This PSD operates two separate water distribution systems: the Golden Keys System and the Oakland System. Buchart Horn prepared a Preliminary Engineering Report and assisted with a funding application submitted to the West Virginia Infrastructure and Jobs Development Council for water system improvements to the Oakland System.

The area involved is located northeast of the City of Weirton and southeast of the City of New Cumberland, generally around Wylie Ridge Road and Hardins Run Road. The system is comprised of three main parts: the four active wells and treatment facility, the distribution mains, and the 200,000-gallon water standpipe.

The current raw water sources contain high concentrations of iron and manganese, and the PSD had received water quality complaints from its customers. The Public Service Commission of West Virginia ordered the PSD to develop alternatives for the removal of iron and manganese, including the construction of a treatment facility or the purchase of water from an adjacent utility. Buchart Horn recommended in the Preliminary Engineering Report the installation of filters to remove these high concentrations of iron and manganese.

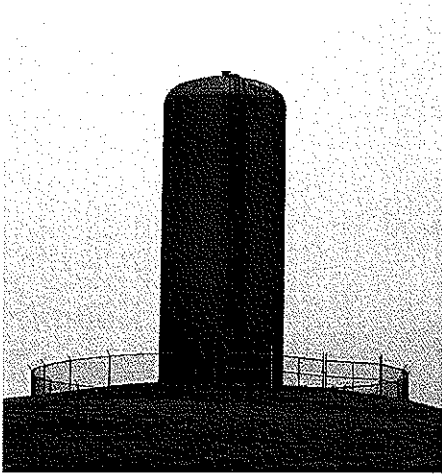
The Wheeling Office of Environmental Health Services District Office's November 10, 2005 Sanitary Survey recommended an evaluation of the inside and outside coating of the existing water storage tank. The coating has reached the end of its life expectancy. In addition, the existing available water volume is not sufficient during peak day demands and fire demands. Buchart Horn recommended both the construction of a new tank in addition to the rehabilitation of the existing water tank.



Water Quality Studies and Treatment

PROJECT

Oakland Public Service District, Water System Improvements



At the request of potential customers, new distribution mains are recommended to be extended east of Wylie Ridge Road. The new water mains are to be installed in portions of Chapman Road, Gibson Road, Tope Road, and Cameron Hollow Road.

Upon consideration of the preliminary funding application, the Infrastructure and Jobs Development Council determined that the District should utilize an available Hancock County grant, a local contribution, pursue a Bureau of Public Health (BPH) design grant and a Rural Utilities Service loan to fund the recommended water system improvements.



Client:

WVDOT
 Building Five
 1900 Kanawha Boulevard East
 Charleston, WV 25305-0430

WVDOT, Corridor H, Section 4, Final Design

Buchart Horn provided preliminary and final design services for an approximately two-mile segment of Corridor H near Greenland Gap in Grant County, WV. We also provided NPDES permitting services. The project also included two major bridges and one minor stream crossing.

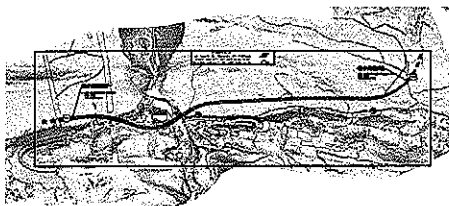
Initially, we were responsible for a watershed-based study of the effects of several alignment alternatives on a major four-lane highway on new alignment. The project site was in a naturally sensitive area surrounded by historic rural residential villages, dense old growth forests, vast agricultural lands, pristine high quality streams, habitat for rare and endangered species, and a unique geological feature - the Greenland Gap.

Buchart Horn evaluated the existing preferred alternative and compared it to two options on an environmental basis. This study not only looked at the direct impact to the immediate surroundings but also looked at the impacts each alternative would have on the entire watershed and sub-watersheds. The technical report generated from this study was an in-depth evaluation of each watershed and sub-watershed and how it would respond to various alignment options. The results were recommendations on how to avoid environmentally and culturally damaging impacts associated with the project.

Subsequent to the initial study, Buchart Horn advanced the project through the preliminary engineering phase and performed final design.

Award

Buchart Horn was awarded an *Engineering Excellence Award* for the 2008 "Large Bridge Category" from the West Virginia Division of Highways for the Dual Bridges on US48 (Corridor H) over Grant County Bridge Route 1, North Fork Patterson Creek and Grant County Route 42/3 through Greenland Gap near Scherr, West Virginia.



- NPDES Permitting
- COE Permitting
- Open Channel Drainage
- Site Stabilization



Client:

US Army Corps of Engineers
City Crescent Building
10 South Howard Street
Baltimore, MD 21203-1715

COE Permitting

Drainage System Design

Olyphant Local Flood Protection Program

Buchart Horn, Inc. proposed the installation of a system of inlets and closed pipe to intercept runoff that would pond behind the levee structures being considered as flood protection for the Borough of Olyphant. The U.S. Army Corps of Engineers originally suggested a large concrete channel to collect the runoff, but the inlets and closed pipe would achieve the same result with a greater degree of safety and at lower cost.

The Stormwater Transport System as presently designed will collect the runoff from storm events up to and including a 100-year storm for a drainage area of approximately 80 acres. The system includes 238 feet of 72-inch-diameter concrete pipe; 154 feet of 60-inch pipe; 406 feet of 54-inch pipe; 417 feet of 48-inch pipe; 200 feet of 36-inch pipe; and 33 concrete inlets.

PROJECT

Olyphant Local Flood Protection Program



Strengthening Communities



Client:

US Army Corps of Engineers
City Crescent Building
10 South Howard Street
Baltimore, MD 21203-1715

Scranton Flood Protection Project

Using preliminary plans prepared by the Corps of Engineers, Buchart Horn, Inc. finalized design and prepared plans and specifications to produce complete and biddable construction contract documents for a one mile flood control project along the Lackawanna River in Scranton, Pennsylvania. Significant major project features are levees, mechanically stabilized earth (MSE) walls, concrete floodwall, closure structures, interior drainage structures, and removal of the Pocono Northeast Railroad Bridge.



Key Activities Completed/Required

- Site Stabilization
- Earth Wall Design
- Drainage Structures

Client:

Harley Davidson Motor Company
Operations, Inc.
1425 Eden Road
York, PA 17402

NPDES Permitting

Water Quality Improvements

Permit Acquisition

Environmental Consulting, Harley Davidson Motor Company

Since 1998, Buchart Horn, Inc. has been the environmental and regulatory consultant for the York, Pennsylvania facility of Harley Davidson Motor Company Operations, Inc. We address any issues that arise related to solid waste (residual and hazardous), air quality, and water quality.

Specific reporting requirements and services provided include the following:

- Preparation of Pennsylvania Department of Environmental Protection (PADEP) annual and biennial residual waste reports
- Preparation of Environmental Protection Agency (EPA) biennial hazardous waste report
- Preparation of EPA Toxic Chemical Release Inventory Form R Report
- Preparation of Pennsylvania Department of Labor & Industry Bureau of Pennsafe Tier II Report
- Preparation of EPA Air Information Management System (AIMS) Report
- Preparation of Pennsylvania Department of Labor & Industry Bureau of Pennsafe Hazardous Substance Survey Form (HSSF)
- Aboveground and underground storage tank monitoring
- Annual update of Preparedness Prevention and Contingency (PPC) Plan, Spill Prevention Control and Countermeasure (SPCC) Plan, and Off-site Response (OSR) Plan
- Preparation of PADEP 25R Source Reduction Strategies
- Monthly Audits of facility's air, waste management, and storage tank provisions to ensure environmental compliance
- Preparation of Discharge Monitoring Reports (PADEP) and Self-Monitoring Reports (Springettsbury Township)
- Preparation of Quarterly volatile organic compounds (VOC) emission reports for PADEP submittal
- Management of projects relating to environmental compliance and awareness
- Preparation of Title V Air Quality permit and management of the associated monitoring program
- Review of environmental regulations to determine the potential impacts to the facility
- Assistance with efforts to obtain ISO 14001 certification

PROJECT

Environmental Consulting 2001/2002, Harley Davidson Motor Company



Strengthening Communities

Client:

City of Germantown
1930 Germantown Road South
Germantown, TN 38138-2815



Stormwater Engineering

Permit Acquisition

Open Channel Drainage

Howard Road Outfall Stormwater Planning & Facility Design

This project consisted of a stormwater management plan and design of retention and detention facilities to protect a downstream residential area from flooding. Protection was for rainfall events up to the 100-year return interval.

This project resulted in the design and construction of the Howard-McVay Detention Basin, as well as other needed drainage improvements within the Howard Road Outfall drainage basin. The Stout Road Detention Alternative Study, a part of the Howard Road Outfall Alternate Detention Basin Study, involved development of alternatives to stop flooding in a residential area currently drained by a concrete-lined channel that was sized for a storm event expected to arrive approximately every four years. This area experiences frequent flooding due to the under-capacity channel. Alternatives studied included rebuilding and enlarging the existing channel, bypassing the existing channel with a box culvert, and building a detention basin upstream of this area in order to slow the drainage entering into the existing undersized channel. All of the alternatives would require a Stormwater Pollutant Prevention Plan (SWPPP) for construction.

Client:

City of Charleston
P.O. Box 1026
Charleston, WV 25324

City of Charleston, Design of Bridge Road Retaining Wall

Buchart Horn, Inc. was responsible for the design of a new retaining wall on Bridge Street. Our responsibilities included not only the design of the wall, but roadway replacement, new sidewalk and curb, drainage calculations, and removal/replacement of drainage inlets to intercept roadway surface drainage from the new contours. We used two types of retaining wall: modular block and pile and lagging.

Site Stabilization

Maintenance of Traffic

PROJECT

City of Charleston, Design of Bridge Road Retaining Wall



Strengthening Communities



Client:

WVDOT
Building Five
1900 Kanawha Boulevard East
Charleston, WV 25305-0430

WVDOT, I-81 Tabler Station Interchange

Buchart Horn provided services for the study, design, and preparation of construction contract plans and related documents for the new Tabler Station Connector Road including modification of ramps and the replacement of the overpass bridge in Berkeley County. The project included expansion of the existing Tabler Station Interchange on I-81 just south of Martinsburg, replacement of the structure carrying Route 32 over I-81 and approximately 1.5 miles of a new five lane road connecting Route 32 and US 11. The project also consisted of at-grade intersections at US 11, the industrial park access road and a railroad crossing with Winchester and Western Railroad. We also prepared NPDES permit applications.

Relevant Services Provided

- NPDES Permitting
- COE Permitting Support
- Drainage Design
- Site Stabilization

Client:

WVDOT
Building Five
1900 Kanawha Boulevard East
Charleston, WV 25305-0430

PERMITTING SERVICES

- NPDES Permitting
- Storm Drainage Design
- Stable Cut and Fill Slopes
- Erosion and Sediment Control Design
- COE Permitting

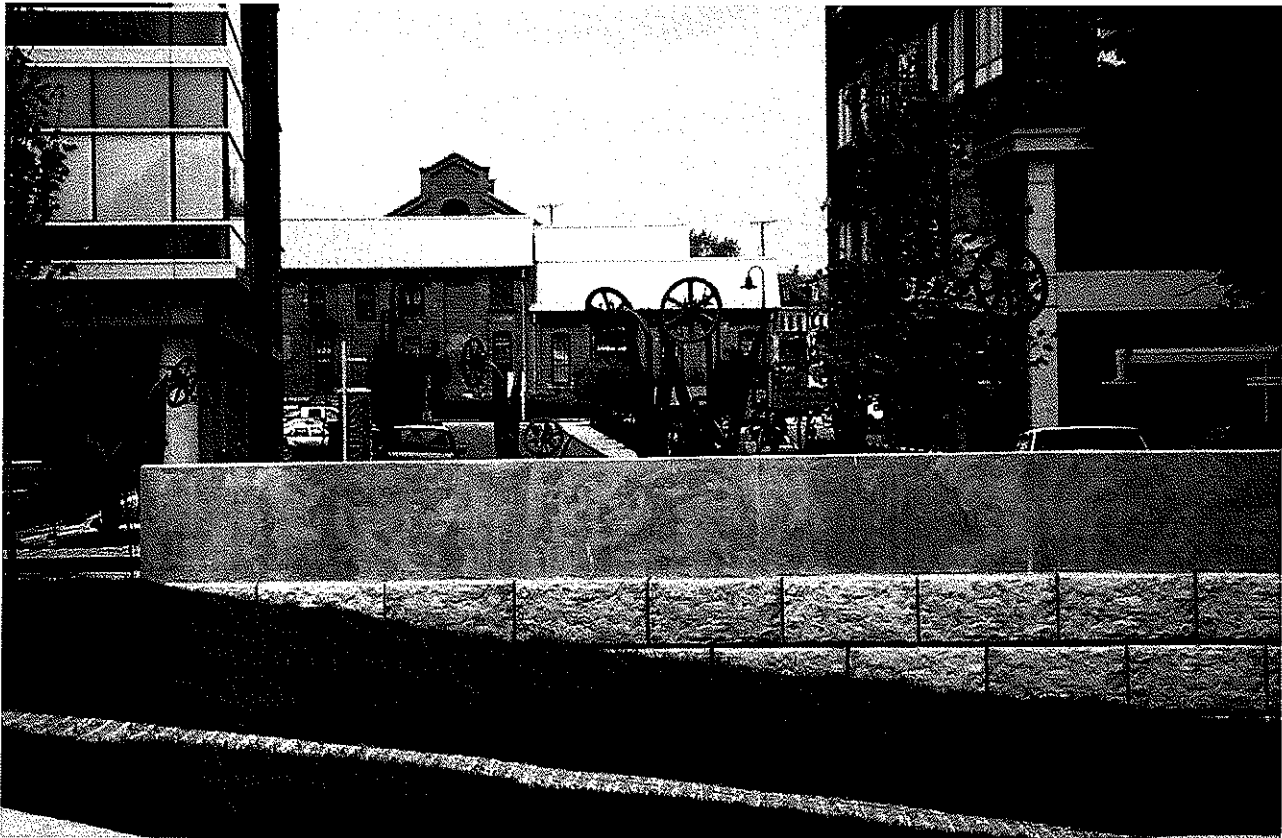
WVDOT, Leon Thru Girder Bridge

The purpose of the Project is to study, design and prepare construction contract plans and related documents for the replacement of the existing Leon Thru Girder Bridge. The Bridge serves as a vehicle/pedestrian crossing that carries CR 35/5 over Thirteen Mile Creek in Mason County, West Virginia. The project consisted of providing plans for a new CR 35/5 bridge, relocated roadway, demolition of old structure, and relocated water line with stream crossing.

The ultimate goal for this project is to provide the West Virginia Division of Highways with plans and contract documents such that they can move forward with the replacement of the Existing Leon Thru Girder Bridge.

PROJECT

WVDOT, Leon Thru Girder Bridge



Client:

City of York
Department of Community
Development
Third Floor
1 Market Way West
York, PA 17401

Codorus Creek Corridor Revitalization/Renovation, City of York

Building on the success of its “Recapture the Riverfront” campaign, the City of York, in collaboration with the Women’s Giving Circle, the Codorus Watershed Endowment of the York County Community Foundation, and other stakeholders, is taking the next step toward a new Codorus Creek Corridor through the City.

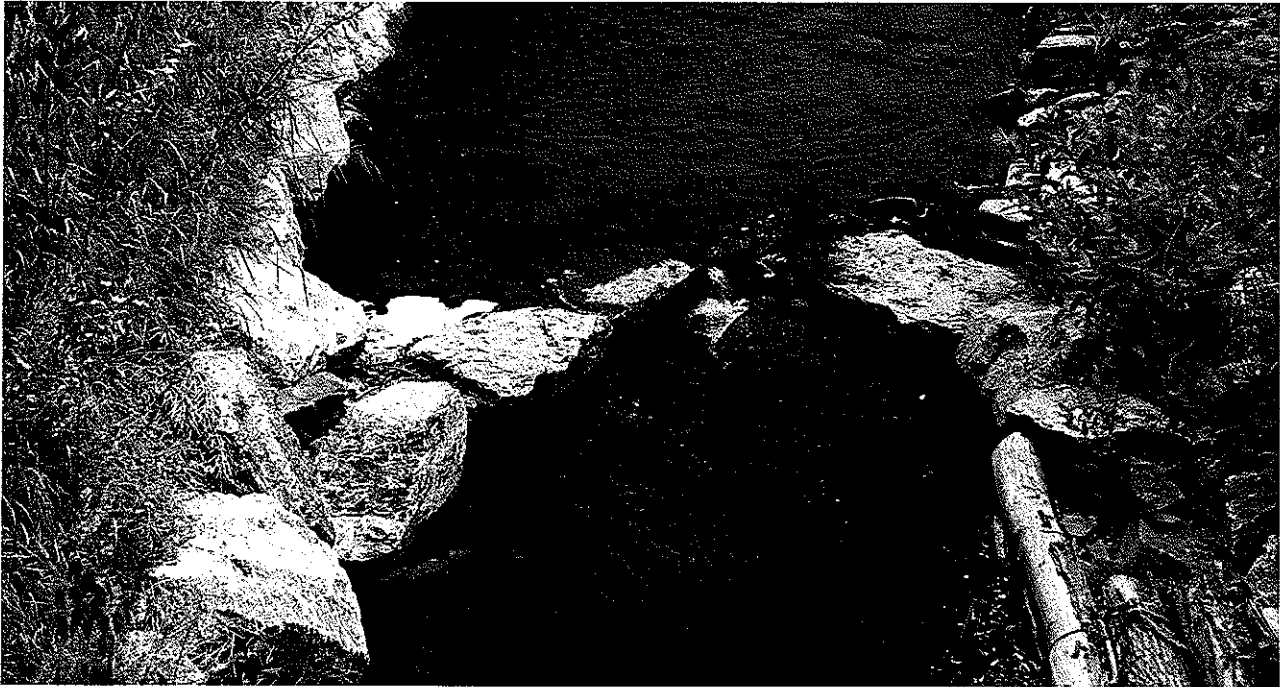
Revitalizing the Codorus Creek Corridor is a major step in revitalizing the City of York. To accomplish this, a series of community design workshops garnered community leaders’ and citizens’ inputs alike. Once the concepts were on paper, it became Bucharthorn’s responsibility to convert the conceptual drawings, sketches, renderings, and descriptions to engineering drawings on which cost estimates could be based.

During the firm’s work on the engineering drawings, we were consulted a number of times regarding our opinions on various solutions and approaches. We provided those professional opinions and, when approved, incorporated them in the engineering drawings and cost estimates.

Our being under contract was an advantage to this major community project, as we were able to make practical and logical changes to the overall design under the terms of our contract. The result is a series of drawings and cost estimates approaching the project from different angles and directions, thereby providing civic leaders with a more precise tool to use in their quest to secure funding for the project.

Natural Stream Design
Open Channel Drainage
Permitting Assistance



**Client:**

New York Wire
152 North Main Street
PO Box 0866
Mt. Wolf, PA 17347-0866

New York Wire, Hartman Run Stream Stabilization

The New York Wire Company's Mt. Wolf facility, located in York County, PA, applied for and received a permit to erect gabion baskets along Hartman Run. The purpose of these gabion baskets was to stabilize a short section of Hartman Run adjacent to the facility's driveway which was threatened by severe erosion. The design at the time called for gabions to be stacked four high to an elevation approximately 12' above the stream. The resultant gabion basket wall was approximately 37' in length.

Hartman Run generally flows west to east toward the Susquehanna River. In the vicinity of the New York Wire Mt. Wolf facility, Hartman Run turns north at the gabion wall and immediately flows under a stone railroad crossing. The creek was "pinched" between the railroad and the existing facility such that the current alignment of Hartman Run required the stream to turn 90 degrees before entering the stone culvert. This situation reduced efficiency of the stream to convey runoff and sediment. Additionally, the stream flowed directly into the gabion basket wall before heading north.

The gabion basket wall has experienced numerous flooding and high flow events. A few gabions of the bottom row have been compromised due to the alignment of the gabion basket wall with the stream. Additionally, due to this compromise, the gabions began to move laterally upstream and began to severely slump.

A more recent storm event caused significant damage to the gabions. The damage was severe enough to require New York Wire to close a portion of their driveway which affects the ability to unload and load products and supplies for daily operation. The gabion basket wall was severely unstable, and complete collapse into Hartman Run was imminent. Should this have happened before or during a storm event, the collapsed gabions would have most likely caused severe flooding for the adjacent facility.

To alleviate this situation, the New York Wire Company hired Buchart Horn to obtain an emergency permit to fix and stabilize the stream. The short-term solution being proposed for this emergency permit is part of the long-term fix being investigated by New York Wire.



Stream/Site Stabilization

Stream Realignment Design

Natural Design Techniques





The overall proposed improvements consisted of re-alignment of the stream and the installation of rock vanes to redirect the flow so as to reduce near bank shear stress along the outside bend (previous location of gabion baskets). Other alternatives were investigated; however, concrete and gabion basket walls have been used in the past with a poor success rating.

The bottom two rows of gabion baskets were left in place and buried. Across the stream from the gabions existed a large point bar that is covered with debris. This point bar and debris were removed and used appropriately as fill around the remaining gabion baskets. The right bank was extended out approximately 5-10 feet and incorporated into a bankfull bench. Remaining gabions from the top two rows were dismantled, and the rock was used in the creation of the bankfull bench.

The channel was relocated and realigned to increase the radius of curvature of the meander heading into the railroad crossing. Two woody shrub species appropriate for this application were utilized to stabilize the sloped areas above the bankfull bench. The streamco willow and silky dogwood are both riparian species very well adapted to growing along streams and waterways. These species help reduce flood stage and increase stability along the banks. The remainder of the exposed bank was stabilized with a standard conservation/streamside seed mix.

The left bank was stabilized using tree trunks and branches from recently felled trees. The railroad company routinely cuts down trees within the channel. The woody debris was drilled, and rebar was used to anchor the logs into the banks. Erosion control matting with conservation seed was placed as a base layer below the logs. A biolog or coconut roll was anchored at waters edge to prevent sediment from entering the stream. Over time, the matting and biolog will deteriorate and leave behind established vegetation that will stabilize the bank. Voids between the anchored logs will eventually fill in with sediment and vegetation taking form as a typical stream bank.

This project utilized natural stream restoration methods while meeting the practical goals and objectives of the client - stabilizing the stream as was designed to alleviate the costly cycle of erosion and armoring of the bank. Creative techniques and native materials were used in the design that decreased cost and increased the stabilization of the stream.



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
 DEP15232

PAGE
 1

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

RFQ COPY
 TYPE NAME/ADDRESS HERE
 Buchart Horn, Inc
 400 Tracy Way, Suite 110
 Charleston, WV 25311

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
11/03/2010				

BID OPENING DATE: 12/08/2010 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	JB		906-29		
CARTRIGHT BRANCH REFUSE PILE 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 CARTRIGHT BRANCH REFUSE PILE PROJECT IN LOGAN COUNTY, WEST VIRGINIA, PER THE FOLLOWING BID REQUIREMENTS AND ATTACHED SPECIFICATIONS. BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THIS CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>[Signature]</i>	TELEPHONE (304) 346-1127	DATE December 7, 2010
TITLE Senior Vice President	FEIN 23-1498326	ADDRESS CHANGES TO BE NOTED ABOVE

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

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

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

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

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

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

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Buchart Horn, Inc.

Authorized Signature: *M. J. Blasek* Date: December 7, 2010

State of Pennsylvania

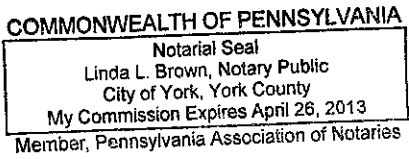
County of York, to-wit:

Taken, subscribed, and sworn to before me this 7 day of December, 2010.

My Commission expires 4-26-13, 20 .

AFFIX SEAL HERE

NOTARY PUBLIC *Linda L. Brown*



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

PROJECT NAME: Cartright Branch Refuse Pile Design, DEP 15232
 DATE (DAY, MONTH, YEAR): December 8, 2010
 FEIN: 23-1498326

1. FIRM NAME: Buchart Horn, Inc.
 2. HOME OFFICE BUSINESS ADDRESS: 445 W. Philadelphia St., York, PA 17401
 3. FORMER FIRM NAME:

4. HOME OFFICE TELEPHONE: (717) 852-1400
 5. ESTABLISHED (YEAR): 1946
 6. TYPE OWNERSHIP: Corporation
 6a. WV REGISTERED DBE (Disadvantaged Business Enterprise) XX NO

7. PRIMARY AML DESIGN OFFICE: ADDRESS/ TELEPHONE/ PERSON IN CHARGE/ NO. AML DESIGN PERSONNEL EACH OFFICE
 2200 Liberty Avenue, Suite 300, Pittsburgh, PA 15222, (412) 261-5059, Robert T. Zulick, PE, 4

8. NAMES OF PRINCIPAL OFFICERS OR MEMBERS OF FIRM: Brian S. Funkhouser, P.E., President
 Charles L. Kinney, PG, Vice President, Finance & Administration
 8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS: see attached

9. PERSONNEL BY DISCIPLINE

52 ADMINISTRATIVE	0 ECOLOGISTS	2 LANDSCAPE ARCHITECTS	14 STRUCTURAL ENGINEERS
23 ARCHITECTS	0 ECONOMISTS	8 MECHANICAL ENGINEERS	5 SURVEYORS
4 CADD OPERATORS	10 ELECTRICAL ENGINEERS	0 MINING ENGINEERS	1 TRAFFIC ENGINEERS
0 CHEMICAL ENGINEERS	12 ENVIRONMENTALISTS	1 PHOTOGRAMMETRISTS	7 TRANSPORTATION ENGINEERS
47 CIVIL ENGINEERS	0 ESTIMATORS	0 PLANNERS: URBAN/REGIONAL	30 OTHER
28 CONSTRUCTION INSPECTORS	6 GEOLOGISTS	12 SANITARY ENGINEERS	
22 DESIGNERS	0 HISTORIANS	0 SOILS ENGINEERS	
17 DRAFTSMEN	1 HYDROLOGISTS	3 SPECIFICATION WRITERS	305 TOTAL PERSONNEL

TOTAL NUMBER OF WV REGISTERED PROFESSIONAL ENGINEERS IN PRIMARY OFFICE: 2
 *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 N/A

8a. NAME, TITLE, & TELEPHONE NUMBER - OTHER PRINCIPALS
(continued)

Diane C. Vesely, PE

(901) 363-6355, 3150 Lenox Park Blvd., Suite 300, Memphis, TN 38115

(662) 563-1299, 103-4 Woodland Road, Batesville, MS 38606

(225) 293-1111, 9100 Bluebonnet Centre Blvd., Suite 502, Baton Rouge, LA 70809

Anthony J. Shinsky, R.A., AIA, LEED[®] AP, Vice President, Facilities(717) 852-1400, 445 West Philadelphia St., York, PA 17401

(717) 232-5140, 112 Market Street, Harrisburg, PA 17101

R. Scott Sternberger, Vice President Transportation Division,
(717) 852-1400, 445 West Philadelphia St., York, PA 17401

Ulrike Page, A.K.H., Prokuristin,

011-49-0631-3037254, Flickerstal 5, 67657 Kaiserslautern, Germany

11-49-6196-9312300, Frankfurter Strasse 21-25, D-65760, Eschborn, Germany

Michael A. Schober, P.E., Senior Vice President

(717) 852-1400, 445 West Philadelphia St., York, PA 17401

(304) 346-1127, 400 Tracy Way, Suite 110, Charleston, WV 25311

(410) 247-3501, 3700 Koppers Street, Suite 305, Baltimore, MD 21211,

(856) 797-4300, 4A Eves Drive, Suite 114, Marlton, NJ 08053-3127

Christopher D. Dwyer, P.E.

David J. Polatnick, AIA
(570) 213-0082, 600 Main Street, Suite 110, Stroudsburg, PA 18360

Scott E. Russell, P.E.

(814) 237-7111, 1200 West College Avenue, State College, PA 16801-2824

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

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
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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?

XXX YES Description and Number of Projects: Buchart Horn has performed complete design for the Reclamation of the Buckeye Run Abandoned Surface Mine in Clearfield County, PA. We recently completed design for the Terry Branch Portals and Refuse project in Wyoming County. In addition, we offer extensive experience in water distribution and storage, stormwater and drainage, land remediation, slip repair and grading.

NO

B. Is your firm experienced in Soil Analysis?

XXX YES Description and Number of Projects: Buchart Horn's Earth Sciences group brings experience in the soils evaluations and analysis. We have existing relationships with a number of qualified soils testing laboratories who provide our professional engineers and geologists with quantitative data from which we can provide analysis and recommendations.

NO

C. Is your firm experienced in hydrology and hydraulics?

XXX YES Description and Number of Projects: Through our work in providing bridge and roadway design for the West Virginia Department of Transportation Division of Highways, we have extensive experience in the development of Hydrologic and Hydraulic Plans and Reports.

NO

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

XXX YES Description and Number of Projects: Buchart Horn has an in-house aerial mapping group. We have performed developed contour mapping from aerial photography for hundreds of water line, sewer line, roadway, and bridge projects, in support of our in-house design efforts and as a subconsultant to other firms.

NO

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

XXX YES Description and Number of Projects: Buchart Horn has performed the design of hundreds of waterline projects, including distribution systems, booster stations, storage facilities, and treatment plants.

NO

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

YES Description and Number of Projects: _____

XXX NO Buchart Horn has not performed abatement design for acid mine drainage. We have provided designs for related groundwater treatment systems related to industrial runoff, airport runway deicing facilities, underground storage tanks and contaminated soils cleanup.

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. Schober, PE, Principal-in-Charge	1	YEARS OF AML DESIGN EXPERIENCE:	5
		YEARS OF AML RELATED DESIGN EXPERIENCE:	20

Brief Explanation of Responsibilities
 As the Principal-in-Charge on this project, Mr. Schober will meet regularly with the Project Manager to monitor schedules and budgets. He will also periodically contact you to confirm that you are satisfied with the progress being made and with our performance throughout the course of this project. Mr. Schober is available to discuss any aspect of this project with you at your request.

EDUCATION (Degree, Year, Specialization)
 Bachelor of Science/1984/Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
 American Society of Civil Engineers
 Chesapeake Water Environment Association
 Water Environment Federation/ Public Education Committee

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	
Robert T. Zulick, PE, Quality Assurance/ Quality Control	1	YEARS OF AML DESIGN EXPERIENCE:	5
		YEARS OF AML RELATED DESIGN EXPERIENCE:	15

Brief Explanation of Responsibilities
 As Associate Vice President of the firm's Pittsburgh office with significant experience in administration and coordination of municipal and industrial water and wastewater projects from initial planning phase through design to project construction and facility start-up, Mr. Zulick has the authority to commit the full resources of the firm as necessary to successfully complete any project. As QA/QC Manager, he will coordinate with the Project Manager to verify that the project plan is followed and that all work meets local, state, and federal codes as well as Buchart Horn policy.

EDUCATION (Degree, Year, Specialization)
 Bachelor of Science/1972/Civil Engineering
 MS/1979/Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
 American Society of Highway Engineers
 American Water Works Association
 Society of American Military Engineers

REGISTRATION (Type, Year, State)
 1977/PE/PA
 1997/PE/OH
 1997/PE/VA

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:
Gregory F. Scott, PE, Senior Staff Engineer	1	2
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 18

Brief Explanation of Responsibilities

Mr. Scott has more than 18 years of experience in water systems engineering. His experience includes directing a technical staff of civil engineers and designers on projects involving design of distribution systems, transmission mains, pump stations, treatment works upgrades and storage facilities, including design of new elevated and ground storage tanks. He has managed projects from conceptual planning through contract document preparation, permitting, and construction services.

EDUCATION (Degree, Year, Specialization)

Master of Science, 2005, Civil and Environmental Engineering, University of Pittsburgh
 Bachelor of Science, 1992, Environmental Engineering Technology, Pennsylvania State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATION

American Society of Civil Engineers/Region 2 Governor
 Water Environment Federation

REGISTRATION (Type, Year, State)
 1999/PE/PA

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

NAME & TITLE (Last, First, Middle Int.)	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE:	YEARS OF AML RELATED DESIGN EXPERIENCE:
Donald H Newman, PE, Project Designer	3	16
		YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 11

Brief Explanation of Responsibilities

Mr. Newman has management responsibilities for the activities of professional and technical personnel for work on environmental engineering projects in the areas of water supply, sewage, stormwater, solid waste and industrial waste management. During his 24-year career, he has successfully executed over 350 engineering projects. Additional responsibilities include technical input, quality control and the planning/scheduling of engineering services. He is also experienced in the siting and engineering of conveyance, treatment and disposal facilities, as well as related areas of comprehensive planning, sediment control, stormwater management, route and option assessment, occupancy/easement/regulatory permits, facility closure, geotechnical engineering, and cost estimating. In addition, he has extensive experience in complex environmental/natural resource/cultural resource assessments and transportation related environmental activities.

EDUCATION (Degree, Year, Specialization)

MS/1977/Water Pollution Control/Water Quality Mgmt./Env. Health Pla/University of Pittsburgh
 AB/1975/Environmental Engineering/The Johns Hopkins University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Air & Waste Management Association; American Association of Advancement of Science; American Society of Civil Engineers; American Water Resources Association; American Water Works Association; National Ground Water Association; National Trust for Historic Preservation

REGISTRATION (Type, Year, State)
 1983/PE/PA/32785E

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.) P. Eric Mains, PE, Project Engineer, Environmental	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 19
YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0		

Brief Explanation of Responsibilities
Mr. Mains has 19 years of experience in the areas of Municipal Engineering and Stormwater Management Regulation/Design. He is currently serving on the Technical Advisory Committee that is overseeing the re-writing of the Pennsylvania Best Management Practices Handbook. He has made presentations at varying public and private levels regarding changes in stormwater management administration, comprehensive stormwater planning, floodplain management regulation and riparian buffering. Mr. Mains continues to be involved in the dynamic changes that are being undertaken as policies regarding stormwater management change from rate control to practices that include water quality and runoff volume reduction(s).

EDUCATION (Degree, Year, Specialization)
BS, Civil Engineering Technology, University of Pittsburgh

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
Association of State Dam Safety Officials
National Society of Professional Engineers

REGISTRATION (Type, Year, State)
PE, Pennsylvania
PE, Maryland

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.) Thomas T Dancsecs, PE, Hydrology	YEARS OF EXPERIENCE	
	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 20
YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0		

Brief Explanation of Responsibilities
Mr. Dancsecs has more than 19 years of experience in the field of hydraulics and drainage design. His background includes design of drainage and stormwater management systems for a variety of transportation projects, as well as experience in hydraulic modeling and permitting. He is familiar with the drainage design standards for numerous state transportation departments and agencies. In addition to drainage design for roadways, Mr. Dancsecs' abilities include hydraulic modeling for bridge projects over waterways, floodplain analysis, design of detention/retention ponds, scour analysis, design of underground detention systems, culvert design and analysis, stream encroachment permitting, and NPDES permitting.

EDUCATION (Degree, Year, Specialization)
BS, 1989, Civil Engineering, Pennsylvania State University

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS
American Society of Highway Engineers

REGISTRATION (Type, Year, State)
PE, 1994, Pennsylvania
PE, 2001, Maryland
PE, 2003, New Jersey

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.) Tony B Kitzmiller, PE, Mineshaft/Portal Engineer	YEARS OF AML DESIGN EXPERIENCE: 38	YEARS OF AML RELATED DESIGN EXPERIENCE: 38	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
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Brief Explanation of Responsibilities

Mr. Kitzmiller has over 37 years of experience in the design of water distribution systems, drainage systems, mine engineering, and civil engineering. He has experience with the supervision of design and construction for coal mining in Northern West Virginia, including water discharges, slurry, and refuse construction. He is intimately familiar with mining conditions and construction, including the design of bridges and roadways near mines. He has experience in managing and construction of methane drainage wells.

EDUCATION (Degree, Year, Specialization)
BS, Civil Engineering

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

REGISTRATION (Type, Year, State)
PE, WV
PE, PA

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

NAME & TITLE (Last, First, Middle Int.) Teresa Blauch, PG Geologist	YEARS OF AML DESIGN EXPERIENCE: 1	YEARS OF AML RELATED DESIGN EXPERIENCE: 20	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
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Brief Explanation of Responsibilities

Ms. Blauch has varied experience in geology and hydrogeology. She has applied her knowledge of these two areas to soil investigations, groundwater studies, remedial investigations, underground storage tanks and environmental site assessments in both the private and public sectors in Maryland, New Jersey, Pennsylvania, Virginia and West Virginia. Some of her responsibilities have included direct drive soil collections and soil gas surveys. Groundwater studies have involved supervising well installation and development, selecting potential water supply well sites, water feasibility studies, and determining hydraulic gradient and direction. She has aided in implementation of vacuum extraction systems and air stripping towers and supervised excavation of contaminated material.

EDUCATION (Degree, Year, Specialization)
BS, Geology

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Society of Women Environmental Professionals
Toasters International

REGISTRATION (Type, Year, State)
PG

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.) Mathew J. Leisses Environmental Scientist	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 8	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
	Brief Explanation of Responsibilities Mr. Leisses has worked in and around streams and wetlands since 2002 and has extensive knowledge of aquatic monitoring; native and invasive plant species; riparian buffers; streambed restoration; workshop/lesson plan research, development, and implementation; grant writing; and community relations. His experience includes acquisition of environmental permits, project documentation, and environmental related design support for a variety of projects.		
EDUCATION (Degree, Year, Specialization) Coursework/Biology			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS Codorus Creek Watershed Association Watershed Alliance of York Susquehanna Wild Ones Stewards of the Lower Susquehanna River			

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.) Laura M. Danko, PWS Environmental Scientist	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 15	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
	Brief Explanation of Responsibilities Ms. Danko is certified as a Professional Wetland Scientist with 14 years of experience providing technical and managerial environmental and ecological consulting for both public and private sector clients on a wide range of natural resources planning, conservation, and design projects. Her detailed experience includes conducting wetland/environmental delineations and function/value assessments; wetland, stream, and wildlife habitat restoration and mitigation design; regulatory permitting services; environmental monitoring services; wetland and stream construction management and inspection; natural resource inventories; wildlife species, habitat, and biodiversity survey and analysis; technical document and open-end contract proposal development; project committee and advisory board liaison services; coordination and facilitation of project meetings, presentations, and project-related public events; development of technical project documents, specifications, and related publications; quality control review of technical reports and related documents; preparation of construction specifications, bid documents, and cost estimates; and technical and impact analysis documents including feasibility studies, hydrology determinations, habitat studies, species studies, and NEPA documents.		
EDUCATION (Degree, Year, Specialization) AAS/Horticulture and Landscape Design/Baltimore County Community College Graduate Coursework/Master's Program, Environmental Resource Management/East Stroudsburg University BS/Environmental Science/East Stroudsburg University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) PWS			

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

NAME & TITLE (Last, First, Middle Int.) Thomas J. Dougan, PE Structural Engineer	YEARS OF AML DESIGN EXPERIENCE: 0	YEARS OF AML RELATED DESIGN EXPERIENCE: 0	YEARS OF DOMESTIC WATERLINE DESIGN EXPERIENCE: 0
Brief Explanation of Responsibilities During Mr. Dougan's 36-year career, he has served many clients including PennDOT, Pennsylvania Turnpike Commission (PTC), West Virginia Department of Highways (WVDOH), Ohio Department of Transportation (ODOT), New Jersey Transit (NJT), and numerous city, county and local governments.			
EDUCATION (Degree, Year, Specialization) Master of Science/Engineering Management (Industrial Engineering)/University of Pittsburgh Bachelor of Science/Civil Engineering/Villanova University			
MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS REGISTRATION (Type, Year, State) PE/WV; PE/PA; PE/OH; PE/FL			

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

PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	NATURE OF YOUR FIRM'S RESPONSIBILITY	ESTIMATED CONSTRUCTION COST	PERCENT COMPLETE
Tabler Station Connector, Berkeley County, WV	West Virginia DOT 1900 Kanawha Blvd. East Building Five Charleston, WV 25305	design & engineering services	\$9,600,000	90
Linden Water Line Replacement, Linden, NJ	New Jersey American Water 1025 Laurel Oak Road P.O. Box 1770 Voorhees, NJ	design & engineering services	\$2,600,000	95
Blue Ball PRV Project, Abandoned Mine Lands, Clearfield County, PA	PA American Water 4 Wellington Boulevard Wyomissing Hills, PA	design & engineering services	\$10,000 fee	50
Drane Area Extension of Water Distribution System Abandoned Mine Lands, Clearfield County, PA	PA American Water 4 Wellington Boulevard Wyomissing Hills, PA	design & engineering services	\$94,100 fee	100
Point Township Tank and Main, Point Township, PA	PA American Water 4 Wellington Boulevard Wyomissing Hills, PA	design & engineering services	\$1,000,000	100
Route 24 Corridor Intersection Improvements, York County, PA	Pennsylvania DOT Engineering District 8-0 2140 Herr Street Harrisburg, PA 17103	design & engineering services	\$4,500,000	50
Open end Contract for Roadway, Bridge and Environmental Services	Pennsylvania DOT Engineering District 5-0 1713 Lehigh Street Allentown, PA 18103	design & engineering services	\$1,500,000 fee	50
Leon Thru Girder Bridge Replacement Leon, WV	West Virginia DOT 1900 Kanawha Blvd. East Building Five Charleston, WV 25305	design & engineering services	\$1,800,000	98
WVDOT, Corridor H, Grant County, WV	West Virginia DOT 1900 Kanawha Blvd. East Building Five Charleston, WV 25305	design & engineering services	\$40,800,000 fee	100
Oakland Public Service District, Water System Improvements	Oakland Public Service District 768 Carothers Rd Weirton, WV 26062	design & engineering services	\$75,000 fee	75
PA Turnpike, Final Design for Full-Depth Turnpike Reconstruction, MP 213.9 to MP 227, Cumberland County, PA	Pennsylvania Turnpike Commission P.O. Box 67676 Harrisburg, PA 17106-7676	design & engineering services	\$4,000,000 fee	85

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
Open End Contract Airport Planning and Design Services, Harrisburg, PA	Susquehanna Area Regional Airport Authority One Terminal Drive, Suite 300 Middletown, PA 17057	design & engineering services	varies by assignment	On-going
US Postal Service Facilities Renovations and Additions Open End various locations	U.S. Postal Service 10500 Little Patuxent Parkway Columbia, MD 21044-3515	design & engineering services	\$2,500,000 fee to date	75
Heth's Run Bridge Replacement, Pittsburgh, PA	Pennsylvania DOT Engineering District 11-0 45 Thoms Run Road Bridgeville, PA 15017	design & engineering services	\$4,200,000	75
Group C Bridge Designs Allegheny County, PA	Allegheny County Department of Public Works 542 Forbes Avenue, Room 501 Pittsburgh, PA 15219	design & engineering services	\$6,000,000	90
Etna Borough Water and Sewer System GIS Development, Pittsburgh, PA	Borough of Etna 437 Butler Street Etna, PA 15223	Sewer system GIS & mapping	\$150,000 fee to date	on-going
Sewer System GIS Development and Mapping Pittsburgh, PA	McCandless Township Sewer Authority 416 Arcadia Drive Pittsburgh, PA 15237	Sewer system GIS & mapping	\$250,000 fee to date	on-going
Groundwater Treatment Alternatives Assessment, Chambersburg, PA	Guilford Water Authority 115 Spring Valley Road Chambersburg, PA 17201	engineering study	\$25,500 fee	100
Wastewater Treatment Expansion & Upgrade, Coatesville, PA	PA American Water Company 4 Wellington Blvd. Wyomissing Hills, PA 19610	design & engineering services	\$10,000,000 estimated	100
TOTAL NUMBER OF PROJECTS: The above projects are merely a representation, as we are currently working on over 1,000 projects.			TOTAL ESTIMATED CONSTRUCTION COSTS: Over \$150,000,000 all projects.	

16. CURRENT ACTIVITIES ON WHICH YOUR FIRM IS SERVING AS A 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
Source Water Protection Program, Various Locations, WV	Source Water Mapping, sampling	Tetra Tech, Inc. 405 Capitol Street, Suite 809 Charleston, WV 25301	2010	\$300,000	\$50,000
Buchart Horn Dewberry Joint Venture, LLC Master Planning for Tobyhanna Army Depot	Open-End Military Master Planning Contract	US Army Corps of Engineers Baltimore District 10 South Howard Street Baltimore, MD 21203	2014	\$14,000,000 fee	\$7,000,000
CN Johnson Rail Yard Relocation Memphis, TN	Site Design	HDR, Inc. 8550 West Byrn Mawr Avenue Suite 900 Chicago, IL 60631	2010	Unavailable	\$750,000

17. C. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIR		AS THE DESIGNATED ENGINEER OF RECORD		
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER	ESTIMATED CONSTRUCTION COST	YEAR	CONSTRUCTED (YES OR NO)
Terry Branch Refuse & Portals, Wyoming County, WV	West Virginia DEP Office of AML & Reclamation 116 Industrial Drive Oak Hill, WV 25901	\$400,000	2010	YES
Water Feasibility Studies, Boone, Raleigh, & Mercer Counties, WV	West Virginia DEP 601 57 th Street SE Charleston, WV 25311	\$40,000 fee	2010	NO
Howell Demand Center, Howell Township, New Jersey	New Jersey American Water 1025 Laurel Oak Road P.O. Box 1770 Voorhees, NJ	\$2,500,000	2006	YES
New Pikesville Reservoir Tanks, Pikesville, MD	Baltimore County Bureau of Engineering 111 West Chesapeake Avenue Towson, MD 21204	\$18,300,000	2008	under construction
Five Forks Water Treatment Facility, Williamsburg, VA	James City Service Authority PO Box 8784 Williamsburg, VA 23187	\$12,500,000	2005	YES
Arkansas State Highway & Transportation Department, Task Order #1, AR	Arkansas State Highway & Transportation Department 10324 Interstate 30 Little Rock, AR 72203-2261	\$291,511 (Fee)	2005	YES
Derry Township, Route 743 Corridor Study, Hershey, PA	Township of Derry Board of Supervisors 235 Hockersville Road Hershey, PA 17033-2057	\$495,000 (Fee)	2005	NO
Derry Township, Route 422 and Lingle Avenue Improvement Project Dauphin County, PA	Township of Derry Board of Supervisors 235 Hockersville Road Hershey, PA 17033-2057	\$624,000 (Fee)	2005	YES
City of Harrisburg, Seventh Street Widening Harrisburg, PA	City of Harrisburg 123 Walnut Street, Suite 212 Harrisburg, PA 17101	\$471,820 (Fee)	2006	YES

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	CC (YES OR NO)	COMPLETED (YES OR NO)
Southern Avenue Study and Design, Memphis, TN	City of Memphis Div. Engineering Suite 644 125 North Main Street Memphis, TN 38103	\$1,900,000	2005		YES
Taxiway Yankee Extension Memphis Shelby County Airport, Memphis, TN	Memphis/Shelby County Airport Authority 2491 Winchester Road Suite 113 Memphis, TN 38116	\$60,000,000	2006		YES
Yield Analysis Tool Scoping, Statewide, PA	Susquehanna River Basin Commission 1721 North Front Street Harrisburg, PA	\$210,000	2009		N/A
Interconnection between Elizabethtown and Jamesburg Water Systems	New Jersey American Water 1025 Laurel Oak Road P.O. Box 1770 Voorhees, NJ	\$2,200,000	2009		YES
Bolivar-Hardeman County Airport Design and Construction Services	Hardeman County Hardeman County Courthouse Bolivar, TN 38008	\$35,000 fee	2009		YES
Taxiway Widening Nashville International Airport, Nashville, TN	Metro Nashville Airport Authority One Terminal Drive Nashville, TN 37214	\$1,400,000	2009		YES
New LEED Certified CVI Maintenance Facility, Davis, WV	Canaan Valley Institute P.O. Box 673 Davis, WV 26260	\$800,000	2009		YES
Bus Garage and Maintenance Facility Expansion Huntington, WV	Tri-State Transit Authority 1120 Virginia Avenue Huntington, WV 25704	\$2,000,000	2009		YES
Jones and Laughlin Bridge Berkeley County, WV	West Virginia DOT 1900 Kanawha Blvd. East Building Five Charleston, WV 25305	\$1,700,000	2009		YES

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	CC (YES OR NO)
Longvue Wastewater Treatment Plant Expansion Pittsburgh, PA	McCandless Township Sewer Authority 416 Arcadia Drive Pittsburgh, PA 15237	\$6,000,000	2009	YES
Treatment Plant Capacity Evaluation, Marietta, PA	Marietta-Donnegal Joint Authority P.O. Box 167 Marietta, PA 17547	\$50,000 fee	2009	YES
Oakland Public Service District, Water Treatment Systems Studies	Oakland Public Service District 768 Carothers Rd Weirton, WV 26062	\$47,000 fee	2009	YES
Kanawha County Courthouse Renovation Charleston, WV	Kanawha County Commission P.O. Box 3627 Charleston, WV 25336	\$9,000,000	2005	YES
West Virginia DOT, Star City-Osage Road Project, Monongalia County, WV	West Virginia DOT 1900 Kanawha Boulevard East Building Five Charleston, WV 25305-0430	\$42,000,000 \$1,824,595 fee	2005	YES
New Jersey DOT Inspection of 39 Conrail Orphan Bridges, Trenton, NJ	New Jersey DOT 1035 Parkway Avenue P.O. Box 600 Trenton, NJ 08625-0600	\$320,571	2005	N/A
New Jersey DOT Inspection of 36 Off-system NJ DEP Bridges, Various Parks in NJ	New Jersey DOT 1035 Parkway Avenue P.O. Box 600 Trenton, NJ 08625-0600	\$166,885	2005	N/A
New Jersey DOT, Inspection of 47 On-System State Owned Bridges, Group M015, Central NJ	New Jersey DOT 1035 Parkway Avenue P.O. Box 600 Trenton, NJ 08625-0600	\$329,084	2005	N/A
McAlevy's Fort Corridor Improvement Study Pennsylvania DOT District 9-0 Huntingdon County, PA	PennDOT - District 9-0 1620 North Juniata Street Hollidaysburg, PA 16648	\$406,840	2005	NO
Bolivar-Hardeman County Airport Design and Construction Services	Hardeman County Hardeman County Courthouse Bolivar, TN 38008	\$35,000 fee	2007	YES

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	COMPLETED (YES OR NO)
Valley Forge Service Plaza Improve Stormwater Management Using a Swale to Divert Stormwater into a Culvert.	Pennsylvania Turnpike Commission Harrisburg East Interchange P.O. Box 67676 Harrisburg, PA 17106-7676	\$79,705 fee	2005	YES
Streambank Restoration, Stabilization and Erosion Prevention, New York Wire, Mount Wolf, PA	New York Wire 152 Main St. P.O. Box 0866 Mt. Wolf, PA 17347	\$8,900 fee	2007	YES
Stormwater BMPs and Design of Demonstration Project on Harrisburg Area Community College Campus, Gettysburg, PA	Adams County Office of Planning and Development Suite 101 19 Baltimore St. Gettysburg, PA 17325	\$15,000 fee	2008	YES
Stream/Wetland Assessment, Mitigation, Restoration, Planned Residential Development, Cumberland County, PA	Delta Development Group, Inc. Wuite 200 2000 Technology Parkway Mechanicsburg, PA 17050	\$31,416 fee	2007	YES
Codorus Creek River Conservation Plan, York, PA	Codorus Creek Watershed Association P.O. Box 2881 York, PA 17405	\$35,588 fee	2005	YES
Conewago Creek Watershed Conservation Plan, York County, PA	PA Environmental Council Central PA Regional Office Suite 200 130 Locust Street Harrisburg, PA 17101	\$96,000 fee	2007	YES
Open-End Quality Assurance/Control, Stormwater Pollution Prevention Plan Preparation, Erosion Prevention and Sedimentation Control Services, Tennessee statewide.	TDOT James K. Polk Building 505 Deaderick Street Nashville, TN 37243	\$2,000,000 fee	2007	YES
Incorporation of Stormwater BMP Measures in Intersection Improvements to Facilitate Safe Traffic Flow, New High School, York, PA	Central York School District 775 Marion Rd. York, PA 17402	\$2,000,000 \$449,700 fee	2007	YES

*NOTE: The above projects are a representation, as we have completed over 5,000 projects in the last five years

18. COMPLETED WORK WITHIN LAST 5 YEARS ON WHICH YOUR FIRM WAS RESPONSIBLE	HAS BEEN A SUB-CONSULTANT TO OTHER FIRMS (INDICATE PHASE OF WORK FOR WHICH YOUR FIRM WAS RESPONSIBLE)				ESTIMATED CONSTRUCTION COST OF YOUR FIRM'S PORTION	YEAR	CONSTRUCTED (YES OR NO)	FIRM ASSOCIATED WITH
PROJECT NAME, TYPE AND LOCATION	NAME AND ADDRESS OF OWNER							
Lisburn Road SR0015 A12 Southcentral PA	Michael Baker, Jr., Inc., 4431 N. Front St. 2nd Floor Harrisburg, PA 17110		\$21,000,000 \$769,876 fee	2005	YES		Michael Baker, Jr., Inc.	
Lanier Middle School Renovations Fairfax, VA	Architecture, Inc. 1801 Alexander Bell Dr. Reston, VA 20191		\$13,300,000 \$410,900 fee	2005	YES		Architecture, Inc.	
University Park Airport T-Hangers Design State College, PA	Poole Anderson Construction 2121 Old Gatesburg Road State College, PA 16801		\$2,104,800 \$49,800 fee	2006	YES		Poole Anderson Construction	
Route 18 Noise Walls New Brunswick, NJ	Gannett Fleming 1001 S. Durham Ave Plainfield, NJ 07080-2305		\$6,000,000 \$310,668 fee	2008	YES		Gannett Fleming	
Taxiways B and D Improvements Design Shreveport Airport Shreveport, LA	Purtle and Associates 701 Texas Street Shreveport, LA 71101		\$500,000 \$50,000 fee	2006	YES		Purtle and Associates	
Susquehanna Township High School Additions Harrisburg, PA	Hayes Large Architects LLP 75 South Houcks Road Suite 300 Harrisburg, PA 17109		\$5,300,000 \$158,000 fee	2006	YES		Hayes Large Architects LLP	
Susquehanna Township Middle School Additions Harrisburg, PA	Hayes Large Architects LLP 75 South Houcks Road Suite 300 Harrisburg, PA 17109		\$3,900,000 \$136,000 fee	2006	YES		Hayes Large Architects LLP	

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.

Buchart Horn, Inc. is a multi-disciplinary organization that provides architectural, engineering, environmental, planning, project management, construction services, and administrative services. Our experience and resources facilitate cost effective solutions. Our "strong Project Manager" approach clarifies project responsibilities and promotes project communication.


Established in 1946, Buchart Engineering Corporation evolved into Buchart Horn, Inc., Consulting Engineers, Architects, and Planners. Today, *Engineering News Record* ranks us among the top consulting firms.

We specialize in designing, improving, and solving the problems of infrastructure and structures, and in helping our clients comply with environmental, life safety, and other codes and regulations. Our work includes:

Airports; Architecture; Bridges; Civil/Site development; Construction services; Electrical systems and computer wiring; Energy conservation; Environmental planning, engineering, compliance; Geographic Information Systems (GIS); Hazardous and toxic substances; Highways, roads, streets; Landscape architecture design; Mechanical systems-HVAC, plumbing, energy conservation; Recreation parks and trails; Schools; Structural design; Surveys/mapping; Telecommunications; Telemetry and SCADA control systems; Traffic and traffic management; Wastewater treatment and systems; and Water treatment and systems.

Given our corporate experience, our people, and our company-wide voice and data network, we are able to quickly identify the in-house experts best suited to assist you. And because we can send CAD, text, data, or voice across our network, we can mobilize and focus this expertise on your challenge without the delay and expense of travel. We thus have the flexibility to meet the most aggressive schedules, and are able to quickly marshal skilled professionals to meet your needs.

20. The foregoing is a statement of facts.

Signature: 

Title: Senior Vice President

Date: December 7, 2010

Printed Name: Michael A. Schober, PE



BUCHART HORN, INC. STANDARD EQUIPMENT

The following lists equipment typically used by Buchart Horn that will be made available as needed for this project.

ITEM JOB TITLE

NO.

Sampling & Testing Equipment

- 1 American Sigma Tipping Bucket Rain Gage
- 2 American Sigma Depth/Velocity Flow Meter
- 3 American Sigma 800SL discrete/composite sampler
- 4 American Sigma Stormwater discrete/composite sampler
Minimum 1 week rental
- 5 Electronic well probe
- 6 Dissolved oxygen meter and field probe
- 7 Portable pH meter
- 8 Portable conductivity meter
- 9 Geo Pump Peristaltic Pump
- 10 Field filtration filters (disposable)
- 11 Field decontamination equipment
- 12 Deionized Water
- 13 COLIWISSA, composite liquid waste sampler (disposable)
- 14 Bailers (disposable)
- 15 Soil Gas Sampling Equipment
- 16 Soil Gas (expendable) tip & tubing
- 17 Soil scoops (disposable)
- 18 Stainless steel soil scoops
- 19 Bucket auger
- 20 Split spoon sampler
- 21 Up-Z-Dazy Submersible Pump Puller
- 22 4" Submersible pump
- 23 2" Submersible pump
- 24 Electric Generator
- 25 Infiltrometer System
- 26 Hermit Environmental Data Logger
- 27 Transducer (each)
- 28 ISCO Flow Poke
- 29 6" V-Notch Weir
- 30 8" V-Notch Weir
- 31 10" V-Notch Weir
- 32 12" V-Notch Weir
- 33 15" V-Notch Weir
- 34 6" Cherne Muni-Ball Plug
- 35 8" Cherne Muni-Ball Plug
- 36 10" Cherne Muni-Ball Plug
- 37 12" Cherne Muni-Ball Plug
- 38 15" Cherne Muni-Ball Plug



ITEM NO. JOB TITLE

Sampling & Testing Equipment (contd)

- 39 Solinst Interface probe
- 40 Balmac Model 216D Vibration Analyzer and Chart Recorder
(4 hour min. charge)
- 41 Terrameter & leads
- 42 Stream Velocity Meter
- 43 Slump Cone
- 44 Electronic Paint Dry Film (DFM) Gauge
- 45 Troxler 3440 Surface Moisture-Density Gauge
- 46 NJDEP VOC Soil Sampling Kit

Field Safety Equipment

- 47 PhotoIonization detector
- 48 Facepiece assembly respirator
- 49 Organic vapor cartridges (max. 1 day use - disposable)
- 50 Vinyl gloves - pair (disposable)
- 51 Coveralls - set (disposable) (Tyvek)
- 52 Sensidyne Pump
- 53 Drager Tubes
- 54 Homelite Blower - 3 HP Gasoline with 20' hose
- 55 Tripod
- 56 LEL/O₂ Monitor
- 57 Confined Space Entry Equipment, Complete
- 58 Air Sampler, Personal

Video Equipment

- 59 Video Camera and Records (Tapes not included)

Field Vehicles

- 60 Four-wheel drive field vehicles



BUCHART HORN, INC. STANDARD SOFTWARE

Fiscal Year 2011

The following water-related software is licensed to Buchart Horn and available for use.

<u>SOFTWARE</u>	<u>DESCRIPTION</u>
ABSCOUR	CALCULATES BRIDGE ABUTMENT SCOUR
AIRVAC	CALCULATES HEADS IN VACUUM SEWER NETWORK
AUTOCADD	COMPUTER-AIDED DRAFTING & DESIGN SOFTWARE
CULVERTMASTER	CULVERT DESIGN & ANALYSIS
EC-DESIGN	STORM WATER MGNT & EROSION CONTROL
ECMDS	EROSION CONTROL MATERIAL DESIGN
FIRE HYDRANT RATING	FIRE HYDRANT RATING
FLOWMASTER	HYDRAULIC TOOLBOX
HEAD LOSS	PIPE SYSTEM HEAD COMPUTATIONS
HEC-1	FLOODPLAIN AND HYDROGRAPH ANALYSIS
HEC-2	WATER SURFACE PROFILES
HEC-6	SEDIMENT TRANSPORT MODEL
HEC-FDA	FLOOD DAMAGE ANALYSIS
HEC-HMS	HYDROLOGIC MODELING SYSTEM
HEC-RAS	RIVER ANALYSIS SYSTEM
HMR52	PROBABLE MAX STORM
HY22 VURBAN	URBAN DRAINAGE DESIGN
HY-8	CULVERT DESIGN & ANALYSIS
HYDRAFLOW HYDRAGRAPH	ANALYSIS OF DRAINAGE BASINS
HYDRAFLOW STORM SEWERS	HYDRAULIC GRADE LINE
HYDRAIN	HIGHWAY DRAINAGE
HYDROCAD	STORMWATER MODELING
HYDRO-CD	CONTAINS 60 PUBLIC DOMAIN STORMWATER PROGRAMS
IRRACALC	IRRIGATION SCEHDULE
KENTUCKY MODEL (KYPEPE)	MODELING OF PIPE DISTRIBUTION NETWORK
LA DOT HYDRAULIC PROGRAMS	HYDRAULIC DESIGN PROGRAMS FOR LA DOT
MICROSTATION	COMPUTER-AIDED DRAFTING & DESIGN SOFTWARE
NETWK	PIPE NETWORK ANALYSIS
PCSWMM	SUPPORT PROGRAM FOR EPA SWMM4 MODEL
RAINCAD	IRRIGATION/LANDSCAPE
SANITARY SEWER MODEL	SANITARY SEWER ANALYSIS
SANSYS	SEWER SYSTEM MODELING
SCOUR AT BRIDGES HY-9	SCOURING ANALYSIS
STORMCAD	STORM SEWER DESIGN
TR-20	HYDROLOGIC ANALYSIS OF A WATERSHED
TR-55	URBAN HYDROLOGY FOR SMALL WATERSHEDS
VISUAL MODFLOW PRO	GROUNDWATER & CONATMINANT MODELING
VTPSUHM	VA TECH/PENN STATE URBAN HYDOLOGY MODEL
WATERCAD	WATER NETWORK MODELING
WATERGEMS FOR GIS	WATER NETWORK MODELING
XP-SWMM	STORMWATER AND WASTEWATER MGNT MODEL